NORM 2024

Breaking Borders: Building Bonds

NORM 2024 Final Report

Conference Dates: June 23rd – 26th, 2024

Location: Washington State University Campus
Pullman, WA

NORM 2024
Breaking Borders: Building Bonds

Contents

1. Introduction and General

General Chair: Zachariah Heiden (zachariah.heiden@wsu.edu)

Program Chair: Kristopher Waynant (kwaynant@uidaho.edu)

1A. Executive Summary

The theme of NORM 2024: “Breaking Borders: Building Bonds” was focused on creating a diverse meeting which focused on topics/tracks were chemists and non-chemists could network and discuss advances in similar areas of interest. The goal of NORM 2024 was to bring in attendees that were from all disciplines to show that chemistry can be found everywhere. This goal addresses the Vision of ACS with aims at improving all people’s lives through the transforming power of chemistry. NORM 2024 fulfilled the mission of ACS by advancing the broader chemistry enterprise and its practitioners for the benefit of Earth and all its people through the focus of NORM 2024’s meeting theme.

During the NORM 2024 program many of the symposia addressed ACS Goals: Providing Information Solutions (ACS Strategic Plan Goal #1), Empower Members and Member Communities (ACS Strategic Plan Goal #2), Support Excellence in Education (ACS Strategic Plan Goal #3), Communicate Chemistry’s Value (ACS Strategic Plan Goal #4), and Embrace and Advance Inclusion in Chemistry (ACS Strategic Plan Goal #5).

1A.1 ACS Strategic Plan Goal #1

Goal #1 of the ACS Strategic Plan focuses on delivering indispensable chemistry-related information solutions to address global challenges and other issues facing the world’s scientific community. With the theme of “Breaking Borders: Building Bonds,” the symposia of NORM 2024 deviated from the traditional tracks (e.g. organic, inorganic, analytical, physical, etc.) and focused on themes critical to society today. Some examples include: nuclear science, pushing the limits of detection, challenges in environmental science, chemistry in the community, chemistry away from the bench, energy, catalysis, synthesis, and interfaces.

1A.2 ACS Strategic Plan Goal #2

Goal #2 of the ACS Strategic Plan focuses on providing access to opportunities, resources, skills training, and networks to empower our global members and diverse member communities to thrive. NORM 2024 accomplished Goal #2 of the ACS Strategic Plan by offering many opportunities for networking, by hosting lunches and snacks in a central location, allowing for attendees to not have to run off and look for food. NORM 2024 also had a Building Bonds room on the top floor of the building holding the technical sessions to allow for attendees to have a room to meet and network with each other for the entirety of the conference. NORM 2024 also offered a sample model kit in the welcome bag and challenged attendees to build molecules with other attendees, with flyers placed throughout the conference listing molecules that could be made with two, three, and four kits. NORM 2024 also offered career workshops, a safety workshop, and plenaries talks that exhibited a speaker from the National Science Foundation.

1A.3 ACS Strategic Plan Goal #3

Goal #3 of the ACS Strategic Plan focuses on fostering the development of innovative, relevant, inclusive, and effective chemistry and chemistry-related education. NORM 2024 accomplished this goal by offering a free outreach event at the Palouse Discovery Science Center to include members of the local public in NORM 2024. NORM 2024 also had a safety workshop and a symposium focused on Chemistry in the Community (chemical education).

1A.4 ACS Strategic Plan Goal #4

Goal #4 of the ACS Strategic Plan focuses on communicating to the public and to policymakers the vital role of chemical professionals and chemistry in addressing the world's challenges. NORM accomplished this goal by focusing the technical program on challenges that face society today as opposed to the typical tracks of a chemistry meeting. This approach allowed for the meeting to attract many attendees outside of the traditional chemistry discipline and allow them to network with chemists.

1A.5 ACS Strategic Plan Goal #5

Goal #5 of the ACS Strategic Plan focuses on promoting diversity, equity, inclusion, and respect; identify and dismantle barriers to success; and create a welcoming and supportive environment so that all ACS members, employees, and volunteers can thrive. All the events of NORM 2024 were all inclusive and all dietary restrictions were considered in food choices at all events catered. The main venue (CUB) also contained a gender neutral bathroom for attendees.

1B. Site and Date Selection

Washington State University (WSU) – Pullman campus was selected as the host site for NORM 2024 due to the availability of large venues for an exposition (Compton Union Building, Senior Ballroom), an amphitheater for plenary talks (Compton Union Building, Auditorium), a large room for poster sessions and social events (Compton Union Building, Junior Ballroom), and close proximity of at least 15 classrooms able to handle at least 30 attendees per room (Center for Undergraduate Excellence) for the technical sessions. The Compton Union Building also housed several restaurants to provide additional dining options to attendees.

1C. Committee Members

The majority of the work regarding the planning and operation of NORM 2024 was concentrated on the general and program chairs. It was very helpful to have a committee member that regularly deals with shipping and receiving at Washington State University. This contact really helped with getting missing expo packages to vendors on short notice. The general and program chairs could have used some more consistent help prior to a month out of the conference. Some of this was due to the general and program chairs not knowing what they needed yet (first time organizing a conference) and the other committee members not being available until the conference was closer.

NORM 2024
Breaking Borders: Building Bonds

General, Expo, and Sponsorship Chair

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Community Organizer

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1D. Meeting and Organizing Committee Operations

The entire organizing committee met in person on a monthly basis six months prior to the start of the conference. The general chair and program chair met via Zoom on a monthly basis two years out from the conference, on a biweekly basis one year out from the conference, a weekly basis six months out from the conference, and twice a week two months out from the conference.

1E. Budget Development

Budget decisions were made primarily between the general and program chair if the cost was below $5,000. Any decision that required a purchase or investment > $5,000 was brought to the organizing committee during one of the monthly meetings, for a vote/discussion decided by a majority.

1F. Meeting Demographics

Table 1F.1. Breakdown of NORM 2024 attendees by registration category.

Registration Category	Quantity
50-year ACS Member	5
ACS Community Associates - Basic Package - Full Conference	9
ACS Members & Society Affiliates - Standard Package - Full Conference	45
ACS Members & Society Affiliates-Premium Package-Full Conference	95
ACS Non-Member - Full Conference	115
Emeritus ACS Member	1
Graduate Student - Community Associates	7
Graduate Student - Non-Member	69
Graduate Student with Premium Package	31
Guest	26
High School Student	3
K-12 Teacher	3
Post doctorate - Non-member	20
Post doctorate with Premium Package	4
Post-Doctorate - Community Associate	1
Post-Doctorate with Standard Package	3
Retired - Non-Member	1
Retired ACS Member	8
Undergraduate Student Member with Premium Package	12
Undergraduate Student-Non-Member	51
Unemployed - Non-Member	13
Unemployed ACS Member or Society Affiliate with Premium Package	10
Unemployed ACS Member or Society Affiliate with Standard Package	7
Unemployed Community Associates	3
TOTAL	**542**

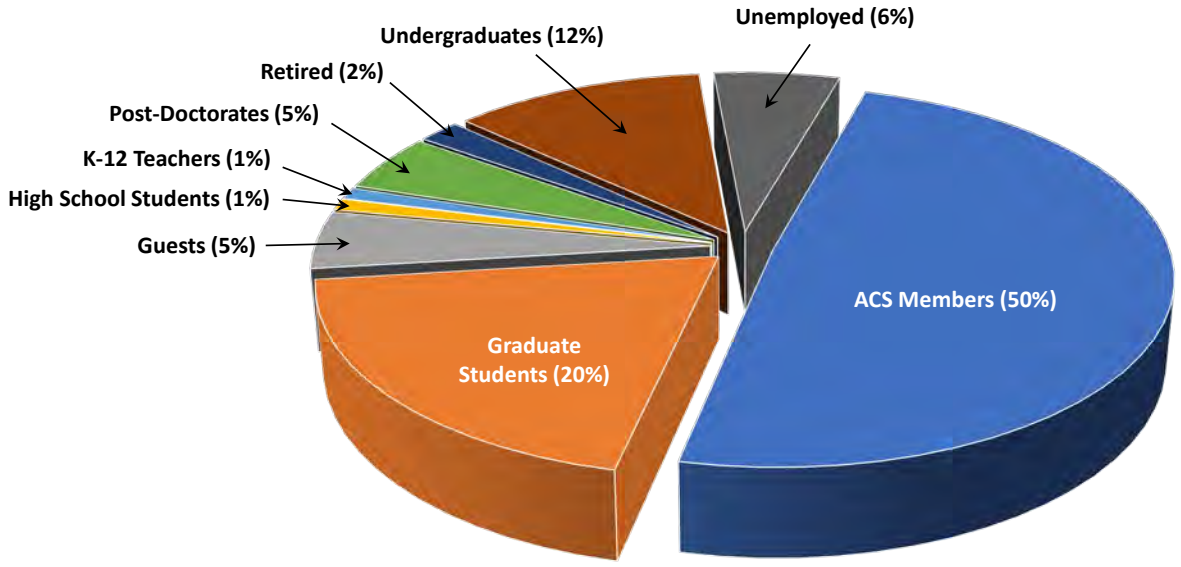


Figure 1F.1. Breakdown of NORM 2024 attendees by registration types.

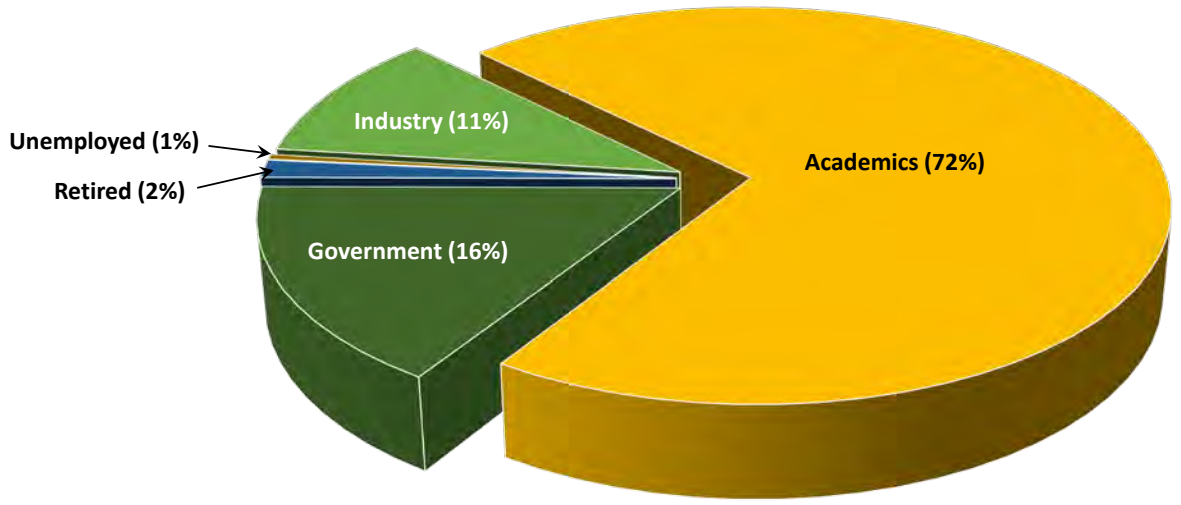


Figure 1F.2. Breakdown of NORM 2024 attendees by affiliation.

37 states and five foreign countries (China, Hong Kong, India, Pakistan, and Canada) represented

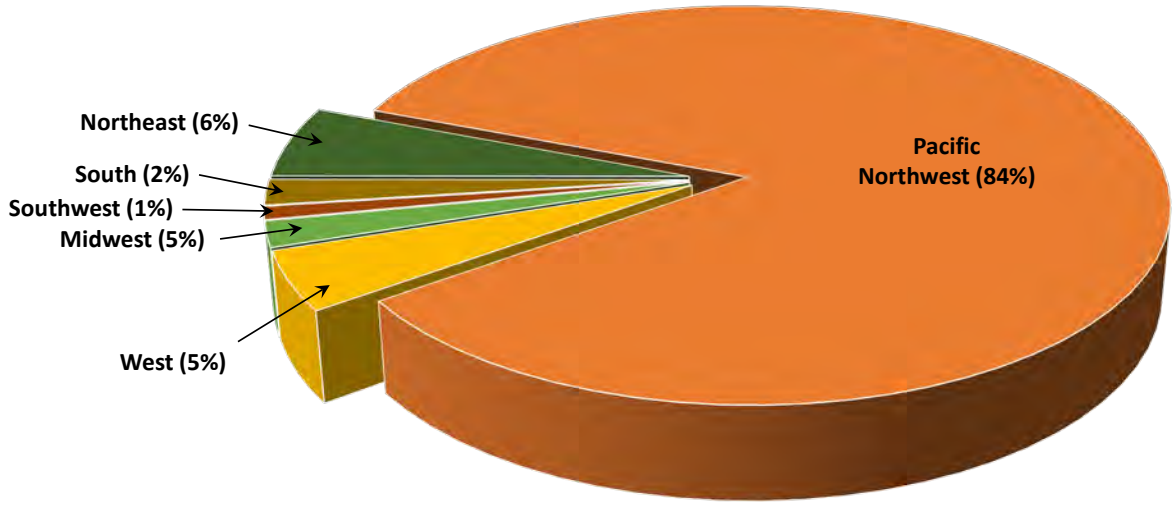


Figure 1F.3. Breakdown of NORM 2024 attendees by location.

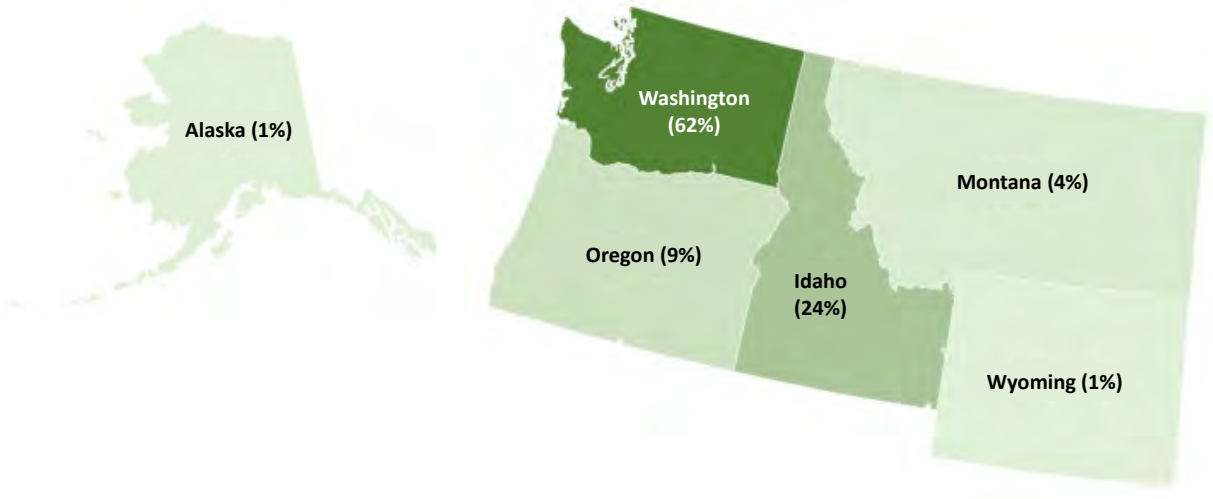


Figure 1F.4. Breakdown of NORM 2024 Pacific Northwest attendees by state.

Table 1F.2. Breakdown of attendance of NORM 2024 by local University, College, or National Laboratory (65% of total attendance).

University/College/National Laboratory	Attendance	Distance to NORM (Miles)
Washington State University	146	0
University of Idaho	58	8
Pacific Northwest National Laboratory	50	147
Oregon State University	20	436
Idaho National Laboratory	13	565
Montana State University	11	455
North Idaho College	9	89
Columbia Basin College	8	134
Idaho State University	7	558
Whitworth University	5	81
University of Washington	4	288
Eastern Washington University	3	67
Gonzaga University	3	77
Central Washington University	3	181
Boise State University	3	296
University of Montana	3	255
Saint Martin's University	2	324
Western Washington University	2	368
Weighted Average Travel Distance/Attendee		**115**

1G. Other/Lessons Learned

Securing the venue and classrooms at WSU was rather challenging. It was easy to put in the room requests 1-2 years in advance, but the confirmations would not be received until the spring of 2024. To help expedite the confirmation process, the Chancellor of WSU was asked to help us with getting the rooms confirmed. It would be nice to have a message from the ACS President that we can use to help with bookings and get support from the community.

Submitted by Zachariah Heiden, NORM 2024 General Chair

2. Meeting Program

2A. Data

Please see Appendix A for the full meeting program.

Track	Symposium Title	Organizer(s)	Attendance
Catalysis	Integration of Thermal Catalysis and Electrocatalysis	Jean-Sabin McEwen (js.mcewen@ wsu.edu) & Qiaowan Chang (qiaowan.chang@wsu.edu)	28
Catalysis	Breaking Borders and Building Bonds Through Catalysis	Jack Zhang (q.zhang@wsu.edu)	25
Synthesis	Creativity in Metal-Ligand Bonding	Rick Thompson (rthompson@uidaho.edu)	30
Synthesis	Breaking Borders and Building Bonds Through Synthesis	Wilson Bailey (baileyw@gonzaga.edu)	20
Chemical Biology	Advances in Medicinal Chemistry	Cliff Berkman (cberkman@wsu.edu)	20
Chemical Biology	Biochemistry and Biomedicine/Cancer Biochemistry and Biology/Biomedical Engineering and Applications	Weimin Li (weimin.li@wsu.edu)	27
Chemical Biology	Breaking Borders and Building Bonds in Chemical Biology	Travis Denton (travis.denton@wsu.edu) and Anjali Sharma (anjali.sharma@wsu.edu)	15
Chemical Biology	Emerging Technologies for Targeted and Controlled Drug Delivery	Anjali Sharma (anjali.sharma@wsu.edu)	25
Chemistry in the Community	Project SEED, REUs, CUREs, and Partners in Science: Engaging the Community in Research Experiences	Don Warner (dwarner@boisestate.edu)	21
Chemistry in the Community	Breaking Borders and Building Bonds through Chemistry in the Community	Ashley Lamm (alamm@ewu.edu)	13
Chemistry in the Community	Undergraduate Research Poster Session	Paul Buckley (ptbuckley@wsu.edu) and Jeremy Lessman (jlessman@wsu.edu)	100
Chemistry Away from the Bench	The Chemistry of Historical Archaeology	Ray von Wandruszka (rvw@uidaho.edu)	29
Chemistry Away from the Bench	Computation in Molecular Sciences	Jagdish Patel (jspatel@uidaho.edu) and Marty Ytreberg (ytreberg@uidaho.edu)	23
Chemistry Away from the Bench	Computational Chemistry: From Theory to Applications	Kirk Peterson (kipeters@wsu.edu)	27
Chemistry Away from the Bench	Advancing Chemistry through Computation and Artificial Intelligence	Ram Devanathan (ram.devanathan@pnnl.gov)	22
Chemistry Away from the Bench	Breaking Borders and Building Bonds through Chemistry Away from the Bench	Kirk Peterson (kipeters@wsu.edu)	27

Track	Symposium Title	Organizer(s)	Attendance
Environmental Challenges	Engineering Solutions for Environmental Chemistry Challenges	James Moberly (jgmoberly@uidaho.edu)	6
Environmental Challenges	Breaking Borders and Building Bonds Through Environmental Challenges	James Moberly (jgmoberly@uidaho.edu)	6
Pushing Limits of Detection	Pushing the Boundaries of Sensitivity	Christine Gobrogge (cagobrogge@shimadzu.com)	16
Pushing Limits of Detection	New Frontiers in Mass Spectrometry and Gas-Phase Ion Manipulation	Brian H. Clowers (brian.clowers@wsu.edu)	16
Pushing Limits of Detection	Breaking Borders and Building Bonds at the Limits of Detection	Erin Linskey (erinL@anataklebs.com)	15
Energy	Chemical Theory and Mechanisms for Sustainable Energy Conversion and Production	Bin Liu (binliu@ksu.edu)	18
Energy	Biobased Materials and Products	Armando McDonald (armandm@uidaho.edu)	17
Energy	Unlocking a Sustainable Future: Harnessing the Power of the Hydrogen and Beyond	Haiyan Zhao (haiyanz@uidaho.edu) and Aaron Wilson (aaron.wilson@inl.gov)	21
Energy	Exploring the Chemistry of Next-Generation Coolants and Solvents: Radiation-Induced Chemistry	Gregory Holmbeck (gregory.holmbeck@inl.gov)	18
Energy	Exploring the Chemistry of Next-Generation Coolants and Solvents: Structure and Properties of Coolants, Fuels and Solvents	Ruchi Gakhar (ruchi.gakhar@inl.gov)	25
Energy	Exploring the Chemistry of Next-Generation Coolants and Solvents: Interfacial Processes Under Extreme Environments	Simerjeet Gill (gills@bnl.gov)	23
Energy	Breaking Borders and Building Bonds through Energy	Haiyan Zhao (haiyanz@uidaho.edu)	32
Interfaces	3D Printing of Biomaterials and Drug Delivery	Susmita Bose (sbose@wsu.edu) and Amit Bandyopadhyay (amitband@wsu.edu)	31
Interfaces	Creating and Breaking the Borders in Molecular Recognition	Gonzalo Campillo-Alvarado (gcampillo@reed.edu) and Kraig Wheeler (kraigwheeler@whitworth.edu)	13
Interfaces	Interfacial Chemistry Enables Sustainable and Resilient Infrastructure Materials	Xianming Shi (xianming.shi@wsu.edu)	21
Interfaces	Electrochemistry	Frank Cheng (ifcheng@uidaho.edu)	26
Interfaces	Structures, Kinetics, and Thermodynamics at Interfaces	Ursula Mazur (umazur@wsu.edu)	12
Interfaces	Breaking Borders and Building Bonds at Interfaces	Jeff Bell (jeffrey.g.bell@wsu.edu)	15

Track	Symposium Title	Organizer(s)	Attendance
Nuclear Science	Advances in Actinide and Lanthanide Chemistry	Jim Boncella (james.boncella@wsu.edu), Xiaofeng Guo (x.guo@wsu.edu), and Neil Henson (neil.henson@pnnl.gov)	30
Nuclear Science	The Nucleus, Radiation, and Chemistry Today	Alexander Chemey (chemeya@oregonstate.edu)	42
Nuclear Science	Geochemistry and Mineralogy of Critical Metal Elements	Xiaofeng Guo (x.guo@wsu.edu), Johannes Haemmerli (johannes.haemmerli@wsu.edu), Xin Zhang (xin.zhang@pnnl.gov), and Zheming Wang (Zheming.wang@pnnl.gov)	25
Nuclear Science	Advancements and Training in Nuclear Materials Processing and Sensing in Harsh Environments	Sam Bryan (sam.bryan@pnnl.gov) and Neil Henson (neil.henson@pnnl.gov)	44
Nuclear Science	Materials in the Nuclear Fuel Cycle: From Cradle to Grave	John McCloy and Xiaofeng Guo (x.guo@wsu.edu)	45
Nuclear Science	Breaking Borders in the Nuclear Science Enterprise	Neil Henson (neil.henson@pnnl.gov)	39

2B. Plenary/Keynote Speakers

Sunday, June 23 (7:00 – 8:30 pm, CUB Auditorium)

"National Science Foundation; Programs in the Chemistry Division and Beyond"
Presented by: Jose Almirall, National Science Foundation

José R. Almirall is Distinguished University Professor Emeritus in Chemistry and Biochemistry at Florida International University in Miami. He received a BS in Chemistry from FIU, a MS in Chemistry from the University of Miami and a PhD in Chemistry from the University of Strathclyde. He began his career at the Miami-Dade Police Department forensic laboratory as a practicing forensic chemist where he worked for 12 years prior to his academic appointment at FIU in 1998. He was the founding co-Director of the International Forensic Research Institute at FIU (1997) and the founding graduate program director of the MS in Forensic Science program at FIU (1998). He was also the founding Director of the NSF-funded Center for Advanced Research in Forensic Science (CARFS) at Florida International University. His research interests include development of mass spectrometry, atomic spectroscopy, and molecular spectroscopy measurement science for improving the forensic examination of controlled substances, explosives, and trace evidence (materials). His research group has also been interested in developing statistical tools to improve the interpretation of chemical data in the forensic context. Prof. Almirall and his group have authored more than 165 peer-reviewed publications in analytical and forensic chemistry, and he currently serves as the co-Editor-in-Chief of Forensic Chemistry, an Elsevier journal. Prof. Almirall joined the National Science Foundation (NSF) in August of 2022 as a Program Director rotator in the Division of Chemistry, Chemical Measurement and Imaging (CMI) and Major Research Instrumentation (MRI) programs. **Attendees: 100 (264 registered)**

"Chemistry in a Glass: The Borders and Bonds of Wine Chemistry"
Presented by: Susan Ebeler, University of California, Davis

Dr. Sue Ebeler is the associate dean of Undergraduate Academic Programs for the College of Agricultural and Environmental Sciences (CA&ES) and a professor in the Department of Viticulture and Enology. She earned her Ph.D. in agricultural and environmental chemistry and an M.S. in food science from UC Davis, and her B.S. in food science from the University of Nebraska, Lincoln, NE. Her research seeks to answer questions about food and beverage flavor, quality and health effects. In her research, she uses analytical tools including gas chromatography-mass spectrometry, high performance liquid chromatography-mass spectrometry, and inductively coupled plasma mass spectrometry to study the effects of agricultural practices, fermentation, processing, and storage on composition of grapes, wines, and other foods and beverages. By linking compositional and sensory information, this research reveals information about how aroma compounds interact with each other and with food matrix components to contribute to complex food and beverage flavors. **Attendees: 70 (264 registered)**

Monday, June 24 (12:00 – 1:30 pm, CUB Junior Ballroom)

Women in Chemistry Committee Luncheon
Keynote Speaker
Joan Broderick, Montana State University
Dr. Joan Broderick received her B.S. in Chemistry from Washington State University and later her M.S. and Ph.D. in Inorganic Chemistry from Northwestern University. She completed a post-doctoral fellowship at MIT and then started her career at Amherst College as an Assistant Professor of Chemistry. She transitioned to Michigan State University where she was a Professor of Chemistry until 2005 when she moved to Montana State University. She was awarded the title of Women in Science Distinguished Professor in 2014 and currently serves as the Department Head of the Chemistry and Biochemistry Dept. **Attendees: 44 (43 registered)**

Monday, June 24 (7:00 – 9:30 pm, CUB Auditorium)

"The Power of Procrastination"
Presented by: Jorge Cham, Creator of PhD Comics and The PhD Movies
Jorge Cham is the creator of Piled Higher and Deeper (PHD Comics), the popular comic strip about life (or the lack thereof) in Academia. He is also the co-founder of PHD TV, a video science and discovery outreach collaborative, the best-selling author of several non-fiction books for kids and adults, and the Emmy-nominated creative director and co-creator of the P BS Kids animated series Elinor Wonders Why. Dr. Cham obtained his B.S. from Georgia Tech and his M.S. and Ph.D. from Stanford University, specializing in Robotics. He was subsequently an Instructor and Research Associate at Caltech from 2003-2005, where his work focused on developing "Smart" Neural Implants. He travels and presents all over the world to thousands of graduate students, faculty and administrators on the graduate student experience. **Attendees: 52 (152 registered)**

Tuesday, June 25 (7:00 – 8:00 pm, Pavilion at Palouse Ridge Golf Course)

NORM 2024 Awards Dinner Plenary Talk
"Nuclear – The Energy of Tomorrow"
Presented by: Simon Pimblott, Idaho National Laboratory
Dr Simon M. Pimblott has over 35 years of experience in the field of nuclear energy sciences, working closely with the US Department of Energy and the UK Nuclear Decommissioning Authority, Currently, a Laboratory Fellow in at INL, Dr Pimblott is the Chief Scientific Officer for the Nuclear Science & Technology Directorate. Prior to joining INL in 2017, he was the Chair Professor in Radiation Chemistry and the founding Director for the Dalton Cumbrian Facility (DCF) at The University of Manchester. The DCF was established to address the engineering decommissioning and scientific challenges associated with the UK nuclear industry, and particularly the Sellafield site. Professionally, Dr Pimblott is recognized as a Fellow of the Royal Society of Chemistry, and is the Chair-elect of the Materials Science &Technology Division of the American Nuclear Society. He held the UK Engineering and Physical Sciences Research Council's Energy Research Chair in Radiation Chemistry from 2007 to 2012. In 1999 he was the 27th Michael Fry Radiation Research Awardee – the most accomplished radiation scientist under 40 years of age, and in 2011 Dr. Pimblott and the development of the DCF project played a major role in the award of the Queen's Anniversary Prize for Higher and Further Education to the Dalton Nuclear Institute for excellence in nuclear energy research and education. He has acted as technical lead for major research programs in disparate areas across the field of nuclear energy research, specifically: fuel performance, management, and disposition; radiation effects in nuclear materials and fuels; LWR chemistry and corrosion processes;

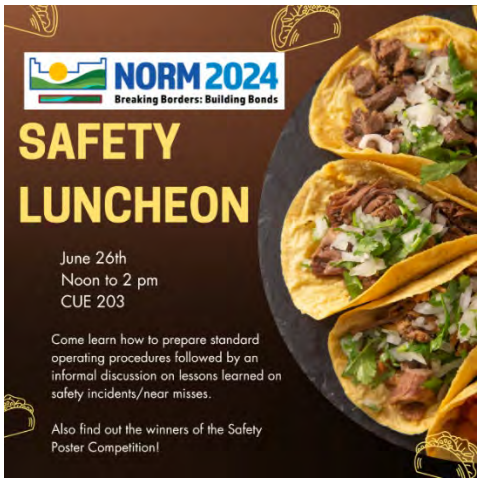
chemistry of nuclear reprocessing systems; and radioactive waste management and decommissioning. **Attendees: 82 (81 registered)**

2C. Workshops

Innovation to Impact (I2I) Part 1: Story of the Cosmic Crisp Apple: The Cosmic Crisp® apple demonstrates how the science of breeding and the art of imagination can work together to create an utterly new and delightful apple. Jeremy Tamsen, Director of Innovation and Commercialization for CAHNRS at WSU gave a presentation on the story of the Cosmic Crisp apple and how it takes innovation and collaboration to move things through the market. **Attendees: 38**

Innovation to Impact (I2I) Part 2: Business Model Canvas Workshop and Fast Pitch Contest: In this interactive workshop Asa Brown, from the Carson Business Solutions in the Center for Entrepreneurship at WSU, led teams through the model building process, highlighting success stories while helping you build your pitch. At the end of the workshop, a panel of experts helped judge pitches and decided if you are on the right track to commercialization. Sponsored by Klarquist and the ACS Division of Business Development and Management. **Attendees: 2 (66 registered)**

Safety Luncheon: A safety luncheon/workshop was led by the Environmental Health and Safety team from the University of Idaho and Washington State University describing the contents and how to prepare standard operating procedures followed by an informal discussion on lessons learned on safety incidents/near misses. **Attendees: 45 (91 registered)**



Concept Mapping in the Science Classroom: Theory, Implementation and Best Practices. Krista Nishida discussed concept mapping, an evidence-based, active-learning pedagogical approach to student learning that involves visual representations of information and emphasizes conceptual connections and relationships in the course material. Several different approaches to using concept mapping in the classroom were described, as well as results from classroom research, Including hands-on concept mapping activities. K-12 teachers that attended earned clock hours. **Attendees: 6 (29 registered)**

ACS Career Workshop: Finding Yourself Identifying a Career that Matches Your Strengths and Values. This course provided self-assessment tools to identify career values and strengths. Participants compared and contrasted the four sectors of chemistry employment to determine which sector best aligned with their values and strengths. This data were used to create a targeted job search strategy. Key topics included how to: Identify and describe your values and strengths in terms of employability, compare and contrast job market outlook and skills in industry, academia, government, and self-employment sectors, understand the purposes of networking, and apply questioning strategies to engage in effective networking. This workshop allowed attendees to self-assess their career values and strengths. Participants also learned how the four sectors of chemistry employment compare and contrast. This workshop helped attendees determine which sector best aligns to their values and strengths as they plan their next steps to obtain their ideal position. **Attendees: 7 (32 registered)**

ACS Career Workshop: Networking : How to Get Started. This course helped participants develop networking skills to enhance their job search and enlarge their professional networks to promote career advancement. Participants analyzed and practiced communication techniques that create a natural flow in networking conversations and meet networking goals. The course concluded with instruction in creating a networking plan geared towards obtaining work in the federal government. Course objectives included: using networking to achieve career goals, identifying networking questions types, and practicing strategies for effective networking. This workshop helped participants utilize networking to enhance their job search. Participants also learned which types of questions to create a natural flow in a networking conversation. This workshop also helped attendees create a networking plan to locate and obtain their ideal job in the federal government. **Attendees: 7 (39 registered)**

ACS Career Workshop: Resume Reviews. This course gavs an overview of the content of a robust résumé for an chemistry position. Participants determined the best practices in terms of résumé content and formatting through analysis of résumé exemplars. The course elaborated on the components of résumé portfolio, including cover letters and research summaries. Additionally, participants learned about the strategic use of job search engines and networking strategies to get their résumés in the proper hands for the chemistry position of their dreams. Participants engaged in: analyzing the sections of a resume, identifying format and

style for print and electronically submitted résumés, and determining and applying question types and network strategies. **Attendees: 15 (17 registered)**

2D. Award Presentations

The Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences

This award recognizes individuals and/or institutions who have advanced diversity in the chemical sciences and significantly stimulated or fostered activities that promote inclusiveness within the region.

Award Winner: Kristopher V. Waynant, Ph.D., University of Idaho

Dr. Waynant is an Associate Professor of Chemistry and the Director of the Office of Undergraduate Research (OUR) at the University of Idaho in Moscow, ID. Trained as an organic chemist, his current research spans a variety of subdisciplines from ligand design for both metal dissolution and catalysis to peptide chemistry and the construction of zwitterionic cross-linkers for polyampholyte materials. As OUR Director, he meets regularly with students to introduce them to research and the opportunities in research careers. He has led many projects on introducing research in the first-year curriculum both as inquiry-based and as course-based undergraduate research experiences (CUREs). He currently leads an NIH Bridges to Baccalaureate program and is the PI of a new NSF REU Site program titled “Elements of Sustainability”. He leads many outreach activities hosting students for ACS events (i.e., USNCO) and as the Councilor for the Washington Idaho Border Section, serves as a member of Project SEED promoting research for to High schoolers throughout the region and the country.

The E. Ann Nalley Northwest Region Award for Volunteer Service to the American Chemical Society

This award recognizes the volunteer efforts of an individual who has served the American Chemical Society and contributed significantly to the goals and objectives of the Society through their regional activities.

Award Winner: Despina Strong, Ph.D.

Dr. Strong has been an active member of ACS for over 40 years, serving as the Chair or as a member for multiple committees and founding two of her own at the local section. She has been the Chair of the local section two times (1992, 2014) and she served as the Education Committee Chair for three years. Strong initiated the Senior Chemists Committee (SCC, 2017) and the Women Chemists Committee (WCC, 2020) where she is currently serving as the first Chair for both. She organizes events to engage members and to promote networking. Strong is a founding member of the Diversity, Equity, Inclusion and Respect committee and leads the Diversity Book Discussion Group. In 2021, Strong participated in the revision of the section’s bylaws making significant contributions during the process. At the Regional level Strong participated in the Northwest Regional (NORM) meetings organizing and /or participating in symposia and events on behalf of the SCC and the WCC. At the National level, Strong is in her third 3-year term as a councilor for the Puget Sound Section, and she is currently an active member (8 years) on the national WCC. As a member of WCC, she leads one of the three major goal areas of the committee and serves on the WCC leadership team. Strong volunteered and chaired the District VI Caucus twice and served as its secretary twice. She participates actively at the National level where she forged relationships with members of the Minority Affairs Committee, WCC and SCC as well as with ACS staff and leadership.

The Glenn and Jane Crosby Northwest Region Award for Excellence in High School Teaching

This award recognizes the efforts of extraordinary high school teachers. The awardee is chosen based on the quality of their teaching as evidenced by incorporation of unusually effective teaching methods, ability to challenge and inspire students, willingness to keep up to date in chemistry, and extracurricular work in chemistry or a chemical science.

Award Winner: Jennifer Pollard, Ph.D., Moscow High School, Moscow, Idaho

Jennifer Pollard is a chemistry teacher and department chair at Moscow High School, in Moscow, Idaho. She received her Ph.D. at the University of Idaho in physical chemistry, having earned a biochemistry degree, K-12 physical science teaching credential and then an M.A. in education at CalPoly, San Luis Obispo. Her love of the Palouse convinced her to stay as a teacher in the area. Her classes now include: dual credit chem 101, dual credit chem 111 (also advanced placement), and high school chemistry. She focuses on “doing chemistry” by integrating labs, activities and content on a day to day basis, and covering regionally important topics such as nuclear chemistry. An integral part of the region’s high school curriculum and a strong supporter of furthering hands-on learning in chemistry, Dr. Pollard has built a strong chemistry program at Moscow High School, integrating dual-credit chemistry with the University of Idaho Chemistry Department’s curriculum and initiating AP curriculum into Moscow High. Dr. Pollard frequently partners with the UI Department of Chemistry to show her classes new and exciting instrumentation. Dr. Pollard’s work has been supported by numerous grants from the Idaho Space Grant Consortium, the Genesee Education Fund and the Office of Energy Resources to help build physics and engineering programs as well as increase the use of solar cells and solar panels at local schools.

2E. Events

Breaking Borders: Building Bonds at the Palouse Discover Science Center. Kids of all ages experienced educational, hands-on science exhibits throughout the Center. The Washington – Idaho Border Section hosted chemistry activity tables designed for ages 3 – 12 that feature tie-dye shirt making (attendees kept the shirt!), slime-making (attendees kept the slime!), beads that reversibly change color when exposed to UV-light (you get to keep these too!), as well as a fun, color-changing demonstration of chemical reactivity. Admission to the Palouse Discovery Science Center is free for all between 1 – 3 pm. The event was sponsored by the Washington State University Nuclear Science Center, providing free admission to all attendees. At the conclusion of the event the PDSC director informed us that we hosted the second largest event they ever had. **Attendees: 220**

Reception with ACS Governance. Occurring concurrently with the Main Poster Session, in the Main Poster Session room, and leading up to the opening plenary session on June 23rd, there will be an opening reception in the exposition hall (Compton Union Building, Senior Ballroom) sponsored by ACS Governance.

Main Poster Session. All posters (outside of the posters submitted by undergraduates) were presented during the main poster session, which occurred the same time as the Reception with ACS Governance.

Chemistry in a Glass Reception. Following the opening plenary lectures a wine and beer reception, sponsored by House of Smith Winery and Another Round Brewery, in the Senior Ballroom of the Compton Union Building occurred. All attendees received a commemorative wine glass. **Attendees: 80 (257 registered)**

Safety Poster Competition. In attempt to increase awareness of chemical safety, the NORM organizing committee organized a Safety Poster Competition. A solicitation for the submission of posters from NORM 2024 attendees where cash prizes were offered to the top three posters. This event was advertised through the ACS Marketing team in emails and in C& E News. The event was canceled due to the fact that no entries were received.

NORM 2024
Breaking Borders: Building Bonds

NORM 2024
Breaking Borders: Building Bonds

Safety Poster Competition

Posters should address an issue that is of interest to a general audience in a chemistry laboratory.

- The top three posters receiving the most votes will receive monetary prizes of $250, $100, and $50 for 1st, 2nd, and 3rd place
- Prizes will be awarded at the NORM Safety Luncheon on June 26th
- Copies of the winning Posters will be available for attendees to take home with them to their home institution at the NORM Safety Luncheon, and posted on the NORM 2024 website for all to see.

Donuts with Directors. With our Keynote Speaker being an NSF Program Officer (Jose Almirall) and the seminar about the current state and future of NSF – we decided to take advantage of our time zone and host an early morning event (7 am PST / 10 am EST) to have attendees meet with NSF Program Officers virtually. A representative from each of the CHE divisions was in attendance (8 NSF program directors) and each, in turn, discussed their division and the type of proposals they see. This was perfect as many questions from the audience pertained to divisional fit (i.e., should I submit my research to Synthesis or Catalysis division?). Additionally, we provided coffee and donuts for all attendees. Unfortunately, the session was sparsely filled, with only a dozen attendees throughout the hour-long session. **Attendees: 7 (111 registered)**

Building Bonds/NORM Lounge. For the duration of NORM 2024, CUE 518 was reserved as a networking room for NORM 2024 attendees. The room has a panoramic view of the Palouse and many of the leftovers from catered events were brought up to this room for attendees.

Snack/Coffee Break Sponsored by ChemScene. A coffee and snack break in the CUB Senior Ballroom was sponsored by ChemScene. During this coffee and snack break, ChemScene hosted a focus group from 9:55 to 10:15 am at the Expo Stage.

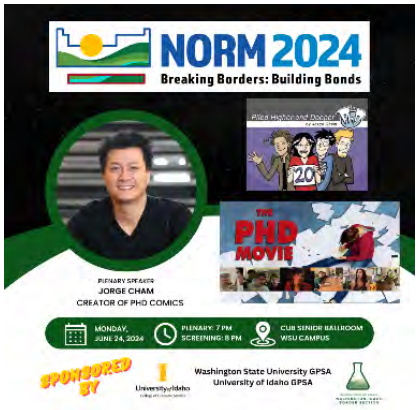
Pizza Lunch. The exhibitors of NORM 2024 sponsored a pizza lunch for NORM 2024 attendees! This pizza lunch was focused at getting NORM 2024 attendees to have more interactions with the NORM 2024 exhibitors. Exposition rates were slightly raised from NORM 2023 to aid in paying for the lunches for attendees.

WCC Luncheon. The Women Chemists Committee honored Joan Broderick, 2019 ACS Alfred Bader Award winner in Bioinorganic or Bioorganic Chemistry and a Washington State University alum, at the WCC luncheon. The program included an update from representatives of the national WCC and a keynote address by Dr. Broderick. She described key milestones, motivating forces, scientific and personal passions and challenges that drove her career decisions, and triumphs. **Attendees: 50 (43 Registered)**

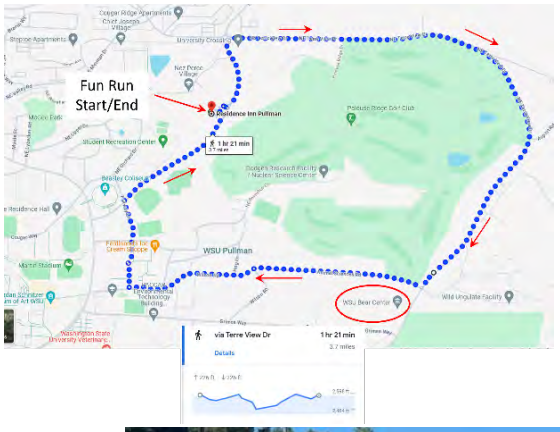
Afternoon Snack Sponsored by Bettersize. A coffee and snack break in the CUB Senior Ballroom was sponsored by Bettersize. During this coffee and snack break, Bettersize hosted a focus group from 3:05 to 3:25 pm at the Expo Stage.

WSU and University of Idaho Alumni and Friends Reception. In an effort to break borders and build bonds: Washington State University and the University of Idaho invited alumni, friends, and colleagues to reconnect at a reception. **Attendees: 55 (140 Registered)**

Screening of The PhD Movie. Following the lecture by Jorge Cham, The PhD Movie 2 was screened. **Attendees: 40 (152 Registered)**



Fun Run To (not From) the Bears. The Fun Run consisted of a 2.6-mile roundtrip run to (not from) the Grizzly Bear Center on the WSU campus from the Compton Union Building. The WSU Bear Center is the only grizzly bear research center of its kind in the United States. Upon reaching the WSU Bear Center, the grizzly bears were visible from a viewing area in the parking lot, where anyone can view the bears foraging or playing in the exercise yard, splashing in their pool, or lounging in their outside runs. **Attendees: 10 (89 Registered)**



WSU Nuclear Reactor Tours. WSU houses a 1 MW TRIGA research reactor. The WSU Nuclear Radiation Center, a WSU department within the Office of Research and located in the Dodgen Research Facility, participates in nationally and internationally pertinent research, isotope production, and various community education initiatives benefiting WSU, other university institutions, and national and worldwide clients. The department and facility are utilized by a variety of fields of study including: nuclear engineering, physics, chemistry, biology, medicine, geology, environmental sciences, archaeology, geology, and traditional and nuclear forensics. We provide laboratory space and equipment for the WSU Chemistry Department Radiochemistry Lab Sections, in addition to utilization of the reactor facility. The Washington State University Nuclear Science Center and the ACS Division of Nuclear Chemistry and Technology sponsored the bus for tours that dropped off and picked up right in front of the technical sessions building for easy access to the Nuclear Science Center. Many of the attendees signed up for the nuclear reactor tour when they registered, but one third of the attendees did not sign up for a particular time to see the nuclear reactor or provide information for the required background check, thus were not able to go on a reactor tour. The attendees were picked up by a shuttle bus outside of the CUE entrance and driven to the Nuclear Science Center and driven back to the CUE (tour was one hour). **Attendees: 100 (166 Registered)**

Snack/Coffee Break Sponsored by Shimadzu. A coffee and snack break in the CUB Senior Ballroom was sponsored by **Shimadzu**.

Academic and Employment Fair. Prospective graduate students and chemists in search of employment attended a Recruitment Fair consisting of 11 recruiters. The recruitment fair acted as the perfect venue for attendees to connect with potential graduate schools and employers in the area. **Attendees: 100 (120 Registered)**

Undergraduate Poster Session. Undergraduate researchers presented their research amongst graduate school, industrial, and national laboratory recruiters inside of the Academic and Employment Recruitment Fair. **Attendees: 100**

Ice Cream Social Sponsored by Washington-Idaho Border Section. The Washington-Idaho Border Section (NORM 2024 host section) sponsored and ice cream social from Ferdinand's Ice Cream Shoppe, Washington State University's gourmet ice cream shop! **Attendees: 180 (252 Registered)**

NORM 2024 Awards Banquet. The NORM 2024 Awards dinner took place at the Banyans Pavilion of the Palouse Ridge Golf Club. **Attendees: 82 (81 Registered)**

Senior Chemists Breakfast. A breakfast was held in the Breaking Borders: Building Bonds room for senior chemists. For this event, a $500 grant from the Senior Chemists at ACS was received. **Attendees: 10 (29 Registered)**

Wednesday Snack/Coffee Break. A snack break and coffee was available from 9:50 to 10:20 am in the CUE atrium to act as a networking opportunity with fellow NORM attendees.

Safety Luncheon. Sponsored by an ACS Presidential Grant, as luncheon that included a discussion on how to create standard operating procedures and a discussion on safety incidents occurred. **Attendees: 80 (91 Registered)**

Crossing the Border into Idaho. Several members of the NORM 2024 organizing committee invited NORM attendees to join them for a night out in Moscow, Idaho. Attendees started at Colter's Creek Winery (4:30 – 7 pm) and finished at Hunga Dunga Brewery (6:30 – 9 pm). **Attendees: 15**

2F. A/V Arrangements

Wireless Internet @ NORM 2024

Washington State University provided free guest wireless access during NORM 2024.

WSU Guest Network details:

- Guests receive a three-day lease for network access.
- The email address is used as the username and an auto-generated six-digit password is created for the guest.
- An email with the username, password, and lease length for WSU Guest access is sent to the email address. A guest can use the same login credentials on up to 10 devices at once.
- Once connected to the network, most wireless devices will save the login credentials and the login credentials will not need to be typed in again until after the three-day lease has expired.

Washington State University Information Technology Services (WSU-ITS) provided onsite technical support during the technical sessions located in the Center for Undergraduate Excellence (CUE) at a cost of $2,624 for June 23rd – June 26th. The services provided by WSU-ITS consisted of making sure all of the rooms containing the technical sessions had functional projectors, HDMI cables for laptop/device connections, the rotating slide decks were running prior to the technical sessions. WSU-ITS also had two staff members on call (and were in the CUE) during the technical sessions. Each classroom had a phone number and a phone where the WSU-ITS staff members could be reached during the technical sessions if IT help was needed. Roughly half of the speakers used their own laptops/devices to present, while the other half loaded their presentations on the provided presentation computers.

The Compton Union Building (CUB) provided its own technical support for the events housing in the CUB. Events at the CUB required an AV lighting/sound tech, a floor podium, laptop audio, projector/screen, and a microphone. The AV equipment was included in the room charge of $130/hour for the CUB Senior Ballroom, $90/hour for the CUB Auditorium and the CUB Junior Ballroom. The AV/lighting/sound technician cost $25/hour.

2G. Electronic Abstract Service

MAPS was useful, but clunky. Many of the symposia organizers did nothing in it and the program chair had to step up to schedule all of the technical sessions. Everything was done last minute or not at all by the symposia organizers. Submission of abstracts were fine.

2H. Co-sponsorships and Affiliated Meetings

The **Nuclear Science Track** were co-sponsored by the Washington State University Nuclear Science Center and the ACS Division of Nuclear Chemistry and Technology.

The **Catalysis Track** was sponsored by the ACS Division of Catalysis Science and Technology.

The **Chemical Biology Track** was sponsored by the ACS Division of Medicinal Chemistry and the Washington State University Elson S. Floyd College of Medicine sponsored the Biochemistry and Biomedicine/Cancer Biochemistry and Biology/Biomedical Engineering and Applications symposium within the Chemical Biology Track.

The **Environmental Challenges Track** was sponsored by the ACS Division of Environmental Chemistry.

The **Pushing the Limits of Detection Track** was sponsored by the ACS Division of Analytical Chemistry and the Pushing Boundaries of Sensitivity symposium was sponsored by Shimadzu.

The **Energy Track** was sponsored by the ACS Division of Energy and Fuels.

The **Interfaces Track** was sponsored by the ACS Division of Colloid and Surface Chemistry.

2I. Additional Comments/Lessons Learned

We were told by WSU-ITS that speakers would be able to load their presentations on the desktop of the computers used to project their presentations using a USB stick. On the first day of the technical sessions, we found out that the desktops were locked down to not allow for the presentations to be transferred and WSU-ITS and the general chair had to scramble to find USB sticks to be used to run the rotating slide decks and any presentations the speakers wished to host off of their own computers.

Learning Canva was very helpful in generating event flyers for each of the events to post on the website and have in the rotating slide decks in each room of the technical sessions.

Attendance of events was low, even though we received high turnouts in registration for the events. We recommend at least charging something for each event so people will attend.

History of Registration for Events

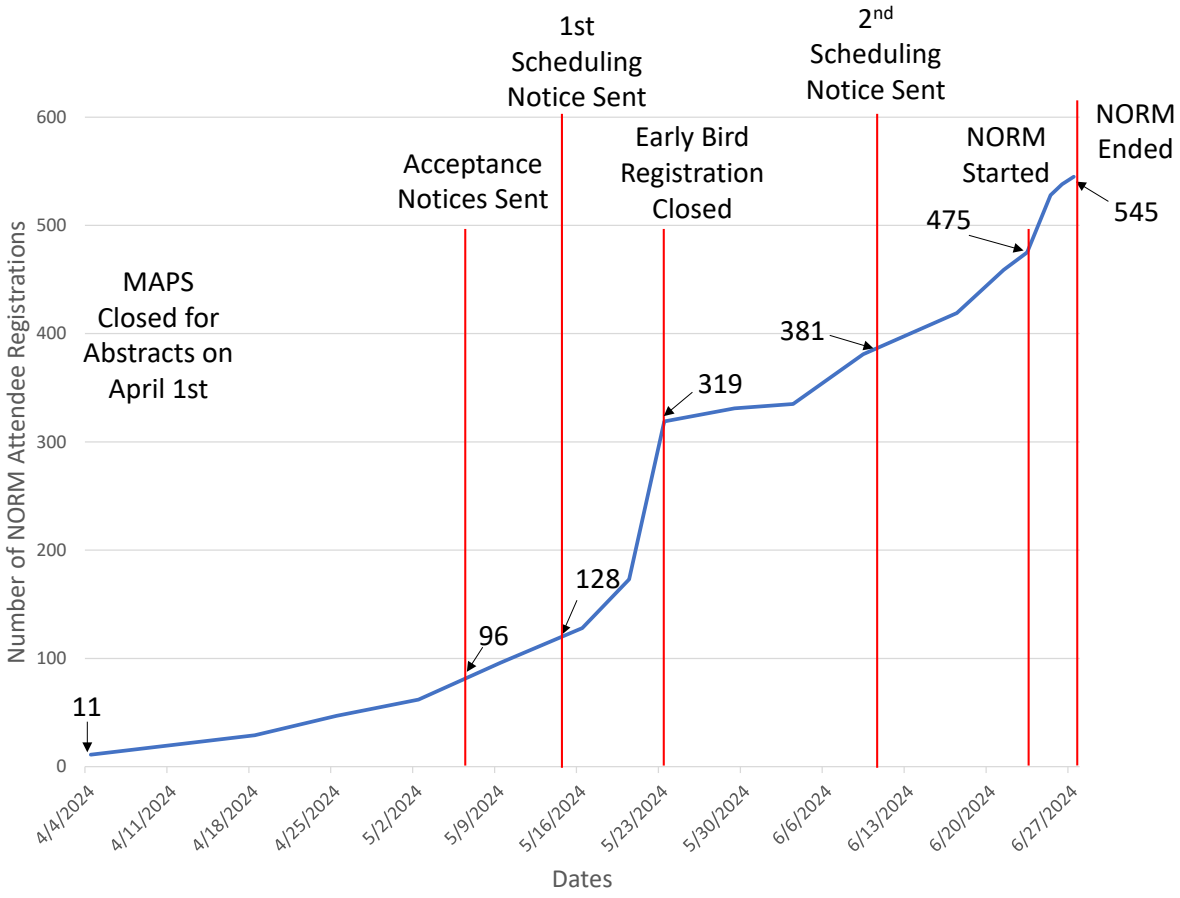


Figure 2I.1. Plot of NORM 2024 registrations over time.

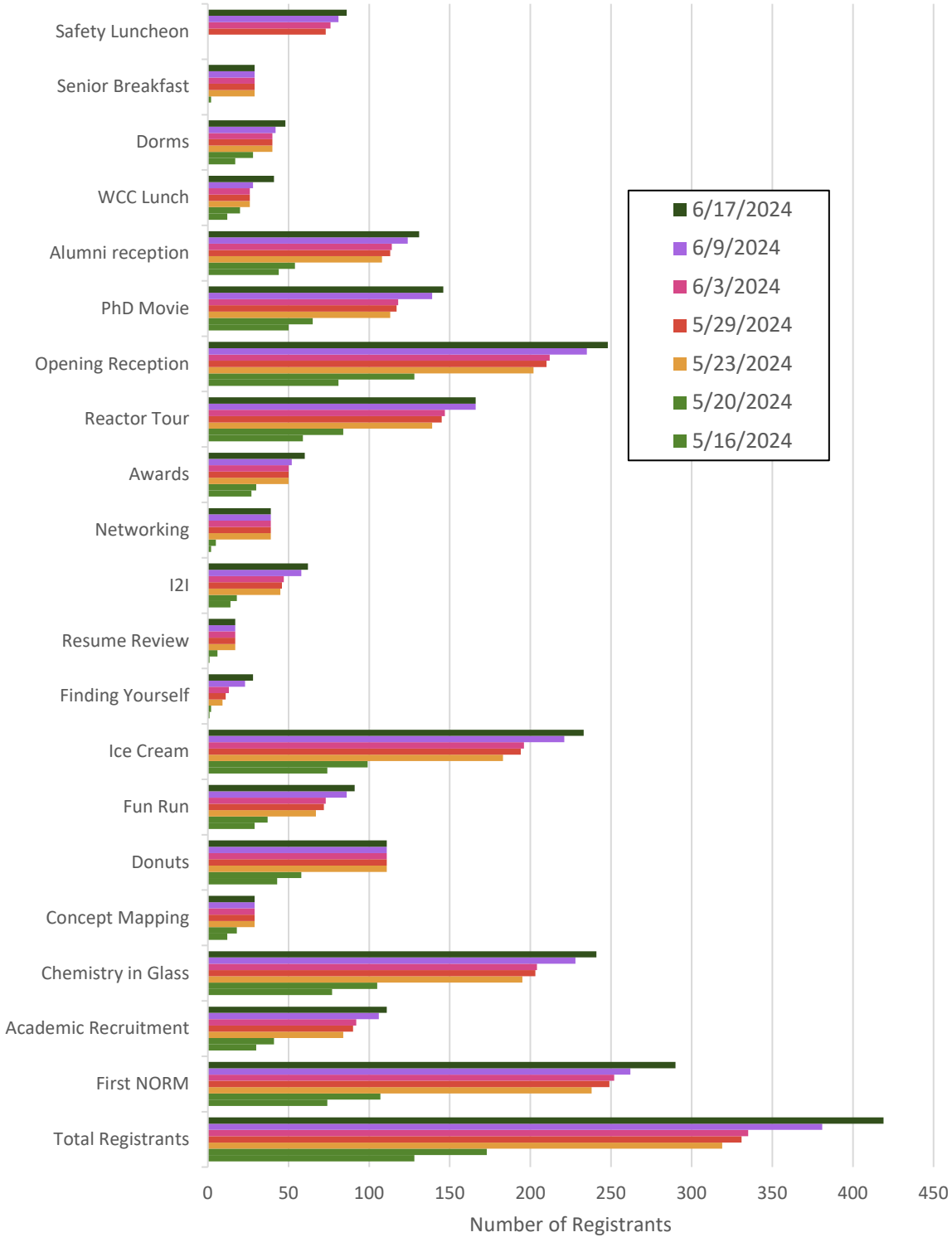


Figure 2I.2. Breakdown of NORM 2024 registration events over time.

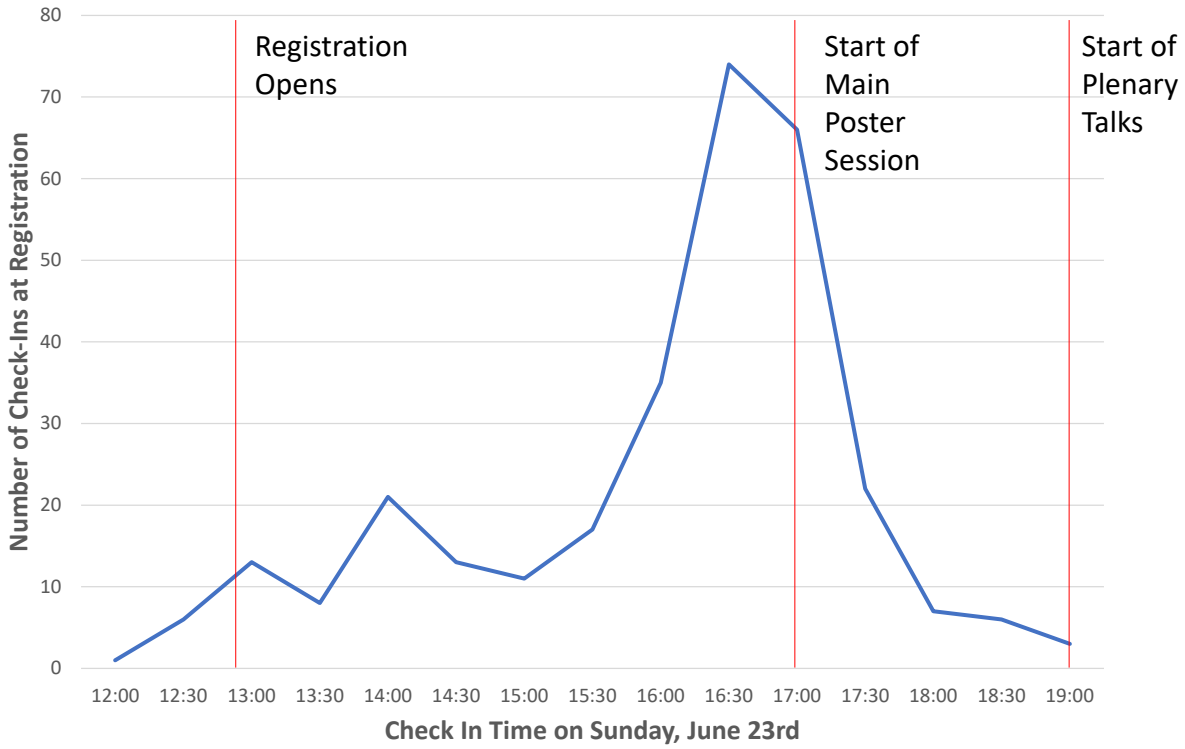


Figure 2I.2. Plot of time attendees arrived at the registration desk with respect to the start of the conference on the first day of NORM 2024 (June 23rd).

Submitted by Zachariah Heiden, NORM 2024 General Chair and Kristopher Waynant, NORM 2024 Program Chair

3. Meeting Finances

3A. Budget

Meeting Expense Summary	Total Expenses: $110,345.96
Venue Rental	$11,429.00
Catering	$43,193.14
Transportation (Hotel Shuttles)	$3,473.65
Marketing	$5,949.98
NORM Swag	$11,404.52
Speaker Travel	$11,391.47
WSU Dorm Deposit	$5,866.50
Miscellaneous	$17,637.70
NOR Board Loan Repayment	$4,000.00

Meeting Revenue Summary	Total Revenue: $150,670.92
Registration (543 registrants)	$67,207.00
Exhibitors (40 exhibitors)	$23,645.77
Sponsorships (39 sponsors)	$44,937.80
Grants	$10,880.35
NOR Board Loan	$4,000.00

Total Revenue (revenue – expenses) for NORM 2024: $40,324.96

Revenue due to NOR Board (20% of Total Revenue): $8,064.99

Total Revenue from NORM 2024 for Washington – Idaho Border Section: $32,259.97

3A.1 NORM 2024 Expenses

Venue Rental Expenses	Amount of Expense
CUB Senior Ballroom on Sunday, June 23rd	$2,210.00
CUB Auditorium on Sunday, June 23rd	$345.00
CUB Senior Ballroom on Monday, June 24th	$1,600.00
CUB 204 (Exhibitor Breakroom) on Monday, June 24th	$237.50
CUB Junior Ballroom on Monday, June 24th	$920.00
CUB Butch's Den on Monday, June 24th (Cancellation Charge)	$25.00
CUB Auditorium on Monday, June 24th	$660.00
CUB Senior Ballroom on Tuesday, June 25th	$1,600.00
CUB 204 (Exhibitor Breakroom) on Tuesday, June 25th	$212.50
CUB Junior Ballroom on Tuesday, June 25th	$495.00
CUE Technical Support	$2,624.00
Palouse Ridge Golf Course, Tuesday, June 25th	$500.00

Speaker Travel Expenses	Amount of Expense
Jorge Cham (honorarium + travel)	$5,557.20
Susan Ebeler Mileage	$1,826.92
Jose Amiral Travel	$0.00
Hamid Ghandehari (using MEDI sponsorship)	$500.00
Simon Pimblott Hotel	$742.92
Despina Strong Travel (Crosby Award Winner)	$612.75
General Chair Spring ACS Travel	$1,780.22
Sanjay Malhotra Hotel (using WSU Spokane Medical School sponsorship)	$371.46

Catering Expenses	Amount of Expense
Linens on Sunday	$379.56
Opening Reception	$5,948.26
Chemistry in a Glass	$2,262.06
Donuts with Directors	$318.19
Exhibitor Break Room	$562.07
Linens on Monday	$104.83
Monday Morning Coffee Break	$1,015.55
WCC Luncheon	$1,230.35
Monday Pizza Lunch	$2,435.62
Monday PM Snack	$1,567.37
Monday Clean Up	$99.98
WSU Alumni & Friends Reception	$3,406.19
Jorge Cham Plenary Talk	$331.50
Exhibitor Break Room	$416.76
Tuesday Morning Coffee Break	$1,021.53
Academic Recruitment Fair	$1,183.83
Undergraduate Poster Session Lunch	$1,448.90
Tuesday Lunch	$3,601.80
Tuesday Ice Cream Social	$2,048.80
Sales Tax on WSU Catering Services	$2,247.75
Award Banquet	$5,264.45
Senior Breakfast	$969.00
Wednesday Snack	$1,044.36
Safety Luncheon	$3,271.33
NOR Board Meeting	$645.10
Beer from Another Round Brewery	$335.00

Marketing Expenses	Amount of Expense
Items for NORM 2023 Expo Booth	$1,948.94
NORM 2024 Organizing Committee Travel to NORM 2023	$2,095.39
Fall 2023 ACS NORM 2024 Swag	$529.25
NORM 2024 General Chair Travel to Fall ACS	$1,376.40

NORM Swag Expenses	Amount of Expense
Molymod Model Kits	$772.50
NORM Swag (Lip Balm, Pens, Notebooks)	$2,739.85
NORM Wine Glasses	$1,660.33
NORM Tote Bags	$4,824.25
Volunteer T-shirts	$500.00
Cosmic Crisp Apples	$907.59

Miscellaneous Expenses	Amount of Expense
Website	$4,258.50
Website Fee for until 2027	$374.20
Fun Run Water and Ice	$11.43
NORM BINGO Cards and PDSC Flyers from UI Copy Center	$169.07
Six Palouse Puzzles for Plenaries and Building Bonds Room	$150.00
NORM Technical Program Signs	$516.75
NORM Events Signs	$477.00
NORM Building Bonds Room & Mother's Room Signs	$79.50
NORM Exhibitor Breakroom Sign	$39.75
NORM Workshop and Plenary Signs	$198.75
NORM Stairwell Signs	$159.00
NORM PDSC Signs and business cards	$204.57
NORM Signs, Drink Tickets	$376.27
NORM A-Frame Signs, Shuttle Stops, and Sponsors	$725.95
PDSC Sponsorship	$500.00
PDSC Supplies	$1,339.97
Welcome Bag Volunteer Lunch	$83.39
100 NORM Printed Programs	$2,236.71
Safety Poster Awards (none submitted)	$0.00
Safety Posters Printing (none submitted)	$0.00
I2I Workshop	$109.50
I2I Fast Pitch Award	$250.00
Liquor Licenses (2 @ $10 each)	$20.00
Asa Brown Honorarium	$500.00
NORM Debriefing Meeting	$279.50
Photographer	$1,000.00
Advertising of PDSC Event in Lewiston Tribune	$940.00
Best Poster Awards	$400.00
Shipping of Welcome Bag to Attendee	$18.40
CUB FacOps Poster Board Installation/Removal	$2,195.17
Farmer’s Market Supplies	$24.32

Discount Name	Discount Code	Used	Total Amount Discounted
ACSSTAFF2024	ACSSTAFF2024	8	1,750.00
Award	AWRD24	3	978.00
Awardee	AWRDS24	0	0.00
AWRDBQT24	AWRDBQT24	0	0.00
Expo	EXPO24	29	8,514.00
EXPOBQT24	EXPOBQT24	0	0.00
Guest	GUEST24	0	0.00
Organizer	ORGANIZR24	0	0.00
Plenary	PLENRY24	6	1,650.00
Speaker	SPKR24	65	15,466.00
Sponsor	SPONSR24	11	2,713.00
SPONSORBQT24	SPONSRBQT24	17	4,726.00
Teacher	K12TEACH24	0	0.00
Volunteer	VOLUNTR24	37	6,500.00
WCC Luncheon Students	WCC2024	0	0.00
Total			**$ 42,297.00**

Each ½ day session received free registration for one invited speaker. Each symposium organizer received a free registration.

3A.2 NORM 2024 Revenue

Grants	Total Grant Revenue: $10,880.35
NOR Board	$1,500.00
ACS Innovative Project Grant	$3,500.00
Safety Program	$3,000.00
ACS Business Development (BMGT), NEXUS	$2,000.00
WCC Reimbursement	$880.35

Sponsors	Sponsorship Level	Total Sponsor Revenue: $44,937.80
Seagen	Silver	$2,424.76
ChemScene LLC	Silver	$2,424.76
Anatek	Silver	$2,500.00
Division of Nuclear Chem	Silver	$2,425.25
AK Scientific	Copper	$970.10
WSU School of Medicine	Silver	$2,424.76
Shimadzu (Expo)	Copper	$970.10
Shimadzu (Morning Coffee -> Monday)		$485.05
Inland Northwest Section	Copper	$1,000.00
Bettersize	Copper	$1,454.66
SCIEX	Silver	$2,424.76
University of Idaho Chemistry	Gold	$5,000.00
WSU Chemistry	Silver	$2,500.00
ACS Membership	Silver	$2,500.00
Mirion	Silver	$2,425.25
Voiland- ChE	Nickel	$485.05
Klarquist Sparkman, LLP	Nickel	$484.56
WSU Materials and Mechanical Eng	Gold	$4,850.01
ACS Colloids	Nickel	$500.00
ACS Catalysis	Nickel	$484.56
ACS Environmental	Nickel	$500.00
ACS Energy & Fuels	Nickel	$485.05
Senior Chemists	Nickel	$500
ACS Governance	Silver	$2,500
Alturus Analytics	Copper	$1,250.00
WSU Nuclear Science Center	Gold	$484.56 + In Kind
University of Idaho Chemical and Biological Engineering	Nickel	$484.56

The following table lists sponsorship funds were unable to be collected by December 6th, 2024 and were considered a lost cause, thus, they were not included in the total revenue calculations.

Sponsor Funds Never Received	Sponsorship Level	Total Missing Sponsor Revenue: $4,000
ACS Analytical	Copper	$1,000
ACS Medicinal Chem	Nickel	$500
Moscow Chamber of Commerce	Nickel	$500.00
Pullman Chamber of Commerce	Copper	$1,500.00
WSU GPSA	Nickel	$500.00

3B. Financial Accounts Used by Meeting

Paypal and a checking account was used for all transactions. This posed a little bit of a problem at the end of the conference when we were settling up the invoices, where there was a limit on the amount that could be paid each day and per transaction.

Yuwei Kan (treasurer), Zachariah Heiden (general chair), and Kristopher Waynant (general chair) had purchasing authority for NORM 2024.

3C. Grant Funding for Meeting

NOR Board Grant

The NOR Board provided a $1,500 grant, in addition to a $4,000 loan, to aid the NORM 2024 organizing committee in hosting NORM 2024.

ACS President Grant for Safety Program

2019 ACS President Bonnie A. Charpentier established a grant program of $3,000 for regional meetings to establish a safety program at a Regional Meeting. The funds from this grant were used for the Safety Luncheon.

Local Section Innovative Project Grant

The Washington-Idaho Border section received the ACS Local Section Innovative Project Grant (IPG) grant (3,500) to help with the costs of putting on the NORM 2024 Awards Banquet. The funds were used to bring in Simon Pimblott, from Idaho National Laboratory, as the plenary speaker for the 2024 NORM Awards banquet.

ACS Division of Business Development and Management neXus Grant

The Washington-Idaho Border Section received the nexus Regional Meeting Grant ($2,000) from BMGT to put on an Innovation to Impact workshop aimed at teaching attendees how to take an idea into a startup company. The grant also funded a presentation by Jeremy Tamsen on the story of commercialization of the Cosmic Crisp Apple (which originated on the Washington State University campus).

ACS Division of Senior Chemists Grant

The Washington-Idaho Border Section received a $500 grant from the Senior Chemist Committee to promote interactions among senior chemists, increase senior members of ACS, and expand awareness of senior chemist activities through a Senior Chemist Breakfast.

3D. Additional Comments/Lessons Learned

Many vendors had problems with Paypal (not allowed) so had to send invoice from Paypal and most paid with a credit card through the invoice, which saved us on the 3% Paypal transaction fee.

Submitted by Zachariah Heiden, NORM 2024 General Chair and Yuwei Kan, NORM 2024 Financial Contact

4. Fundraising

4A. Data

In many ways, the fundraising for NORM 2024 began years ago when we started reaching out to our local analytical firms to sponsor our Chemical Olympics events. This event planted the seed of collaboration between the major universities in our section with these private industries. We even had a local industry member in our Chair succession for the 3 years leading up to NORM 2024. These two main firms were viewed as “definite” sponsors of NORM 2024 as well as they could interact with vendors from a different standpoint, and we utilized that network to bring in other vendors (e.g. Agilent).

The Fundraising was through levels with Nickel being the lowest (up to $500) and Diamond being the highest at $20,000. There was also Platinum ($10,000), Gold ($5,000), Silver ($2,500), and Copper ($1,000). Sponsors were also able to sponsor a session and/or break time.

When the organizing committee committed to NORM 2024, we went all in and made sure that the entire executive board was involved. We knew that we had to get folks excited about NORM and so we made small giveaway items, and we created games for folks to play. We brought those ideas and excitement on trips to ACS National and Regional meetings (Executive Committee 5/5 members to NORM 2023 in Bozeman, 3/5 to ACS Fall 2023, 2/5 to ACS Spring 2024) to talk with attendees, vendors, and division leaders. We made relationships with vendors and discussed what they could get from NORM.

On these trips we would visit with, and give information to, every vendor, division, person who would listen to us. We would go all over the venue to find people to talk to. We brought pens, cards, signs, and we created sponsorship prospectuses for all to see. We were professional and that is what made a large difference in recruiting so many vendors to NORM 2024.

Our fundraising also came from ACS Division and regional department sponsorships. By having a theme that was focused on interdisciplinary research, we were able to reach beyond the chemistry departments (of UI and WSU) to the Materials Science, Chemical Engineering, and more importantly, the WSU Nuclear Science Center (NSC). The NSC played a large role in NORM 2024 being a success. Moreover, our conference tracks were well aligned with many of the divisions, and we were able to receive divisional sponsorships from 8 ACS divisions. This desire to be multidisciplinary and to “break down borders” created new attendees that normally would not be at a NORM. The Division of Nuclear Chemistry wanted to help in a bigger than normal way as there was a strong theme in Nuclear Science, but we had positive interactions with all divisions, even if they could not sponsor, except for one, the Division of Organic Chemistry (more on that below).

Next, we wanted to make the Undergraduate Poster session also a graduate recruiting session and we sent emails to over 50 graduate schools (either direct people who were indicated as grad directors or to the generic emails gradadmin@ insertschool .edu. We sent these emails multiple times starting in the Fall before NORM and continuing through May (we also had a literature only option where they could send us their literature, if they were unable to attend in person).

We reached out to the community and received sponsorship help from local wineries, local businesses, and the chambers of commerce in both towns. Being a section of two university college towns is a benefit and we were able to work with both. We hoped for even more help from local breweries / coffee shops but couldn’t always make things work.

To be honest, with every bit of fundraising that we were able to secure there were at least 10 emails that went unanswered. Overall, over 400 emails were sent.

4B. Exhibits

The following message is an example email sent to potential sponsors to request sponsorship of a particular event of NORM 2024.

Subject: CHAS sponsored Safety Program at NORM 2024
Date: Saturday, 27 January 2024 at 17:47:00 Pacific Standard Time
From: Waynant, Kristopher (kwaynant@uidaho.edu)
To: kalim863@gmail.com, rmizzo@princeton.edu, mbkoza2@gmail.com, sigmannsb@retired.appstate.edu
CC: Heiden, Zachariah M

All,

I am reaching out in regards to the opportunity to build a CHAS sponsored Safety Program at this year's Northwest Regional Meeting of the ACS (NORM2024) www.norm2024.org This conference is being held on the campus of Washingotn State Unviersity in Pullman, WA on June 23-26, 2024.

I reached out to Dr. Miller (Braun Group UIUC alumni represent!!!) and she asked that I email the larger CHAS executive committee as we (Zach Heiden, CC'd and I) navigate our safety program ideas. Each time we discuss building a safety program we keep returning to the same thought... "what have others done for safety programs and are our ideas along the lines of something that is "sponsorable".

We have been in contact with our EHS officers at both UI and WSU and the UI Lab Safety Officer has mentioned both discussing proper use of fumehoods (similar to CHAS presentation) and we have requested a potential workshop on proper "Job Hazard Analysis" utilizing either (or both) a chemical demonstration (i.e., thermite or similar) and/or a laboratory tour with preset safety violations to then ask attendees to identify as many safety violations as possible and discussing them. We thought that a proper "JHA" of a popular demo would attract high school teachers and instructors to attend as well as the students that want to see the demo. We also thought that a "prize-oriented" setup of a teaching lab with various violations could be beneficial for "seeing the need for safety" instead of just discussing it.

Does this make sense? In the original communication on reaching out for CHAS sponsorship of a safety program – we were thinking that we needed to develop the program. Is this true? or do we simply ask for CHAS officers to attend and provide a Peer-Led workshop? Academics could always strengthen their safety culture and RAMP would also be valuable to our attendees.

Looking forward to future conversations on this matter.

All the Best,

KW
--
Kristopher V. Waynant Ph.D.
Associate Professor of Chemistry
Director, Office of Undergraduate Research
University of Idaho
875 Perimeter Dr. MS 2343
Moscow, ID 83844-2343
kwaynant@uidaho.edu
(208)-885-6768

The following message is an example email sent to potential sponsors request sponsorship of NORM 2024.

Subject: Charity Request Form for an upcoming Chemistry Conference
Date: Thursday, 19 October 2023 at 11:51:52 Pacific Daylight Time
From: Waynant, Kristopher (kwaynant@uidaho.edu)
To: kmcdaniel@houseofsmith.com
Attachments: Charity Request Form House of Smith.pdf

Kelly McDaniel,

We met this past weekend at the Walla Walla tasting room. My name is Kris Waynant and I am a Chemistry Professor at the University of Idaho, the Program Chair of our upcoming Regional Meeting, and most importantly – a Rocket88 member since 2016.

As we discussed on Saturday, our upcoming meeting is the **No**rthwest **R**egional **M**eeting of the American Chemical Society (affectionately called NoRM) www.norm2024.org and it is being hosted by our Washington Idaho Border Local Section and will be held on Washington State University campus from June 23-26, 2024. The northwest region encompasses WA, OR, ID, MT, and AK and usually pulls in over 500 attendees and numerous seminars, posters, and keynote talks from scientists from all over the country. We wanted to highlight the area for its agricultural chemistry. Therefore, we have booked our keynote speaker to be Dr. Susan Ebeler from the University of California – Davis. Her research is in flavor chemistry and most particularly in wine. https://caes.ucdavis.edu/about/directory/fsd/fzebeler This keynote address will be on the evening of June 23rd 2024 and we'd like to have a wine social with all attendees following her address.

As a dedicated Rocket 88 member, I have petitioned my local section to ask that House of Smith be the **SOLE SPONSOR** of this Evening Social event. Especially with the *Wines of Substance labels* (Cs, Sb, Pn, and Ch) – what chemist wouldn't like that! Being that we want this to be a key event we are requesting 600 glasses of wine – or 120 bottles (10 cases). We hope that you will see that our request is similar in cost to sponsoring a coffee break https://norm2024.org/support/.

In exchange – we will promote your logo on our website, on our printed program materials, online program materials, and will advertise your logo on the powerpoint display prior and following Dr. Ebeler's lecture. If you want to supply us with any other promotional material to distribute in every attendees welcome swag bag – we will absolutely do that too. (Many of our attendees will be coming from WA and OR) – we would love to direct them back home through Walla Walla!
We may look to see if we could get an additional sponsor for 600 wine glasses – if that is the case we will still add your logo (with permission) to the glasses. Also – we could supply a free registration for your sponsorship if someone wanted to attend.

As we discussed this past Saturday - we will only need the wine as the event will be in the Senior Ballroom of the Compton Union Building on the WSU campus https://cub.wsu.edu/spaces/space-reservations/sr-ballroom/ Thus we are not allowed to pour the wine but will be hiring WSU catering to pour it.

Thank you for the opportunity to request ***Wines of Substance*** from you for our upcoming event.

Please feel free to reach out if there are any questions.

Best,

KW

--
Kristopher V. Waynant Ph.D.
Associate Professor of Chemistry
Director, Office of Undergraduate Research
University of Idaho
875 Perimeter Dr. MS 2343
Moscow, ID 83844-2343
kwaynant@uidaho.edu
(208)-885-6768

The following message is an example email sent to ACS Divisions to request a general sponsorship of NORM 2024.

Subject: Reaching out to NUCL Division for Sponsorship of NORM 2024 Programming and events
Date: Saturday, 10 February 2024 at 21:19:55 Pacific Standard Time
From: Waynant, Kristopher (kwaynant@uidaho.edu)
To: walenskyj@missouri.edu, kersting1@llnl.gov, bpowell@clemson.edu, amy.hixon.2@nd.edu, gpeaslee@nd.edu, jurissons@missouri.edu, fugatega@ornl.gov, rewilson@anl.gov, bennypd@ornl.gov, ezoldjg1@ornl.gov, dpenchof@utk.edu
CC: Heiden, Zachariah M, Porterfield, Donivan Robert, Boncella, James, Guo, Xiaofeng

NUCL Division Leadership,

My name is Kris Waynant and I am the Program Chair for the upcoming Northwest Regional Meeting of the ACS (NORM 2024) to be held in Pullman, WA on the campus of Washington State University on June 23-26th, 2024. www.norm2024.org

I have been guided to reach out to you by Dr. Donivan Porterfield (CC'd), NUCL member and a leader for Regional Meetings with ACS. I have also CC'd our conference General Chair Dr. Zachariah Heiden and our *Nuclear Science* Track Chairs Drs. James Boncella and Xiaofeng Guo to keep them in the loop of this email and request.

To put it mildly – the track chairs and the nuclear community in the Pacific Northwest have done an excellent job at building a strong nuclear program for our upcoming conference. We have Six unique Symposia with some expecting multiple sessions of speakers. The specific symposium include:

- Advances in Actinide and Lanthanide Chemistry – Organized by Drs. Boncella and Guo (Washington State Univ., WSU)
- The Nucleus, Radiation, and Chemistry Today – Organized by Dr. Alexander Chemey (Oregon State University)
- Geochemistry and Mineralogy of Critical Metal Elements – Organized by X. Guo (WSU), Johannes Haemmerli (WSU), Xin Zhang (PNNL), and Zheming Wang (PNNL)
- Advancements and training in nuclear materials processing and sensing in harsh environments – organized by Drs. Sam Bryan and Neil Henson from Pacific Northwest National Lab (PNNL)
- Materials in the nuclear fuel cycle: from cradle to grave - organized by Drs. John McCloy and X. Guo (WSU)
- Breaking Borders in the Nuclear Science Enterprise – organized by Drs. James Boncella (WSU) , Neil Henson (PNNL), and Amanda Lines (PNNL).

This last symposia is an 'invited only' symposia where Dr. Boncella and Dr. Henson have been identifying top scientists/engineers to give updates on the current states on all aspects of the nuclear science enterprise from fuel to waste management.

We are excited about all of these symposia and descriptions of each can be found at the bottom of this email. On top of all this - Ken Nash (Washington State University) will be the 2024 recipient of the Glenn T. Seaborg Award for Nuclear Chemistry sponsored by **YOU**, the ACS Division of Nuclear Chemistry and Technology. We have been trying to get a hold of Ken (as he has retired and moved away from Pullman) – but hope to recognize him at our awards banquet.

We believe that Nuclear Science will be one of the most successful tracks at this conference, drawing scientists and engineers from the regional labs, universities, and beyond. ***We would look to request a sponsorship to help these track chairs bring in top scientists/engineers to speak.***

Additionally, Washington State University has a small nuclear reactor on campus (the Washington State

University Nuclear Science Center) and our General Chair, Zach Heiden, is the Associate Director of the facility. We plan on having reactor tours at the conference but with the facility located just off the main campus and away from the conference venue – we'd like to offer a shuttle service to these reactor tours. ***We were hoping that a sponsorship could help with the shuttle rentals?***

Essentially, we wanted to tell you that we are intending to put on an amazing Nuclear Science program at NORM 2024 and could utilize your support. ***WOULD THE DIVISION BE ABLE TO SPONOSR OUR PROGRAM/EVENTS AT A SILVER LEVEL OF $2500?***
www.norm2024.org/support/

We understand that this is usually more than what is normally given – but this is no normal nuclear science track – it is extensive and the biggest track we have at our conference. To put it plainly – the Nuclear Science Community in our region has really stepped up to create a fantastic program and we would be very excited to earn a sponsorship from ACS Division of Nuclear Chemistry and Technology.

Please feel free to reach out if you have any questions or need any more information.

All the Best,

KW

Kristopher V. Waynant Ph.D.
Associate Professor of Chemistry
Director, Office of Undergraduate Research
University of Idaho
875 Perimeter Dr. MS 2343
Moscow, ID 83844-2343
kwaynant@uidaho.edu
(208)-885-6768

Nuclear Science Program

Session Title: Advances in Actinide and Lanthanide Chemistry
Symposium Organizers: Jim Boncella, Xiaofeng Guo, and Neil Henson
Symposium Description: The chemistry of compounds encompassing the 5f and 4f elements. From fundamental studies of their synthesis, structure, and bonding to separations chemistry to nanoparticle chemistry.
Symposium Type: Posters and Oral
Symposium Contributions: Contributions Allowed
Technical Session Track(s): Nuclear Science

Session Title: The Nucleus, Radiation, and Chemistry Today
Symposium Organizers: Alexander Chemey
Symposium Description: This symposium will focus on all areas of nuclear chemistry, radiochemistry, radiation chemistry, and nuclear medicine.
Symposium Type: Posters and Oral
Symposium Contributions: Contributions Allowed
Technical Session Track(s): Nuclear Science

Session Title: Geochemistry and Mineralogy of Critical Metal Elements
Symposium Organizers: Xiaofeng Guo, Johannes Haemmerli, Xin Zhang, and Zheming Wang
Symposium Description: The symposium aims to establish a platform for interdisciplinary researchers from chemistry, geology, biology, computational chemistry, and materials sciences to share research on geochemistry and mineralogy of critical metals, in terms of their resources, formation and alteration, deposit mining, tailing waste, and separation/remediation. Appropriate topics include but are not limited to: Rare-earth elements mineralization and fractionation; Mineral nucleation and crystal growth mechanisms; Chemistry of hydrothermal fluids and minerals; Molecular simulations and solubility/speciation and

spectroscopic studies; Fluid-driven reactive transport and thermodynamic modeling in natural systems; Waste contamination and remediation; Recycling critical metals from tailing waste.
Symposium Type: Posters and Oral
Symposium Contributions: Contributions Allowed
Technical Session Track(s): Nuclear Science

Session Title: Advancements and training in nuclear materials processing and sensing in harsh environments
Symposium Organizers: Sam Bryan and Neil Henson
Symposium Description: The ability to detect small quantities of analytes from complex environments such as complex environmental solutions, nuclear reprocessing streams, and related wastes can be challenging. The work presented in this symposium will describe the development of various analytical techniques including electrochemistry, spectroscopy, separation science, and radiochemistry, that are working to resolve these challenges. This symposium is also directed at workforce development in nuclear and non-proliferation applications.
Symposium Type: Oral
Symposium Contributions: Contributions Allowed
Technical Session Track(s): Nuclear Science and Environmental Challenges

Session Title: Materials in the nuclear fuel cycle: from cradle to grave
Symposium Organizers: John McCloy and Xiaofeng Guo
Symposium Description: The proposed symposium will bring together a group of experimental and theoretical scientists focused on issues and challenges in solid state and materials chemistry raised in the nuclear fuel cycle. Appropriate topics include but are not limited to: Actinide and rare-earth elements mineralization and recovery; Accidental tolerant fuels, ceramic and metallic fuel, molten salt fuel cycle; Spent nuclear fuel and waste form dissolution, degradation, and long-term stability; Rad waste contamination and remediation; Nuclear waste geological disposal.
Symposium Type: Posters and Oral
Symposium Contributions: Contributions Allowed
Technical Session Track(s): Nuclear Science

Session Title: Breaking Borders in the Nuclear Science Enterprise
Symposium Organizers: Neil Henson and Amanda Lines
Symposium Description: This symposium will provide a forum to present recent progress in the application of nuclear science to current problems including the startup of next gen nuclear reactors, progress on cleanup at the Hanford site, developments in forensics for non-proliferation, response to unplanned radiological events, etc.
Symposium Type: Oral
Symposium Contributions: Invited Only
Technical Session Track(s): Nuclear Science

4C. Additional Comments/Lessons Learned

From the many interactions with potential sponsors and exhibitors, many expressed that we needed to have asked close to 1 year earlier for bigger entities.

We were very disappointed with the Division of Organic Chemistry. We were interacting with them for close to one year trying to get them to sponsor our conference and they ended up turning us down because we didn't have a specific organic chemistry symposium (we felt that they were not promoting innovation). The interactions with the Division of Organic Chemistry angered the General Chair enough that the General Chair is no longer a member of the Organic Division of ACS.

Submitted by Zachariah Heiden, NORM 2024 General Chair and Kristopher Waynant, NORM 2024 Program Chair

5. Exposition

5A. Data

The NORM 2024 Exposition had 32 vendors and was completely sold out. The NORM 2024 Exposition was held in the Compton Union Building (CUB) in the Senior Ballroom and ran from 5 – 7 pm on June 23rd, 8 am to 5:00 pm on June 24th, and 8 am to 3:30 pm on June 25th. A map of the Exposition layout is seen in the exhibits section. A list of exhibitors and their respective contacts can be seen in the table below.

Company Name	Expo Package	Contact Name	Contact Email
Agilent	Commercial Exhibitor	Mary Campbell	MARY.CAMPBELL@AGILENT.COM
Anatek Labs, Inc.	Commercial Exhibitor	Erin Linskey	ERIN@ANATEKLABS.COM
Bettersize	Commercial Exhibitor	Kiwan Park	KIWAN.PARK@BETTERSIZE.US
Biotage	Commercial Exhibitor	Jeff Line	JEFF.LINE@BIOTAGE.COM
Bruker AXS	Commercial Exhibitor	Melanie Swanson	MELANIE.SWANSON@BRUKER.COM
Bruker NMR	Commercial Exhibitor	Monica Bastawrous	MONICA.BASTAWROUS@BRUKER.COM
Center for Advanced Energy Studies	Commercial Exhibitor	Sunny Katseanes	SUNNY.KATSEANES@INL.GOV
Chemwatch	Commercial Exhibitor	Rick Endsley	RICHARD.ENDSLEY@CHEMWATCH.NET
Eldex Corporation	Literature Only Commercial Exhibitor	Josh Harrington	JHARRINGTON@ELDEX.COM
Fisher Scientific	Commercial Exhibitor	Angela Young	ANGELA.YOUNG2@THERMOFISHER.COM
IKA	Commercial Exhibitor	Linsey Carter	LINDSEY.CARTER@IKA.NET
JEOL	Commercial Exhibitor	Carolyn Rogers	CROGERS@JEOL.COM
Klar Scientific	Commercial Exhibitor	Matthew D McCluskey	MATTMCC@WSU.EDU
LECO	Commercial Exhibitor	Katie Redinius	KATIE_REDINIUS@LECO.COM
MacMillan Learning	Commercial Exhibitor	T.J. Minckler	TJ.MINCKLER@MACMILLAN.COM
MAGRITEK Inc	Commercial Exhibitor	Hector Robert	hector@magritek.com
Mirion Technologies	Commercial Exhibitor	Steven Mell	SMELL@MIRION.COM
Nanalysis Corp	Commercial Exhibitor	Amy Nadeau	AMY.NADEAU@NANALYSIS.COM
Oakwood Chemical	Commercial Exhibitor	Wil Butler	WBUTLER@OAKWOODCHEMICAL.COM
Oxford Instruments	Commercial Exhibitor	Lea Kuhn	LEA.KUHN@OXINST.COM
Pine Research Instrumentation	Commercial Exhibitor	Neil Spinner	NSPINNER@PINERESEARCH.COM
Process Insights	Commercial Exhibitor	Terri Melle-Johnson	TMELLEJOHNSON@PROCESS-INSIGHTS.COM
Proteios Technology Inc.	Literature Only Commercial Exhibitor	Anjala Bulathge	ANJALA@PROTEIOS.COM
RAIN Incubator	Commercial Exhibitor	Jennifer McKee-Johnson	JENNAMJ@RAININCUBATOR.ORG
SCIEX	Commercial Exhibitor	Jacob George	JACOB.GEORGE@SCIEX.COM
Shimadzu	Commercial Exhibitor	Christine Gobrogge	CAGOBROGGE@SHIMADZU.COM
Velp Scientific, Inc.	Literature Only Commercial Exhibitor	Corey Letizio	COREY.LETIZIO@VELP.COM
Washington-Idaho Border Section	Non-profit Exhibitor	Erin Linskey	ERIN@ANATEKLABS.COM
WSU Nuclear Science Center	Non-profit Exhibitor	Janice Meeuwsen	JANICE.MEEUWSEN@WSU.EDU

Academic Recruitment and Employment Fair

Company Name	Contact Name	Contact Email
University of California, Riverside	Haofei Zhang	HAOFEI.ZHANG@UCR.EDU
University of Idaho Chemistry Department	Ray von Wandruszka	rvw@uidaho.edu
Washington State Department of Ecology	Huckleberry Palmer	HPAL461@ECY.WA.GOV
Washington State University, Department of Chemistry	Janelle Sordelet	JANELLE.SORDELET@WSU.EDU
Alturas Analytics	John Ingram	JINGRAM@ALTURASANALYTICS.COM
WSU-PNNL Nuclear Science and Technology Institute	Neil Henson	NEIL.HENSON@PNNL.GOV
PNNL – WSU Distinguished Graduate Fellowship	Jonathan Male	jonathan.male@wsu.edu
University of Nevada, Reno	Laina Geary	LGEARY@UNR.EDU
Oregon State University Chemistry	Richard Nafshun	NAFSHUNR@CHEM.ORST.EDU
WSU Nuclear Science Center	Janice Meeuwsen	JANICE.MEEUWSEN@WSU.EDU

5B. Vendor Feedback

During the conference, the general/expo chair checked in with the vendors several times. They really liked the vendor break room, and several asked about NORM 2025 and were discouraged when the general chair told them that there will be no NORM in 2025 and that the next one will be in 2026.

5C. Approaches Used to Attract Vendors to Meeting

A list of vendors was created from previous NORMS, attending Fall and Spring ACS meetings (expos), and Pittcon list, and Fisher and VWR product shows on WSU campus. The potential vendor list consisted of 446 contacts that were contacted with messages, see below. At each ACS National Meeting, the program chair and the general chair met with > 90 vendors and sent follow up email to business cards collected from each vendor.

At the Fall, Spring, and product shows, business cards were developed and handed out to each of the vendors that the general chair and program chair interacted with.

Figure 5C.1. NORM 2024 business cards handed out to exhibitors at ACS National Meetings.

Figure 5C.2. Flyer for NORM 2024 available to attendees at Washington-Idaho Border local section events.

Subject:

Happy Holidays for the Washington-Idaho Border Section of the American Chemical Society

Dear XX,

The Washington-Idaho Border Local Section of the American Chemical Society would like to wish you a Happy Holidays.

We would also like to invite you to join us in Pullman, WA on June 23rd – 26th, 2024 for the **No**rthwest **R**egional **M**eeting (NORM) of the American Chemical Society (ACS) Meeting. Please see below for ways to be a part of our regional ACS meeting (e.g. be part of our *EXPOSITION*, *SPONSOR* NORM or a technical session, present a talk during the *TECHNICAL SESSION*, etc).

Please let us know if you have any questions.

Thank you,

Zachariah Heiden (*ZACHARIAH.HEIDEN@WSU.EDU*)
General, Expo, and Sponsorship Chair of NORM 2024

Kristopher Waynant (*KWAYNANT@UIDAHO.EDU*)
Program Chair of NORM 2024

Figure 5C.3. Sample email sent out to potential exhibitors, sponsors, and attendees in December of 2023.

Figure 5C.4. NORM 2024 Holiday Card sent to potential attendees, exhibitors, and sponsors in December of 2023. The NORM 2024 Holiday Card was included in the email seen in Figure 5C.3.

Similar messages (to Figure 5C.3) were emailed out to potential exhibitors and sponsors for Valentine's Day (February 14th) with the attached flyer:

Figure 5C.5. NORM 2024 Valentine's Day Card sent to potential exhibitors and sponsors.

Similar messages (to what was seen in Figure 5C.3) were emailed out to potential exhibitors and sponsors for Pi Day (March 14th) with the attached flyer:

Figure 5C.6. NORM 2024 Pi Day Card sent to potential exhibitors and sponsors.

Similar messages (to what was seen in Figure 5C.3) were emailed out to potential exhibitors and sponsors for May Day (May 1st) with the attached flyer:

Figure 5C.6. NORM 2024 May Day Card sent to potential exhibitors and sponsors.

5D. Exhibits

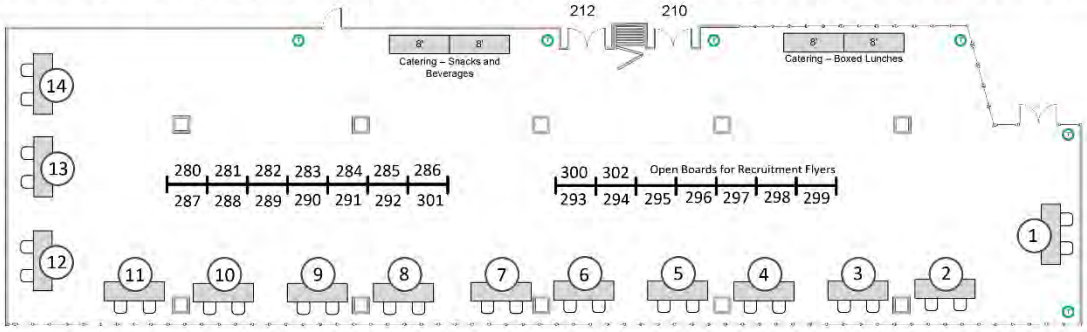
Yellow expo tables have power

1) ACS Membership
2) Mirion Technologies
3) WSU Nuclear Science Center
4) ChemScene LLC
5) Bettersize Inc.
6) Biotage
7) Fisher Scientific
8) Fisher Scientific
9) JEOL
10) Oakwood Chemical
11) LECO
12) SCIEX
13) Pine Research Instrumentation
14) RAIN Incubator
15) MacMillan Learning
16) Eldex Corporation
17) IKA
18) Center for Advanced Energy Studies
19) Oxford Instruments
20) Bruker AXS
21) Bruker Magnetic Resonance
22) Agilent Technologies
23) Shimadzu
24) Nanalysis Corp.
25) Klar Scientific
26) Velp Scientific, Inc.
27) Proteios Technology Inc.
28) Magritek
29) Process Insights
30) Chemwatch
31) Anatek Labs Inc.
32) Washington-Idaho Border Section

NORM 2024
Breaking Borders: Building Bonds

NORM 2024
Breaking Borders: Building Bonds

Academic & Employment Recruitment Fair and Undergraduate Poster Locations



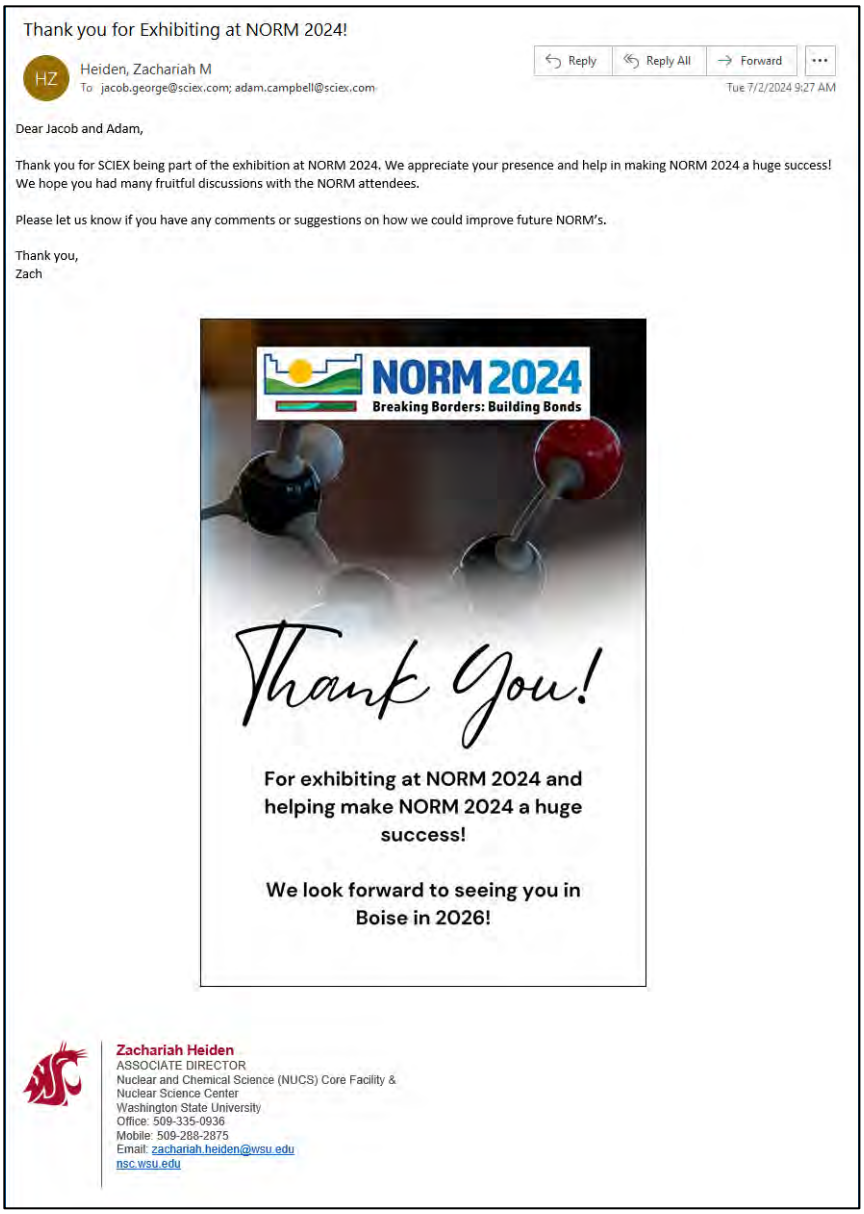
1) Washington State University Department of Chemistry
2) University of Idaho Chemistry Department
3) State of Washington - Department of Ecology
4) Alturas Analytics, Inc.
5) School of Mechanical and Materials Engineering at WSU
6) WSU – PNNL Nuclear Technology Institute
8) WSU Nuclear Science Center
10) PNNL – WSU Distinguished Graduate Fellowship
12) Department of Chemistry at UC Riverside
13) Oregon State University Chemistry Department
14) Department of Chemistry at the University of Nevada, Reno

5E. Additional Comments/Lessons Learned

It is important to have someone on the committee that deals with shipping and receiving on a daily basis at the venue where the event is located, which helped with vendor shipment logistics and get missing items very quickly.

Talk to vendors early, some needed much longer than a year to schedule and many ignored our messages until we had only a few spots left close to the deadline (then we received some angry vendors about last minute emails).

The NORM 2024 Expo chair sent out NORM Thank you cards via email on July 2nd, 2024 to all of the exhibitors part of the NORM 2024 expo.



Thank you for Exhibiting at NORM 2024!

HZ Heiden, Zachariah M
To jacob.george@sciex.com; adam.campbell@sciex.com

Reply | Reply All | Forward | ...
Tue 7/2/2024 9:27 AM

Dear Jacob and Adam,

Thank you for SCIEX being part of the exhibition at NORM 2024. We appreciate your presence and help in making NORM 2024 a huge success! We hope you had many fruitful discussions with the NORM attendees.

Please let us know if you have any comments or suggestions on how we could improve future NORM's.

Thank you,
Zach

Zachariah Heiden
ASSOCIATE DIRECTOR
Nuclear and Chemical Science (NUCS) Core Facility &
Nuclear Science Center
Washington State University
Office: 509-335-0936
Mobile: 509-288-2875
Email: zachariah.heiden@wsu.edu
nsc.wsu.edu

Submitted by Zachariah Heiden, NORM 2024 General Chair

6. Publicity/Web Site

6A. Data

The conference was advertised in the Call for Papers in C & E News (see section 6.C), emails to ACS members, the NORM 2024 website (*HTTPS://NORM2024.ORG/*), emails to Washington-Idaho Border Section members, emails to potential vendors/sponsors.

6B. Publicity Methods

Emails were sent to potential sponsors and exhibitors on roughly a monthly basis starting about six months out from the conference. We also spent significant time with our web developer to make a useful website containing large amounts of information regarding attending, exhibiting, and sponsoring NORM 2024.

The Science Saturday event at the Palouse Discovery Science Center was publicized on the Inland 360 website, which is a local paper that lists events occurring in the area.

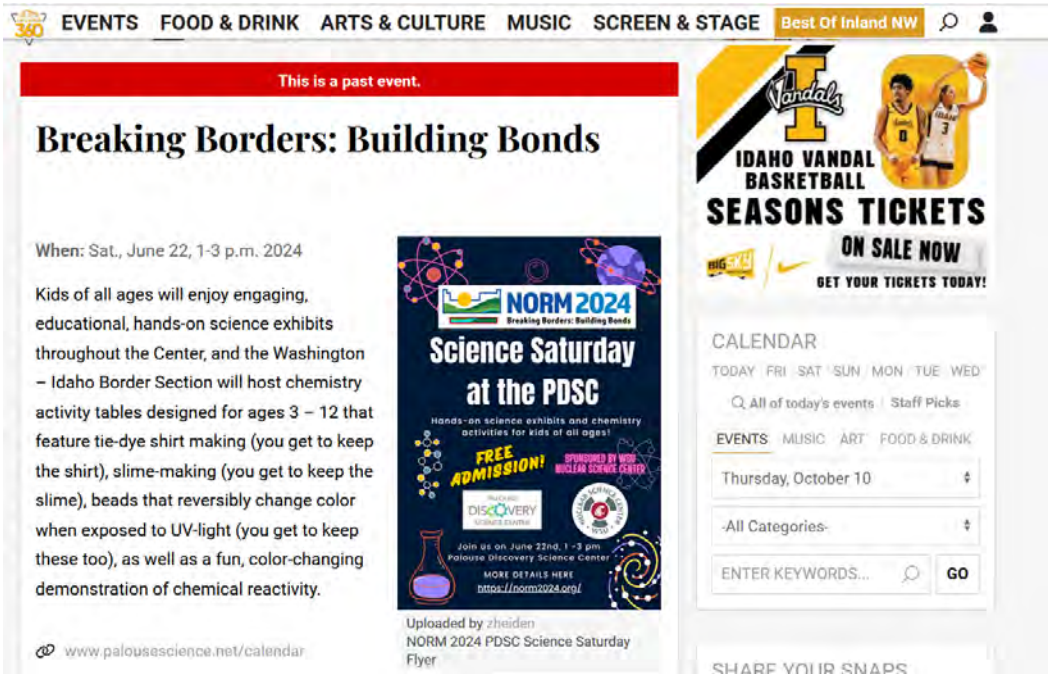


Figure 6B.1. Advertising of Science Saturday NORM 2024 event at the Palouse Discovery Science Center on Inland 360 website.

6C. Web Page Design

We contracted Sharon Betterton (*SHARON.BETTERTON@GMAIL.COM*; *HTTPS://BETTERTON.MYPORTFOLIO.COM/*) to aid us in our web page design and development. Sharon had helped with previous NORM meeting websites. We were charged $4,258 for her services.

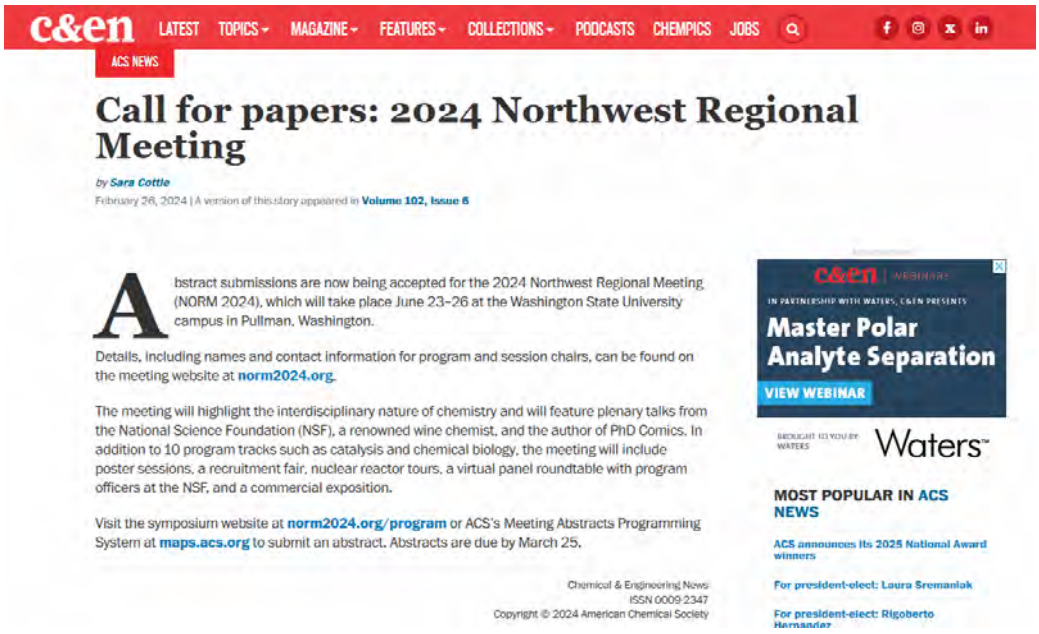
6D. Meeting Logo

The meeting logo was initially designed by Zachariah Heiden and then passed on to our web designed Sharon Betterton, where she modernized the logo. The NORM logo was used in all communications regarding NORM with potential vendors/sponsors, on flyers, business cards, the website, documents, prospectuses, and reports.

6E. News Media

Outside of the NORM 2024 website, NORM 2024 was advertised through C & EN (see Section 6F, for advertisements).

6F. Exhibits



Register for the 2024 Northwest Regional Meeting

by *Sara Cottle*

May 16, 2024 | A version of this story appeared in **Volume 102, Issue 15**

Credit: William "Bill" Sutton/Newscom

Buildings on the Washington State University Pullman campus

MOST POPULAR IN ACS NEWS

ACS announces its 2025 National Award winners

For president-elect: Laura Sremaniak

For president-elect: Rigoberto Hernandez

US EPA names 2024 Green Chemistry

The Washington-Idaho Border Section of the American Chemical Society will be hosting the 2024 Northwest Regional Meeting (NORM) June 23–26 at the Washington State University (WSU) campus in Pullman. Whether you're in academia, industry, or a nontraditional chemistry job or you're in transition, NORM 2024 has something for you. Find details on the meeting website at **norm2024.org**.

Technical program. Chemistry has grown into a more multidisciplinary science, and the technical program is using broad strokes to blur the lines between traditional disciplines with the meeting theme "Breaking Borders: Building Bonds." The meeting hopes to promote discussions between chemists and nonchemists. Plenary talks include José Almirall from the National Science Foundation (NSF) discussing the history and future perspective of the chemistry program at NSF and Susan Ebeler from University of California, Davis, discussing the chemistry of wine. Simon Pimblott from Idaho National Laboratory will provide a plenary seminar on the future of the US Department of Energy during the awards banquet on Tuesday evening.

NORM 2024 AT A GLANCE

- **Date:** June 23–26, 2024
- **Location:** Washington State University, Pullman, Washington
- **Contact:** Zachariah Heiden, general chair, at zachariah.heiden@wsu.edu; Kristopher Waynant, program chair, at kwaynant@uidaho.edu
- **Website:** norm2024.org

Workshops. For educators, the meeting will offer the workshop "Concept Mapping in the Science Classroom." Prospective business owners will benefit from attendance at the Innovation 2 Impact program. The Environmental Health and Safety Departments from WSU and the University of Idaho (UI) will lead a safety luncheon. There will be two ACS career workshops ideal for individuals who are trying to decide what career path to pursue and how to navigate interactions with other professionals. Consultants will be available for students to schedule one-on-one résumé reviews.

Undergraduate programming. Many NORM 2024 programs can provide guidance to those considering what to do after completing their undergraduate degree. Various sessions on career path options will be available, including the ACS career workshops. An academic and employment recruitment fair will take place in the same room as the undergraduate poster session on Tuesday to promote the mingling of graduate school and industrial recruiters with attendees and undergraduate students.

Exposition. A Sunday evening reception will help kick off the exposition, which will run through Tuesday afternoon. The expo offers an opportunity to learn about the latest products on the market. Lunches, snacks, and coffee breaks will occur in the expo hall. Applications for exhibitors are available on the meeting website at **norm2024.org/expo**.

Awards. Awards to be presented include the Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences, the Glenn and Jane Crosby Northwest Region Award for Excellence in High School Teaching, and the E. Ann Nalley Regional Award for Volunteer Service to ACS. The awards dinner will take place on Tuesday evening at the Palouse Ridge Golf Club at WSU.

Social events. An opening reception on Sunday evening, sponsored by ACS governance, will give attendees a chance to mingle and enjoy a taste of the Pacific Northwest. Other events include a Chemistry in a Glass reception after Susan Ebeler's plenary talk; a Women Chemists Committee luncheon and a WSU and UI alumni and friends reception on Monday; a Tuesday morning fun run to the WSU Bear Research, Education, and Conservation Center; an ice cream social with sweet treats from WSU's award-winning creamery, Ferdinand's Ice Cream Shoppe, on Tuesday; and an event to explore Moscow, Idaho, on Wednesday evening.

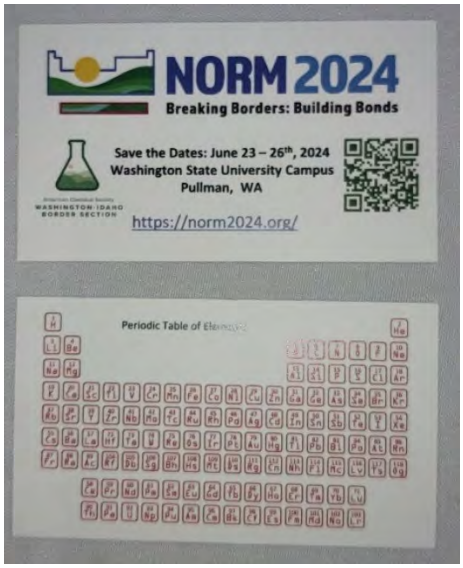
Other events. Other events include an outreach event at the Palouse Discovery Science Center on Saturday; Doughnuts with Directors, an in-person and virtual panel with NSF program officers on Monday; the Innovation 2 Impact Fast Pitch Showcase, where you can win a prize from a panel of angel-investor and tech-transfer judges; a plenary talk from Jorge Cham, the creator of *PhD Comics*, followed by a screening of *The PhD Movie*; and tours of the 1 MW TRIGA nuclear reactor at the WSU Nuclear Science Center on Tuesday and Wednesday. To help promote the safety culture in chemistry, NORM 2024 is hosting a safety poster competition and offering monetary prizes to the top three posters of the competition. Throughout the conference, there will be a room containing molecular model pieces where attendees can build bonds with fellow attendees. There will be prizes for attendees who fill out their NORM bingo card by attending various technical sessions.

Lodging and registration. Early-bird registration for the meeting ends at 11:59 p.m. (PDT) on May 22, but you can register at the on-site rate through the end of the meeting. Many lodging options, including campus housing, are available. Visit **norm2024.org/travel** for more information.

Chemical & Engineering News
ISSN 0009-2347

6F.1. NORM 2023 – Bozeman, MT

The organizing committee hosted a booth in the expo of NORM 2023 for NORM 2024. At the expo booth we hosted a "Guess the Number of Lentils in a Jar" to highlight that the Palouse is the Lentil Capital of the United States. Attendees were invited to provide us with their contact information to guess the number of lentils and the winner received a complimentary registration at NORM 2024. We received 59 entries. We also had a map of the waterways of the Pacific Northwest and asked attendees to identify the location of Pullman, WA. Winners received a pair of NORM safety glasses. In addition to the games at the NORM 2024 booth, we had giveaways of NORM 2024 pens, NORM 2024 lip balm, NORM 2024 stickers, NORM 2024 Custom M & M candies, and Save the Date pocket Periodic Tables (see pictures below for NORM 2024 expo table at NORM 2023).



6F.2. Fall 2023 ACS – San Francisco, CA

The NORM 2024 General Chair and Program Chair attended the Fall 2023 ACS Meeting in San Francisco and went through the expo to recruit exhibitors, talking with 95 vendors, for the NORM 2024 exposition. NORM 2024 “Save the Dates” cards, Figure 6F.2.1, containing the cost of exhibiting at NORM 2024 were handed out to any exhibitors that seemed interested.

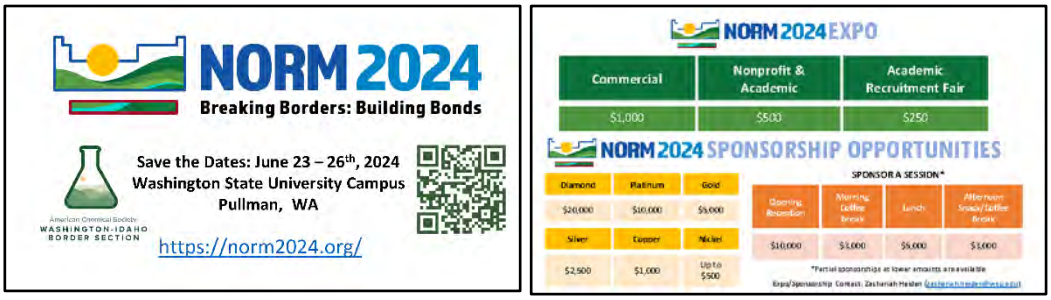


Figure 6F.2.1. NORM 2024 business cards handed out to exhibitors at ACS National Meetings.

The Washington-Idaho Section (WIBS) also happened to be included at the Local Section Showcase during SCI-MIX. The WIBS booth had and had a NORM 2024 “Save the Dates” sign, giveaways (pens, lip balm, NORM 2024 “Save the Dates” business cards (see Figure 6F.2.2), and games. The games consisted of a “Guess the Number of Lentils in a Jar” to highlight that the Palouse is the Lentil Capital of the United States. Attendees were invited to provide us with their contact information to guess the number of lentils and the winner received a complimentary registration at NORM 2024. We received 19 entries. We also had a map of the waterways of the Pacific Northwest and asked attendees to identify the location of Pullman, WA. Winners received a pair of NORM safety glasses.

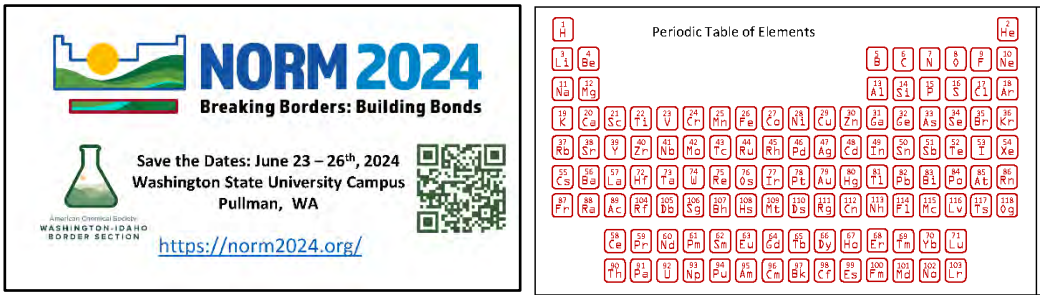
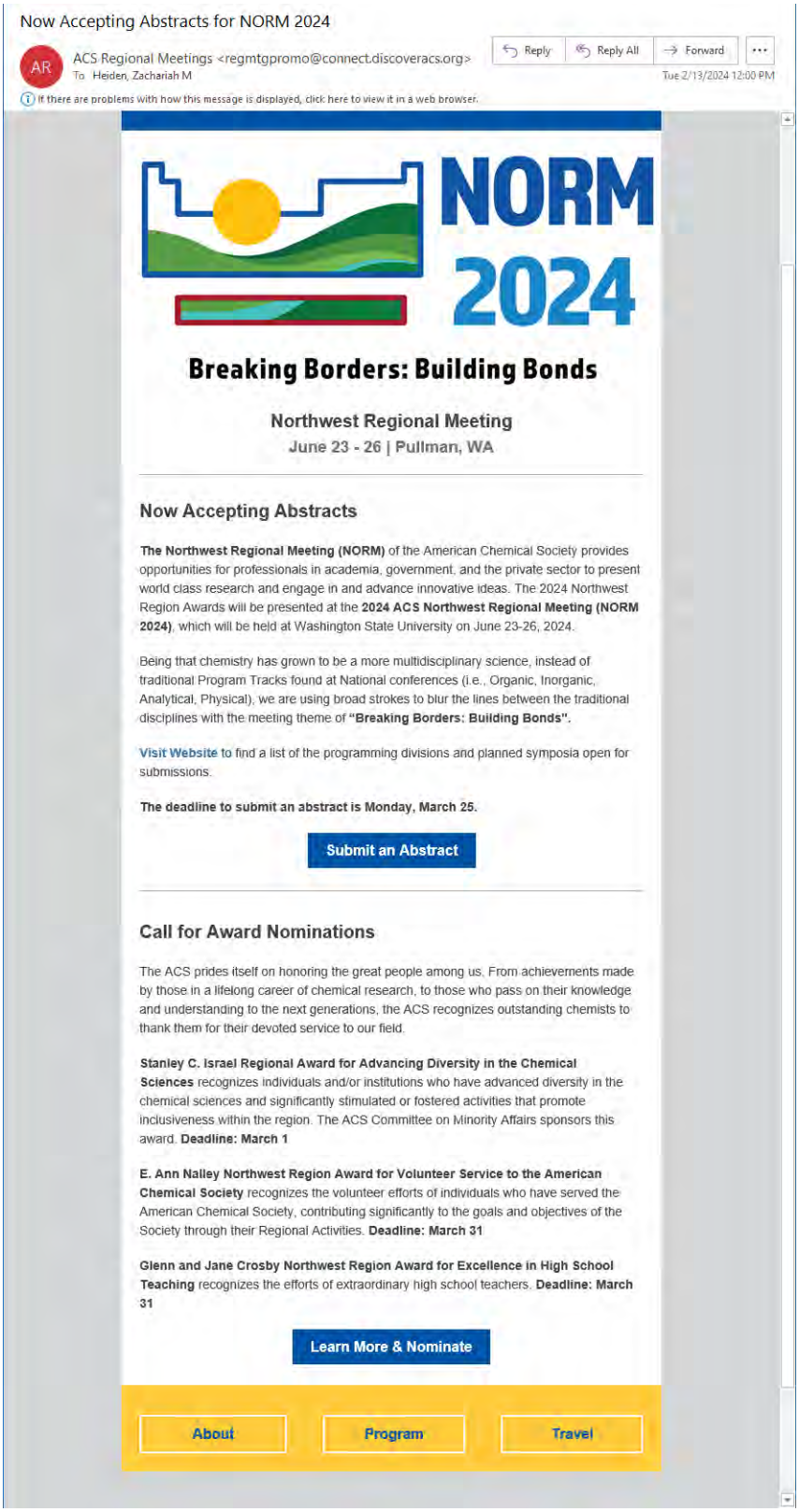


Figure 6F.2.2. NORM 2024 “Save the Dates” handed out to attendees at ACS National Meetings.

6F.3. Spring 2024 ACS – New Orleans, LA

The NORM 2024 General Chair and Program Chair attended the Spring 2024 ACS Meeting in New Orleans and went through the expo to recruit exhibitors for the NORM 2024 exposition. The talked to about 95 vendors providing them with NORM 2024 “Save the Dates” cards containing the cost of exhibiting at NORM 2024 were handed out to any exhibitors that seemed interested. Some vendors (gave out 8) were also provided with paper copies of NORM 2024 sponsorship/exhibitor prospectuses, if desired. NORM 2024 sponsorship/exhibitor prospectuses, academic and recruitment fair prospectuses, pens, lip balm, and “Save the Dates” cards (with periodic tables ono the back side), see Figure 6F.2.2, were placed at regional meeting booth.

6F.4. Marketing Emails sent from ACS Regional Meeting Marketing



Now Accepting Abstracts for NORM 2024

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NORM 2024

Breaking Borders: Building Bonds

Northwest Regional Meeting
June 23 - 26 | Pullman, WA

Now Accepting Abstracts

The Northwest Regional Meeting (NORM) of the American Chemical Society provides opportunities for professionals in academia, government, and the private sector to present world class research and engage in and advance innovative ideas. The 2024 Northwest Region Awards will be presented at the **2024 ACS Northwest Regional Meeting (NORM 2024)**, which will be held at Washington State University on June 23-26, 2024.

Being that chemistry has grown to be a more multidisciplinary science, instead of traditional Program Tracks found at National conferences (i.e., Organic, Inorganic, Analytical, Physical), we are using broad strokes to blur the lines between the traditional disciplines with the meeting theme of **"Breaking Borders: Building Bonds"**.

Visit Website to find a list of the programming divisions and planned symposia open for submissions.

The deadline to submit an abstract is Monday, March 25.

Submit an Abstract

Call for Award Nominations

The ACS prides itself on honoring the great people among us. From achievements made by those in a lifelong career of chemical research, to those who pass on their knowledge and understanding to the next generations, the ACS recognizes outstanding chemists to thank them for their devoted service to our field.

Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences recognizes individuals and/or institutions who have advanced diversity in the chemical sciences and significantly stimulated or fostered activities that promote inclusiveness within the region. The ACS Committee on Minority Affairs sponsors this award. **Deadline: March 1**

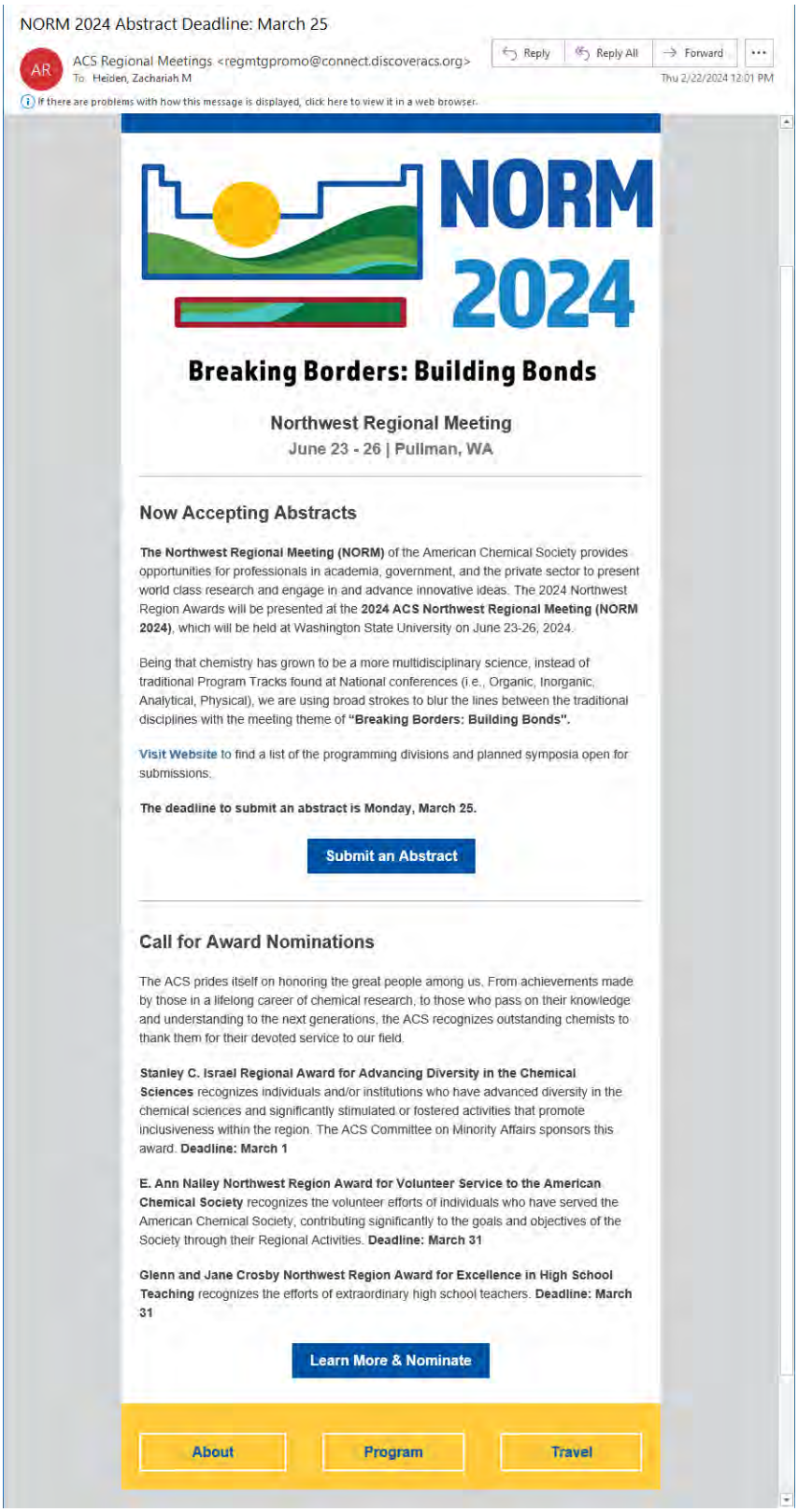
E. Ann Nalley Northwest Region Award for Volunteer Service to the American Chemical Society recognizes the volunteer efforts of individuals who have served the American Chemical Society, contributing significantly to the goals and objectives of the Society through their Regional Activities. **Deadline: March 31**

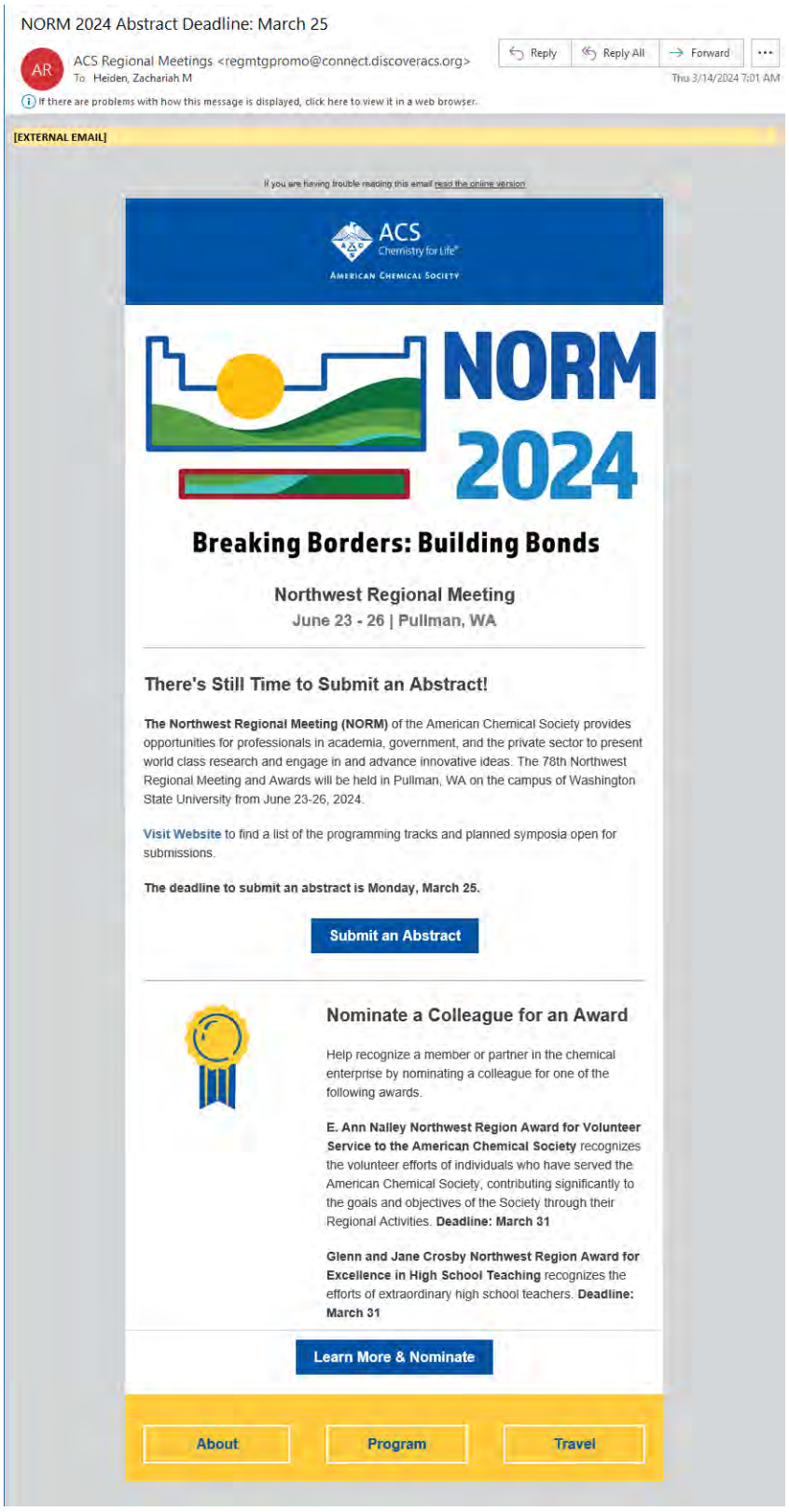
Glenn and Jane Crosby Northwest Region Award for Excellence in High School Teaching recognizes the efforts of extraordinary high school teachers. **Deadline: March 31**

Learn More & Nominate

About | Program | Travel

NORM 2024
Breaking Borders: Building Bonds





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NORM 2024

Breaking Borders: Building Bonds

Northwest Regional Meeting
June 23 - 26 | Pullman, WA

There's Still Time to Submit an Abstract!

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Nominate a Colleague for an Award

Help recognize a member or partner in the chemical enterprise by nominating a colleague for one of the following awards.

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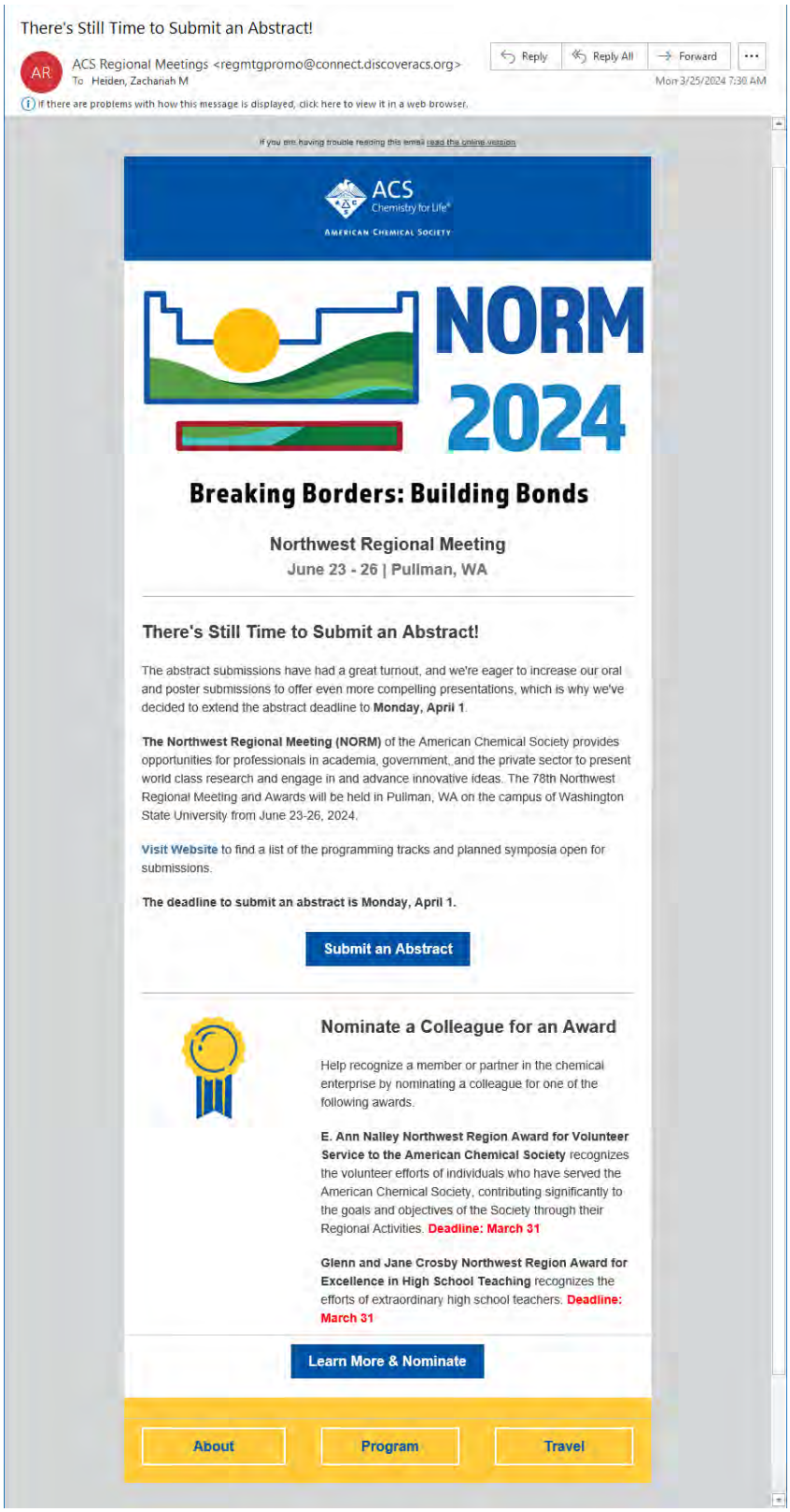

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NORM 2024

Breaking Borders: Building Bonds

Northwest Regional Meeting
June 23 - 26 | Pullman, WA

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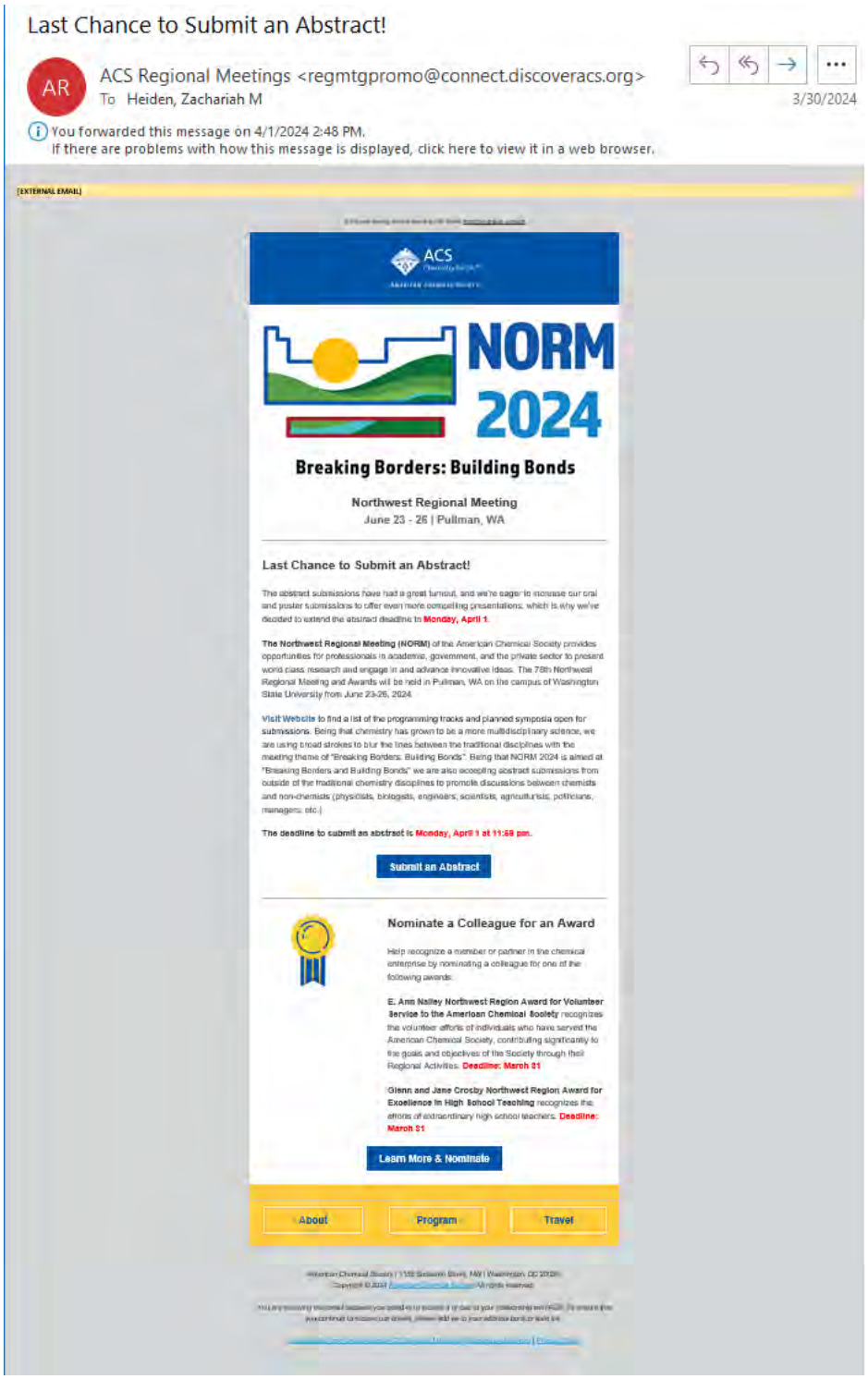

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The deadline to submit an abstract is Monday, April 1 at 11:59 pm.

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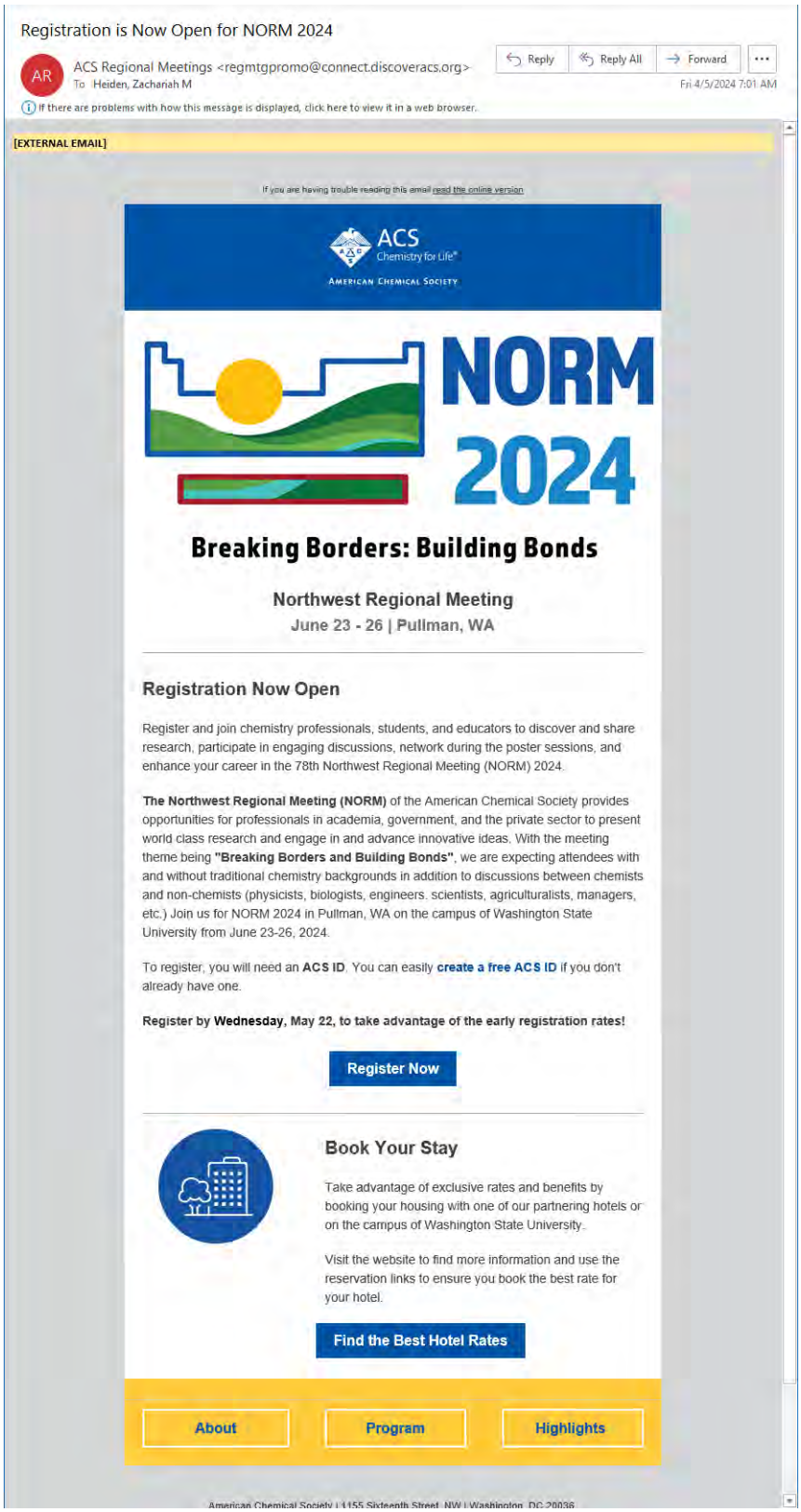

Registration is Now Open for NORM 2024

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NORM 2024

Breaking Borders: Building Bonds

Northwest Regional Meeting
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Visit the website to find more information and use the reservation links to ensure you book the best rate for your hotel.

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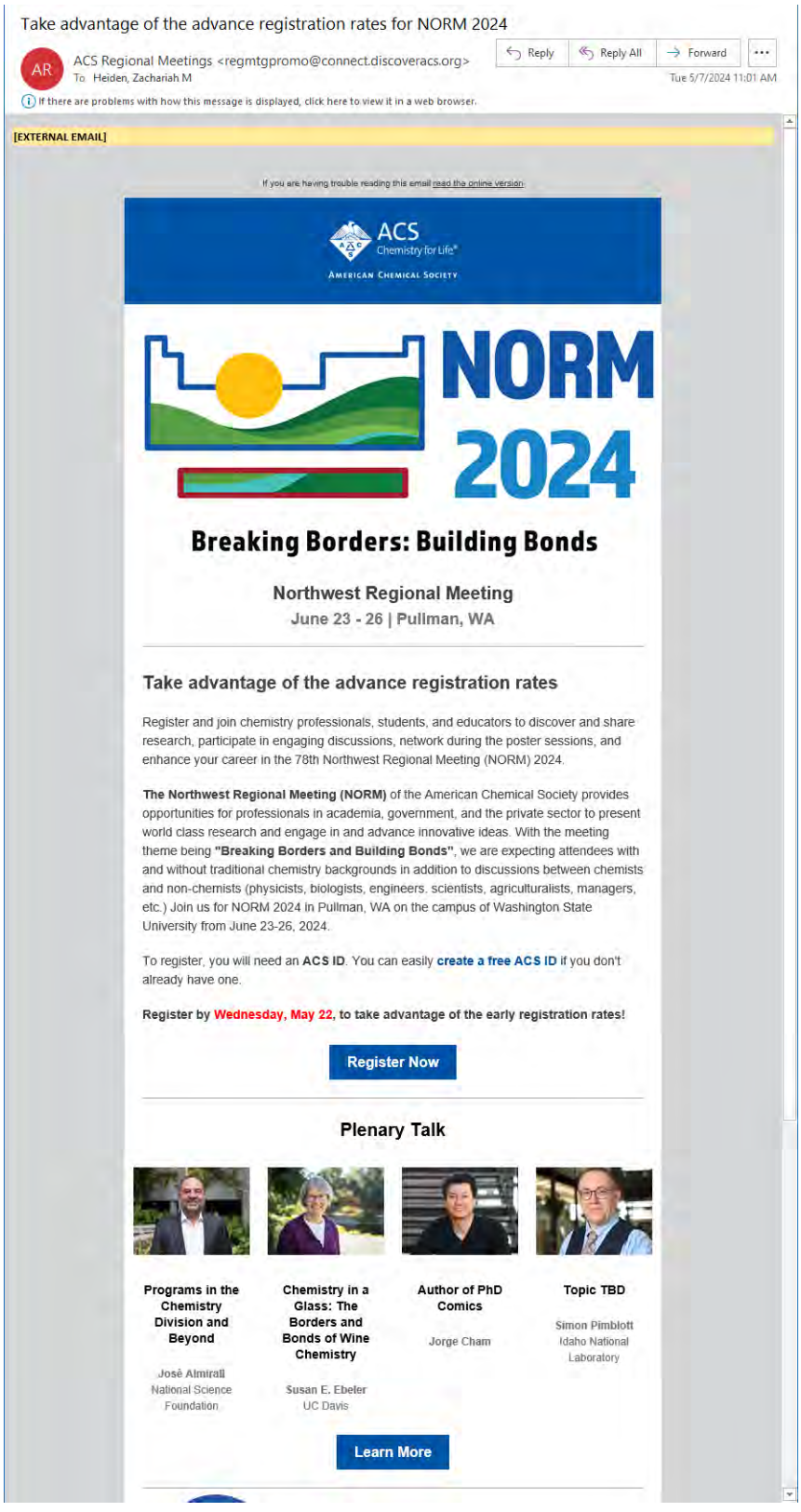

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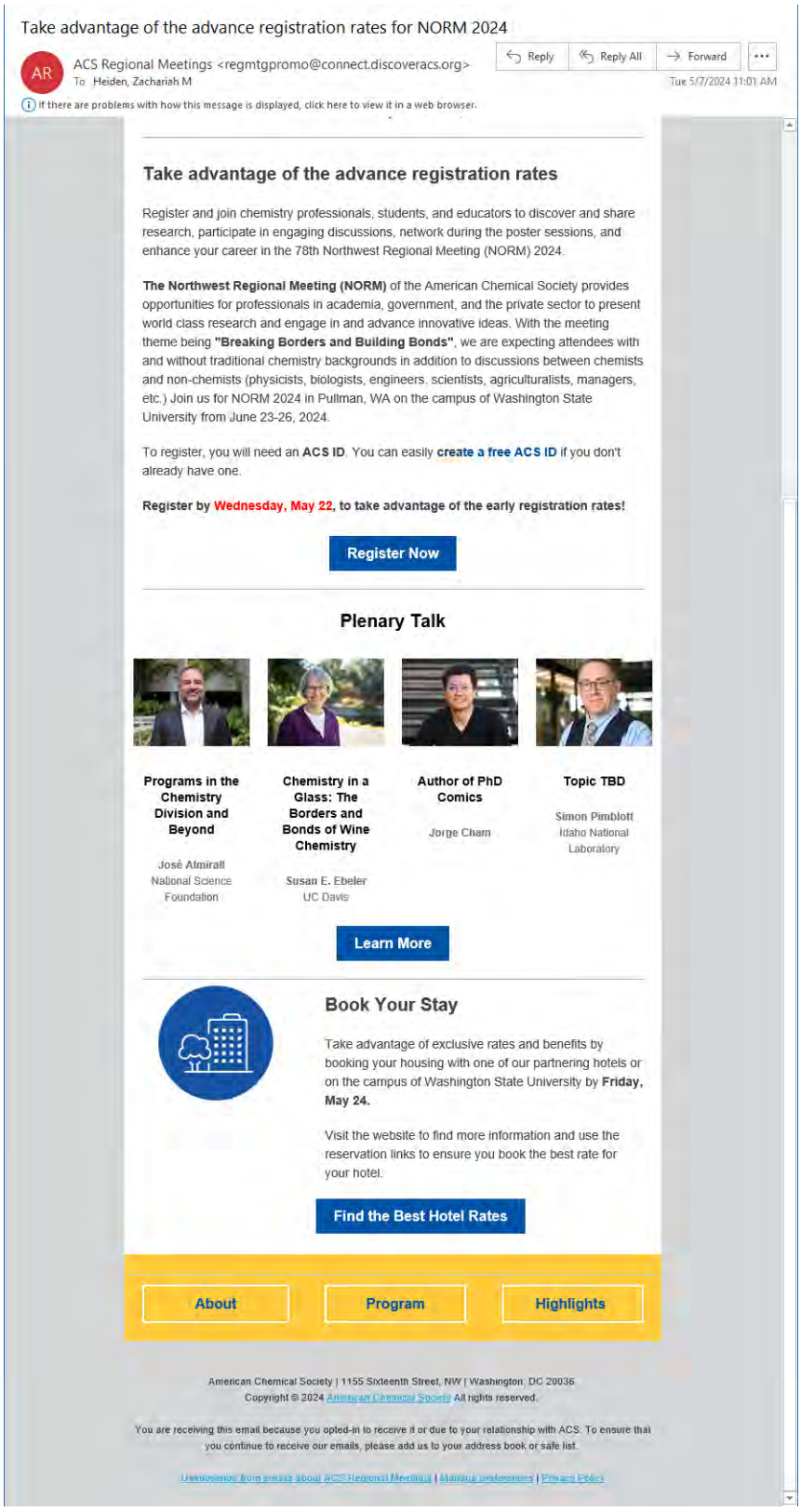
Programs in the Chemistry Division and Beyond
José Almirall
National Science Foundation

Chemistry in a Glass: The Borders and Bonds of Wine Chemistry
Susan E. Ebeler
UC Davis

Author of PhD Comics
Jorge Cham

Topic TBD
Simon Pimblott
Idaho National Laboratory

Learn More



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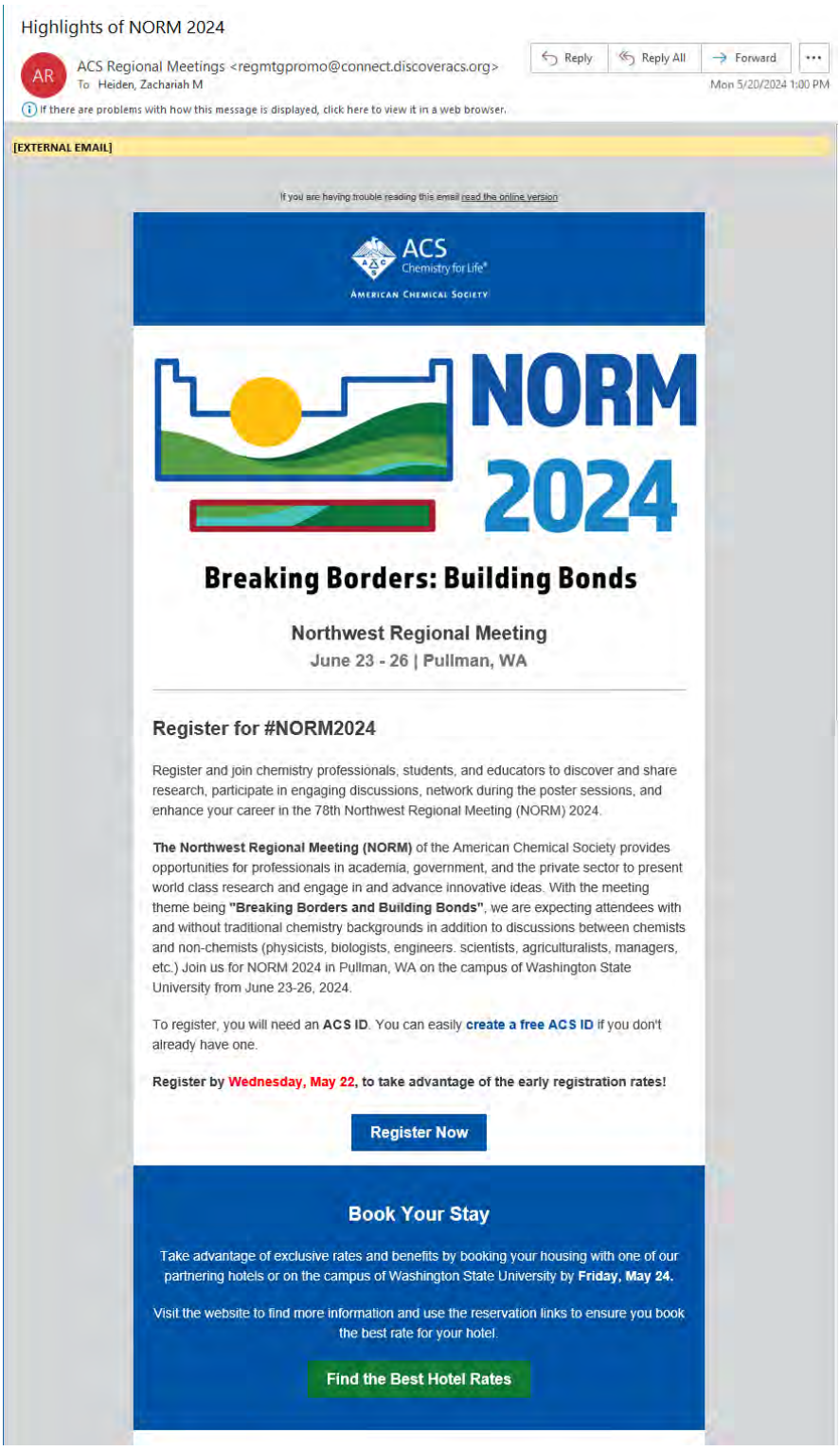

Highlights of NORM 2024

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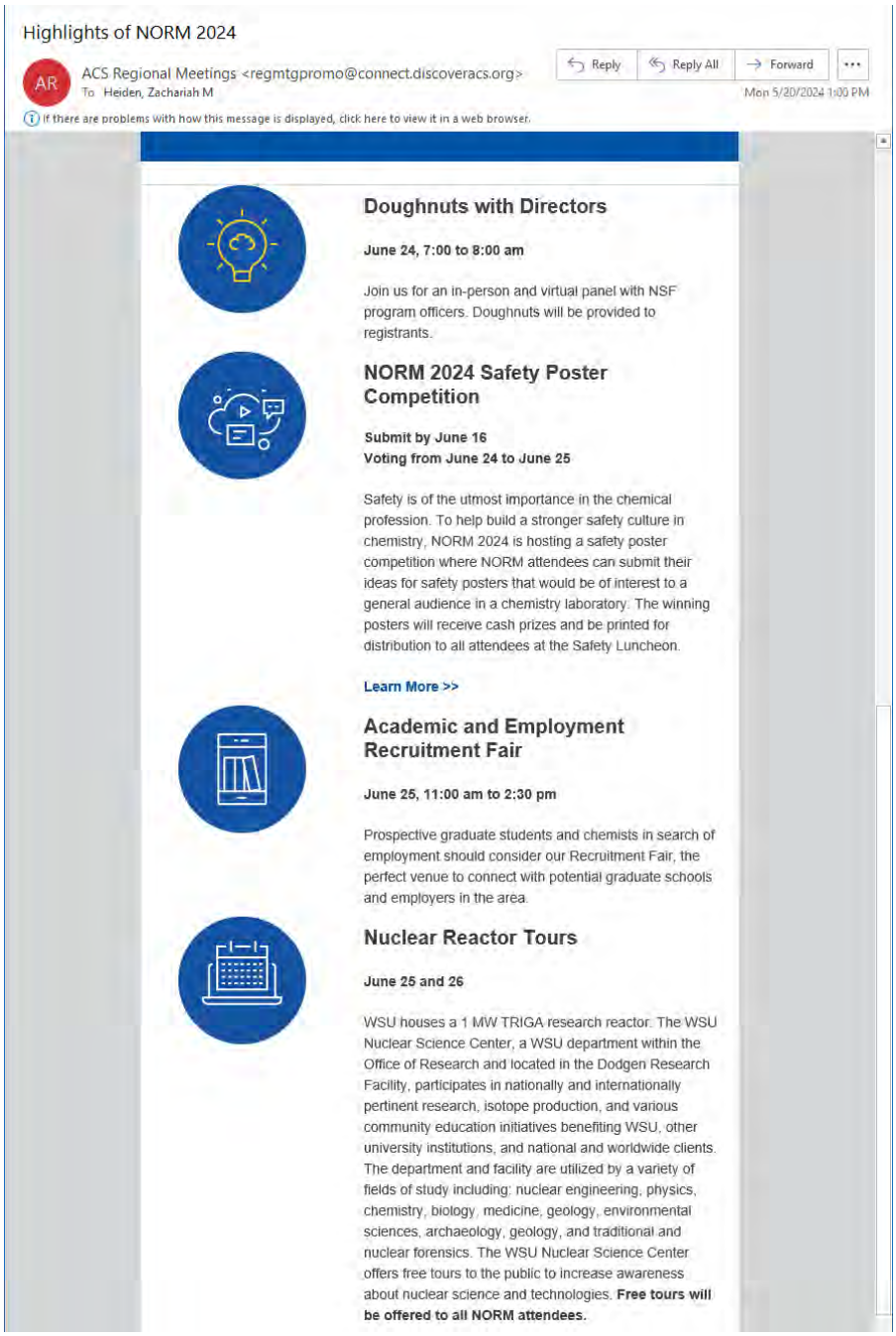

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Doughnuts with Directors

June 24, 7:00 to 8:00 am

Join us for an in-person and virtual panel with NSF program officers. Doughnuts will be provided to registrants.

NORM 2024 Safety Poster Competition

Submit by June 16
Voting from June 24 to June 25

Safety is of the utmost importance in the chemical profession. To help build a stronger safety culture in chemistry, NORM 2024 is hosting a safety poster competition where NORM attendees can submit their ideas for safety posters that would be of interest to a general audience in a chemistry laboratory. The winning posters will receive cash prizes and be printed for distribution to all attendees at the Safety Luncheon.

Learn More >>

Academic and Employment Recruitment Fair

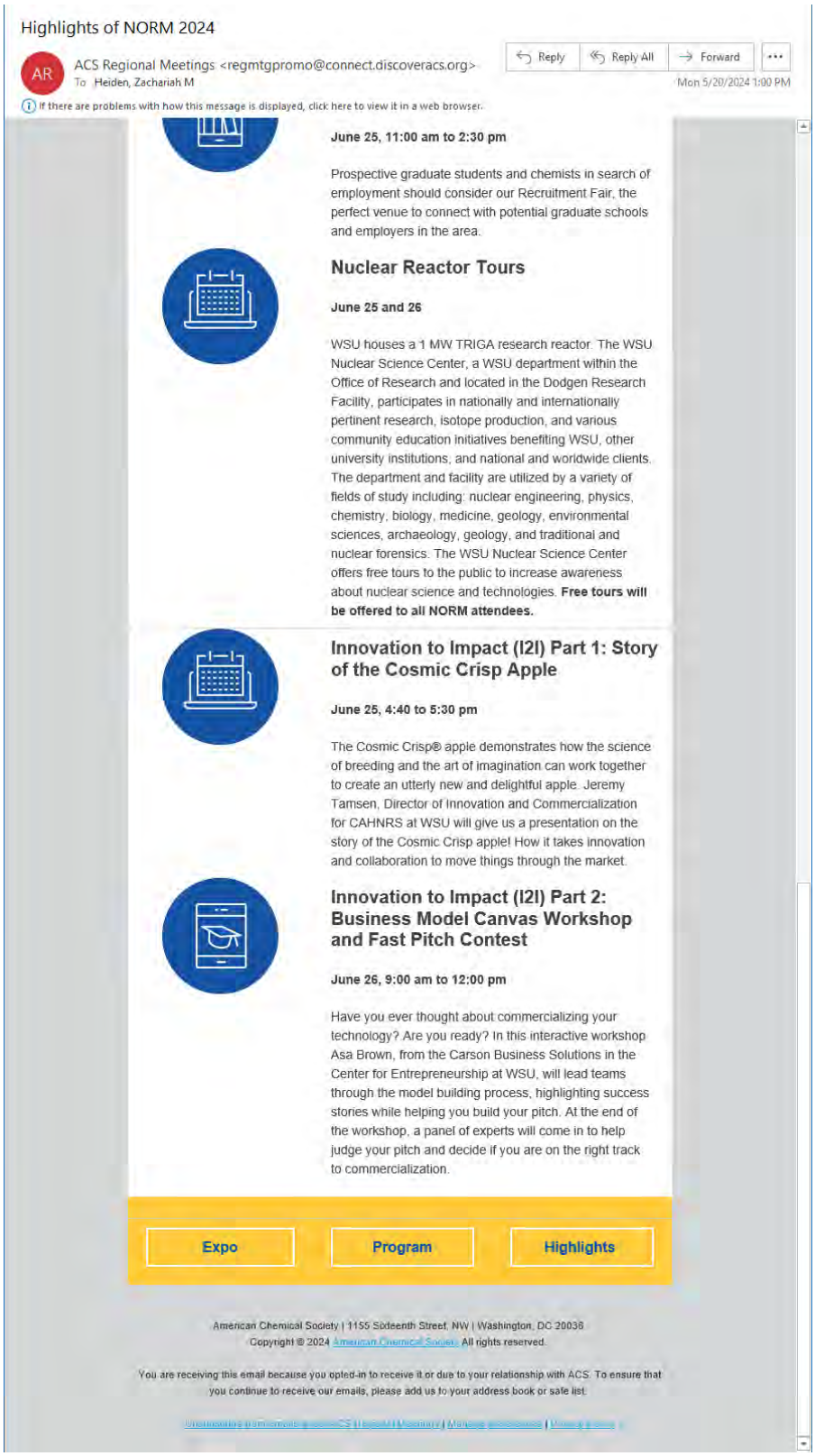
June 25, 11:00 am to 2:30 pm

Prospective graduate students and chemists in search of employment should consider our Recruitment Fair, the perfect venue to connect with potential graduate schools and employers in the area.

Nuclear Reactor Tours

June 25 and 26

WSU houses a 1 MW TRIGA research reactor. The WSU Nuclear Science Center, a WSU department within the Office of Research and located in the Dodgen Research Facility, participates in nationally and internationally pertinent research, isotope production, and various community education initiatives benefiting WSU, other university institutions, and national and worldwide clients. The department and facility are utilized by a variety of fields of study including: nuclear engineering, physics, chemistry, biology, medicine, geology, environmental sciences, archaeology, geology, and traditional and nuclear forensics. The WSU Nuclear Science Center offers free tours to the public to increase awareness about nuclear science and technologies. **Free tours will be offered to all NORM attendees.**



Highlights of NORM 2024

AR ACS Regional Meetings <regmtgpromo@connect.discoveracs.org>
To Heiden, Zachariah M

Reply | Reply All | Forward | ...
Mon 5/20/2024 1:00 PM

If there are problems with how this message is displayed, click here to view it in a web browser.

June 25, 11:00 am to 2:30 pm

Prospective graduate students and chemists in search of employment should consider our Recruitment Fair, the perfect venue to connect with potential graduate schools and employers in the area.

Nuclear Reactor Tours

June 25 and 26

WSU houses a 1 MW TRIGA research reactor. The WSU Nuclear Science Center, a WSU department within the Office of Research and located in the Dodgen Research Facility, participates in nationally and internationally pertinent research, isotope production, and various community education initiatives benefiting WSU, other university institutions, and national and worldwide clients. The department and facility are utilized by a variety of fields of study including: nuclear engineering, physics, chemistry, biology, medicine, geology, environmental sciences, archaeology, geology, and traditional and nuclear forensics. The WSU Nuclear Science Center offers free tours to the public to increase awareness about nuclear science and technologies. **Free tours will be offered to all NORM attendees.**

Innovation to Impact (I2I) Part 1: Story of the Cosmic Crisp Apple

June 25, 4:40 to 5:30 pm

The Cosmic Crisp® apple demonstrates how the science of breeding and the art of imagination can work together to create an utterly new and delightful apple. Jeremy Tamsen, Director of Innovation and Commercialization for CAHNRS at WSU will give us a presentation on the story of the Cosmic Crisp apple! How it takes innovation and collaboration to move things through the market.

Innovation to Impact (I2I) Part 2: Business Model Canvas Workshop and Fast Pitch Contest

June 26, 9:00 am to 12:00 pm

Have you ever thought about commercializing your technology? Are you ready? In this interactive workshop Asa Brown, from the Carson Business Solutions in the Center for Entrepreneurship at WSU, will lead teams through the model building process, highlighting success stories while helping you build your pitch. At the end of the workshop, a panel of experts will come in to help judge your pitch and decide if you are on the right track to commercialization.

Expo | Program | Highlights

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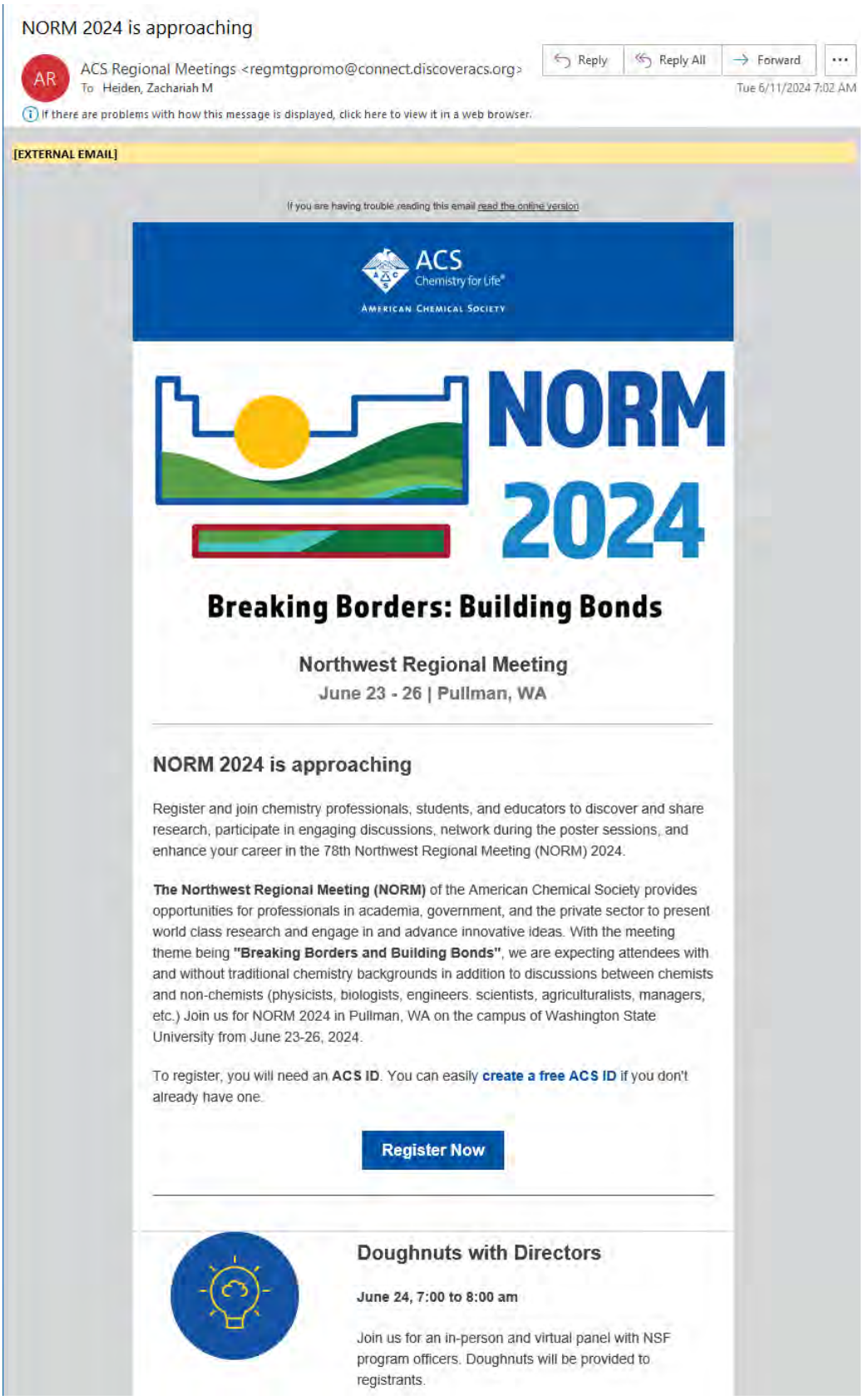
NORM 2024
Breaking Borders: Building Bonds



NORM 2024 is approaching

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[EXTERNAL EMAIL]

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ACS Chemistry for Life®
American Chemical Society

NORM 2024

Breaking Borders: Building Bonds

Northwest Regional Meeting
June 23 - 26 | Pullman, WA

NORM 2024 is approaching

Register and join chemistry professionals, students, and educators to discover and share research, participate in engaging discussions, network during the poster sessions, and enhance your career in the 78th Northwest Regional Meeting (NORM) 2024.

The Northwest Regional Meeting (NORM) of the American Chemical Society provides opportunities for professionals in academia, government, and the private sector to present world class research and engage in and advance innovative ideas. With the meeting theme being **"Breaking Borders and Building Bonds"**, we are expecting attendees with and without traditional chemistry backgrounds in addition to discussions between chemists and non-chemists (physicists, biologists, engineers. scientists, agriculturalists, managers, etc.) Join us for NORM 2024 in Pullman, WA on the campus of Washington State University from June 23-26, 2024.

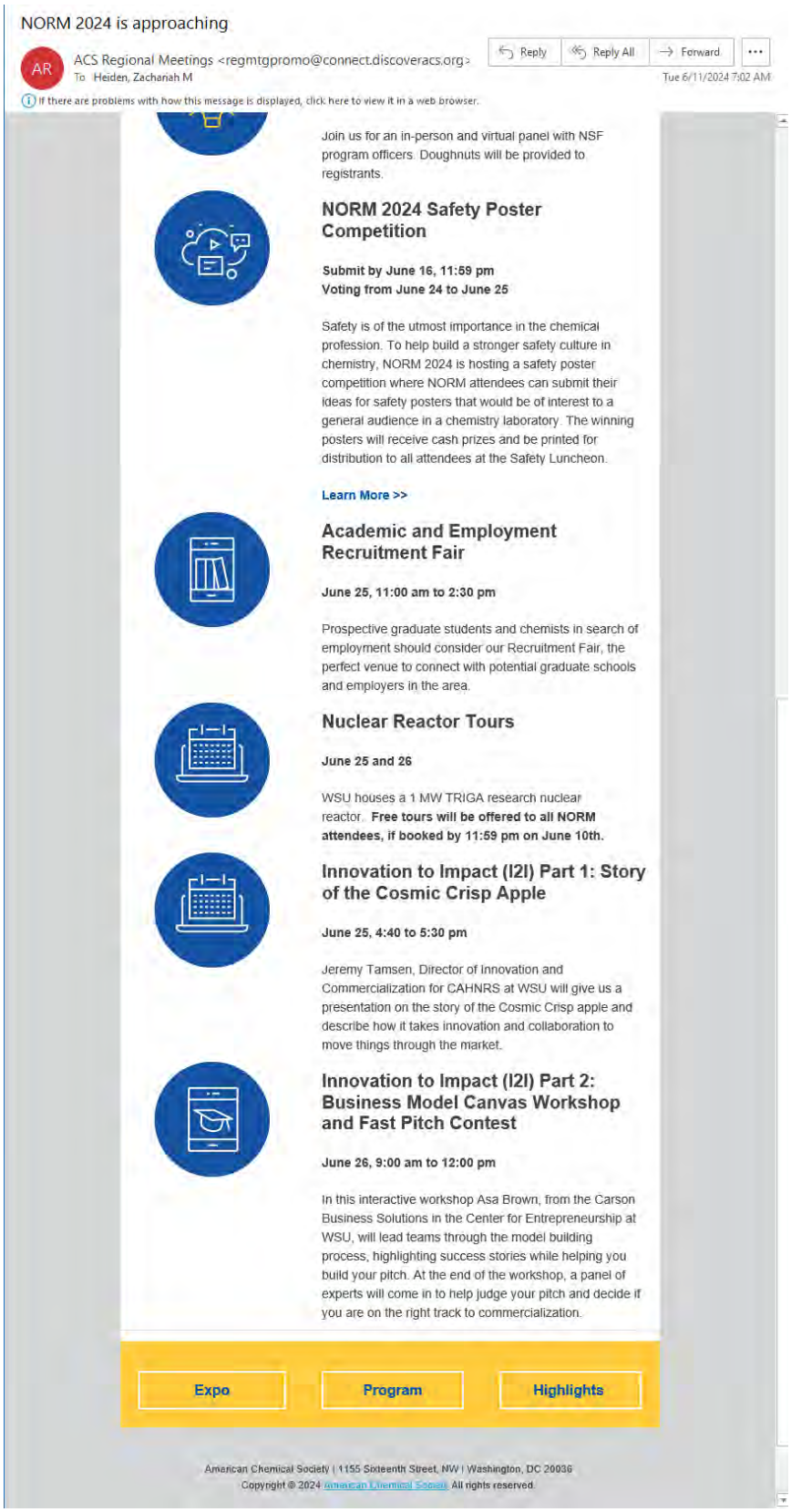
To register, you will need an **ACS ID**. You can easily **create a free ACS ID** if you don't already have one.

Register Now

Doughnuts with Directors

June 24, 7:00 to 8:00 am

Join us for an in-person and virtual panel with NSF program officers. Doughnuts will be provided to registrants.



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Join us for an in-person and virtual panel with NSF program officers. Doughnuts will be provided to registrants.

NORM 2024 Safety Poster Competition

Submit by June 16, 11:59 pm
Voting from June 24 to June 25

Safety is of the utmost importance in the chemical profession. To help build a stronger safety culture in chemistry, NORM 2024 is hosting a safety poster competition where NORM attendees can submit their ideas for safety posters that would be of interest to a general audience in a chemistry laboratory. The winning posters will receive cash prizes and be printed for distribution to all attendees at the Safety Luncheon.

Learn More >>

Academic and Employment Recruitment Fair

June 25, 11:00 am to 2:30 pm

Prospective graduate students and chemists in search of employment should consider our Recruitment Fair, the perfect venue to connect with potential graduate schools and employers in the area.

Nuclear Reactor Tours

June 25 and 26

WSU houses a 1 MW TRIGA research nuclear reactor. **Free tours will be offered to all NORM attendees, if booked by 11:59 pm on June 10th.**

Innovation to Impact (I2I) Part 1: Story of the Cosmic Crisp Apple

June 25, 4:40 to 5:30 pm

Jeremy Tamsen, Director of Innovation and Commercialization for CAHNRS at WSU will give us a presentation on the story of the Cosmic Crisp apple and describe how it takes innovation and collaboration to move things through the market.

Innovation to Impact (I2I) Part 2: Business Model Canvas Workshop and Fast Pitch Contest

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Expo | Program | Highlights

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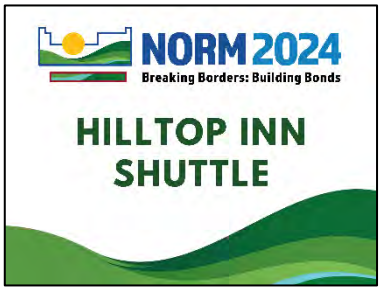
6G. Additional Comments/Lessons Learned

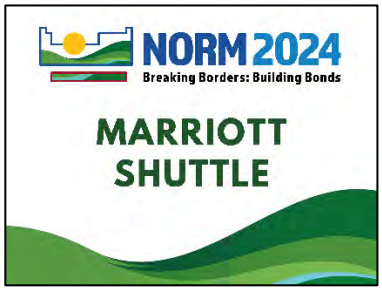
All future NORM meetings should have a booth in the expo at a NORM meeting.

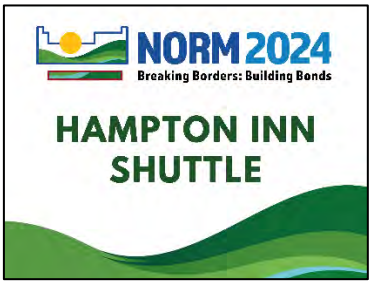
Signage at NORM 2024

Signs were very important to help attendees find the correct locations on where to go. About $2,700 was spent to create signage for the conference.

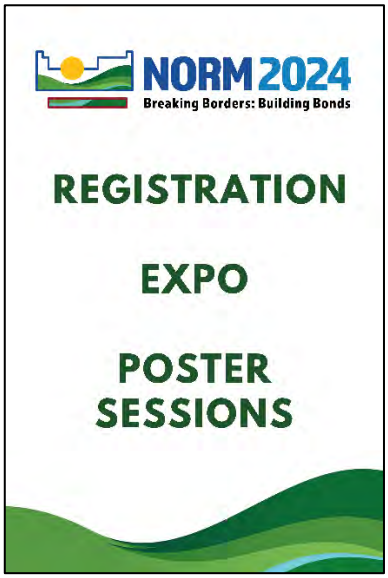
Each shuttle also had a sign (8 ½" × 11") in the window indicating where it was going to help attendees find the shuttle they needed. NORM 2024 did not have signage at the hotels outside of signs inside the windows of the shuttle vans. The inclusion of yard signs at the hotel shuttle stops could be something to consider at future meetings.

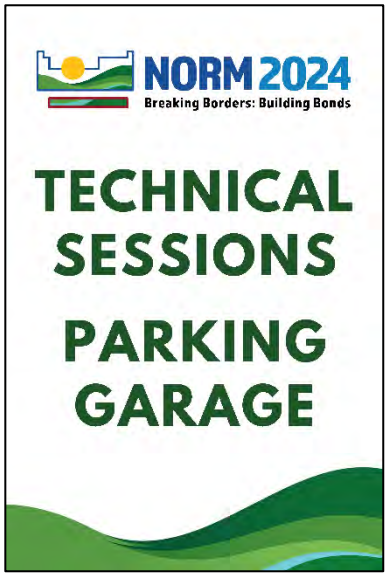


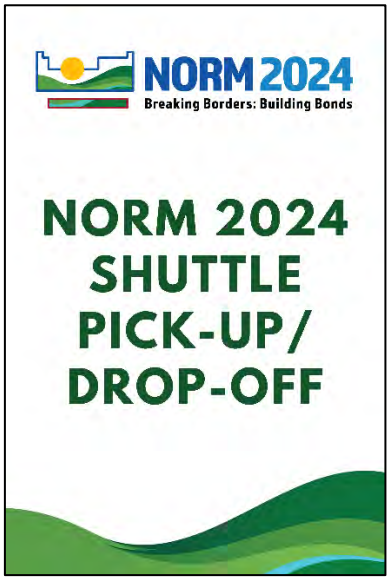




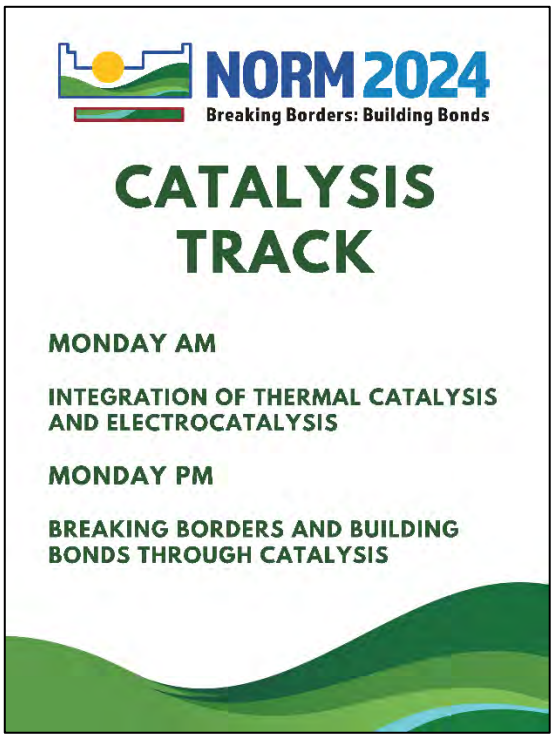
A-frame signs (24" × 36") were placed outside of the Compton Union Building and the Center for Undergraduate Excellence to aid attendees in finding the technical sessions and the plenaries, poster sessions, and social events. Examples of some of the A-frame signs used during NORM 2024 are seen below.

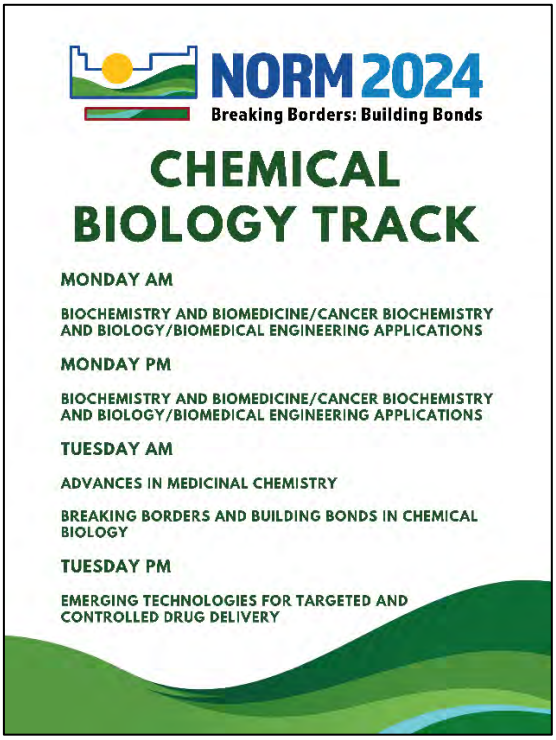


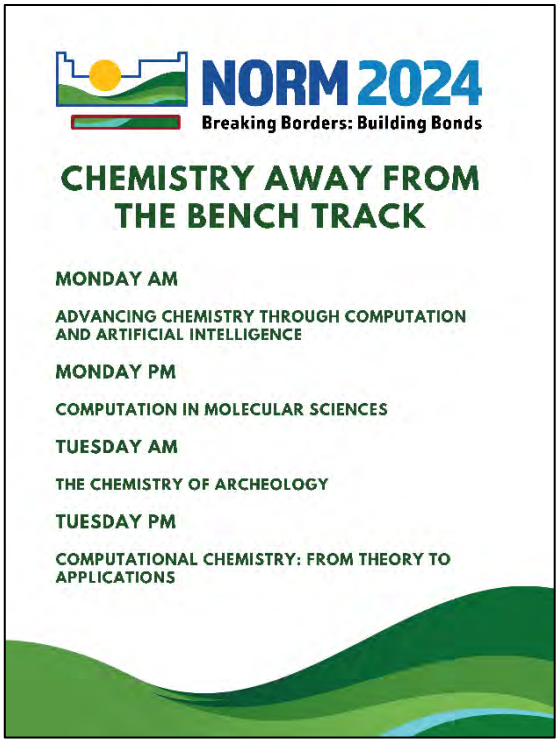


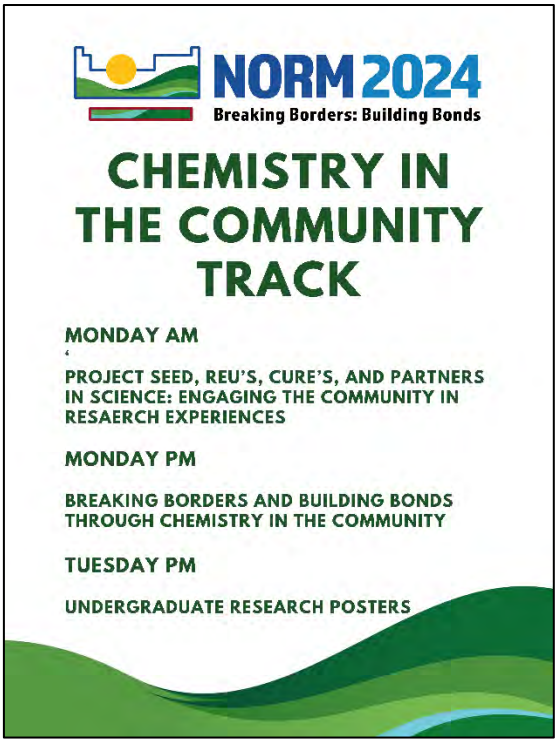


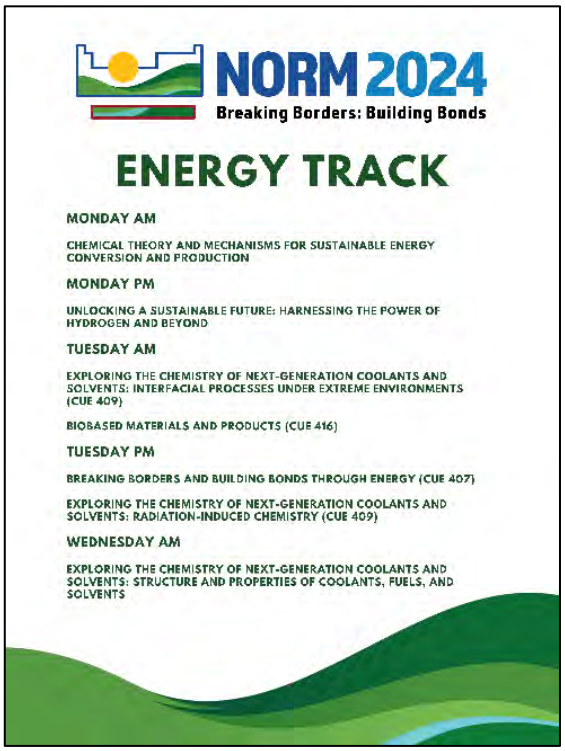
Each room of the technical sessions had a NORM 2024 sign (24” × 36”) listing the Track that was happening in the specific room and the other symposia occurring in the respective track.

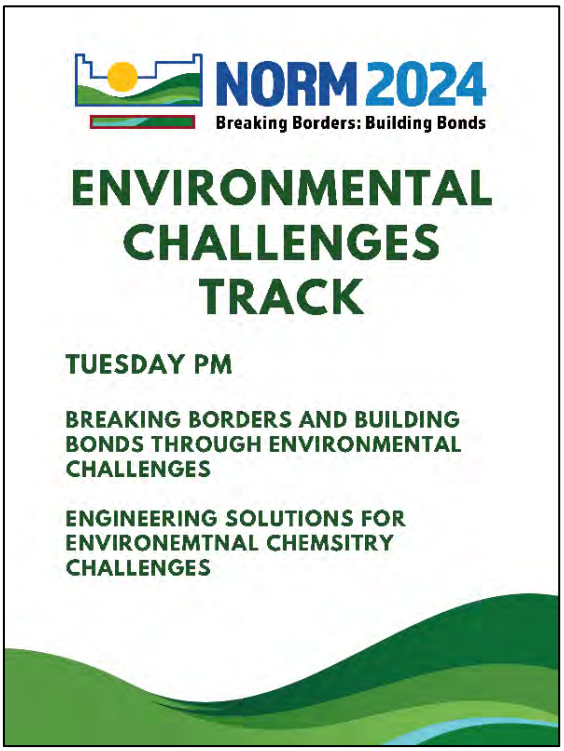


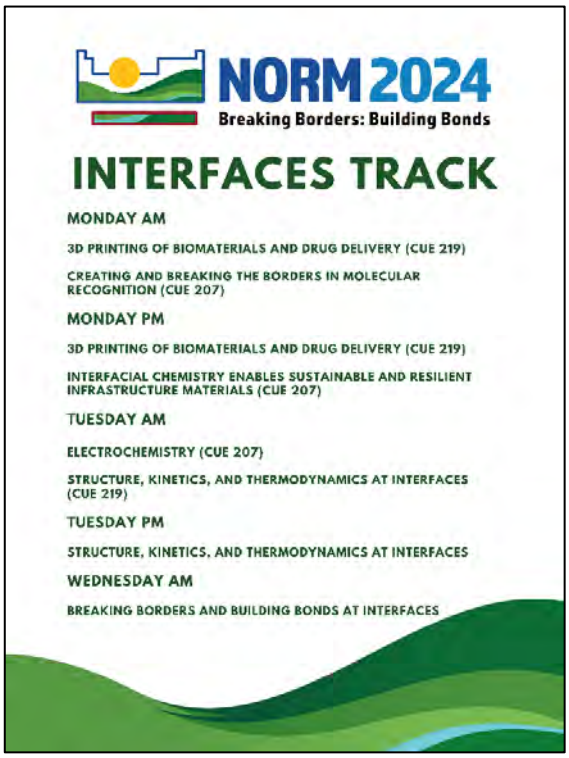


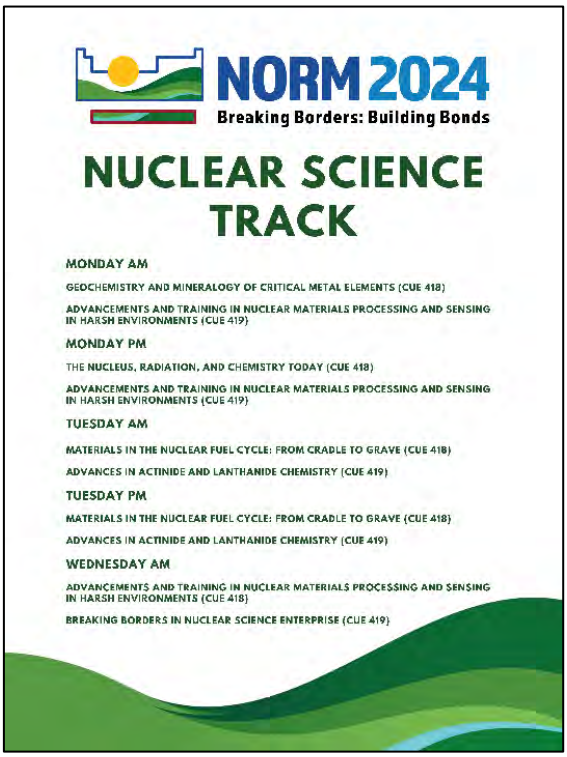




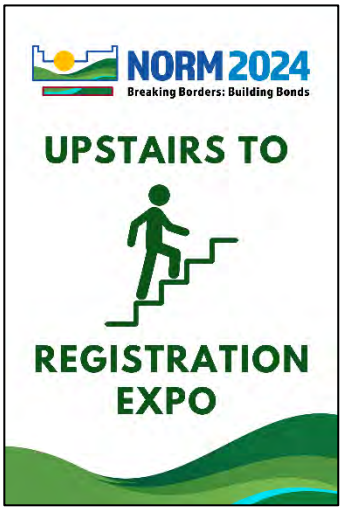

NORM 2024
Breaking Borders: Building Bonds
ENERGY TRACK
MONDAY AM
CHEMICAL THEORY AND MECHANISMS FOR SUSTAINABLE ENERGY CONVERSION AND PRODUCTION
MONDAY PM
UNLOCKING A SUSTAINABLE FUTURE: HARNESSING THE POWER OF HYDROGEN AND BEYOND
TUESDAY AM
EXPLORING THE CHEMISTRY OF NEXT-GENERATION COOLANTS AND SOLVENTS: INTERFACIAL PROCESSES UNDER EXTREME ENVIRONMENTS (CUE 409)
BIOBASED MATERIALS AND PRODUCTS (CUE 416)
TUESDAY PM
BREAKING BORDERS AND BUILDING BONDS THROUGH ENERGY (CUE 407)
EXPLORING THE CHEMISTRY OF NEXT-GENERATION COOLANTS AND SOLVENTS: RADIATION-INDUCED CHEMISTRY (CUE 409)
WEDNESDAY AM
EXPLORING THE CHEMISTRY OF NEXT-GENERATION COOLANTS AND SOLVENTS: STRUCTURE AND PROPERTIES OF COOLANTS, FUELS, AND SOLVENTS


NORM 2024
Breaking Borders: Building Bonds
ENVIRONMENTAL CHALLENGES TRACK
TUESDAY PM
BREAKING BORDERS AND BUILDING BONDS THROUGH ENVIRONMENTAL CHALLENGES
ENGINEERING SOLUTIONS FOR ENVIRONEMTNAL CHEMSITRY CHALLENGES


NORM 2024
Breaking Borders: Building Bonds
INTERFACES TRACK
MONDAY AM
3D PRINTING OF BIOMATERIALS AND DRUG DELIVERY (CUE 219)
CREATING AND BREAKING THE BORDERS IN MOLECULAR RECOGNITION (CUE 207)
MONDAY PM
3D PRINTING OF BIOMATERIALS AND DRUG DELIVERY (CUE 219)
INTERFACIAL CHEMISTRY ENABLES SUSTAINABLE AND RESILIENT INFRASTRUCTURE MATERIALS (CUE 207)
TUESDAY AM
ELECTROCHEMISTRY (CUE 207)
STRUCTURE, KINETICS, AND THERMODYNAMICS AT INTERFACES (CUE 219)
TUESDAY PM
STRUCTURE, KINETICS, AND THERMODYNAMICS AT INTERFACES
WEDNESDAY AM
BREAKING BORDERS AND BUILDING BONDS AT INTERFACES


NORM 2024
Breaking Borders: Building Bonds
NUCLEAR SCIENCE TRACK
MONDAY AM
GEOCHEMISTRY AND MINERALOGY OF CRITICAL METAL ELEMENTS (CUE 418)
ADVANCEMENTS AND TRAINING IN NUCLEAR MATERIALS PROCESSING AND SENSING IN HARSH ENVIRONMENTS (CUE 419)
MONDAY PM
THE NUCLEUS, RADIATION, AND CHEMISTRY TODAY (CUE 418)
ADVANCEMENTS AND TRAINING IN NUCLEAR MATERIALS PROCESSING AND SENSING IN HARSH ENVIRONMENTS (CUE 419)
TUESDAY AM
MATERIALS IN THE NUCLEAR FUEL CYCLE: FROM CRADLE TO GRAVE (CUE 418)
ADVANCES IN ACTINIDE AND LANTHANIDE CHEMISTRY (CUE 419)
TUESDAY PM
MATERIALS IN THE NUCLEAR FUEL CYCLE: FROM CRADLE TO GRAVE (CUE 418)
ADVANCES IN ACTINIDE AND LANTHANIDE CHEMISTRY (CUE 419)
WEDNESDAY AM
ADVANCEMENTS AND TRAINING IN NUCLEAR MATERIALS PROCESSING AND SENSING IN HARSH ENVIRONMENTS (CUE 418)
BREAKING BORDERS IN NUCLEAR SCIENCE ENTERPRISE (CUE 419)

In the CUB, there were also signs (24” × 36” on elevated foam board) at each elevator and stairwell to show that the NORM events occurred on the second floor of the CUB.



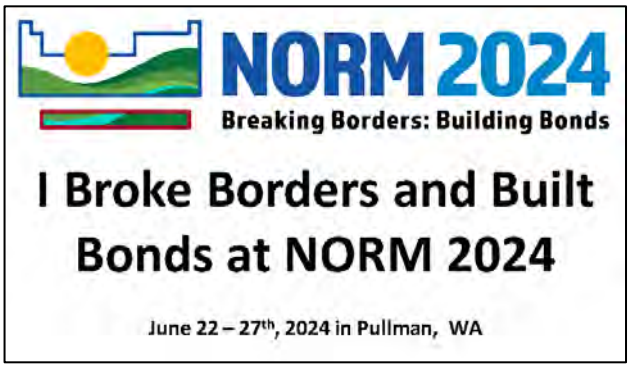
Inside CUE parking garage, there were also signs (8 ½" × 11") at each elevator to help attendees navigate the locations of the NORM 2024 events and technical sessions.

Outside of the CUE parking garage and the CUE were 18" × 24" yard signs stuck in the ground showing the location of the parking garage and shuttle pickup for the nuclear reactor tours.

There was also a sign where attendees could take a selfie at NORM 2024.

We felt that the publicity of NORM did not end with the end of the conference. That being said we aimed to have things in the welcome bag that would be used outside of NORM to increase the exposure of NORM after the conference had concluded. The NORM 2024 welcome bag consisted of (see Figure 6G.1):

- Red NORM 2024 reusable bag
- I Broke Borders and Built Bonds at NORM 2024 business card (Periodic table on back side)
- Cosmic Crip Apple
- NORM 2024 pen
- NORM 2024 lip balm
- NORM 2024 notebook with pen
- NOMR BINGO card
- Two drink tickets for the NORM 2024 Opening Reception
- Molymod sample molecular model kit
- Pen from the Washington State University Nuclear Science Center
- Water bottle from the Washington State University Nuclear Science Center
- Eldex Optos Data Sheet
- Chem Scene Poster
- ChemScene pen
- Bettersize brochure
- City of Moscow map
- City of Moscow brochure
- City of Pullman dining guide
- Downtown Pullman brochure
- Discover Pullman brochure
- House of Smith Winery brochure



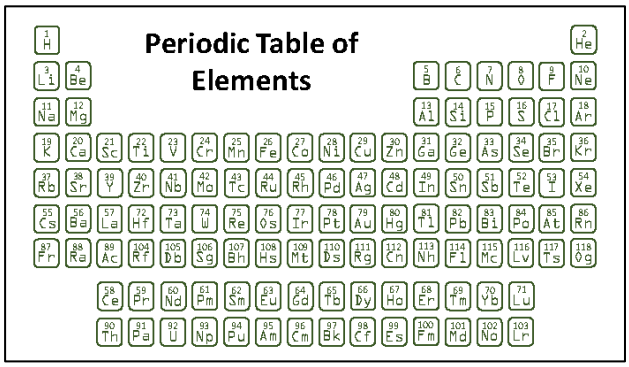


Figure 6G.1. Photo of the contents of the NORM 2024 Welcome Bag. Two welcome bags are shown to show the printing on both sides of the welcome bag.

Submitted by Zachariah Heiden, NORM 2024 General Chair and Kristopher Waynant, NORM 2024 Program Chair

7. Arrangements

7A. Data

NORM 2024 Housing Accommodations

NORM 2024 organizers arranged for courtesy blocks at four local hotels and dorm rooms with WSU Housing.

- *Residence Inn* – Pullman, WA
  - $169/night (30 rooms reserved in courtesy block)

- *Courtyard by Marriott* – Pullman, WA
  - $159/night (30 rooms reserved in courtesy block)

- *Coast Hilltop Inn* – Pullman, WA
  - $135/night (50 rooms reserved in courtesy block)

- *Hampton Inn* – Pullman, WA
  - $154/night (15 rooms reserved in courtesy block)

- *Community/Duncan Dunn Residence Halls* (WSU Dorms)
  - $120 for double occupancy (three nights) (80 reserved)
  - $150 for single occupancy (three nights) (20 reserved)

- Other Suggested Options (not served by shuttles)
  - *Hotel McCoy* in downtown Pullman, WA
  - *Monarch Hotel* in downtown Moscow, ID
  - *La Quinta by Wyndam* in Moscow, ID
  - *Best Western Plus University Inn* in Moscow, ID
  - *Hattabaugh Hotel* in Moscow, ID

NORM 2024 Shuttles

NORM 2024 provided shuttles for attendees. The shuttles provided transportation for about ½ of the conference attendees utilized them for to and from the conference hotels.

Marriott Shuttle This shuttle services the Marriott Courtyard (1295 NE North Fairway Rd, Pullman, WA 99163) and the Residence Inn (1255 NE North Fairway Rd, Pullman, WA 99163) and provides transport to/from the hotels to the CUE and the Awards banquet.

Sunday, June 23rd

Leave CUE	Leave Residence Inn	Arrive @CUE
	3:00 PM	3:05PM
3:30PM	3:35 PM	3:40PM
4:00PM	4:05 PM	4:10PM
4:15PM	4:20 PM	4:25PM
4:30PM	4:35 PM	4:40PM
4:45PM	4:50 PM	4:55PM
5:00PM	5:05 PM	5:10PM
5:30PM	5:35 PM	5:40PM
6:00PM	6:05 PM	6:10PM
6:30PM	6:35 PM	6:40PM
7:00PM	7:05 PM	7:10PM
7:30PM	7:35 PM	7:40PM
8:00PM	8:05 PM	8:10PM
8:30PM	8:35 PM	8:40PM
9:00PM	9:05 PM	9:10PM
9:30PM	9:35 PM	9:40PM
10:00 PM	10:05PM	10:10 PM
10:15 PM	10:20PM	

Travel time between Marriott Hotels and CUE ~5 minutes

Monday, June 24th

Leave CUE	Leave Residence Inn	Arrive @CUE
	7:00AM	7:05AM
7:15 AM	7:20AM	7:25AM
7:35 AM	7:40AM	7:45AM
7:55 AM	8:00AM	8:05AM
8:15 AM	8:20AM	8:25AM
8:35 AM	8:40AM	8:45AM
9:00 AM	9:10AM	9:15AM
9:30 AM	9:35AM	9:40AM
10:15AM	10:25AM	10:30AM
11:00AM	11:10AM	11:15AM
11:45AM	11:50AM	11:55AM
12:15PM	12:20PM	12:25 PM
12:45PM	12:50PM	12:55 PM
1:15PM	1:20PM	1:30PM
2:00PM	2:05PM	2:10PM
2:45PM	2:50PM	2:55PM
3:30PM	3:35PM	3:40PM
4:15PM	4:20PM	4:25PM
4:45PM	4:50PM	4:55PM
5:15PM	5:20PM	5:25PM
5:45PM	5:50PM	5:55PM
6:15PM	6:20PM	6:25PM
6:45PM	6:50PM	6:55PM
7:45PM	7:50PM	7:55PM
8:30PM	8:35PM	8:40PM
9:15PM	9:20PM	9:25PM
9:45PM	9:50PM	9:55PM
10:05PM	10:10PM	10:15 PM

Travel time between Marriott Hotels and CUE ~5 minutes

Tuesday, June 25th

Leave CUE	Leave Awards Banquet	Leave Residence Inn	Arrive @CUE	Arrive @ Awards Banquet
		7:00 AM	7:05 AM	
7:15 AM		7:20 AM	7:25 AM	
7:35 AM		7:40 AM	7:45 AM	
7:55 AM		8:00 AM	8:05 AM	
8:15 AM		8:20 AM	8:25 AM	
8:35 AM		8:40 AM	8:45 AM	
9:00 AM		9:05 AM	9:10 AM	
9:30 AM		9:35 AM	9:40 AM	
10:15AM		10:20 AM	10:25 AM	
11:00AM		11:05 AM	11:10 AM	
11:45AM		11:50 AM	11:55 AM	
12:15PM		12:20 PM	12:25 PM	
12:45PM		12:50 PM	12:55 PM	
1:15 PM		1:20 PM	1:25 PM	
2:00 PM		2:05 PM	2:10 PM	
2:45 PM		2:50 PM	2:55 PM	
3:30 PM		3:35 PM	3:40 PM	
4:15 PM		4:20 PM	4:25 PM	
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5:45 PM		5:50 PM		5:55 PM
	6:05PM	6:10 PM		6:15 PM
	7:00PM	7:05 PM		7:10 PM
	7:45PM	7:50 PM		7:55 PM
	8:30PM	8:35 PM		8:40 PM
	9:00PM	9:05 PM		9:10 PM
	9:20PM	9:25 PM		

Travel time between Marriott Hotels and CUE (or Awards Banquet) ~5 minutes

Wednesday, June 26th

Leave CUE	Leave Residence Inn	Arrive @CUE
	7:00 AM	7:05 AM
7:15 AM	7:20 AM	7:25 AM
7:35 AM	7:40 AM	7:45 AM
7:55 AM	8:00 AM	8:05 AM
8:15 AM	8:20 AM	8:25 AM
8:35 AM	8:40 AM	8:45 AM
9:00 AM	9:05 AM	9:10 AM
9:30 AM	9:35 AM	9:40 AM
10:15 AM	10:20 AM	10:25 AM
11:00 AM	11:05 AM	11:10 AM
11:45 AM	11:50 AM	11:55 AM
12:15 PM	12:20 PM	12:25 PM
12:45 PM	12:50 PM	12:55 PM
1:15 PM	1:20 PM	1:30 PM
2:00 PM	2:05 PM	2:10 PM
2:45 PM	2:50 PM	2:55 PM

Travel time between Marriott Hotels and CUE ~5 minutes

Hampton Shuttle This shuttle services the Hampton Inn (1190 SE Bishop Blvd, Pullman, WA 99163) and provides transport to/from the hotels to the CUE and the Awards banquet.

Sunday, June 23rd		
Leave CUE	Leave Hampton Inn	Arrive @CUE
	3:00 PM	3:05 PM
3:30 PM	3:35 PM	3:40 PM
4:00 PM	4:05 PM	4:10 PM
4:15 PM	4:20 PM	4:25 PM
4:30 PM	4:35 PM	4:40 PM
4:45 PM	4:50 PM	4:55 PM
5:00 PM	5:05 PM	5:10 PM
5:30 PM	5:35 PM	5:40 PM
6:00 PM	6:05 PM	6:10 PM
6:30 PM	6:35 PM	6:40 PM
7:00 PM	7:05 PM	7:10 PM
7:30 PM	7:35 PM	7:40 PM
8:00 PM	8:05 PM	8:10 PM
8:30 PM	8:35 PM	8:40 PM
9:00 PM	9:05 PM	9:10 PM
9:30 PM	9:35 PM	9:40 PM
10:00 PM	10:05 PM	10:10 PM
10:15 PM	10:20 PM	
Travel time between Hampton Inn and CUE ~ 5 minutes		

Monday, June 24th		
Leave CUE	Leave Hampton Inn	Arrive @CUE
	7:00 AM	7:05 AM
7:15 AM	7:20 AM	7:25 AM
7:35 AM	7:40 AM	7:45 AM
7:55 AM	8:00 AM	8:05 AM
8:15 AM	8:20 AM	8:25 AM
8:35 AM	8:40 AM	8:45 AM
9:00 AM	9:10 AM	9:15 AM
9:30 AM	9:35 AM	9:40 AM
10:15 AM	10:20 AM	10:25 AM
11:00 AM	11:05 AM	11:10 AM
11:45 AM	11:50 AM	11:55 AM
12:15 PM	12:20 PM	12:25 PM
12:45 PM	12:50 PM	12:55 PM
1:15 PM	1:20 PM	1:25 PM
2:00 PM	2:05 PM	2:10 PM
2:45 PM	2:50 PM	2:55 PM
3:30 PM	3:35 PM	3:40 PM
4:15 PM	4:20 PM	4:30 PM
4:45 PM	4:50 PM	4:55 PM
5:15 PM	5:20 PM	5:25 PM
5:45 PM	5:50 PM	5:55 PM
6:15 PM	6:20 PM	6:25 PM
6:45 PM	6:50 PM	6:55 PM
7:45 PM	7:50 PM	7:55 PM
8:30 PM	8:35 PM	8:40 PM
9:15 PM	9:20 PM	9:25 PM
9:45 PM	9:50 PM	9:55 PM
10:00 PM	10:05 PM	
Travel time between Hampton Inn and CUE ~ 5 minutes		

Tuesday, June 25th				
Leave CUE	Leave Awards Banquet	Leave Hampton Inn	Arrive @ CUE	Arrive @ Awards Banquet
		7:00 AM	7:05 AM	
7:15 AM		7:20 AM	7:25 AM	
7:35 AM		7:40 AM	7:45 AM	
7:55 AM		8:00 AM	8:05 AM	
8:15 AM		8:20 AM	8:25 AM	
8:35 AM		8:40 AM	8:45 AM	
9:00 AM		9:05 AM	9:10 AM	
9:30 AM		9:35 AM	9:40 AM	
10:15 AM		10:20 AM	10:25 AM	
11:00 AM		11:05 AM	11:10 AM	
11:45 AM		11:50 AM	11:55 AM	
12:15 PM		12:20 PM	12:25 PM	
12:45 PM		12:50 PM	12:55 PM	
1:15 PM		1:20 PM	1:25 PM	
2:00 PM		2:05 PM	2:10 PM	
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5:45 PM		5:50 PM		6:00 PM
	6:05 PM	6:15 PM		6:25 PM
	7:00 PM	7:10 PM		7:20 PM
	7:45 PM	7:55 PM		8:05 PM
	8:30 PM	8:40 PM		8:50 PM
	9:00 PM	9:10 PM		9:20 PM
	9:20 PM	9:30 PM		
Travel time between Hampton Inn and CUE ~ 5 minutes				
Travel time between Hampton Inn and Awards Banquet ~ 9 minutes				

Wednesday, June 26th		
ave CUE	Leave Hampton Inn	Arrive @CUE
	7:00 AM	7:05 AM
7:15 AM	7:20 AM	7:25 AM
7:35 AM	7:40 AM	7:45 AM
7:55 AM	8:00 AM	8:05 AM
8:15 AM	8:20 AM	8:25 AM
8:35 AM	8:40 AM	8:45 AM
9:00 AM	9:10 AM	9:15 AM
9:30 AM	9:35 AM	9:40 AM
10:15 AM	10:25 AM	10:30 AM
11:00 AM	11:10 AM	11:15 AM
11:45 AM	11:50 AM	11:55 AM
12:15 PM	12:20 PM	12:25 PM
12:45 PM	12:50 PM	12:55 PM
1:15 PM	1:20 PM	1:25 PM
2:00 PM	2:05 PM	2:10 PM
2:45 PM	2:50 PM	2:55 PM
3:00 PM	3:05 PM	3:10 PM
Travel time between Hampton Inn and CUE ~ 5 minutes		

Coast Hilltop Inn Shuttle This shuttle services the Coast Hilltop Inn (928 NW Olsen St, Pullman, WA 99163) and provides transport to/from the hotels to the CUE and the Awards banquet.

Sunday, June 23rd

Leave CUE	Leave Hilltop	Arrive @CUE
	3:00 PM	3:10 PM
3:30 PM	3:40 PM	3:50 PM
4:00 PM	4:10 PM	4:20 PM
4:25 PM	4:35 PM	4:45 PM
4:50 PM	5:00 PM	5:10 PM
5:15 PM	5:25 PM	5:35 PM
6:00 PM	6:10 PM	6:20 PM
6:30 PM	6:40 PM	6:50 PM
7:00 PM	7:10 PM	7:20 PM
7:30 PM	7:40 PM	7:50 PM
8:00 PM	8:10 PM	8:20 PM
8:30 PM	8:40 PM	8:50 PM
9:00 PM	9:10 PM	9:20 PM
9:30 PM	9:40 PM	9:50 PM
10:00 PM	10:10 PM	10:20 PM
10:25 PM	10:35 PM	

Travel time between Hilltop and CUE ~8 minutes

Monday, June 24th

Leave CUE	Leave Hilltop Inn	Arrive @CUE
	7:00 AM	7:10 AM
7:15 AM	7:25 AM	7:35 AM
7:40 AM	7:50 AM	8:00 AM
8:05 AM	8:15 AM	8:25 AM
8:30 AM	8:40 AM	8:50 AM
8:55 AM	9:05 AM	9:15 AM
9:30 AM	9:40 AM	9:50 AM
10:15 AM	10:25 AM	10:35 AM
11:00 AM	11:10 AM	11:20 AM
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6:15 PM	6:25 PM	6:35 PM
6:45 PM	6:55 PM	7:05 PM
7:45 PM	7:55 PM	8:05 PM
8:30 PM	8:40 PM	8:50 PM
9:15 PM	9:25 PM	9:35 PM
9:45 PM	9:55 PM	10:05 PM
10:10 PM	10:20 PM	

Travel time between Hilltop and CUE ~ 8 minutes

Tuesday, June 25th

Leave CUE	Leave Awards Banquet	Leave Hilltop Inn	Arrive @ CUE	Arrive @ Awards Banquet
		7:00 AM	7:10 AM	
7:15 AM		7:25 AM	7:35 AM	
7:40 AM		7:50 AM	8:00 AM	
8:05 AM		8:15 AM	8:25 AM	
8:30 AM		8:40 AM	8:50 AM	
8:55 AM		9:05 AM	9:15 AM	
9:20 AM		9:30 AM	9:40 AM	
9:45 AM		9:55 AM	10:05 AM	
10:15 AM		10:25 AM	10:35 AM	
11:00 AM		11:10 AM	11:20 AM	
11:45 AM		11:55 AM	12:05 PM	
12:15 PM		12:25 PM	12:35 PM	
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1:15 PM		1:25 PM	1:35 PM	
2:00 PM		2:10 PM	2:20 PM	
2:45 PM		2:55 PM	3:05 PM	
3:30 PM		3:40 PM	3:50 PM	
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	6:05 PM	6:15 PM		6:25 PM
	7:00 PM	7:10 PM		7:20 PM
	7:45 PM	7:55 PM		8:05 PM
	8:30 PM	8:40 PM		8:50 PM
	9:00 PM	9:10 PM		9:20 PM
	9:20 PM	9:30 PM		

Travel time between Hilltop and CUE (or Awards Banquet) ~ 8 minutes

Wednesday, June 26th

Leave CUE	Leave Hilltop Inn	Arrive @CUE
	7:00 AM	7:10 AM
7:15 AM	7:25 AM	7:35 AM
7:40 AM	7:50 AM	8:00 AM
8:05 AM	8:15 AM	8:25 AM
8:30 AM	8:40 AM	8:50 AM
8:55 AM	9:05 AM	9:15 AM
9:20 AM	9:30 AM	9:40 AM
9:45 AM	9:55 AM	10:05 AM
10:15 AM	10:25 AM	10:35 AM
11:00 AM	11:10 AM	11:20 AM
11:45 AM	11:55 AM	12:05 PM
12:15 PM	12:25 PM	12:35 PM
12:45 PM	12:55 PM	1:05 PM
1:15 PM	1:25 PM	1:35 PM
2:00 PM	2:10 PM	2:20 PM
2:45 PM	2:55 PM	3:05 PM

Travel time between Hilltop and CUE ~ 8 minutes

Other Accommodations

The Building Bonds Room in CUE 519 was arranged to be a networking room for all attendees.

CUE 119 was established as a Mother's room for current or expecting mothers for the duration of the conference.

7B. Special Needs

All catering events considered dietary options. Listed below were the list of dietary considerations for each catered event:

- Opening Reception on Sunday, June 23rd: 23 vegetarians, 8 no pork, 5 gluten free, 2 shellfish allergy
- WCC Luncheon on Monday, June 24th: 7 vegetarians, 1 with celiac disease, 2 no beef or pork, 1 gluten free, and 2 shellfish allergy
- WSU & U of Idaho Alumni Reception on Monday, June 24th: 14 vegetarians, 4 no beef or pork, 1 gluten free, 1 with chicken/turkey allergy (eggs okay), 3 no red meat, 1 shellfish, and 1 lemon allergy
- Senior Breakfast on Wednesday, June 26th: 1 vegetarian, 3 no beef or pork, 1 gluten free
- Safety Luncheon on Wednesday, June 26th: 9 vegetarians, 5 that don't eat beef or pork, 2 that are gluten free, and one that has a lemon allergy.

We also had two people attending conference with a nut allergy, so we removed any initial menu plans for any trail mix or mixed nuts and substituted chips and dip/salsa.

7C. Additional Comments/Lessons Learned

The NORM 2024 attendees had many bad experiences with the WSU dorms. The NORM 2024 organizers had such a bad experience with the dorms that if a future NORM would be hosted on the WSU campus, no dorms would be used.

NORM 2024
Breaking Borders: Building Bonds

Submitted by Zachariah Heiden, NORM 2024 General Chair

8. Appendices

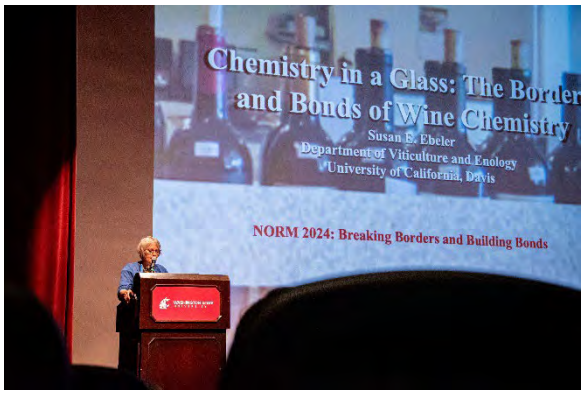
8A. Attendance and Financial Data for Previous NORM's

Year	Location	Attendance	Abstracts	Exhibitors	Finances
2024	Pullman	545	358	32	+$40,325
2023	Bozeman	464	268	16	+$5,323
2022	canceled				
2021	Bellingham (online)	578	168	0	+$3,694
2020	canceled				
2019	Portland	647	343	32	+$21,230
2018	Richland	612	391	22	+$32,455
2017	Corvalis	444	265	27	+$15,620
2016	Anchorage	271	153	17	
2015	Pocatello	304		16	
2014	Missoula	389	200	20	+$10K
2013	Corvalis	431	200	28	+$1.1K
2012	Boise	459	257	21	+$8K
2011	Portland	514	248	54	–$24.7K
2010	Pullman	380	224	15	+13K
2009	Tacoma	382	199	17	+4K
2008	Park City	543	280	16	"broke even"
2007	Boise	352	233	28	+20K
2006	Reno	410	247	16	+$3.1K
2005	Anchorage	200	312	8	"broke even"
2004	Pocatello	408	276	19	+ $10.5K
2003	Bozeman				
2002	Spokane				
2001	Seattle				

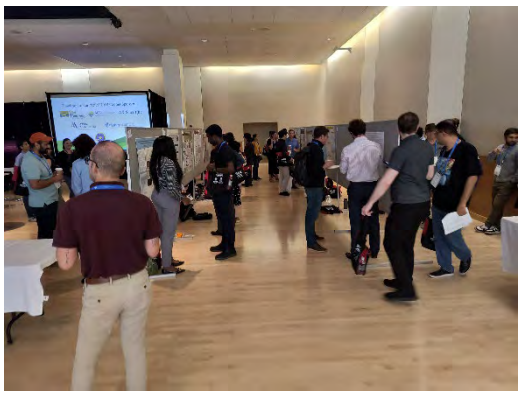
Year	Location	Attendance	Abstracts	Exhibitors	Finances
2000	Idaho Falls	300	165	14	
1999	Portland	801	413	33	
1998	Pasco	478	232	24	
1997	Moscow	253	191	9	
1996	Corvalis	457	196	14	
1995	Park City	445	225	13	
1994	Anchorage	205	153	7	
1993	Laramie	277	137	5	
1992	Missoula	317	213	16	
1991	La Grande	337	198	9	
1990	Salt Lake City	585	267	22	
1989	Reno	410	183	11	
1988	Spokane	327	184		
1987	Bellingham	441	221	41	
1986	Portland	763	303	31	
1985	Sun Valley	266	173	17	
1984	Moscow	290	188	27	
1983	Honolulu	265	157	9	
1982	Eugene	386	171	23	
1981	Bozeman	407	21	15	
1980	Salt Lake City	596	283	30	
1979	Richland	526	179	35	
1978	Seattle	543	247		

8B. Photos from NORM 2024

8B.1. Highlights

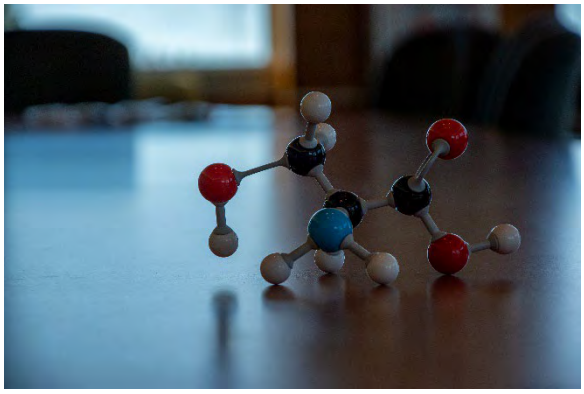



PILED HIGHER
AND DEEPER
JORGE CHAM
NORM 2024
JUNE 24




WRITING SOPs: WITH A FOCUS
ON METHYLENE CHLORIDE
TOM EBELING
WASHINGTON STATE UNIVERSITY
ENVIRONMENTAL HEALTH & SAFETY (EH&S)



8B.2. Women's Luncheon



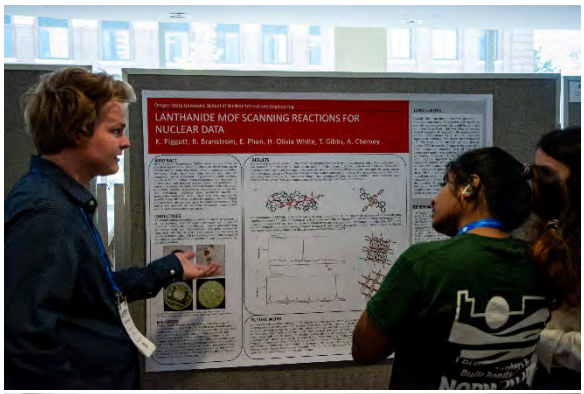
8B.3. Breaking Borders and Building Bonds at the Palouse Discovery Science Center

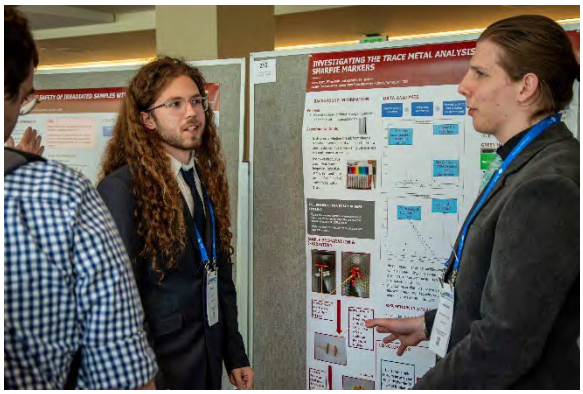




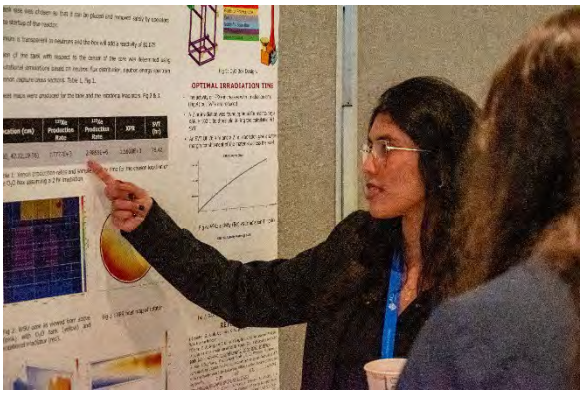


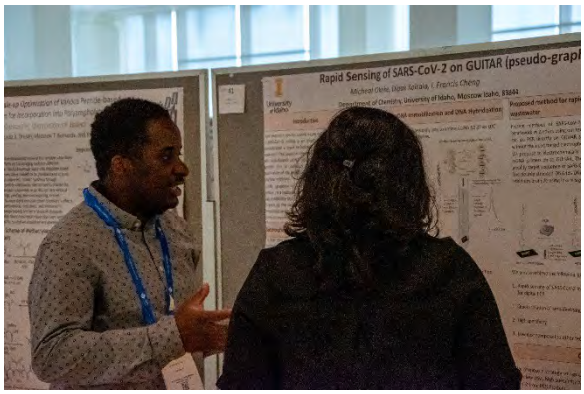

8B.4. Undergraduate Poster Session

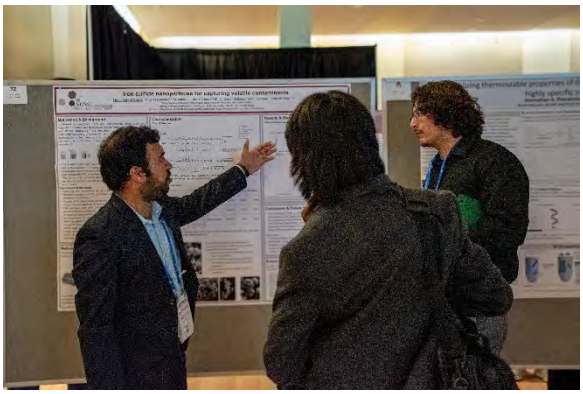


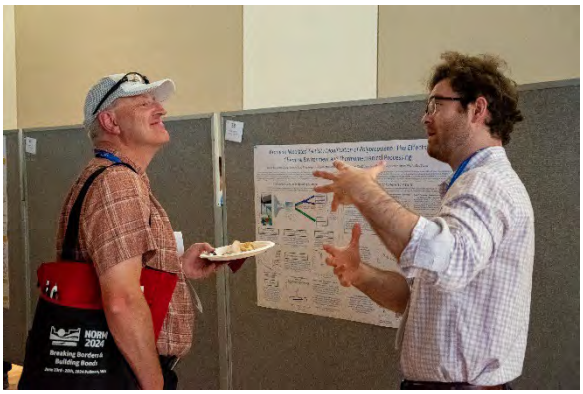


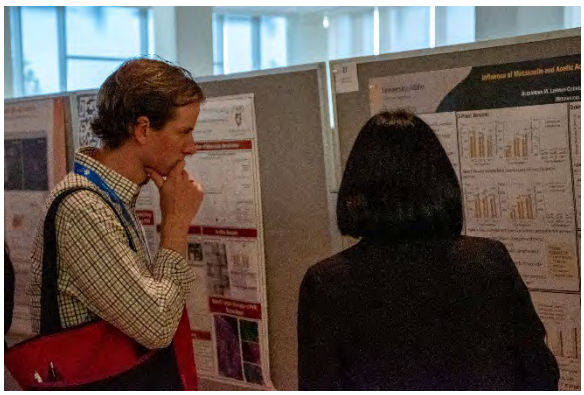
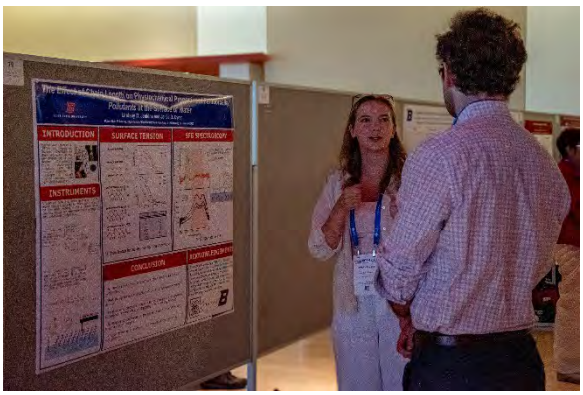
8B.5. Main Poster Session







8B.6. Exposition







8B.7. Awards Banquet

8B.8. Innovation 2 Impact Workshop

8B.9. Technical Sessions

8C. NORM 2024 Final Program

Printed NORM 2024 programs were printed at Staples, which had a three-day turnaround. Programs were sent to the printers on June 18th and were available for pickup on June 21st.

100 copies were printed at a cost of $22.36 each ($2,236.71 total).

The ACS meeting crew were rather stingy on handing out the programs and we would have liked them being given out on the first day as opposed to only having them if an attendee asked for them.

Would have been beneficial if there was a note at registration that said printed programs available on request and at least one sitting at the registration table for attendees to look at and take, if desired. We ended having around ¾ of the programs left on the last day of the conference. When we handed them out, several attendees said they wished they had them earlier in the conference.

NORM 2024

Breaking Borders: Building Bonds

Conference Program

June 22nd – 27th, 2024
Washington State University
Pullman, WA

Hosted By:

American Chemical Society
WASHINGTON-IDAHO
BORDER SECTION

Up to date Information:

Table of Contents

American Chemical Society

OFFICE OF THE PRESIDENT

Mary K. Carroll, Ph.D.
President-Elect, 2023
President, 2024
Immediate Past President, 2025

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036
Phone 202-872-4461
president@acs.org

June 23, 2024

Dear Northwest Regional Meeting Participants:

On behalf of the global American Chemical Society community, I am delighted to extend my warm personal greetings to all of you attending the 2024 ACS Northwest Regional Meeting (NORM) at Washington State University in beautiful Pullman, Washington.

NORM 2024 will kick off on Sunday, June 23, with the opening reception—please stop by and meet ACS governance leaders. Immediately following the reception, you will hear from NORM plenary speakers: Dr. José Almirall, Distinguished Professor Emeritus in Chemistry and Biochemistry at Florida International University and Dr. Susan E. Ebeler, Associate Dean of Undergraduate Academic Program for College of Agricultural and Environmental Sciences (CA&ES) and Professor in the Department of Viticulture and Enology. After the plenary talks, consider attending the "Chemistry in a Glass" Reception.

Under the theme of "Breaking Borders, Building Bonds," please take advantage of the variety of oral and poster sessions and learn about the great science happening in the Northwest region that will promote crosstalk between scientists and engineers from academia, industry, and government on interdisciplinary, multidisciplinary, and cross-disciplinary topics and studies. There will also be an academic and employment recruitment fair, undergraduate poster session, career workshops, and nuclear reactor tours.

On Monday, June 24, the Women Chemists Luncheon will feature keynote speaker Joan Broderick, recipient of the 2019 ACS Alfred Bader Award in Bioinorganic and Bioorganic Chemistry. Later that evening, join us for the University of Idaho and Washington State University Alumni and Friends reception. Immediately following the reception, we will hear from plenary speaker Jorge Cham, creator of the *Piled Higer and Deeper* (PHD Comics), followed by the screening of *The PhD Movie*.

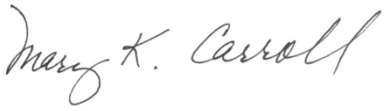
On Tuesday, June 25 the Awards Ceremony will recognize the recipients of the E. Ann Nalley Northwest Region Award for Volunteer Service to the ACS, the Glenn and Jane Crosby Northwest Region Award for Excellence in High School Teaching, and the Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences. The awards ceremony will also include a plenary seminar by Dr. Simon Pimblott, Laboratory Fellow at the Idaho National Laboratory and Nuclear Science and Technology Directorate Chief Scientist.

Don't miss the opportunity to visit NORM 2024 Expo and "build bonds" at Doughnuts with Directors, the Senior Chemists Breakfast, the Safety Luncheon, the Ice Cream Social from Ferdinand's Ice Cream Shoppe, and "break borders" with Crossing the Border into Idaho: Night out in Moscow, ID.

If travel plans have you in Pullman on Saturday, June 22, plan to attend the Breaking Borders: Building Bonds at the Palouse Discovery Science Center where kids of all ages will enjoy engaging, educational, hands-on science exhibits and the Washington-Idaho Border Section will host chemistry activity tables.

With all these great symposia, workshops, and various social events, I want to express my special thanks to the NORM General Chair Zachariah Heiden, Program Committee Chair Kristopher Waynant, the many organizers and volunteers, ACS staff, and especially to our hosts at the Washington-Idaho Boarder Local Section for their hard work and dedication to create an intellectually stimulating, diverse and inclusive experience here in Pullman.

Best wishes for a most successful 2024 NORM!



Mary K. Carroll
President
American Chemical Society

Northwest Region Board of Directors
NOR Board

Dear Colleagues:

Welcome to the 2024 American Chemical Society (ACS) Northwest Regional Meeting (NORM2024) on the beautiful campus of Washington State University in Pullman, Washington. The meeting theme, *Breaking Borders: Building Bonds*, focuses on collaborations in science, education and the many issues society currently faces. It is my hope that the program will initiate meaningful discussions on the roles of chemistry and chemical education in addressing the complex systems that influence outcomes. I anticipate that NORM2024 will produce valuable exchanges of knowledge across the Pacific Northwest, Alaska and beyond, and catalyze new collaborations across the chemical enterprise that engage researchers and educators alike.

The overall objectives of ACS are to support and promote the safe, ethical, responsible, and sustainable practice of chemistry coupled with professional and inclusive behavior and technical competence while recognizing a responsibility to safeguard the health of the planet and the people who live on it, through chemical stewardship. The ACS NOR Board working with ACS Meetings and Expositions provides support for ACS local sections of the Pacific Northwest and Alaska as they plan and execute NORM events that contribute to these objectives.

The NORM2024 Local Organizing Committee (LOC) of the Washington Idaho Border Section, led by Drs. Zachariah Heiden and Kristopher Waynant, has worked diligently to assemble a varied and comprehensive program. The leadership exhibited by General Chair Heiden over the past two years has been inspirational and the NOR Board commends his and his team's efforts, persistence and success in constructing a NORM that reflects the multi-disciplinary and collaborative nature of successful chemical endeavors. The NOR Board extends gratitude to the LOC. A special thank you to participants that have contributed oral and poster presentations. The members of ACS are what makes it great.

I am delighted to welcome you to the beautiful Palouse and wish you an enjoyable and rewarding experience at NORM2024.

Lisa Hoferkamp
Chair, NOR Board, Inc. 2023 - 2026
Northwest Region Board of Directors

American Chemical Society
Email. lahoferkamp@alaska.edu

Dear guests,

Thank you for visiting Pullman. We are so glad you are here!

There are countless things to see and do in our city and beyond, and we hope you have a great time experiencing everything our community has to offer.

From hiking our majestic buttes and biking the Washington-Idaho border to browsing museums and sauntering through our historic downtown, your stay in our city is sure to take on an adventure or two!

Should you need more information on activities and places in our region, we strongly encourage you to stop by our Visitor Center located at 415 N. Grand Ave., where we house an extensive collection of information about the city of Pullman and Washington State University in addition to a variety of locally made souvenirs, the perfect items commemorate your visit to Pullman!

Welcome to Pullman. We hope your visit is one to remember!

Warm regards,

Marie Dymkoski

Marie Dymkoski
Executive Director
Pullman Chamber of Commerce and Visitor Center

Wireless at NORM 2024

Washington State University Guest Network details:

- Guests receive a three-day lease for network access.
- The email address is used as the username and an auto-generated six-digit password is created for the guest.
- An email with the username, password, and lease length for WSU Guest access is sent to the email address. A guest can use the same login credentials on up to 10 devices at once.
- Once you connect to the network, most wireless devices will save the login credentials and you will not have to type them in again until after the three-day lease has expired.

Registration at NORM 2024

All NORM 2024 events will require the presence of a NORM 2024 badge. Badges can be obtained from the registration desk during the hours indicated below:

Sunday, June 23rd

1:00 PM – 7:00 PM (Compton Union Building, Second Floor Mezzanine)

Monday, June 24th

7:00 AM – 5:00 PM (Compton Union Building, Second Floor Mezzanine)

Tuesday, June 25th

7:00 AM – 5:00 PM (Compton Union Building, Second Floor Mezzanine)

Wednesday, June 26th

7:00 AM – 3:00 PM (Center for Undergraduate Excellence, Room 209)

NORM 2024 Local Organizing Committee

General, Expo, and Sponsorship Chair

Zachariah Heiden
zachariah.heiden@wsu.edu

Program Chair

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Plenary/Keynote Speakers

Sunday, June 23 (7:00 – 8:30 pm, CUB Auditorium)

"National Science Foundation; Programs in the Chemistry Division and Beyond"
Presented by: Jose Almirall, National Science Foundation

José R. Almirall is Distinguished University Professor Emeritus in Chemistry and Biochemistry at Florida International University in Miami. He received a BS in Chemistry from FIU, a MS in Chemistry from the University of Miami and a PhD in Chemistry from the University of Strathclyde. He began his career at the Miami-Dade Police Department forensic laboratory as a practicing forensic chemist where he worked for 12 years prior to his academic appointment at FIU in 1998. He was the founding co-Director of the International Forensic Research Institute at FIU (1997) and the founding graduate program director of the MS in Forensic Science program at FIU (1998). He was also the founding Director of the NSF-funded Center for Advanced Research in Forensic Science (CARFS) at Florida International University. His research interests include development of mass spectrometry, atomic spectroscopy, and molecular spectroscopy measurement science for improving the forensic examination of controlled substances, explosives, and trace evidence (materials). His research group has also been interested in developing statistical tools to improve the interpretation of chemical data in the forensic context. Prof. Almirall and his group have authored more than 165 peer-reviewed publications in analytical and forensic chemistry, and he currently serves as the co-Editor-in-Chief of Forensic Chemistry, an Elsevier journal. Prof. Almirall joined the National Science Foundation (NSF) in August of 2022 as a Program Director rotator in the Division of Chemistry, Chemical Measurement and Imaging (CMI) and Major Research Instrumentation (MRI) programs.

"Chemistry in a Glass: The Borders and Bonds of Wine Chemistry"
Presented by: Susan Ebeler, University of California, Davis

Dr. Sue Ebeler is the associate dean of Undergraduate Academic Programs for the College of Agricultural and Environmental Sciences (CA&ES) and a professor in the Department of Viticulture and Enology. She earned her Ph.D. in agricultural and environmental chemistry and an M.S. in food science from UC Davis, and her B.S. in food science from the University of Nebraska, Lincoln, NE. Her research seeks to answer questions about food and beverage flavor, quality and health effects. In her research, she uses analytical tools including gas chromatography-mass spectrometry, high performance liquid chromatography-mass spectrometry, and inductively coupled plasma mass spectrometry to study the effects of agricultural practices, fermentation, processing, and storage on composition of grapes, wines, and other foods and beverages. By linking compositional and sensory information, this research reveals information about how aroma compounds interact with each other and with food matrix components to contribute to complex food and beverage flavors.

Chemistry in a Glass Reception sponsored by House of Smith will follow the opening plenary talks.

Monday, June 24 (12:00 – 1:30 pm, CUB Junior Ballroom)

Women in Chemistry Committee Luncheon Keynote Speaker
Joan Broderick, Montana State University

Dr. Joan Broderick received her B.S. in Chemistry from Washington State University and later her M.S. and Ph.D. in Inorganic Chemistry from Northwestern University. She completed a post-doctoral fellowship at MIT and then started her career at Amherst College as an Assistant Professor of Chemistry. She transitioned to Michigan State University where she was a Professor of Chemistry until 2005 when she moved to Montana State University. She was awarded the title of Women in Science Distinguished Professor in 2014 and currently serves as the Department Head of the Chemistry and Biochemistry Dept.

Monday, June 24 (7:00 – 9:30 pm, CUB Auditorium)

"The Power of Procrastination"
Presented by: Jorge Cham, Creator of PhD Comics and The PhD Movies

Jorge Cham is the creator of Piled Higher and Deeper (PHD Comics), the popular comic strip about life (or the lack thereof) in Academia. He is also the co-founder of PHD TV, a video science and discovery outreach collaborative, the best-selling author of several non-fiction books for kids and adults, and the Emmy-nominated creative director and co-creator of the PBS Kids animated series Elinor Wonders Why. Dr. Cham obtained his B.S. from Georgia Tech and his M.S. and Ph.D. from Stanford University, specializing in Robotics. He was subsequently an Instructor and Research Associate at Caltech from 2003-2005, where his work focused on developing "Smart" Neural Implants. He travels and presents all over the world to thousands of graduate students, faculty and administrators on the graduate student experience.

A screening of The PhD Movie will occur at the conclusion of Dr. Cham's plenary talk.

Tuesday, June 25 (7:00 – 8:00 pm, Pavilion at Palouse Ridge Golf Course)

NORM 2024 Awards Dinner Plenary Talk
"Nuclear – The Energy of Tomorrow"
Presented by: Simon Pimblott, Idaho National Laboratory

Dr Simon M. Pimblott has over 35 years of experience in the field of nuclear energy sciences, working closely with the US Department of Energy and the UK Nuclear Decommissioning Authority, Currently, a Laboratory Fellow in at INL, Dr Pimblott is the Chief Scientific Officer for the Nuclear Science & Technology Directorate. Prior to joining INL in 2017, he was the Chair Professor in Radiation Chemistry and the founding Director for the Dalton Cumbrian Facility (DCF) at The University of Manchester. The DCF was established to address the engineering decommissioning and scientific challenges associated with the UK nuclear industry, and particularly the Sellafield site. Professionally, Dr Pimblott is recognized as a Fellow of the Royal Society of Chemistry, and is the Chair-elect of the Materials Science &Technology Division of the American Nuclear Society. He held the UK Engineering and Physical Sciences Research Council's Energy Research Chair in Radiation Chemistry from 2007 to 2012. In 1999 he was the 27th Michael Fry Radiation Research Awardee – the most accomplished radiation scientist under 40 years of age, and in 2011 Dr. Pimblott and the development of the DCF project played a major role in the award of the Queen's Anniversary Prize for Higher and Further Education to the Dalton Nuclear Institute for excellence in nuclear energy research and education. He has acted as technical lead for major research programs in disparate areas across the field of nuclear energy research, specifically: fuel performance, management, and disposition; radiation effects in nuclear materials and fuels; LWR chemistry and corrosion processes; chemistry of nuclear reprocessing systems; and radioactive waste management and decommissioning.

Award Winners

The Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences

This award recognizes individuals and/or institutions who have advanced diversity in the chemical sciences and significantly stimulated or fostered activities that promote inclusiveness within the region.

Congratulations Kristopher V. Waynant, Ph.D., University of Idaho

Dr. Waynant is an Associate Professor of Chemistry and the Director of the Office of Undergraduate Research (OUR) at the University of Idaho in Moscow, ID. Trained as an organic chemist, his current research spans a variety of subdisciplines from ligand design for both metal dissolution and catalysis to peptide chemistry and the construction of zwitterionic cross-linkers for polyampholyte materials. As OUR Director, he meets regularly with students to introduce them to research and the opportunities in research careers. He has led many projects on introducing research in the first-year curriculum both as inquiry-based and as course-based undergraduate research experiences (CUREs). He currently leads an NIH Bridges to Baccalaureate program and is the PI of a new NSF REU Site program titled “Elements of Sustainability”. He leads many outreach activities hosting students for ACS events (i.e., USNCO) and as the Councilor for the Washington Idaho Border Section, serves as a member of Project SEED promoting research for to High schoolers throughout the region and the country.

The E. Ann Nalley Northwest Region Award for Volunteer Service to the American Chemical Society

This award recognizes the volunteer efforts of an individual who has served the American Chemical Society and contributed significantly to the goals and objectives of the Society through their regional activities.

Congratulations Despina Strong, Ph.D.!

Dr. Strong has been an active member of ACS for over 40 years, serving as the Chair or as a member for multiple committees and founding two of her own at the local section. She has been the Chair of the local section two times (1992, 2014) and she served as the Education Committee Chair for three years. Strong initiated the Senior Chemists Committee (SCC, 2017) and the Women Chemists Committee (WCC, 2020) where she is currently serving as the first Chair for both. She organizes events to engage members and to promote networking. Strong is a founding member of the Diversity, Equity, Inclusion and Respect committee and leads the Diversity Book Discussion Group. In 2021, Strong participated in the revision of the section’s bylaws making significant contributions during the process. At the Regional level Strong participated in the Northwest Regional (NORM) meetings organizing and /or participating in symposia and events on behalf of the SCC and the WCC. At the National level,

Strong is in her third 3-year term as a councilor for the Puget Sound Section, and she is currently an active member (8 years) on the national WCC. As a member of WCC, she leads one of the three major goal areas of the committee and serves on the WCC leadership team. Strong volunteered and chaired the District VI Caucus twice and served as its secretary twice. She participates actively at the National level where she forged relationships with members of the Minority Affairs Committee, WCC and SCC as well as with ACS staff and leadership.

The Glenn and Jane Crosby Northwest Region Award for Excellence in High School Teaching

This award recognizes the efforts of extraordinary high school teachers. The awardee is chosen based on the quality of their teaching as evidenced by incorporation of unusually effective teaching methods, ability to challenge and inspire students, willingness to keep up to date in chemistry, and extracurricular work in chemistry or a chemical science.

Congratulations Jennifer Pollard, Ph.D.!

Jennifer Pollard is a chemistry teacher and department chair at Moscow High School, in Moscow, Idaho. She received her Ph.D. at the University of Idaho in physical chemistry, having earned a biochemistry degree, K-12 physical science teaching credential and then an M.A. in education at CalPoly, San Luis Obispo. Her love of the Palouse convinced her to stay as a teacher in the area. Her classes now include: dual credit chem 101, dual credit chem 111 (also advanced placement), and high school chemistry. She focuses on “doing chemistry” by integrating labs, activities and content on a day to day basis, and covering regionally important topics such as nuclear chemistry. An integral part of the region’s high school curriculum and a strong supporter of furthering hands-on learning in chemistry, Dr. Pollard has built a strong chemistry program at Moscow High School, integrating dual-credit chemistry with the University of Idaho Chemistry Department’s curriculum and initiating AP curriculum into Moscow High. Dr. Pollard frequently partners with the UI Department of Chemistry to show her classes new and exciting instrumentation. Dr. Pollard’s work has been supported by numerous grants from the Idaho Space Grant Consortium, the Genesee Education Fund and the Office of Energy Resources to help build physics and engineering programs as well as increase the use of solar cells and solar panels at local schools.

NORM 2024 Sponsors

Platinum (Conference Host)

American Chemical Society WASHINGTON-IDAHO BORDER SECTION	We are a local section of the American Chemical Society consisting of about 120 members. We serve the Pullman, Moscow, Clarkston, and Lewiston area in southeastern WA and Idaho panhandle and are the host of NORM 2024. https://www.wibs-acs.org/

Gold ($5,000 - $9,999)

University of Idaho Department of Chemistry	The Chemistry Department at University of Idaho offers B.S. and research M.S. and Ph.D. degrees in Chemistry. For the student who wants to pursue a graduate degree or will work in a field related to chemistry, we offer the Professional B.S. in Chemistry, which is the degree accredited by the American Chemical Society. For students interested in pursuing careers in medicine, dentistry, and pharmacy we offer a B.S.-Pre Med. https://www.uidaho.edu/sci/chem/about
NUCLEAR SCIENCE CENTER WSU	The Washington State University Dodgen Research Facility is located at WSU Pullman. The facility houses the Nuclear Science Center which maintains oversight of WSU's 1 MW TRIGA research nuclear reactor. The Center is a multidisciplinary teaching, research, and service endeavor designed to make high impact contributions to nuclear science, national and international security, nuclear non-proliferation, and emergency readiness. https://nsc.wsu.edu/
WASHINGTON STATE UNIVERSITY School of Mechanical and Materials Engineering	The School of Mechanical and Materials Engineering at WSU has one of the largest undergraduate programs in the Pacific Northwest, with about 1000 students and 45 faculty members spread across three sister campuses. Our graduate student and postdoctoral researcher populations are growing, underpinned by continuously increasing annual research expenditures (currently over $9m), with over 100 PhD students. It is one of few schools where both Mechanical Engineering and Materials Science and Engineering programs are offered under the same roof, allowing our students to be reared in a highly interdisciplinary, enriching environment. https://mme.wsu.edu/

Silver ($2,500 - $4,999)

ACS Division of Nuclear Chemistry & Technology https://www.nucl-acs.org/	ACS Chemistry for Life® https://www.acs.org/
ANATEK LABS https://www.anateklabs.com/	Bettersize www.bettersizeinstruments.com
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SHIMADZU Excellence in Science www.ssi.shimadzu.com	College of Arts & Sciences Department of Chemistry https://chem.wsu.edu/
WASHINGTON STATE UNIVERSITY Elson S. Floyd College of Medicine https://medicine.wsu.edu/	

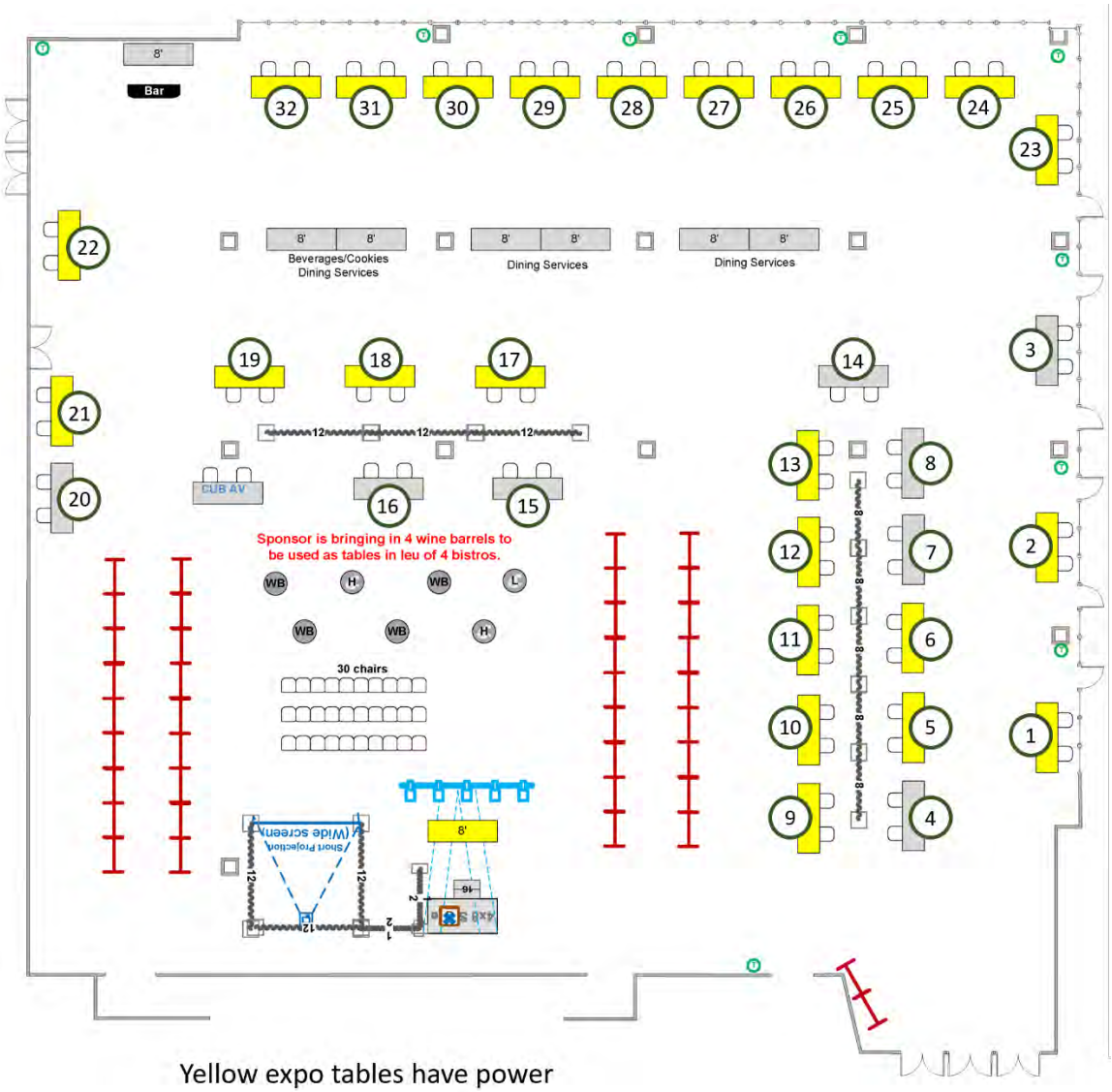
Copper ($1,000 - $2,499)

Division of Analytical Chemistry ACS	ACS Local Section Inland Northwest	AK Scientific
Alturas Analytics, Inc. The LC-MS Experts	fisher scientific part of Thermo Fisher Scientific	Visit Pullman Washington

Nickel (Up to $500)

ACS Technical Division Colloid and Surface Chemistry (COLL)	ACS Committee Senior Chemists	Division of Medicinal Chemistry
Another Round Brewing Co.	Colter's Creek	Merry Cellars
ACS Division of Catalysis Science and Technology	ENFL ACS Division of Energy & Fuels	ACSenvr ACS Division of Environmental Chemistry
Klarquist	University of Idaho Department of Chemical and Biological Engineering	Washington State University Gene and Linda Voiland School of Chemical Engineering and Bioengineering
Rivaura	Moscow chamber of commerce + visitor center	

NORM 2024 Exhibitors



Yellow expo tables have power

1) ACS Membership
2) Mirion Technologies
3) WSU Nuclear Science Center
4) ChemScene LLC
5) Bettersize Inc.
6) Biotage
7) Fisher Scientific
8) Fisher Scientific
9) JEOL
10) Oakwood Chemical
11) LECO
12) SCIEX
13) Pine Research Instrumentation
14) RAIN Incubator
15) MacMillan Learning
16) Eldex Corporation
17) IKA
18) Center for Advanced Energy Studies
19) Oxford Instruments
20) Bruker AXS
21) Bruker Magnetic Resonance
22) Agilent Technologies
23) Shimadzu
24) Nanalysis Corp.
25) Klar Scientific
26) Velp Scientific, Inc.
27) Proteios Technology Inc.
28) Magritek
29) Process Insights
30) Chemwatch
31) Anatek Labs Inc.
32) Washington-Idaho Border Section

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ANATEK LABS	Anatek Labs, Inc. is a full service environmental analytical testing laboratory, established in 1992, with offices in Moscow, ID and Spokane, WA, and branch offices in Yakima and Wenatchee, WA. Our mission is to provide precise and accurate analytical data and technical assistance to our clients in a timely and cost-effective manner. We test drinking water samples for community water services and private well customers, as well as water and environmental samples for environmental, industrial, and agricultural clients. https://www.anateklabs.com/
Bettersize	Bettersize is a leading manufacturer of analytical instruments. Our product range covers basic to advanced particle analysis instruments to provide precise analysis results of particle size, particle shape, zeta potential and powder characteristics helping scientists and engineers understand material properties and optimize research and production. With strict quality control and exceptional customer service, our instruments are trusted by over 17,000 businesses. www.bettersizeinstruments.com
Biotage®	Biotage is the Global Go-To Separations Company, supporting customers from drug discovery and development through to diagnostics and analytical testing with intelligent and sustainable workflow solutions. Our expertise and top-tier separation solutions play a key role in streamlining our customers' workflows and improving their outcomes. Headquartered in Sweden, Biotage operates globally with 700 employees, serving over 80 countries. Our company is listed on NASDAQ Stockholm (BIOT). https://www.biotage.com/
BRUKER	Bruker is a developer, manufacturer and distributor of high-performance scientific instruments and analytical and diagnostic solutions that enable our customers to explore life and materials at microscopic, molecular and cellular levels. Many of our products are used to detect, measure and visualize structural characteristics of chemical, biological and industrial material samples. https://www.bruker.com/en.html

CAES Center for Advanced Energy Studies	The Center for Advanced Energy Studies (CAES) is an academic-government-industry consortium comprised of the US Department of Energy's Idaho National Laboratory, the public research universities of Idaho (Boise State University, Idaho State University and University of Idaho) and industry collaborators. Through world-class collaborative research, CAES innovates to secure the nation's energy future. CAES strives to create new knowledge and the next generation of scientists and engineers through education and research. https://www.caes.org
ChemScene Chemical Reagents For Life Science	ChemScene is a chemical supplier for small molecules and building blocks. With 76k+ in stock catalog available and competitive custom synthesis ability, ChemScene is eager to help support R&D. Let us save your time and budget while your R&D saves the world. https://www.chemscene.com/
CHEMWATCH	Regulatory and compliance responsibilities of companies are becoming more complex and wide-ranging every year. Dedicated chemical management software at Chemwatch has gone far beyond storing your SDS. As well as storing, Chemwatch's dedicated chemical management software also automatically updates your SDS, and continuously tracks and updates your safety and risk profiles, environmental performance, and storage and signage needs. It generates labels and mini SDS for employee safety and product/company compliance across multiple jurisdictions. www.chemwatch.net
Eldex	Eldex Corporation manufactures instruments for industrial, life science, chemical process, energy, and OEM applications. For over 50 years, the company has consistently met the needs of scientists, chemists, and engineers with simple, reliable fluid pumping solutions meeting exacting requirements for precision, reproducibility, and pressure. www.eldex.com
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Klar Scientific	Klar Scientific sells photoluminescence (PL) and Raman microscopes, and test & measurement services. https://klarscientific.com/
LECO EMPOWERING RESULTS	Since 1936, millions of samples worldwide have been analyzed using LECO instruments for elemental analysis, thermal analysis, metallography, and mass spectrometry. Our comprehensive solutions for improving productivity include working with you to find the right equipment for the type of analysis you are doing — and providing you with the training, application support, and service you need to keep your lab running at its best. https://www.leco.com/
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PINE research	Pine Research Instrumentation is a world leader in design and manufacturing of electrochemistry research products, including potentiostats, electrodes and electrode rotators, cells and glassware, and accessories. Additionally, Pine Research offers innovative software programs and tools, such as electrochemical simulation and EIS circuit fitting licenses perfect for both teaching curricula and research labs. https://pineresearch.com

Process Insights	Process Insights provides real-time analytical instrumentation, gas and water analysis solutions, and safety products for a variety of industries including industrial manufacturing, lab, chemical, life science, mining, metals processing, environmental, and more. Our analytical measurement solutions and technologies ensure safe operations, increase production quality, improve asset lifecycle while optimizing levels of efficiency and throughput across your process and quality control. https://www.process-insights.com/
Proteios Technology	Protein Technology is a Seattle-based company founded to share novel protein purification technology developed at the University of Washington. The technology has been expanded to discover and manufacture advanced therapeutics. Proteios has developed a series of RapidPro protein purification kits that enable effective, efficient, scalable, and safe purification of a wide range of proteins - including metalloproteins. Our eco-friendly four-step method provides rapid access to milligram quantities of your target protein. www.proteios.com
RAIN INCUBATOR	RAIN Incubator is a non-profit, biotech-focused incubator located in downtown Tacoma, WA, that has approximately 2500 square feet of shared and individual wet-lab space outfitted with standard molecular biology equipment. We also provide business, technical, and logistic support, networking opportunities, and connections to local universities. RAIN supports local STEM education by providing paid internships for college students to gain valuable hands-on experience. Incubator companies may choose to participate in this program. www.rainincubator.org
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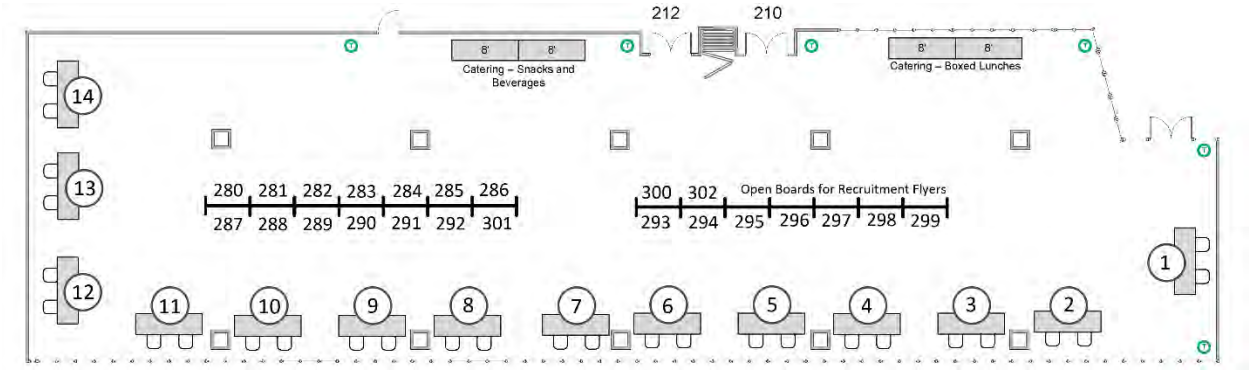
NORM 2024 Academic and Employment Fair Exhibitors

CUB Junior Ballroom (11:00 am – 2:30 pm)



1) Washington State University Chemistry Department
2) University of Idaho Chemistry Department
4) Alturas Analytics, Inc.
6) WSU – PNNL Nuclear Technology Institute
8) WSU Nuclear Science Center
10) PNNL – WSU Distinguished Graduate Fellowship
12) Department of Chemistry at UC Riverside
13) Oregon State University Chemistry Department
14) Department of Chemistry at the University of Nevada, Reno

Alturas Analytics, Inc. The LC MS Experts	Alturas Analytics, Inc. is a bioanalytical laboratory and CRO located in beautiful Moscow, Idaho. For over two decades, we have crafted a talented and experienced scientific team dedicated to supporting drug discovery and development programs and new drug approvals. Our vision supports transformative medicines for a healthier future. We are a growing, privately-owned company specializing in method development, validation, and sample analysis in all biological matrices in support of therapeutic development programs. www.alturasanalytics.com
Oregon State University	Oregon State University's chemistry courses provide a wide range of learning options for students interested in expanding their chemistry knowledge at a location and schedule that works for them. The Department of Chemistry offers courses through the ecampus office, but also digitally through our department which we refer to as either online or hybrid courses. Online courses are offered in a fully digital format. https://chemistry.oregonstate.edu/

NSTI Nuclear Science & Technology Institute Pacific Northwest National Laboratory Washington State University	The WSU-PNNL Nuclear Technology Institute aims to advance knowledge and the applications of that knowledge in nuclear science and technology, and to create the next-generation nuclear workforce, through effective research partnerships between Pacific Northwest National Laboratory (PNNL) and Washington State University (WSU). https://natlab.wsu.edu/nuclearscience/
UC Riverside University of California | Department of Chemistry	The Department of Chemistry at UC Riverside is a rapidly growing department, with outstanding faculty, increasing students, new research programs in multidisciplinary areas of the chemical sciences, and state-of-the-art instrumentation continues added to our Analytical Chemistry Instrumentation Facility (ACIF) to support our research programs. These changes are making our department even stronger and more diverse, and are making our department even more attractive as a place to study chemistry. https://chem.ucr.edu/
University of Idaho Department of Chemistry	The Chemistry Department at the University of Idaho offers B.S., M.S., and Ph.D. degrees. Undergraduate majors can choose between General, Professional, Pre-Med, and Forensic B.S. degree options. Of these, the Professional B.S. degree is certified by the American Chemical Society. Ph.D. and M.S. students can conduct research in Analytical, Inorganic, Organic, and Physical Chemistry. Projects with an emphasis on biological and environmental studies are especially popular. A non-thesis option is also available for the M.S. degree. The Department has an excellent suite of instrumentation and ample laboratory space. Our faculty is of the highest caliber, both as teachers and as researchers. We are eager to enroll new students and to prepare them for a rewarding career in Chemistry! https://www.uidaho.edu/sci/chem
University of Nevada, Reno	The Department of Chemistry at the University of Nevada, Reno is a teaching- and research oriented department offering graduate degrees in Chemistry (MS and PhD) and Chemical Physics (PhD, joint with the Department of Physics). Our graduate students participate in state-of-the-art research within all fields of modern chemistry. As a relatively small program, we are provide close interactions among our faculty and students. www.unr.edu/chemistry

College of Arts & Sciences Department of Chemistry	Chemistry is the “central science” and we are excited about the transformational discoveries and educational advances that our faculty, staff, students, and alumni contribute to every day. Apply to our program and you too can be a part of our scientific breakthroughs. Our three focus areas are chemistry of radiological systems; materials and interfacial science; and chemistry of biological systems. https://chem.wsu.edu/
NUCLEAR SCIENCE CENTER WSU	The WSU Nuclear Science Center (NSC) provides a collaborative environment where WSU faculty, staff, students, and clients can succeed in their basic and applied nuclear science research goals. The NSC prepares WSU students for successful entry into the scientific workforce, provides the pathway to discovery in novel research, and makes impactful contributions to science and to the people who work and study here. The Center is a multidisciplinary teaching, research, and service endeavor designed to make high-impact contributions to nuclear science, national and international security, nuclear non-proliferation, and emergency readiness. https://nsc.wsu.edu/
PNNL	Through the PNNL-WSU Distinguished Graduate Research Program (DGRP), Ph.D. students will earn a stipend along with benefits, funded by their WSU and PNNL advisors, while working under a prestigious graduate committee on nationally relevant research. It is a unique opportunity to tap into the knowledge and world-class research infrastructure available at both institutions. https://natlab.wsu.edu/dgrp/

NORM 2024 Events

June 22nd (1 – 3 pm)

Breaking Borders: Building Bonds at the Palouse Discovery Science Center

Sponsored by the WSU Nuclear Science Center

Join us for family fun at the Palouse Discovery Science Center! Kids of all ages will enjoy engaging, educational, hands-on science exhibits throughout the Center, and the Washington – Idaho Border Section will host chemistry activity tables designed for ages 3 – 12 that feature tie-dye shirt making (you get to keep the shirt!), slime-making (you get to keep the slime!), beads that reversibly change color when exposed to UV-light (you get to keep these too!), as well as a fun, color-changing demonstration of chemical reactivity. Admission to the Palouse Discovery Science Center is free for all between 1 – 3 pm.

June 23rd (5 – 7 pm)

Opening Reception with ACS Governance

Leading up to the opening plenary session on June 23rd, there will be an opening reception in the exposition hall (Compton Union Building, Senior Ballroom) sponsored by ACS Governance.

June 23rd (8:30 – 10 pm)

Chemistry in a Glass – Wine & Beer Reception

Sponsored by House of Smith

Following the opening plenary lectures there will be a wine and beer reception, sponsored by House of Smith Winery, in the Senior Ballroom of the Compton Union Building.

June 24th (7:00 – 8:00 am)

Donuts with Directors

Join us for an in-person and virtual panel with NSF program officers. Doughnuts will be provided to registrants in CUE 202.

June 24th (9:50 to 10:20 am)

Morning Coffee and Snack Break

Sponsored by ChemScene

Enjoy a coffee and snack break in the CUB Senior Ballroom with break sponsor ChemScene, who will host a focus group from 9:55 to 10:15 am at the Expo Stage.

June 24th (12:00 to 1:30 pm)

The Women Chemists Committee (WCC) Luncheon

Honoring Joan Broderick, 2019 ACS Alfred Bader Award winner in Bioinorganic or Bioorganic Chemistry and a Washington State University alum. The program will include an update from representatives of the national WCC and a keynote address by Dr. Broderick in the CUB Junior Ballroom (Room 212). She will describe key milestones, motivating forces, scientific and personal passions and challenges that drove her career decisions, and triumphs.

June 24th (12:00 to 1:30 pm)

Pizza Lunch

Sponsored by NORM Expo

To help Break Borders and Build Bonds, for the individuals not attending the WCC Luncheon, there will be a pizza lunch available in the CUB Senior Ballroom sponsored by the NORM exhibitors.

June 24th (3:05 to 3:25 pm)

Afternoon Coffee and Snack Break

Sponsored by Bettersize

Enjoy a coffee and snack break in the CUB Senior Ballroom with break sponsor Bettersize, who will host a focus group from 3:05 to 3:25 pm at the Expo Stage.

June 24th (5:00 to 6:30 pm)

University of Idaho and Washington State University Alumni and Friends Reception

Sponsored by Merry Cellars, Rivaura, and Colter's Creek Winery

In an effort to break borders and build bonds: Washington State University and the University of Idaho would like to invite alumni, friends, and colleagues to reconnect at a reception in the CUB Junior Ballroom.

June 24th (8:00 to 9:00 pm)

Screening of The PhD Movie

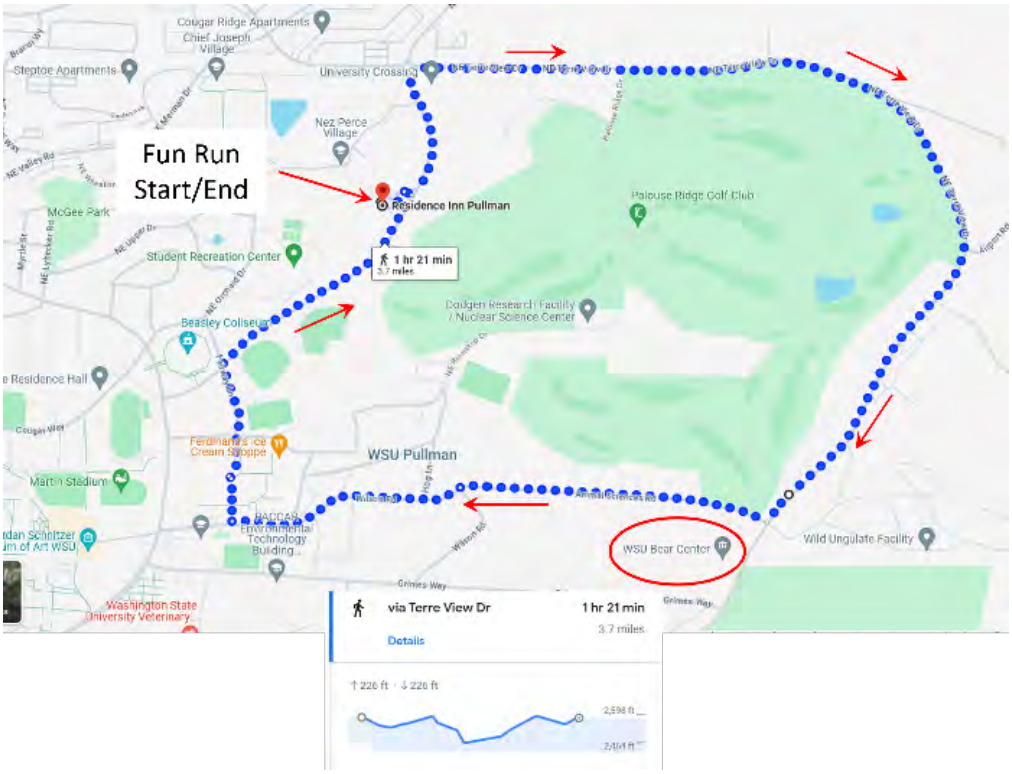
Sponsored by WSU GPSA, University of Idaho GPSA, and University of Idaho Graduate School

Following the lecture by Jorge Cham, The PhD Movie will be screened. In March 2011, Jorge Cham started filming a movie based on the comic series. The film production was a collaboration between Cham and a theater group at the California Institute of Technology.

June 25th (6:30 to 7:30 am)

Fun Run: To (not from) the Bears

Join us for a 2.6 mile roundtrip run to (not from) the Grizzly Bear Center on the WSU campus from the Compton Union Building. The WSU Bear Center is the only grizzly bear research center of its kind in the United States. Upon reaching the WSU Bear Center, the grizzly bears will be visible from a viewing area in the parking lot, where anyone can view the bears foraging or playing in the exercise yard, splashing in their pool, or lounging in their outside runs.



June 25th (9:50 to 10:20 am)

Morning Coffee and Snack Break

Sponsored by Shimadzu

Enjoy a coffee and snack break in the CUB Senior Ballroom with break sponsor Shimadzu.

June 25th (11:00 to 2:30 pm)

Academic and Employment Recruitment Fair

Prospective graduate students and chemists in search of employment should consider our Recruitment Fair, the perfect venue to connect with potential graduate schools and employers in the area at the CUB Junior Ballroom.

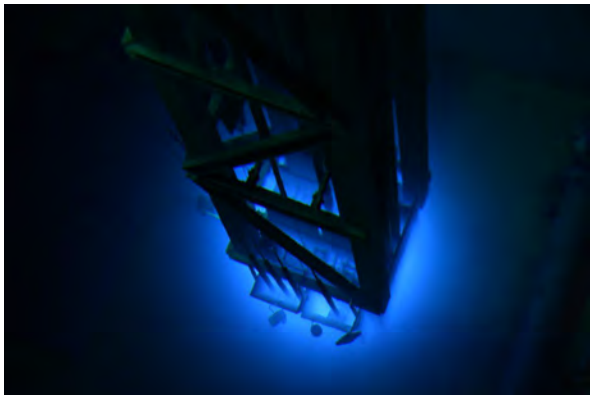
June 25th (12:00 to 1:30 pm)

Academic and Employment Recruitment Fair

Undergraduate researchers will showcase their research amongst graduate school recruiters and potential employers in the CUB Junior Ballroom.

June 25th & 26th (9:00 to 4:00 pm)

Nuclear Reactor Tours



WSU houses a 1 MW TRIGA research reactor. The WSU Nuclear Radiation Center, a WSU department within the Office of Research and located in the Dodgen Research Facility, participates in nationally and internationally pertinent research, isotope production, and various community education initiatives benefiting WSU, other university institutions, and national and worldwide clients. The department and facility are utilized by a variety of fields of study including: nuclear engineering, physics, chemistry, biology, medicine, geology, environmental sciences, archaeology, geology, and traditional and nuclear forensics. We provide laboratory space and equipment for the WSU Chemistry Department Radiochemistry Lab Sections, in addition to utilization of the reactor facility.

June 25th (2:45 to 3:30 pm)

Ice Cream Social

Sponsored by Washington-Idaho Border Section

Stop by the Expo Hall to join us for the Ice Cream Social from Ferdinand's Ice Cream Shoppe, Washington State University's gourmet ice cream shop! Grabbers and scooped ice cream featuring "Apple Cup" Crisp and Chocolate Cookie Dough will be available. Sponsored by the NORM 2024 Conference host section.

June 25th (4:40 to 5:30 pm)

Innovation to Impact (I2I) Part 1: Story of the Cosmic Crisp Apple

The Cosmic Crisp® apple demonstrates how the science of breeding and the art of imagination can work together to create an utterly new and delightful apple. Jeremy Tamsen, Director of Innovation and Commercialization for CAHNRS at WSU will give us a presentation in CUE 203 on the story of the Cosmic Crisp apple! How it takes innovation and collaboration to move things through the market.

June 25th (6:00 to 9:00 pm)

NORM 2024 Awards Dinner

The NORM 2024 Awards dinner will take place at the Pavilion of the Palouse Ridge Golf Club. Come celebrate your honored colleagues and hear a plenary talk from Simon Pimblott on “Nuclear – The Energy of Tomorrow”!

June 26th (8:00 to 9:00 am)

Senior Chemists Breakfast

Come network with senior chemists over breakfast in CUE 512.

June 26th (11:00 to 12:00 pm)

Innovation to Impact (I2I) Part 2: Fast Pitch Contest

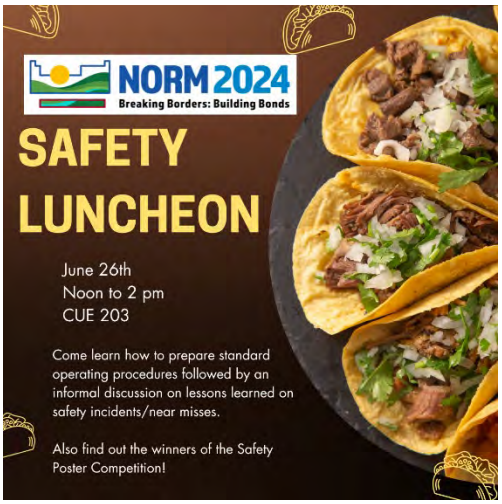
Sponsored by ACS Division of Business Development and Management and Klarquist

Come hear the pitches of teams from the Business Model Canvas Workshop in CUE 203 as a panel of experts will come in to help judge the pitches and decide if the teams are on the right track to commercialization.

June 26th (12:00 to 2:00 pm)

Safety Luncheon

Come join the Environmental Health and Safety team from the University of Idaho and Washington State University to learn the contents and how to prepare standard operating procedures followed by an informal discussion on lessons learned on safety incidents/near misses. We will also award prizes for the top three posters in the Safety Poster Competition!



June 26th (4:30 to 9:00 pm)

Crossing the Border into Idaho: Night out in Moscow, ID

Come join us for a night out in Moscow, Idaho. Starting at Colter's Creek Winery (4:30 – 7 pm) and finishing at Hunga Dunga Brewery (6:30 – 9 pm).

June 27th (7:30 to 12:00 pm)

NOR Board Meeting

The representatives of the local ACS sections of the NOR Board will meet in Troy G5 for breakfast (7:30 – 9:00 am) followed by a meeting from 9:00 am – 12:00 pm to discuss business and upcoming NORM's.

NORM 2024 Program Summary

	Sun June 22	Mon June 23			Tues June 24			Wed June 25			
Plenary Talks	**Eve**	**AM**	**PM**	**Eve**	**AM**	**PM**	**Eve**	**AM**	**PM**	**Eve**	**Plenary Talk Title**
Jose Almirall											National Science Foundation; Programs in the Chemistry Division and Beyond
Susan Ebeler											Chemistry in a Glass: The Borders and Bonds of Wine Chemistry
Jorge Cham											The Power of Procrastination
Simon Pimblott											Nuclear – The Energy of Tomorrow

	Sun June 22	Mon June 23			Tues June 24			Wed June 25		
NORM Workshops	**Eve**	**AM**	**PM**	**Eve**	**AM**	**PM**	**Eve**	**AM**	**PM**	**Eve**
I2I Part 1: Story of the Cosmic Crisp Apple										
ACS Career Workshop: Finding Yourself										
I2I Part 2: Business Model Canvas Workshop and Fast Pitch Contest										
Concept Mapping in the Science Classroom										
ACS Career Workshop: Networking										
Safety Luncheon										
ACS Career Workshop: Resume Reviews										

NORM 2024: Breaking Borders & Building Bonds: June 22nd - 27th, 2024

	Sat June 21	Sun June 22	Mon June 23			Tues June 24			Wed June 25			Thurs June 26
NORM Events	PM	Eve	AM	PM	Eve	AM	PM	Eve	AM	PM	Eve	AM
Breaking Borders: Building Bonds at the Palouse Discovery Science Center												
Reception with ACS Governance												
Main Poster Session												
Exposition												
Chemistry in a Glass Reception												
Safety Poster Competition												
Dounuts with Directors												
Building Bonds/NORM Lounge												
Technical Sessions												
Snack/Coffee Break Sponsored by ChemScene												
Pizza Lunch												
WCC Luncheon												
Afternoon Snack Sponsored by Bettersize												
WSU & University of Idaho Alumni Reception												
Screening of The PhD Movie												
Fun Run To (not From) the Bears												
WSU Nuclear Reactor Tours												
Snack/Coffee Break Sponsored by Shimadzu												
Academic & Employment Fair												
Undergraduate Poster Session												
Ice Cream Social Sponsored by WIBS												
I2I Part 1: Story of the Cosmic Crisp Apple												
NORM 2024 Awards Banquet												
Senior Chemists Breakfast												
ACS Career Workshop: Finding Yourself												
I2I Part 2: Business Model Canvas Workshop and Fast Pitch Contest												
Snack/Coffee Break												
Concept Mapping in the Science Classroom												
ACS Career Workshop: Networking												
Safety Luncheon												
ACS Career Workshop: Resume Reviews												
Crossing the Border into Moscow												
NOR Board Meeting												

NORM 2024: Breaking Borders & Building Bonds: June 22nd - 27th, 2024

	Sun June 22	Mon June 23		Tues June 24		Wed June 25		
Catalysis Track	**Eve**	**AM**	**PM**	**AM**	**PM**	**AM**	**Organizer**	**Symposium Description**
Integration of Thermal Catalysis and Electrocatalysis							Jean-Sabin McEwen & Qiaowan Chang	The presence of internal and external electric fields can affect the catalytic activity and selectivity of heterogeneous catalysts. Recent advances in the synthesis, characterization, and computational modeling of catalytic materials have made measuring and predicting field influences more accessible. Consequently, field-assisted catalysis has emerged as a leading area of research in electrocatalysis. This symposium aims to foster the cross-pollination of knowledge for discovering and studying phenomena and mechanisms in thermal heterogeneous catalysis and electrocatalysis.
Breaking Borders and Building Bonds Through Catalysis							Jack Zhang	This session is dedicated to all aspects of catalysis. Homogeneous, heterogeneous, mixed, molecular catalysis, and biocatalysis. Topics can cover life sciences, electrochemistry, organometallics, photochemistry, experimental and theoretical studies, and efforts towards green catalytic processes.

	Sun June 22	Mon June 23		Tues June 24		Wed June 25		
Synthesis Track	**Eve**	**AM**	**PM**	**AM**	**PM**	**AM**	**Organizer**	**Symposium Description**
Creativity in Metal-Ligand Bonding							Rick Thompson	Ligands have evolved far beyond being the inert, organic ancillaries of transition metals. This session will discuss and celebrate new instances of creative ligand design including cooperativity, redox non-innocence, secondary coordination sphere interactions and more.
Breaking Borders and Building Bonds Through Synthesis							Wilson Bailey	Fundamental research in all branches, theory, or practice of organic and inorganic synthesis. Sessions will focus on broad approaches at synthesis from natural products total synthesis and transformation methodology to coordination chemistry, supramolecular chemistry, and inorganic complex design. Mechanistic studies, both experimental and theoretical should provide novel insight into the course of a chemical reaction. Multi-step synthetic methods, new strategies towards targets of interest.

	Sun June 22	Mon June 23		Tues June 24		Wed June 25		
Chemical Biology Track	**Eve**	**AM**	**PM**	**AM**	**PM**	**AM**	**Organizer**	**Symposium Description**
Advances in Medicinal Chemistry							Cliff Berkman	This symposium invites researchers in the medicinal chemistry and chemical biology space from academia, the pharmaceutical industry, and research institutions. The program will highlight research and development of emerging technologies spanning the spectrum from bench to bedside.
Biochemistry and Biomedicine/Cancer Biochemistry and Biology/Biomedical Engineering and Applications							Weimin Li	This session features the use of biochemistry in biological and biomedical research works at mechanistic, phenotypic, engineering, translational, and clinical levels. Research using omics, mathematical, statistical, AI/machine learning, computational or molecular modeling, and biomaterial technologies to address biological or biomedical questions are welcome to join this symposium.
Breaking Borders and Building Bonds in Chemical Biology							Travis Denton and Anjali Sharma	This symposium will utilize molecular design to probe questions for in vitro or in vivo studies. Mechanistic studies, cell biology work, toxicology, medicine and pharmacokinetics, proteins, nucleic acids, sugars, proteins, or organismic studies are welcome. Exploring cellular function from either a chemical or a biological (or both) prospective can lead to advances for many applications. Medicinal chemistry and chemical neuroscience as well as bioconjugate chemistry would apply to this symposium.
Emerging Technologies for Targeted and Controlled Drug Delivery							Anjali Sharma	This symposium is set to feature presentations by both emerging and established distinguished speakers in the realms of targeted drug delivery, biomaterials, nanotherapeutics, and nanomedicine. Additionally, discussions will cover mechanisms of nanotherapeutics, focusing on achieving target-specific delivery to enhance effectiveness while minimizing potential toxicity.

	Sun June 22	Mon June 23		Tues June 24		Wed June 25		
Chemistry in the Community Track	**Eve**	**AM**	**PM**	**AM**	**PM**	**AM**	**Organizer**	**Symposium Description**
Project SEED, REUs, CUREs, and Partners in Science: Engaging the Community in Research Experiences							Don Warner	This symposium spotlights programs dedicated to fostering authentic research experiences for novice researchers. It invites participants, mentors, and organizers from diverse initiatives such as those who implement course-based research experiences, Research Experiences for Undergraduates (REUs), which are typically NSF or NIH-funded summer research programs for undergraduates, Project SEED, an ACS program providing mentored research experiences for economically disadvantaged high school students, and Partners in Science, funded by the Murdock Charitable Trust, pairing high school teachers with mentors to develop relevant research skills. The symposium encourages describing specific programs and sharing stories about the benefits, successes, challenges, and lasting impacts of these programs.
Breaking Borders and Building Bonds through Chemistry in the Community							Ashley Lamm	Outreach and service in the community broadly defined.
Undergraduate Research							Paul Buckley and Jeremy Lessman	This poster session is open to undergraduates only and will occur in conjunction with the Academic Recruitment Fair.

	Sun June 22	Mon June 23		Tues June 24		Wed June 25		
Chemistry Away from the Bench Track	**Eve**	**AM**	**PM**	**AM**	**PM**	**AM**	**Organizer**	**Symposium Description**
The Chemistry of Historical Archaeology							Ray von Wandruszka	Undergraduate researchers at the University of Idaho partake in a project in which they analyze and identify artifacts that are sent to the lab by museums, state institutions, other universities, and archaeology firms from all across North America. Apart from having a lot of fun with the work, students are also exposed to a wide variety of analytical techniques and the need to find the right approach for each artifact.
Computation in Molecular Sciences							Jagdish Patel and Marty Ytreberg	Join us at the "Computation in Molecular Sciences" symposium, where leading experts converge to explore the intricate realms of molecular modeling, material simulations, computational chemistry, drug design, quantum calculations, and diverse computational analyses including artificial intelligence. This symposium serves as a dynamic platform to unveil groundbreaking advancements in understanding and manipulating the complexities of chemicals, materials, and biochemical phenomena through cutting-edge computational approaches.
Computational Chemistry: From Theory to Applications							Kirk Peterson	This symposium will range from new theoretical developments in both quantum chemistry and molecular simulations to applications designed to predict or interpret experiments. Applications of computational chemistry relevant to environmental issues or energy-related areas are particularly welcome.
Advancing Chemistry through Computation and Artificial Intelligence							Ram Devanathan	Computation and artificial intelligence have a critical role in accelerating chemistry by rapidly identifying molecules with desired properties, designing new materials, illuminating reaction mechanisms, and advancing drug development. This interdisciplinary symposium will explore the latest advances in computation and the potential of large language models, machine learning, and generative artificial intelligence in the field of chemistry.
Breaking Borders and Building Bonds through Chemistry Away from the Bench							Kirk Peterson	With chemistry spreading to a multi-discipline science, many advances in chemistry do not occur in a traditional laboratory setting. This symposium welcomes contributions that advance chemistry outside of the traditional laboratory setting which may include field work, computational analysis, or even casual observations at home.

	Sun June 22	Mon June 23		Tues June 24		Wed June 25		
Environmental Challenges Track	**Eve**	**AM**	**PM**	**AM**	**PM**	**AM**	**Organizer**	**Symposium Description**
Engineering Solutions for Environmental Chemistry Challenges							James Moberly	This symposium will capture application driven research in environmental chemistry, sustainability focused chemistry, valorization and recycling of wastes into useful products, and similar applications toward environmental chemistry challenges.
Breaking Borders and Building Bonds Through Environmental Challenges							James Moberly	This symposium will accept contributions in the areas of complex environmental phenomena (i.e., climate change), biogeochemical cycling, bioremediation and biotechnology, data science, occurrence, fate, and behavior of aquatic or terrestrial contaminants (both on land and in air), sustainable systems, resource recovery, land use management, water research, agricultural research, chemical answers to questions in plant pathology, nematology, entomology, pest management, and crop science.

	Sun June 22	Mon June 23		Tues June 24		Wed June 25		
Pushing Limits of Detection Track	**Eve**	**AM**	**PM**	**AM**	**PM**	**AM**	**Organizer**	**Symposium Description**
Pushing the Boundaries of Sensitivity							Christine Gobrogge	This symposium will provide a forum to discuss the advances in instrument development and detection.
New Frontiers in Mass Spectrometry and Gas-Phase Ion Manipulation							Brian H. Clowers	Focusing broadly on techniques that exploit gas-phase ions for analytical gain, this symposium aims to present new developments, approaches, and methods using mass spectrometry and or ion mobility spectrometry. Given the wide applicability of both techniques, speakers will address both fundamental and applied aspects of these techniques.
Breaking Borders and Building Bonds at the Limits of Detection							Erin Linskey	This symposium will bring together all parts of the analytical operations of measurement science including sampling, measurements, and data analysis: New methods of sampling, emerging contaminants (i.e., PFOA/PFOS). Topics can include bioanalytical chemistry; forensics, archaeological, and medical sciences; chemometrics and data processing; mass spectrometry, microscale and nanoscale systems; electrochemistry; elemental and molecular characterization techniques and instrumentation development; sensing; separations; -omics; new directions in analysis.

	Sun June 22	Mon June 23		Tues June 24		Wed June 25		
Energy Track	**Eve**	**AM**	**PM**	**AM**	**PM**	**AM**	**Organizer**	**Symposium Description**
Chemical Theory and Mechanisms for Sustainable Energy Conversion and Production							Bin Liu	This symposium provides an opportunity to obtain an overview of the current status and latest progress based on mechanistic studies employing density functional theory, molecular simulations, and various synthetic, characterization tools to study waters-splitting, CO_2 conversions, and sustainable energy and fuel productions.
Biobased Materials and Products							Armando McDonald	Biobased products are materials are critical for producing sustainable products from renewable resources that helps guide us away from fossil fuels. Various feedstocks (agricultural and forestry residues, food waste, municipal waste, etc) can be used for generating these products via various processes (thermal, chemical, biological). These products have the potential for being direct replacements for synthetic products.
Unlocking a Sustainable Future: Harnessing the Power of the Hydrogen and Beyond							Haiyan Zhao and Aaron Wilson	Hydrogen is widely viewed as a key enabler of energy transition. Our symposium explores the vast potential processes and technologies for H_2, biofuels, fossil fuel mitigation, renewable natural gas, carbon capture and more. Together, let's chart a course towards a greener, more sustainable world. Your presence is key to the transformative dialogue that will shape the energy landscape of tomorrow.
Exploring the Chemistry of Next-Generation Coolants and Solvents: Radiation-Induced Chemistry							Gregory Holmbeck	Nuclear fission has been championed as a sustainable and reliable carbon-free energy source for providing baseload electricity to bridge the transition between fossil fuels and renewable energy sources. To achieve the widespread adoption of nuclear fission technologies and meet society's growing demand for safe and clean energy, multiple advanced reactor designs and fuel cycle processes are under development. Many of these new technologies envision the use of next-generation coolants and solvents, such as organic solvents, ionic liquids, and molten halide salts. To explore the utility and applicability of these new media under process conditions, a deeper molecular-level understanding of their energetics, structure, interfacial processes, and radiation-induced chemical properties is needed. This symposium will present an overview of our current knowledge and challenges in this area through invited and contributed talks from leading experts. This session will highlight new fundamental and applied research that targets understanding ionizing radiation-induced processes in complex systems that utilize next-generation coolants and solvents.
Exploring the Chemistry of Next-Generation Coolants and Solvents: Structure and Properties of Coolants, Fuels and Solvents							Ruchi Gakhar	Nuclear fission has been championed as a sustainable and reliable carbon-free energy source for providing baseload electricity to bridge the transition between fossil fuels and renewable energy sources. To achieve the widespread adoption of nuclear fission technologies and meet society's growing demand for safe and clean energy, multiple advanced reactor designs and fuel cycle processes are under development. Many of these new technologies envision the use of next-generation coolants and solvents, such as organic solvents, ionic liquids, and molten halide salts. To explore the utility and applicability of these new media under process conditions, a deeper molecular-level understanding of their energetics, structure, interfacial processes, and radiation-induced chemical properties is needed. This symposium will present an overview of our current knowledge and challenges in this area through invited and contributed talks from leading experts. This session will focus on advances in understanding the structure and dynamics of next-generation coolants and solvents, and the identification of emergent behavior for solutes (e.g., actinides and corrosion and fission products) in extreme environments.
Exploring the Chemistry of Next-Generation Coolants and Solvents: Interfacial Processes Under Extreme Environments							Simerjeet Gill	Nuclear fission has been championed as a sustainable and reliable carbon-free energy source for providing baseload electricity to bridge the transition between fossil fuels and renewable energy sources. To achieve the widespread adoption of nuclear fission technologies and meet society's growing demand for safe and clean energy, multiple advanced reactor designs and fuel cycle processes are under development. Many of these new technologies envision the use of next-generation coolants and solvents, such as organic solvents, ionic liquids, and molten halide salts. To explore the utility and applicability of these new media under process conditions, a deeper molecular-level understanding of their energetics, structure, interfacial processes, and radiation-induced chemical properties is needed. This symposium will present an overview of our current knowledge and challenges in this area through invited and contributed talks from leading experts. This session will present advances in our mechanistic knowledge of interfacial processes that underpin the molecular level properties and behavior of structural materials in extreme environments, including highly corrosive coolants and solvents, high temperature, and ionizing radiation fields.
Breaking Borders and Building Bonds through Energy							Haiyan Zhao	In particular, this symposium emphasizes mechanistic understanding of the relevant chemical processes. Detailed mechanisms depicting complex processes related to sustainable chemical and energy productions, energy conversions are instrumental to a variety of technologies that advance energy conversions, non-carbon-based fuel productions, and CO2 utilizations. In the past twenty years, we witnessed how the mechanisms established with the state-of-the-art computational, characterization, and experimentation techniques have led to the theories and principles responsible for new materials discovery and system design. Ultimately, the pace of the fuel cell, battery, and green hydrogen production revolution has accelerated.

	Sun June 22	Mon June 23		Tues June 24		Wed June 25		
Interfaces Track	**Eve**	**AM**	**PM**	**AM**	**PM**	**AM**	**Organizer**	**Symposium Description**
3D Printing of Biomaterials and Drug Delivery							Susmita Bose and Amit Bandyopadhyay	This session will include presentations in the areas of (I) Processing of 3D printed biomedical devices, (ii) tissue-biomaterial interactions, (iii) in vitro and in vivo property evaluation, (iv) nanoscale surface modification and encapsulation of drugs for bone healing, (v) drug delivery from micro and nanoscale devices.
Creating and Breaking the Borders in Molecular Recognition							Gonzalo Campillo-Alvarado and Kraig Wheeler	The discovery, application, and study of non-covalent interactions and supramolecular aggregates have sparked transformative advances in materials chemistry, bridging various disciplines such as organic, inorganic, analytical, and physical chemistry. Notably, molecular recognition has revolutionized catalysis, sensing, separations, drug delivery, and the emerging fields of molecular machines and dynamic materials. This symposium provides a dynamic platform for interactive discussions and presentations on the broad scope of molecular recognition and its diverse applications. Encouraging cross-disciplinary collaborations and the exchange of innovative ideas, we invite experimental and theoretical chemists to participate, encompassing the molecular recognition of small molecules in solution, gas, and solid-state.
Interfacial Chemistry Enables Sustainable and Resilient Infrastructure Materials							Xianming Shi	This session will feature several talks that showcases how understanding and/or manipulating the chemistry at interfaces within infrastructure materials can translate to enhanced durability, environmental sustainability, and/or resilience of such materials (cementitious composites, polymeric composites, wood composites, asphaltic materials, etc.). The interfacial chemistry plays an enabling role in recent advances of infrastructure materials. The session will conclude with a roundtable discussion on how chemists and infrastructure engineers could collaborate to tackle important challenges faced by the infrastructure industry.
Electrochemistry							Frank Cheng	This symposium seeks the latest advancements in electrochemistry. Topics may include energy storage and conversion, corrosion, sensors, bioelectrochemistry, chemically modified electrodes, electrosynthesis, electrocatalysis and electrochemistry of carbon and other materials.
Structures, Kinetics, and Thermodynamics at Interfaces							Ursula Mazur	We welcome contributions regarding physio-chemical aspects of processes at soft and solid interface, such as structures, and kinetics and thermodynamics of chemical reactions, adsorption, and solvation. Basic theories intended to explain these interfacial processes and results of advanced ab initio and molecular-dynamics simulations will also be accepted.
Breaking Borders and Building Bonds at Interfaces							Jeff Bell	Interdisciplinary topics from chemists, engineers, physicists, and biologists towards interfacial discoveries and processes for applications. Materials science, biological and medical applications of materials, bioengineering, solid-state chemistry (including sol-gel chemistry) and functional inorganic devices, organic electronic devices, nanostructured materials, composites, polymers, surfaces, and the many applications. This track will also include the fabrication and processing of electronic, magnetic, or optical materials and devices.

	Sun June 22	Mon June 23		Tues June 24		Wed June 25		
Nuclear Science Track	**Eve**	**AM**	**PM**	**AM**	**PM**	**AM**	**Organizer**	**Symposium Description**
Advances in Actinide and Lanthanide Chemistry							Jim Boncella, Xiaofeng Guo, and Neil Henson	The chemistry of compounds encompassing the 5f and 4f elements. From fundamental studies of their synthesis, structure, and bonding to separations chemistry to nanoparticle chemistry.
The Nucleus, Radiation, and Chemistry Today							Alexander Chemey	This symposium will focus on all areas of nuclear chemistry, radiochemistry, radiation chemistry, and nuclear medicine.
Geochemistry and Mineralogy of Critical Metal Elements							Xiaofeng Guo, Johannes Haemmerli, Xin Zhang, and Zheming Wang	The symposium aims to establish a platform for interdisciplinary researchers from chemistry, geology, biology, computational chemistry, and materials sciences to share research on geochemistry and mineralogy of critical metals, in terms of their resources, formation and alteration, deposit mining, tailing waste, and separation/remediation. Appropriate topics include but are not limited to: Rare-earth elements mineralization and fractionation; Mineral nucleation and crystal growth mechanisms; Chemistry of hydrothermal fluids and minerals; Molecular simulations and solubility/speciation and spectroscopic studies; Fluid-driven reactive transport and thermodynamic modeling in natural systems; Waste contamination and remediation; Recycling critical metals from tailing waste.
Advancements and Training in Nuclear Materials Processing and Sensing in Harsh Environments							Sam Bryan and Neil Henson	The ability to detect small quantities of analytes from complex environments such as complex environmental solutions, nuclear reprocessing streams, and related wastes can be challenging. The work presented in this symposium will describe the development of various analytical techniques including electrochemistry, spectroscopy, separation science, and radiochemistry, that are working to resolve these challenges. This symposium is also directed at workforce development in nuclear and non-proliferation applications.
Materials in the Nuclear Fuel Cycle: From Cradle to Grave							John McCloy and Xiaofeng Guo	The proposed symposium will bring together a group of experimental and theoretical scientists focused on issues and challenges in solid state and materials chemistry raised in the nuclear fuel cycle. Appropriate topics include but are not limited to: Actinide and rare-earth elements mineralization and recovery; Accidental tolerant fuels, ceramic and metallic fuel, molten salt fuel cycle; Spent nuclear fuel and waste form dissolution, degradation, and long-term stability; Rad waste contamination and remediation; Nuclear waste geological disposal.
Breaking Borders in the Nuclear Science Enterprise							Neil Henson	This symposium will provide a forum to present recent progress in the application of nuclear science to current problems including the startup of next gen nuclear reactors, progress on cleanup at the Hanford site, developments in forensics for non-proliferation, response to unplanned radiological events, etc.

SUNDAY EVENING

3D Printing of Biomaterials and Drug Delivery

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by MEDI
A. Bandyopadhyay, S. Bose, *Organizers*

5:00 - 7:00

12. Nature meets science: Carvacrol aldehyde for bone regeneration. **A. Dahiya**, S. Bose

13. Quercetin-Zinc (II) complex loaded in 3D printed tricalcium phosphate for osteogenic and antitumorigenic treatment. **C. Toulou**

14. Indian gooseberry encapsulated liposomes for bone tissue engineering. **B. White**

15. Geometric optimization of polyvinyl alcohol microneedles for enhanced cutting performance. **A.J. Lefors**, S. Rahmani, P. Akbari, R. Chen

16. Withdrawn

17. Natural medicine release from 3D printed calcium phosphate scaffolds for bone tissue engineering. **U. Majumdar**, A. Dahiya, Y. Jo, P. Kushram, S. Bose

Advances in Actinide and Lanthanide Chemistry

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by NUCL
J. M. Boncella, X. Guo, *Organizers*
N. J. Henson, *Presiding*

5:00 - 7:00

18. Interrogating the Fe/U interface towards predictive models for environmental remediation. **B.A. Rooney-Sailand**, L.M. Moreau

19. Crystallographic and electronic structure of lanthanide-doped CeO_2 nanoparticles. **P. Jensen**

20. Investigation of thermal stabilities of mixed anion bearing Sodalites to study immobilization of radioisotopic chlorine and iodine. **K. Dahal**, S. Chong, D. Bollinger, N. Stone-Weiss, H. Zhong, B. Riley, S.P. Beckman, X. Guo, J. McCloy

Advances in Medicinal Chemistry

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by MEDI
C. E. Berkman, *Organizer*

5:00 - 7:00

21. Biocatalytic aza-Michael addition of aromatic amines to enone using α-amylase in water. **S. DUTT**

22. Optimizing procyanidin extraction from coffee pulp: A comparative study of microwave-assisted, ultrasound-assisted, and hybrid extraction methods. **M.B. Bamikale**, J.S. Cortés

23. Dimeric ATF compounds: Promising antibacterial agents. **C. Sprague**, K. Cornell

Advancing Chemistry through Computation and Artificial Intelligence

Compton Union Building
CUB Senior Ballroom (220)

R. Devanathan, *Organizer*

5:00 - 7:00

24. Authentication and contamination assessments of food products using a conformal prediction based consensus one-class classification. **H. Redd**, J.H. Kalivas

25. Computational modeling of plutonium oxide fate and transport. **M. DeSmet**, **L. Hubbard**, a. bautista, S. Muller, A. Nicholas, A. Casella, E. Buck, A. Williams, N.J. Henson, S. Miley, A. Carman

Biobased Materials and Products

Compton Union Building
CUB Senior Ballroom (220)

A. G. McDonald, *Organizer*

5:00 - 7:00

26. Investigating the effects of Alkali and Alkaline Earth Metallic (AAEM) species during biochar gasification of raw and treated samples in O_2 and H_2O mediums. **M. Arshad**

27. Influence of metakaolin and acetic acid on sodium silicate-based inorganic bonded wood composites. **A.M. Lehman-Chong**, M. Maughan, A.G. McDonald

28. Preliminary investigations on the thermal properties and flame retardancy of laccase grafted lignin micro/nanoparticles (LMNPs) on bamboo. **J. Tongco**, L. Cai

29. In situ biomineralization of metal phytates in pine wood for improved flame retardancy. **A. Farhabi**, L. Cai

30. Weathering performance of cardanol-based resin-treated wood. **L. Liang**, L. Cai, A.G. McDonald

31. Development and evaluation of an innovative mycelium-based bio-composite material for insulation applications. **E. Osei-Bonsu**, L. Cai

Biochemistry and Biomedicine/Cancer Biochemistry and Biology/Biomedical Engineering and Applications

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by MEDI
Financially supported by WSU E.S.F College of Medicine &

Office of Research
W. Li, *Organizer*

5:00 - 7:00

32. Dissecting the metabolic roles of lactate in breast cancer cell survival. **W.C. Hiscox**, W. Li

33. Investigating a potential protein-protein interaction between transcription factor PAX6 and Ribosomal Protein S20: Applications in Biochemistry and Biomedicines. **M. oladayo**, T. Kroll

34. Unveiling buried nerves with near-infrared fluorophores in fluorescence-guided surgery. **G. KUMAR**

35. Traceless phosphoryl mediated isopeptide crosslinking. **R.K. Ballard**, E. Savoy, C.E. Berkman

36. Withdrawn

37. [FeFe]-hydrogenase maturation: Refining the defined *in vitro* maturation. **A. Marlott**, B. Balci, A. Teye, A. Pagnier, E.M. Shepard, W.E. Broderick, J.B. Broderick

38. Synthesis of building blocks for novel DNA-targeting oligonucleotides. **T.J. Dohm**, **M. Rahman**, P.J. Hrdlicka

Breaking Borders and Building Bonds at Interfaces

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by COLL
J. Bell, *Organizer*

5:00 - 7:00

39. Surface chemistry and binding interactions of Lignin with Polymer-encapsulated gold nanoparticles acting as model microplastics. **O.A. AKINSOLA**, S.E. Lohse

40. Design, synthesis, and scale-up optimization of various peptide-based zwitterionic cross-linker species for incorporation into polyampholyte hydrogels. **S. Oneida**

Breaking Borders and Building Bonds in Chemical Biology

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by MEDI
T. T. Denton, A. Sharma, *Organizers*

5:00 - 7:00

41. Rapid Sensing of SARS-CoV-2 on GUITAR (pseudo-graphite). **M. Okeke**, D. Koirala, I.F. Cheng

42. Accelerated and scalable synthesis of mixed-layered glycodendrimers using copper-free click chemistry. **A. RANI**, V. Jain, A. Sharma

43. Hepatocytes-targeted silibinin nanoconjugate for the treatment of acute liver injury. **V. Jain**, A. Sharma, A. RANI

44. Targeted nanotherapy for the treatment of proliferative vitreoretinopathy. **S. GOPALAKRISHNAN**, A.I. Dar, A. RANI, K. Hsu, A. Szczesniak, M. Kelly, A. Sharma

45. Development of cannabinoid-dendrimer conjugate for efficient wound healing by localized controlled inflammation. **A.I. Dar**, A. RANI, S. Gopalakrishnan, A. Sharma

Breaking Borders and Building Bonds Through Catalysis

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by CATL
Q. Zhang, *Organizer*

5:00 - 7:00

46. Hydrogenation and dehydrogenation of N-heterocycles under Cp*Co (III)-catalysis. **P. Dahiya**, B. Sundararaju

47. Nickel-cobalt bimetallic phosphides as bifunctional electrocatalysts for electrochemical water splitting. **L. Zhu**, S. Yu, C.E. Umhey, H. Lin, J. McEwen, Q. Zhang, Y. Lin

48. Synthesis of Rh-Pd nanoparticles via neutron activation. **R.A. Adewale**, **L.M. Moreau**

Breaking Borders and Building Bonds Through Energy

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by ENFL
H. Zhao, *Organizer*

5:00 - 7:00

49. Synthesis of high aluminum content cubic ordered mesoporous silicates. **I. Joyce**, N.P. Stadie

Breaking Borders and Building Bonds Through Environmental Challenges

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by ENVR
J. Moberly, *Organizer*

5:00 - 7:00

50. Colorimetric sensor array: Rapid and sensitive approach for detecting emerging nanomaterial contaminants. **I. Ede**

51. Toxic chemicals in products: A policy approach. **S. Zigah**

Breaking Borders and Building Bonds Through Synthesis

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by CATL
W. D. Bailey, *Organizer*

5:00 - 7:00

52. Stereocontrolled synthesis of pharmaceutically pertinent 3-methylenetetrahydropyrans as potential antidiabetic agents. **I. Anosike**, T.K. Beng

53. Design, Development, and Synthesis of variable length zwitterionic crosslinkers for non-fouling polyampholyte hydrogels. **L. Dresler**, S. Oneida, K.V. Waynant

54. Synthesis of 2,*N*3-disubstituted 4(3*H*)-quinazolinones via *N*3-alkylation and C2-amination. **K. Kim**, M. Saroya, F. Gesinde

55. Withdrawn

Computational Chemistry: From Theory to Applications

Compton Union Building
CUB Senior Ballroom (220)

K. A. Peterson, *Organizer*

5:00 - 7:00

56. Relativistic ab initio calculations of the thermochemical properties of uranium oxides, sulfides, and selenides. **A. Hunt**, K.A. Peterson

57. Theory of integral and differential infinity: Applications on the atomic and nuclear scales. **D.W. Wester**

58. Molecular dynamics and docking simulations to predict inhibitors against zinc transporters (ZnT). **I. Batta**, G. Sharma

59. Direct air capture of CO_2 using amino-acid sorbents at oligomer decorated Air-aqueous interfaces. **N. Kumar**, U. Premadasa, B. Doughty, V. Bryantsev

60. Ion-ice reactions in astrochemical models. **K. Darnell**, D. Lopez-Sanders, C.N. Shingledecker

61. Synthesis and density functional theory investigation of gold deposition on silver for core-shell nanocubes with enhanced stability and sensing applications. **A. Oluwafemi**, Y. Bao, T. Kowalczyk

Creating and Breaking the Borders in Molecular Recognition

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by ANYL and COLL
G. Campillo-Alvarado, K. A. Wheeler, *Organizers*

5:00 - 7:00

62. Oriented growth of 2D metal-organic frameworks at solid-liquid interfaces. **S. Shin**, J. Tao, N. Canfield, M. Bowden, J. Heo, B. Sivakumar, L. Liu, D. Li, J. Liu, J. DeYoreo, P.K. Thallapally, M. Sushko

63. Impact of molecular shape on crystal assembly. **M. Dun**, K.A. Wheeler

64. Structural and spectroscopic characterization of Cu and Zn complexes supported by a tetradentate N_2S_2 ligand. **M. Kilker**

Electrochemistry

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by ANYL
I. F. Cheng, *Organizer*

5:00 - 7:00

65. Advancing solid electrolyte performance by protein as a dual-functional bridge for Li metal batteries. **C. Wang**, l. Ren, C. Ying, J. Liu, W. Zhong

66. Non precious metal phosphides and nitrides as HER and OER catalysts. **C. Umhey**, J. McEwen, L. Zhu, Y. Lin

Engineering Solutions for Environmental Chemistry Challenges

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by ENVR
J. Moberly, *Organizer*

5:00 - 7:00

67. Effective removal of antibiotics from aqueous solutions: Using deep eutectic solvent immobilized graphene oxide based adsorbents. **a. goyal**, E. Nashef

68. Bromine mediated tacticity modification: The effects of chemical environment and thermomechanical processing. **B. Bliss**, B. Zhao, W. Liu, J. Zhang

Integration of Thermal Catalysis and Electrocatalysis

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by CATL
Q. Chang, J. McEwen, *Organizers*

5:00 - 7:00

69. Development of High-yield Guerbet Alcohol over NiCuSn/MgAlO catalyst. **Y. Kwon**, M. Shao

70. Probing the TiO_2 surface through water and methanol adsorption. **C. Moore**, B.M. Moskowitz, J. McEwen, S. Raugei

391. Exploring the potential of electrogens in a microbial fuel cell-hydroponic system through multi omics approach. **K. Sharma**, C. Sato, S. Pradhan

Interfacial Chemistry Enables Sustainable and Resilient Infrastructure Materials

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by COLL
X. Shi, *Organizer*

5:00 - 7:00

71. Utilizing thermostable properties of GUITAR (pseudo-Graphite) for rapid and highly specific ssDNA generation. **J.A. Plascencia**, D. Koirala, I.F. Cheng

Materials in the Nuclear Fuel Cycle: From Cradle to Grave

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by NUCL
X. Guo, J. McCloy, *Organizers*

5:00 - 7:00

72. Iron sulfide nanoparticles for capturing volatile contaminants. **N. Shuvo**, J. Bussey, A.J. Lere-Adams, C. Dixon Wilkins, S. Karcher, J. McCloy

73. Molten salt synthesis of metal borides for nuclear waste forms. **E. Espinoza**, V. Augustine, A. Chemey

74. Investigation of the alkali and alkali-earth effect on crystallization of SnO_2 in LAW glasses for WTP. **A.J. Lere-Adams**, J. McCloy

75. In situ raman spectroscopy of Zr-Doped UO_2. **A. Totten**, S. Karcher, X. Guo, J. McCloy

76. 222-S Laboratory method development: Complexant analysis by high performance liquid chromatography. **T. Clauss**, E. Panisko, H. Anastos

Project SEED, REU's, and Partners in Science

Compton Union Building
CUB Senior Ballroom (220)

D. L. Warner, *Organizer*

5:00 - 7:00

77. N-Acyl homoserine lactone analogs as quorum sensing signal synthase modulators in B. japonicum. **L.B. Snow**, S. Jude, J. Abraham, M. Abrew, E.C. Brown, R. Nagarajan

Structures, Kinetics, and Thermodynamics at Interfaces

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by COLL
U. Mazur, *Organizer*

5:00 - 7:00

78. Heavy-atom tunneling in Cascade electrocyclizations in the biosynthesis of natural products. **I. Jain**, C. Castro, W.L. Karney

79. Effect of chain length on the physiochemical properties of perfluoroalkyl substances at the surface of water. **L. Jenkins**, J.D. Cyran

The Nucleus, Radiation, and Chemistry today

Compton Union Building
CUB Senior Ballroom (220)

Cosponsored by NUCL
A. Chemey, *Organizer*

5:00 - 7:00

80. Development of analysis codes for understanding element yields in nuclear fission. **L. Walker**, J. Olinger, A. Chemey

81. Design considerations for STARDUST, a nuclear fission scattering chamber. **J. Olinger**, L. Walker, A. Chemey

82. Design and building HPGe cooling array project. **J. Jaffe**, C. Jablonski, L. Walker, A. Chemey

83. D_2O box facility for higher-purity ^{135}Xe production at the Washington State University TRIGA Reactor. **M. Santillan**, C. C. Hines

MONDAY MORNING

Geochemistry and Mineralogy of Critical Metal Elements

Smith Center for Undergraduate Excellence
CUE 418

Cosponsored by NUCL
X. Guo, J. Haemmerli, Z. Wang, X. Zhang, *Organizers*

8:05 Introductory Remarks .

8:10 84. Preparation of divalent Eu materials for thermodynamic study under hydrothermal conditions. **N.S. Yaw**, Y. Cortez, A. Migdisov, X. Guo

8:30 85. Incorporation of Ni and Zn affects the redox reactivity of goethite. **S. Mergelsberg**, D. Latta, M. Scherer, B. Popejoy, E.J. Bylaska, E.S. Ilton

9:10 86. Probing lanthanide structure and speciation with optical spectroscopy. **Z. Wang**

9:30 87. Large language model-based structured information retrieval and dataset construction: examples on rare earth mineral thermodynamic properties. **J. Liu**, H. Anderson, N. Waxman, D. Biehler, H. Pulivarthy, X. Guo

9:50 Morning Coffee/Snack Break.

10:20 88. Development of an internally consistent thermodynamic database for REE minerals and crystalline solids. **C. Zhu**, R. pan, R. Virk

11:00 89. Calorimetric and structural characterization of gamma irradiated rare earth rhabdophanes. **E.C. Kindall**, S. Bang, M. Reece, X. Guo

11:20 90. Availability and trends in thermodynamic data of solid rare earth element compounds with a specific focus on carbonate phases. **M. Scharrer**, G.A. Agbanga, B.L. Brugman, M. Guild, J. Liu, X. Guo, A. Navrotsky

3D Printing of Biomaterials and Drug Delivery

Smith Center for Undergraduate Excellence
CUE 219

Cosponsored by MEDI
A. Bandyopadhyay, S. Bose, *Organizers*

8:25 Introductory Remarks.

8:30 91. Development of biomimetic functional materials using sequence-defined peptoids. **C. Chen**

9:00 92. Precision biofabrication of complex calcified tissues and engineered cancer models in-vitro and ona-chip. **L. Bertassoni**

9:30 93. 3D-printed flexible microfluidic health monitors for in-situ sweat analysis and biomarker detection. C. Chen, Y. Fu, S. Sparks, Y. Lin, D. Du, **K. Qiu**

9:50 Morning Coffee/Snack Break.

10:20 94. Lipid nanoparticle-encapsulated gingerol on 3D-printed scaffolds for orthopedic applications. **B. White**, S. Bose, V. Chaudhari

10:40 95. Morphology and photoresponsive behavior of spiropyran-conjugated poly(N-isopropylacrylamide) and polyvinyl alcohol blend cryogel. **s. rahmani**, S. Simpson, A.J. Lefors, P. Akbari, R. Chen

11:00 96. Revolutionizing bone tissue engineering with botanical biomaterials. **A. Dahiya**, S. Bose

11:20 97. 3d-printed microprecise spatiotemporal delivery system for in situ tissue engineering of multi-tissue and their interfaces. **S. Tarafder**

Advancements and Training in Nuclear Materials Processing and Sensing in Harsh Environments

Smith Center for Undergraduate Excellence
CUE 419

Cosponsored by NUCL
S. D. Branch, H. Felmy, A. French, N. J. Henson, *Presiding*

8:25 Introductory Remarks.

8:30 98. Three decades of process monitoring applications directed toward the nuclear fuel cycle. **S.A. Bryan**, A. Lines, G. Nelson, J. Bello

9:10 99. Raman spectroscopic quantification of hydrogen isotopes using chemometric models applied across multiple systems. **H. Felmy**, R. Cox, A. Espley, E. Campbell, B. Kersten, H. Lackey, S.D. Branch, S.A. Bryan, A. Lines

9:30 100. Utilizing spectroscopic on-line monitoring to study the mass balance in a simulated TALSPEAK process. **P. Tse**, N.P. Bessen, A. Espley, H. Felmy, H. Lackey, R. Rodrigues, A. Parekh, S. Potter, G. Nelson, J. Allred, G.B. Hall, B. Seiner, G.J. Lumetta, S.A. Bryan, A. Lines

9:50 Morning Coffee/Snack Break.

10:20 101. Automated control of pH for a citric acid based TALSPEAK batch extraction process using real time Raman spectroscopy: chemometric model construction. **G.L. Nelson**, S. Potter, A. Espley, T. Serrano, P. Tse, S.A. Bryan, A. Lines

10:40 102. Utilizing Raman spectroscopy for industrial control in nuclear environments. **T. Serrano**, G.L. Nelson, S. Potter, A. Espley, P. Tse, N. Bessen, H. Felmy, J. Allred, K. Ross, S.A. Bryan, A. Lines

11:00 103. Raman spectroscopy-based process monitoring for real-time control of solution pH. **A. Espley**, S. Potter, G. Nelson, T. Serrano, P. Tse, S.A. Bryan, A. Lines

11:20 104. On-line monitoring of simulated Hanford waste streams in turbulent and laminar flow conditions with dual Raman probes. **N. Boily**, A. Schafer Medina, H. Felmy, S.A. Bryan, A. Lines

11:40 105. Raman fiber optic probe development for hazardous applications. **J. Bello**

Advancing Chemistry through Computation and Artificial Intelligence

Smith Center for Undergraduate Excellence
CUE 318

R. Devanathan, *Organizer*

8:25 Introductory Remarks.

8:30 112. ChemReasoner: Heuristic search over a large language model's knowledge space using quantum-chemical feedback. **S. Choudhury**

9:10 113. FoldX free energy prediction corrections using neural networks. **J. Barnes**, J. Suresh Patel, M. Ytreberg

9:30 114. HTModel: Using natural language processing model Molecular Transformer to predict hydrotreating reactions. S.C. Eswaran, L.N. Marrlett, R. Rallo, **M.V. Olarte**

9:50 Morning Coffee/Snack Break.

10:20 115. Use of relativistic composite methods for accurate thermochemistry of actinide-containing molecules. **K.A. Peterson**

11:00 116. Enhanced models for spent fuel with machine learning. **S. Muller**, M. Dinpajooh, M. LaCount, A.M. Ritzmann

Biochemistry and Biomedicine/Cancer Biochemistry and Biology/Biomedical Engineering and Applications

Smith Center for Undergraduate Excellence
CUE 319

Cosponsored by MEDI
Financially supported by WSU E.S.F College of Medicine & Office of Research
W. Li, *Organizer*

8:25 Introductory Remarks.

8:30 117. Designing podophyllotoxin-based inhibitors to combat Guanylate Binding Protein 1 (GBP1) derived treatment resistance in ovarian cancer. **S.V. Malhotra**

8:50 118. Quantitative proteomic analysis reveals unique Hsp90 cycle-dependent client interactions. **J.L. Johnson**, E. Rios

9:10 119. Nanotechnology-enhanced biosensors for biomedical and healthcare applications. **D. Du**

9:50 Morning Coffee/Snack Break.

10:20 120. Using directed evolution and rational protein design to create biomaterials to recapitulate angiogenesis. **M.H. Hettiaratchi**, J. Svendsen, C. Asnes, M. Ford

11:00 121. Fluorescence guided surgery can improve surgical outcomes. **L.G. Wang**

11:20 122. Fatty acid efflux in capacitated sperm. **T. Chauvin**, J. McAllister, P. Gaburak, C. Heflick, A. Tanggono

Chemical Theory and Mechanisms for Sustainable Energy Conversion and Production

Smith Center for Undergraduate Excellence
CUE 409

Cosponsored by ENFL
B. Liu, *Organizer*

8:25 Introductory Remarks.

8:30 123. Protonic ceramic electrochemical cells for power generation, H_2 production and CO_2 conversion. **F. LIU**

9:10 124. Theory and modeling of Sm-doped-CeO2-supported Ni-Ru bimetallic catalyst for dry and steam reforming of methane. **H. Deng**, F. Liu, C. Duan, B. Liu

9:30 125. Designing dual-site catalyst systems aided by kinetic modeling. **B. Liu**

9:50 Morning Coffee/Snack Break.

10:30 126. Ultrafast ligand planarization in metal-organic frameworks gates charge transfer: spectroscopy-guided rational design toward efficient photocatalysis. **L. Lancaster**, T. Krueger, E. Musa, K.C. Stylianou, C. Fang

10:50 127. Enhancing photoelectrochemical performance for water splitting through graphene composite materials. **Y. . Sirina**

Creating and Breaking the Borders in Molecular Recognition

Smith Center for Undergraduate Excellence
CUE 207

Cosponsored by ANYL and COLL
G. Campillo-Alvarado, K. A. Wheeler, *Organizers*

8:25 Introductory Remarks.

8:30 128. Halogen bonding with diarylhaloniums. **D.R. Stuart**

9:10 129. Structural and spectroscopic investigation of Oxo-bridged Fe^{III} and Co^{III} clusters supported by a tripodal hydroxyl-imine ligand. **K. Seabourn**, K.A. Wheeler, S. Stoian

9:30 130. Fluorination as a supramolecular switch: Directing boron coordination vs co-crystal

formation. **S. Agarwal**, J.D. Loya, G. Campillo-Alvarado, N.Z. Lutz

9:50 Morning Coffee/Snack Break.

10:20 131. Assessing the magnetic anisotropy of a series of Co(II) complexes with N4S2 coordination. **M. Idrees**, S. Stoian

10:40 132. Molecular confinement and separation using an adamantane based supramolecular architecture. **N. Lutz**, J. Bicknell, J.D. Loya, E.W. Reinheimer, G. Campillo-Alvarado

11:00 133. Supramolecular recognition of hydrocarbons using adamantanes: Applications in chemical separations. **G. Campillo-Alvarado**

Integration of Thermal Catalysis and Electrocatalysis

Smith Center for Undergraduate Excellence
CUE 407

Cosponsored by CATL
Q. Chang, J. McEwen, *Organizers*

8:25 Introductory Remarks.

8:30 134. Tandem electrocatalysis-thermocatalysis for CO_2 conversion. **J.G. Chen**

9:10 135. Trends and descriptors for electrochemical reduction of carbon dioxide to formic acid over Sn-based catalysts. **B. Wu**, X. Han, C. Wang, H. Lin, Q. Chang

9:30 136. Elucidating the effects of coverage on the adsorption of species on La-based perovskites. **A. Whitten**, J. McEwen, E. Nikolla, R. Denecke

9:50 Morning Coffee/Snack Break.

10:20 137. Interfacial quantum electric fields. **S. Kathmann**

10:40 138. Elucidating the influence of electric fields on Fe oxidation via multiscale models. **N. Cardwell**, S.V. Lambeets, I. Onyango, Y. Wang, T. Visart de Bocarme, D. Perea, J. McEwen

11:00 139. Field-assisted N_2 activation on Ru model nanoparticle imaged by Field Ion Microscopy and Operando Atom Probe. **S. Lambeets**, M. Wirth, S. Kathmann, D. Perea

11:20 140. Enhancing hydrogen production efficiency with caustic aqueous phase electrochemical reforming (CAPER) from organic-contaminated water. **S. Ha**, B. Kee

Project SEED, REU's, and Partners in Science

Smith Center for Undergraduate Excellence
CUE 209

D. L. Warner, *Organizer, Presiding*

8:25 Introductory Remarks.

8:30 141. Coordinating the Project SEED Program in the CA section. **E.S. Yamaguchi**

8:50 142. CLICKED: Chemical learning inspired by crystallographic knowledge, experiences, and discovery. **M. Jahnke**, O.B. Berryman, D. Decato

9:10 143. Cultural and academic research experience: Increasing cultural identity in STEM among high school students. **T. Zecher**, **K. Acothley**, K. Gustatson, J. Lee, **N. Lee**

9:30 144. Development of online engineering laboratories. **J. Crepeau**

9:50 Morning Coffee/Snack Break.

10:20 145. Project SEED at the University of Southern Mississippi. **D.S. Masterson**

10:40 146. Successes and impacts of organizing the ACS Project SEED Program at a primarily undergraduate institution. **A. Mallia**

11:00 147. Snake River Project SEED Site, Part 1: Program overview. **D.L. Warner**, H. Herring, L.B. Snow, C. Sprague

11:20 148. Snake River Project SEED Site, Part 2: Student experiences. **D.L. Warner**, H. Herring, L.B. Snow, C. Sprague

11:40 Panel Discussion.

MONDAY AFTERNOON

3D Printing of Biomaterials and Drug Delivery

Smith Center for Undergraduate Excellence
CUE 219

Cosponsored by MEDI
A. Bandyopadhyay, S. Bose, *Organizers*

1:35 Introductory Remarks.

1:40 149. Advancing tissue-biomaterial interfaces: From nanostructure modification to pathological tissue integration. **I. Mitra**, M. Astudillo Potes, L. Lu, B. Elder

2:10 150. Challenges and opportunities for the additive manufacturing of materials for dental applications. **S. Khajotia**

2:40 151. 3D printed tricalcium phosphate: Polycaprolactone biocomposite functionalized with quercetin enhances osteogenic, antitumorigenic, and antibacterial properties. **C. Toulou**

3:00 Afternoon Coffee/Snack Break.

3:30 152. Advancing fracture care: 3D-printed 17-4 PH stainless steel devices. **A. Dash**, A. Bandyopadhyay

3:50 153. Carvacrol and allicin release from HA-coated Ti64 enhances in vitro and in vivo biological properties. **U. Majumdar**, S. Bose

4:10 154. 3D Printed CoCrMo-3Cu alloy with hydroxyapatite for load-bearing articulating implants. **C.L. Orozco**, L. Upadhayay, A. Dash, N. Zuchschwerdt, A. Bandyopadhyay

4:30 155. Machine learning enabled design and optimization for 3D-printing of high-fidelity presurgical organ models. E. Chen, A. Alaleh, S. Sparks, A. Deshwal, J. Doppa, **K. Qiu**

Advancements and Training in Nuclear Materials Processing and Sensing in Harsh Environments

Smith Center for Undergraduate Excellence
CUE 419

Cosponsored by NUCL

1:35 Introductory Remarks.

1:40 366. Advancing freshwater monitoring: Artificial mussels with Chelex-100 for uranium detection. **L.R. Lewis**, M.K. Murphy, A. Chemey

2:00 369. Image analysis of particulate debris laced with luminescent tracers. **L. Hubbard**, a. bautista, M. DeSmet, S. Muller, S. Milley, C. Reed, A. Nicholas, A. Williams, A. Casella, A. Carman

2:20 373. Optical spectroscopic sensor fusion on a microfluidic device for lanthanide quantification. **H. Lackey**, A. Espley, F. Lamadie, G. Nelson, M. Miguirditchian, S. Potter, S.A. Bryan, A. Lines

2:40 370. Refining luminescent tungsten oxide particles as a model tracer of plutonium oxide transport. a. bautista, **L. Hubbard**, M. DeSmet, A. Nicholas, A. Casella, E. Buck, A. Williams, N.J. Henson, S. Muller, S. Miley, A.J. Carman

3:00 Afternoon Coffee/Snack Break.

3:30 372. Exploring complex molten salt chemistry through chemimetric analysis. **S.D. Branch**, J.M. Rakos, S. Choi, H. Felmy, A. Schafer Medina, S.A. Bryan, A. Lines

3:50 368. ICP-MS/MS analyses for improved measurements in nuclear forensics. **A. French**, K. Hobbs, I. Arnquist, K. Harouaka, C.L. Beck, S. Scott

Biochemistry and Biomedicine/Cancer Biochemistry and Biology/Biomedical Engineering and Applications

Smith Center for Undergraduate Excellence
CUE 319

Cosponsored by MEDI
Financially supported by WSU E.S.F College of Medicine & Office of Research
W. Li, *Organizer*

1:35 Introductory Remarks.

1:40 156. Anticancer activity of some organoplatinum(IV) complexes. **W.A. Howard**, A. Arabi, S. Stitz, M. Cogley, A. O'Brien, D. Fabrizio, K.A. Wheeler

2:00 157. Filament assembly of human PRPP synthetase 1 stabilizes allosteric sites to regulate activity. **K. Hvorecny**, K. Hargett, J. Quispe, J. Kollman

2:20 158. Biomimetic self-powered triboelectric nano-generator integrated silicone e-skin for real-time postural feedback in amputee rehabilitation. **M. Haider**, M. Wasif

2:40 159. Predicting the effects of point mutations on the affinity of a peptide-peptide complex by molecular dynamics simulations and end-point free energy binding calculations. **G. Smith**, E.J. Sanchez, A.S. Kostyukova

3:00 Afternoon Coffee/Snack Break.

3:30 160. Sequence-unrestricted recognition of double-stranded DNA by chimeric LNA-Invader probes. **M. Everly**, P.J. Hrdlicka

3:50 161. Near infrared fluorescent probes for fluorescence guided prostatectomy. **G. Malankar**, D. Szafran, G. KUMAR, A.M. Masillati, A.R. Montaño, L.G. Wang, S.L. Gibbs

4:10 162. Modeling tumor microenvironment with native tissue matrix: structure, biology, and metabolism. **W. Li**

Breaking Borders and Building Bonds Through Catalysis

Smith Center for Undergraduate Excellence
CUE 407

Cosponsored by CATL
Q. Zhang, *Organizer*

1:35 Introductory Remarks.

1:40 163. H-D exchange of aromatic compounds using ruthenium complexes bearing PNP ligands. **N. Fisher**, D. Culver, J.M. Boncella

2:00 164. Metal-coordinated phthalocyanines as platform molecules for understanding isolated metal sites in electrochemical reduction of CO_2. **Q. Chang**, J. Lee, S. Kattel, J.G. Chen

2:40 165. Advancing click chemistry: An efficient, green one-pot synthesis of triazole derivatives using atomically dispersed copper catalysts in azide-alkyne reactions under mild conditions. **A. Auni**, Q. Zhang

3:00 Afternoon Coffee/Snack Break.

3:30 166. Developing a scalable catalytic process for the cyclization and dehydrogenation of botanical cannabidiol to form cannabinol. **R. Jensen**

3:50 167. Boosting photocatalytic hydrogen production by MOF-derived metal oxide heterojunctions achieving a 10.0% apparent quantum yield. **E.N. Musa**

4:10 168. Breaking borders: The creation and catalytic innovations of hierarchical porous UiO-66 MOFs. **Q. Zhang**

Breaking Borders and Building Bonds Through Chemistry in the Community

Smith Center for Undergraduate Excellence
CUE 209

A. N. Lamm, *Organizer*

1:35 Introductory Remarks.

1:40 1. Chemistry outreach in South Sound region: Engaging activities for K-12 students. **S. Arungundram**, **A. Hoffman**

2:00 2. Chemistry outreach at Eastern Washington University. **A.N. Lamm**

2:20 3. Aromatic potential of hop polyfunctional thiols. **C. Chenot**, S. Collin

Computation in Molecular Sciences

Smith Center for Undergraduate Excellence
CUE 318

J. Patel, M. Ytreberg, *Organizers*

1:35 Introductory Remarks.

1:40 169. Use of structure-guided drug discovery for development of novel antibacterial medicines. **A. Baylink**

2:20 170. Exploring the ability of the MD+FoldX method to predict SARS-CoV-2 antibody escape mutations using large-scale data. **L. Chi Uluac**, J. Barnes, J. Suresh Patel, M. Ytreberg

2:40 171. Using structure prediction to predict mechanisms and families in *S. cerevisiae* Killer toxins. **J. Creagh-Grave**

3:00 Afternoon Coffee/Snack Break.

3:30 172. Unleashed from constrained optimization: Quantum computing for quantum chemistry employing generator coordinate method. **B. Peng**

3:50 173. Visual languages in VR to explore chemical spaces. **J. Peper**, J.H. Kalivas

4:10 174. The MifS/MifR signal transduction system links central metabolism with virulence in Pseudomonas aeruginosa. **Z. Sarwar**

Interfacial Chemistry Enables Sustainable and Resilient Infrastructure Materials

Smith Center for Undergraduate Excellence
CUE 207

Cosponsored by COLL
X. Shi, *Organizer*

1:35 Introductory Remarks.

1:40 175. Application of polyvinyl alcohol (PVA) polymer to produce Zn-hydrogel anode in providing cathodic protection for rebars in salt-contaminated concrete. Z. Zhou, **X. Shi**

2:00 176. Interfacial bond strength of nanoclay-modified epoxy resin for CFRP-mortar composites. **A. Ali Shahmansouri**, X. Shi

2:20 177. Cost-effective and durable concrete with nano-modified aggregates pretreated by graphene oxide. **J. He**, X. Shi

3:00 Afternoon Coffee/Snack Break.

3:30 178. Catalyst-free, degradable, amine cured epoxy network vitrimer: Robust mechanical performance, 100% hydrothermal recyclability in pure water. **L. Shao**, J. Zhang

3:50 179. Micro-/nano-engineered epoxy-coated rebar to increase concrete durability in harsh environments: anticorrosion and bond performances. **A. Mahmoodigahrouei**, X. Shi

4:10 180. Recycled mask polypropylene microfibers benefit tensile properties and prevent

thermally induced spalling of high-strength engineered cementitious composite. **X. Shi**, Z. Zhang

The Nucleus, Radiation, and Chemistry Today

Smith Center for Undergraduate Excellence
CUE 418

Cosponsored by NUCL
A. Chemey, *Organizer*

1:35 Introductory Remarks.

1:40 181. Nuclear chemistry: An essential nuclear science. **A. Chemey**

2:00 182. Unveiling the chemistry of superheavy elements: insights and challenges. **J.M. Gates**

2:40 183. Use of mixed resin system for separation of actinides and long-lived fission products. **C. Allen**, S. Herman, E. Arnold, A. French, C.L. Beck

3:00 Afternoon Coffee/Snack Break.

3:30 185. Investigation of candidates for reactor produced radioactive materials in support of radiological training exercises. **Z.M. Heiden**, C.C. Hines, N.R. Mann

3:50 186. Overview of fusion commercialization in the pacific NW. **C. Keane**

4:10 184. Future mass measurement capabilities at Berkeley Lab's FIONA. **R. Orford**

Unlocking a Sustainable Future: Harnessing the Power of the Hydrogen and Beyond

Smith Center for Undergraduate Excellence
CUE 409

Cosponsored by ENFL
A. Wilson, H. Zhao, *Organizers*

1:35 Introductory Remarks.

1:40 187. Advanced solid oxide electrolysis cell (SOEC) technology for H2 production at Idaho National Laboratory. **D. Ding**

2:20 188. Synergizing direct air capture and utilization of CO2 for energy system decarbonization. **H. Lin**, C. Wang, Z. Dong

3:00 Afternoon Coffee/Snack Break.

3:30 189. [FeFe]-Hydrogenase maturation: DTMA ligand biosynthesis and the role of HydF maturase. **B. Balci**, R. O'Neill, A. Marlott, E.M. Shepard, h. yang, A. Pagnier, M.T. Mock, B.M. Hoffman, W.E. Broderick, J.B. Broderick

3:50 190. $SrIrO_3$ as efficient electrocatalysts for hydrogen production in proton exchange membrane electrolyzer. **Z. Feng**

4:30 191. Effect of a-site deficiency on the performance of PrNi0.7Co0.3O3-δ perovskite materials for protonic ceramic electrochemical cells. **H. Zhao**, D. Ding, W. Bian, T. Li

TUESDAY MORNING

Advances in Actinide and Lanthanide Chemistry

Smith Center for Undergraduate Excellence
CUE 419

Cosponsored by NUCL
J. M. Boncella, X. Guo, N. J. Henson, *Presiding*

8:25 Introductory Remarks.

8:30 192. Elucidating the growth pathways and periodic trends of actinide oxide nanoparticle formation. **W. Vance**

8:50 193. Solvent directed anisotropic growth of uranium dioxide nanoparticles. **C. Wentzell**

9:10 194. Solid state ^{59}Co NMR study of a high-valent Np complex: : $[Co(NH_3)_6]_3[NpO_4(OH)_2]_3.nH_2O$. **K. ANAND**, K. Rana, S. Park, S.I. Sinkov, G.C. benthin, H. Rajapaksha, T. Forbes, H. Cho

9:30 195. Reactivity of actinide complexes supported by meso-$[ONO]^{2-}$, products arising from a template synthesis. **A.M. Tondreau**

9:50 Morning Coffee/Snack Break.

10:20 196. Synthesis of a trivalent uranium Monoimido and the role of potassium intercalation in stabilizing this reactive moiety. **E.D. Reinhart**, C. Studvick, B. Billow, J.M. Boncella, I.A. Popov, A.L. Odom

10:40 197. Stabilizing low-valent organouranium complexes using bulky terphenyl amido ligands. **V. Groner**, E.D. Reinhart, J.M. Boncella

11:00 198. Investigating the formation and reactivity of Zr^{II}, Hf^{II}, and An^{II} species supported by metal-arene interactions. **I. Haltom**, J.M. Boncella, E. Reinhart

11:20 199. Stabilization of high- and low-valent f-element complexes: Computational rationale. **I.A. Popov**, J.M. Boncella, H.S. La Pierre, B. Vlaisavljevich, A.M. Tondreau, E.D. Reinhart, P. Yang, E.R. Batista

Advances in Medicinal Chemistry

Smith Center for Undergraduate Excellence
CUE 319

Cosponsored by MEDI
C. E. Berkman, *Organizer*

8:25 Introductory Remarks.

8:30 206. An efficient synthesis of C-6 aminated 3-bromoimidazo[1,2-b]pyridazines. **T. Iorkula Hange**, B. Tolman, S. Burt, M. Peterson

8:50 207. An isoxazole conformational scan: towards bioisosteric replacement in design of PDZ domain inhibitors. **C.A. Gates**, N.R. Natale

9:10 208. Inhibition of oxytosis/ferroptosis as a tool for identifying neuroprotective phytocannabinoids. **R. Jensen**, P. Maher

9:30 209. The natural products magnetic resonance database (NP-MRD): comprehensive resource for NMR data enabling natural products discovery and understanding. **J.R. Cort**

Biobased Materials and Products

Smith Center for Undergraduate Excellence
CUE 416

A. G. McDonald, *Organizer*

8:25 Introductory Remarks.

8:30 210. Development of wood fiber reinforced biodegradable PHB-based toughening materials. Z. Chen, **H. Li**

8:50 211. Carbonized hemp fiber for use in composites materials. **S.B. Yusuf**, A.G. McDonald

9:10 212. Solvent-assisted plastic recovery from mixed municipal solid waste. **H. Appiah**, A.G. McDonald, J. Klinger, E.B. Ziv

9:30 213. Biobased novolac composites: Flow, curing, and mechanical properties. **J. Kukal**, A.G. McDonald, L. Portilla, B. Via, S. Adhikari

9:50 Morning Coffee/Snack Break.

10:20 214. Preparation and characterization of lignin-polybutylene-succinate copolymers. **N. Ewurum**, A.G. McDonald

10:40 215. Enhancement of rheology and thermal stability of PHBV fed fermented dairy manure blended with polylactic acid by *in-situ* reactive extrusion. **M. Abbasi**, A.G. McDonald

11:00 216. Wood protection properties of Zinc Oxide-based Cement complex from Clove oil and wood pyrolysis oil. **C. Alorbu**, A.G. McDonald, L. Cai

11:20 217. Artificial weathering performance of wood coated with bio-oils. **D. Willard**, L. Cai, A.G. McDonald

11:40 218. Thermoforming natural fiber prepregs into laminated structures. **A. Chanda**, M.B. Bakri, V. Yadama

Electrochemistry

Cosponsored by ANYL
I. F. Cheng, *Organizer*

Smith Center for Undergraduate Excellence
CUE 207

8:25 Introductory Remarks.

8:30 219. Exploring the lower limit of electrorefining. **J.H. Manner**, M. Stoddard, D. Rappleye

8:50 220. GUITAR: A highly modifiable carbon thin film for catalytic applications. **F. Dalbec**, D. Koirala, J.A. Plascencia, I.F. Cheng

9:10 221. Soy protein-enhanced cathode with graphene coating for high-performance Li-S batteries. **Y. Guo**, C. Ying, l. Ren, C. Wang, J. Liu, W. Zhong

9:30 222. Corn protein-functionalized separator for trapping polysulfides and regulating ion transport in Li-S batteries. **L. Ren**, C. Wang, Y. Guo, J. Liu, W. Zhong

9:50 Morning Coffee/Snack Break.

10:20 223. Single-atom catalysts for enhanced electrochemical applications: Fuel cells and CO2 conversion. **Y. Lin**

10:40 224. Chemical and radiation effects from Hanford tank waste on long-term performance of Ag/AgCl reference electrodes for in-tank corrosion potential monitoring. **S.X. Feng**, D. Frye

11:00 225. Exploration of chemical and thermal stability of c-LLZO using in situ Raman microscopy. **S.T. Montoya**, S. Shanto, R.A. Walker

11:20 226. Economical Zr & Ti electroplating at low-throughput commercial scales. **C. Arendt**, **L. Hubbard**, K. Grubel, C. Chancellor, S. Livers, B. Lawler, M. di Vacri

Exploring the Chemistry of Next-Generation Coolants and Solvents: Interfacial Processes Under Extreme Environments

Smith Center for Undergraduate Excellence
CUE 409

Cosponsored by ENFL and NUCL
S. Gill, *Organizer*

8:25 Introductory Remarks.

8:30 227. Disentangling simultaneous effects of corrosion and irradiation of structural materials in molten salts and liquid metals. **M.P. Short**, A. Peterkin, W. Zhou, W. Cairang, K. Woller, Y. Yang, A. Minor, R. Moeykens, G. Zheng

9:00 228. Strategies for characterizing the impact of fission environmental factors on the interfacial molten salt corrosion mechanisms of Ni-based reactor structural materials. **T. Copeland-Johnson**, X. Quintana, I. Han, F. Teng, M.E. Woods, R. Gakhar, D. Murray, G. Cao, G. Holmbeck, S. Gill, J. Tucker, L. He

9:20 229. Chloride-induced stress corrosion cracking in stainless steels: Mechanisms and mitigation. **J. Wharry**, H.J. Qu

9:50 Morning Coffee/Snack Break.

10:20 230. Perspectives on the interfacial interactions between U-Zr fuel and cladding. **M. Okuniewski**, N. Rodríguez Pérez, J. Thomas, M. Smith, A. Figueroa Bengoa

10:50 231. Fission products, actinides, and other things that are depositing, diffusing, and plating onto materials in molten salt systems. **S.S. Raiman**

Materials in the Nuclear Fuel Cycle: From Cradle to Grave

Smith Center for Undergraduate Excellence
CUE 418

Cosponsored by NUCL
X. Guo, J. McCloy, *Organizers*

8:25 Introductory Remarks.

8:30 237. Ab initio molecular dynamics informed EXAFS of some F-block elements associated with ancient and synthetic Fe oxides. **E.S. Ilton**, S. Mergelsberg, E.J. Bylaska, J.G. Catalano

9:10 232. Thermal expansion of uranium mononitride. **N.S. Yaw**, E. Kindall, A. van Veelen, S. Karcher, B. Merrill, C. Dixon Wilkins, G. King, j. white, J. McCloy, X. Guo

9:30 235. Analysis of the structural polymorphism of thorutite, $ThTi_2O_6$, and related materials. **M.C. Dixon Wilkins**, N.S. Yaw, X. Guo, J. McCloy, N.C. Hyatt

9:50 Morning Coffee/Snack Break.

10:20 238. Leach test diffusivity parameters accuracy for cementitious waste forms models. **A. Fujii Yamagata**, R. Skeen, G. Smith, R.M. Asmussen

10:40 236. Dissolution of doped UO_2 using single pass flow through studies. **S. Asmussen**, R.M. Asmussen, A.P. Goulet, R.W. Shimskey, B.D. Hanson

11:00 . The xenon-metal pair formation in UO2: A DFT+U study. **L. Malakkal**, S. Zhou, V. Prithivirajan, C. Howard, D. Yushu, L. He, S. Biswas

11:20 234. Thermal conductivity of nuclear fuels and materials, before and after irradiation. **Z. Hua**, A. Khanolkar, C. Dennett, K. Gofryk, M. Manley, M. Khafizov, D. Hurley

11:40 . Initial results in molten salt synthesis of f-element nitrides. **V. Augustine**, E.A. Espinoza, S. Parker, A. Chemey

Pushing the Boundaries of Sensitivity

Smith Center for Undergraduate Excellence
CUE 209

Cosponsored by ANYL
Financially supported by Shimadzu
C. Gobrogge, *Organizer*

8:25 Introductory Remarks.

8:30 247. Building a better microscope for imaging mass spectrometry sensitivity. **B.**

Bogdanov, **B. Feild**, C.A. Gobrogge

8:50 248. Sensitive measurement of steroids, small molecules, and peptides by LC-MS/MS. **D.W. Erikson**

9:10 249. PFAS trailhead: A path to testing. **D. Gruszecka**

9:30 250. PFAS - They are here, now what?. **E.T. Linskey**

Structures, Kinetics, and Thermodynamics at Interfaces

Smith Center for Undergraduate Excellence
CUE 219

Cosponsored by COLL
U. Mazur, *Organizer*
J. A. Brozik, *Presiding*

8:25 Introductory Remarks.

8:30 251. Stochastic interactions of long- and short-form aquaporin-4 in supported lipid bilayers. **J.A. Brozik**, J.D. Carder, B. Barile, K. Shisler, F. Pisani, A. Frigeri, K. Hipps, G. Nicchia

9:10 252. Thermal effusivity measurement using modulated temperture differential scanning calorimetry. **R. Blaine**

9:30 253. Functionalized Liquid-Solid Interfaces for Ion Separations. **G.E. Johnson**

9:50 Morning Coffee/Snack Break.

10:20 254. Imaging kinetics and ion uptake in organic mixed ionic-electronic conductors. **R. Giridharagopal**, D.S. Ginger

11:00 255. Photophysics and chemistry of group XIV rhodamines. **F. Abounorinejad**, E.L. Taylor, E.P. Jacobo, J.A. Brozik

11:20 256. Withdrawn

The Chemistry of Historical Archaeology

Smith Center for Undergraduate Excellence
CUE 318

R. Von Wandruszka, *Organizer*

8:25 Introductory Remarks.

8:30 262. Analytical chemistry in historical archaeology. **R. Von Wandruszka**

8:50 263. From yellow powder to black powder: An archaeochemical journey. **M. LaFleur**, R. Von Wandruszka

9:10 264. Arsenic for health and beauty. **C. Qualls**, R. Von Wandruszka

9:30 265. Snake oils and witch bottles in our past. **E. Wilcoxson**, R. Von Wandruszka

9:50 Morning Coffee/Snack Break.

10:20 266. Historical laxatives. **C. Young**, R. Von Wandruszka

10:40 267. Chemical sleuthing in historical archaeology. **R. Von Wandruszka**, M. Moody

11:00 268. Digging chemistry. **A. Hoffman**

Breaking Borders and Building Bonds in Chemical Biology

Smith Center for Undergraduate Excellence
CUE 319

Cosponsored by MEDI
T. T. Denton, A. Sharma, *Organizers*

10:20 Introductory Remarks.

10:25 269. Characterisation of phospholamban phosphorylation in response to β1-adrenoceptor stimulation in cardiac H9C2 myocytes. **N.U. Anyiam**

10:45 270. Design and synthesis of a platelet activating factor activity-based probe. **J. Kroll**, D. Kim, V. Lin

11:05 271. Investigating lncRNA structure and dynamics with single-molecule fluorescence microscopy. **K. Pai**, J.R. Widom

11:25 272. Sequence-unrestricted DNA-targeting using Invader probes. **P.J. Hrdlicka**

11:45 273. Pre-clinical evaluation of phosphonate analogues of lanthionine ketenamine as potential therapies for neurological disorders. **T.T. Denton**

TUESDAY AFTERNOON

Undergraduate Research

Compton Union Building
CUB Junior Ballroom (210)

P. Buckley, J. Lessmann, *Organizers*

12:00 - 1:30

280. Zeolite catalyzed Friedel-Crafts acylations. J. Tzompa, **A. Hayden**, **S. Call**, I. Marshall, L.A. Nickerson

281. Green synthesis of MOF materials. **K. Younce**, F. Hou

282. Synthesis and characterization of ruthenium pincer complexes. **J. Carrell**, N. Fisher, J.M. Boncella

283. Pulsed source ion mobility spectrometry. **L. Vyhmeister**, S. Gharari, A. Robb, B. Clowers, E. Davis

284. Synthetic preparation of modified compounds for fluorescent click labeling of cysteinylated tRNA. **T. Le**, L.A. Nickerson, C.M. Evilia

285. Maximizing with MOF catalysts: Testing for optimal yield conditions of one-step phenol synthesis. **Z. Irvine**, F. Hou

286. Improved solid phase extraction method for quantifying thiamine in fish tissues. **E. Boyd-Tucker**, L.A. Hoferkamp, C. Pinger

287. Incorporation of transition metals into CeO2 and UO2. **M. Lauby**, P. Jensen, S. Scheel, L.M. Moreau

288. Interanionic interactions in aluimno-boro-silicate nuclear waste glasses. **J. Bussey**, A. Azeddioui, N. Smith-Gray, N. Stone-Weiss, D. Neuville, S. Karcher, C. Dixon Wilkins, J. McCloy

289. CuCo catalysts derived from decomposed CuCo-MOF materials for selective CO_2 hydrogenation to methanol. **B. Li**, C. Wang, H. Lin

290. Deciphering LARP6-mediated collagen mRNA stability via FRET: implications for targeted fibroproliferative disease therapies. **H. Herring**, E. Baggs, L. Warner

291. Increasing the safety of irradiated samples with nitrogen. **L. Lumzer**, Z.M. Heiden

292. Investigating the trace metal analysis in Sharpie markers. **A. Smith**, **E. Irish**, Z.M. Heiden

293. PSMA-targeted dendrimer nanomedicine for prostate cancer. **K.J. Goody**

294. Protic NNN pincer complexes as homogeneous CO_2 reduction catalysts. **S.G. von Fuchs**, J. Smith, S. Dillinger, W.D. Bailey

295. Investigation of lewis acid catalysts to aid the synthesis of substituted chalcones. **H.M. Gray**, L. Wang, W.D. Bailey

296. Hydrolysis kinetics of trimeric Benzodiazaborole. **M.A. Lamb**

297. Salmonella and the microbiome: How metabolism plays a role in competition. **S. Diaz De Leon**, A. Baylink

298. Pulsed electrospray ionization kinetics. **G. Valdez**, L. Vyhmeister, R. Mcrae, T. Masiello, E. Davis

299. Synthesis and Reactivity of Zr, Hf, Th, and U Complexes. **M. Litwin**, J.M. Boncella

300. Scandium dissolution in alkaline carbonate media. **O. Bahhage**, X. Guo

301. Investigation of trace metals in packaging materials for nuclear reactor irradiations. **M. McCloy**, **G. McCloy**, Z.M. Heiden

302. Advancing molten salt reactor technology. **B. Iyer**, X. Guo

Breaking Borders and Building Bonds Through Environmental Challenges

Smith Center for Undergraduate Excellence
CUE 207

Cosponsored by ENVR
J. Moberly, *Organizer*

1:35 Introductory Remarks.

1:40 307. High-valent metal species in water splitting and abatement of micropollutants in water. **V.K. Sharma**

2:00 308. Withdrawn

2:20 309. Towards optimizing biobeads for improved bioremediation of trichloroethylene. **C. Silsby**, J. Moberly

Computational Chemistry: From Theory to Applications

Smith Center for Undergraduate Excellence
CUE 318

K. A. Peterson, *Organizer*

1:35 Introductory Remarks.

1:40 310. The many-body expansion in science. **S. Xantheas**

2:20 311. Consequences of the Kirkwood transition: from separations to sludge. **G.K. Schenter**

2:40 312. Exploring the chemical behavior of water within enzymes using spatial and electrostatic computation. **C. Sindic**, P.R. Callis

3:00 Ice Cream Social.

3:30 313. Simulating excited states and interlayer coupling for photoactive and electroactive covalent organic framework design. T. Leo, N. Kanlayakan, M. Robbins, A. Sullivan, H. Abbay, H. Thornes, G. Fitzsimmons, A. Goodey, **T. Kowalczyk**

3:50 314. Over-destabilization vs. over-stabilization in theoretical analysis of f-orbital covalency. **X. Li**

4:30 315. Application of auxiliary field quantum Monte Carlo to actinide thermochemistry. **B. Bonar**

Creativity in Metal-Ligand Bonding

Smith Center for Undergraduate Excellence
CUE 416

R. R. Thompson, *Organizer*

1:35 Introductory Remarks.

1:40 4. Recent development in the evolution of pop-based ligands for the construction of electrophilic transition metal systems. **E.B. Hulley**, K. Chavez

2:00 5. Engineering a new stable and luminescent zirconium metal-organic framework using a lowered-symmetry tetraphenylethene-based ligand, meta-ETTC. **H. Johnson**, E.S. Garcia, M. Ebberson, Q. Zhang

2:20 6. Synthesis of Azothioformamide and Azoformamide ligands: Application from coordination to catalysis and biological activity. **L. Tiwari**, K.V. Waynant, K. Cornell

2:40 7. Designing ligands for metal dissolution. **K.V. Waynant**, J. Moberly, M.F. Roll, L. Tiwari, R. pradhan, M. Moody

3:00 Ice Cream Social.

3:30 8. Diverse reactivity of a nickel-phosphaethynolate. **R.R. Thompson**, D. Powers, O. Gutierrez

3:50 9. Sequential pore functionalization of metal-organic framework for carbon dioxide capture. **A. Yadav**, K.C. Stylianou

4:10 10. Synthesis, characterization, and reactivity of thioether-supported amido complexes of iron and cobalt. **R.D. ONeill**, C. Pollock, M. Mosquera, M.T. Mock

4:30 11. High-valent mononuclear nickel complexes: From C-H bond activation to water splitting catalysis. **D. Wang**, Y. Kwon, C. Bruner

Emerging Technologies for Targeted and Controlled Drug Delivery

Smith Center for Undergraduate Excellence
CUE 319

Cosponsored by MEDI
A. Sharma, *Organizer*

1:35 Introductory Remarks.

1:40 316. 2-Deoxy glucose surfaced mixed layer dendrimer-based non-invasive neuron-targeted drug delivery system. **A. Dhull**, Z. Zhang, A. Sharma, R. Sharma

2:00 317. Modular SMART molecules for targeted drug delivery. **E. Savoy**, F.P. Olatunji, R.K. Ballard, C. Lovingier, M. Fulton, C.E. Berkman

2:20 318. Hydrogels and micellar structures for controlled drug delivery and as liquid embolics. **H. Ghandehari**

3:00 Ice Cream Social.

3:30 319. Dynamic borders: A study of interfacial phenomena in lipid nanoparticle systems. **Y. Eygeris**, G. Sahay

3:50 320. Re-discovering tumor-targeted glutamine antagonists using prodrug paradigms. **R. Rais**

Exploring the Chemistry of Next-Generation Coolants and Solvents: Radiation-Induced Chemistry

Smith Center for Undergraduate Excellence
CUE 409

Cosponsored by ENFL and NUCL
G. Holmbeck, *Organizer*

1:35 Introductory Remarks.

1:35 321. Influence of proton irradiation on the corrosivity of molten fluoride salt. **W. Zhou**, A. Peterkin, R. Moeykens, K. Woller, M.P. Short, G. Zheng, Y. Yang

2:00 322. Understanding the effects of gamma radiation on the chemical and physical characteristics of a potential candidate for organic cooled reactors. **A. Vasquez**, A. Seshadri, K. Shirvan, J. Buongiorno

2:30 323. Radiation-induced transients in solid and molten Li and K iodides. **A. Ramos Ballesteros**, G. Holmbeck, R. Gakhar, M.E. Woods, J.K. Conrad

3:00 Ice Cream Social.

3:30 324. Dynamics and reactivity of electrons in aliphatic ionic liquids. **C. Huber**, A.T. Healy, J.F. Wishart, D.A. Blank

3:55 325. Investigating the impacts of used nuclear fuel direct dissolution of on the radiolytic longevity of solvent and butyramide extractants. **S.P. Mezyk**, A. Dang, A. Kynman, G. Holmbeck

Advances in Actinide and Lanthanide Chemistry

Smith Center for Undergraduate Excellence
CUE 419

Cosponsored by NUCL

1:55 Introductory Remarks.

2:00 367. Towards a molecular-based understanding of extraction with Diamyl amyl phosphonate. **M. Dinpajooh**, R. Overstreet, A.M. Ritzmann, L.A. Metz, N. Uhnak

2:20 371. Bonding, reactivity, and mechanisms of stabilization of low valent uranium-arene complexes: a computational rationale. **C. Studvick**, E. Reinhart, A.M. Tondreau, B. Billow, A.L. Odom, J.M. Boncella, I.A. Popov

2:40 375. ^{79}Br and ^{81}Br Nuclear Quadrupole resonance study of the electronic structure and bonding in $Cs_2UO_2Br_4$. S. Park, **K. Rana**, K. ANAND, R.G. Surbella, S.I. Sinkov, H. Cho

3:00 Ice Cream Social.

3:30 376. Mausolates: large-cavity chelates for lanthanide and heavy metal ion binding. J.F. Smart, A.J. Ackroyd, A.T. Gogoulis, L. Gajecki, A.G. Oliver, J.S. McIndoe, **D.J. Berg**

3:50 377. Calculation of reaction rate for dinitrogen pentaoxide using ab initio molecular dynamics. **M. LaCount**, N.J. Henson, A.M. Ritzmann

4:10 379. Uranyl uptake into metal–organic frameworks: A detailed X-ray structural analysis. **M.P. Heaney**, H. Johnson, J.G. Knapp, S. Bang, S. Seifert, N.S. Yaw, J. Li, O.K. Farha, Q. Zhang, L.M. Moreau

4:30 XXX. Exploring Actinide Optical Properties through Extended Frameworks. **R. G. Surbella III**, A. Arteaga, and A. Nicholas

Breaking Borders and Building Bonds Through Energy

Smith Center for Undergraduate Excellence
CUE 407

Cosponsored by ENFL
H. Zhao, *Organizer*

1:55 Introductory Remarks.

2:00 303. Particle-size mixing as a route to high stability all-silicon electrodes for lithium-ion batteries with a liquid electrolyte. V. Joshi, W. Xu, **N.P. Stadie**

2:40 304. New double perovskite materials and their suitability for high temperature energy conversion applications. **B. Samuel**, J. Esakoff, S. Sofie, R.A. Walker

3:00 Ice Cream Social.

3:50 305. Unveiling conduction mechanism in lithium-doped high-entropy oxides for extreme-condition energy storage. **H. Zhang**, M. Song, X. Zhang, S. Wan, G. Wang, J. Liu, W. Li, H. Dong, C. Lou, Z. Chen, B. Chen

4:10 306. Pseudocapacitive lithiation of hexabenzocoronene and pyrolyzed derivatives. **C. McDaniel**, D. McGlamery, N.P. Stadie

Materials in the Nuclear Fuel Cycle: From Cradle to Grave

Smith Center for Undergraduate Excellence
CUE 418

Cosponsored by NUCL

1:55 Introductory Remarks.

2:00 . In-situ X-ray diffraction and Raman spectroscopy of $(Zr_{0.1}U_{0.9})O_2$ and $(Zr_{0.2}U_{0.8})O_2$. **S. Karcher**, S. Bang, C. Dixon Wilkins, N.S. Yaw, B. Merrill, A. Totten, X. Guo, J. McCloy

2:20 . The destiny of water in uranium dioxide nanoparticle synthesis for the production of nanoscale U/Th MOX fuel. **M.P. Heaney**, L.M. Moreau

2:40 387. In situ high-temperature X-ray diffraction and X-ray fine structure analyses of UO2: probing the dopant effect on thermal expansion and disorder. **J. Liu**, S. Bang, A. van Veelen, j. white, N. Dacheux, X. Guo

3:00 Ice Cream Social.

3:30 388. Thermal oxidation and high temperature structures of uranium carbide: in situ X-ray diffraction studies. **E.C. Kindall**, N.S. Yaw, J. Liu, C. Dixon Wilkins, S. Karcher, H. Xu, A. van Veelen, J.T. White, J. McCloy, X. Guo

3:50 380. Understanding the structure and dynamics of uranium-chlorine complexes in UCl_n - (KCl-LiCl) eutectics through atomistic simulations. A. Islam, X. Guo, **S. Banerjee**

4:10 382. Novel chloride volatility scheme for reprocessing advanced reactor used nuclear fuel. **J.M. Torrie**, I. Urraco, J. Wright, D. Rappleye

4:30 389. Rare earth element recovery from mixed chloride salts by isotachophoresis. **H. Hallikainen**, C. Ivory

Structures, Kinetics, and Thermodynamics at Interfaces

Smith Center for Undergraduate Excellence
CUE 219

Cosponsored by COLL

1:55 Introductory Remarks.

2:00 378. Probing the local coordination environment of atomically dispersed palladium supported on cerium oxide. **N.C. Nelson**, M. Prange, J. Nguyen, Z. Dohnalek

2:20 383. Interactions between plant cytochrome P450 reductase and mimics of plant ER membranes. **E.P. Jacobo**, J. Lewis, K. Shisler, J.A. Brozik, C. Kang

2:40 374. Thermodynamic driving forces of redox-dependent CPR insertion into biomimetic endoplasmic reticulum membranes. **M.J. Martinez**, J.D. Carder, E.L. Taylor, E.P. Jacobo, C. Kang, J.A. Brozik

3:00 Ice Cream Social.

3:30 384. Impact of oxygen-functional groups on CO_2 and CH_4 adsorption on carbon surfaces. **E.U. Osuagwu**, G. Loney, R.K. Szilagyi, N.P. Stadie

3:50 386. Investigating the role of induced macroporosity in ZIF-8 towards improved uptake kinetics in gas phase separations. **T. Hurley**

4:10 392. Enhancing and gating organic mixed ionic-electronic transport through local surface energy. **B. Collins**

New Frontiers in Mass Spectrometry and Gas-Phase Ion Manipulation

Smith Center for Undergraduate Excellence
CUE 209

Cosponsored by ANYL
B. Clowers, *Organizer*

2:15 Introductory Remarks.

2:20 327. Solving the "General Elution Problem" in ion mobility spectrometry. **E. Davis**, T. Koop, L. Vyhmeister, S. Gharari, J. Fehr, G. Valdez

3:00 Ice Cream Social.

3:30 326. Structures for lossless ion manipulations (SLIM) enabled mobility selective ion soft-landing for orthogonal characterization. **S.V. Garimella**

3:50 328. Hydrogen/deuterium exchange in ion mobility spectrometers: new instrumentation approaches and ion chemistry advantages. **D. Wu**, N. Morgan, H. Schramm, Z. Kinlein, B. Clowers

4:10 329. Multiplexing strategies for improving ion utilization in ion mobility spectrometry-mass spectrometry. **C. Greer**, E.R. Cabrera, N.W. Buzitis, B. Clowers

Engineering Solutions for Environmental Chemistry Challenges

Smith Center for Undergraduate Excellence
CUE 207

Cosponsored by ENVR
J. Moberly, *Organizer*

3:30 330. Withdrawn

3:50 331. Upcycling carbon fiber-reinforced epoxy composites into hydrothermally recyclable vitrimer composites under mild conditions. **B. Zhao**, C. Hao, J. Zhang

4:10 332. Enhancing the gaseous iodine adsorption of hierarchically porous UiO-66 MOFs via aromatic substitution. **S. Yu**, Q. Zhang

4:30 Closing Remarks.

WEDNESDAY MORNING

Exploring the Chemistry of Next-Generation Coolants and Solvents: Structure and Properties of Coolants, Fuels and Solvents

Smith Center for Undergraduate Excellence
CUE 409

Cosponsored by ENFL and NUCL
R. Gakhar, *Organizer*

8:00 Introductory Remarks.

8:05 353. Electrochemical behavior of corrosion and fission products in molten salts. P. Asghari-Rad, **H. Kim**

8:35 362. Calorimetric measurements of thermodynamic properties of molten salt: a case study of the binary eutectic $MgCl_2$-NaCl from 400 to 800 °C. **X. Guo**, J. Eakin, B. Merrill, K. Dahal, C. Ivory, J. Schorne-Pinto, T. Besmann, J. Lonergan

8:55 355. Absorption spectroscopy for interrogating structure and speciation in molten salt reactor- and pyroprocessing-relevant molten salt mixtures. **J. Moon**, **D. Chidambaram**

9:15 357. Determining thermophysical properties of actinide molten salts via AIMD. **B. Beeler**, D. Andersson, K. Duemmler

9:35 358. Unraveling complexities of speciation in molten salts. **S. Roy**, V. Bryantsev, L. Gibson, S. Gill, A. Frenkel, R. Gakhar

9:55 Morning Coffee/Snack Break.

10:30 359. In-situ monitoring of molten salts and off-gases using a combined spectroscopic approach. **m. raab**, A. Williams, R. Gakhar, R. Roper, Q. Yang

10:50 360. Iodide species in LiCl-KCl matrix: Thermal behavior and phase distribution with temperature. **M. Rodriguez Laguna**, R.H. Lazzari Garcia, S.T. Anderson, S. Gill, G. Holmbeck, R. Gakhar

11:10 361. Determining optical basicity of molten chloride salts by probe ion doping. **L. Sharpless**, J. Moon, D. Chidambaram

11:30 356. Withdrawn

11:50 354. Withdrawn

Breaking Borders and Building Bonds at Interfaces

Smith Center for Undergraduate Excellence
CUE 219

Cosponsored by ANYL and COLL
J. Bell, *Organizer*

8:05 Introductory Remarks.

8:10 333. Synthesis, structural characterization, and optical properties of core–satellite nanoassemblies comprising SiO_2 and Ag. **M. Haider**, W. Miran, M. Niazi

8:30 334. Development of a fully 3D-printed solid-contact ion-selective electrode. **S. Farahani**, D. Glasco, J. Bell

8:50 335. Gaining insight into the molecular organization within the nematic phase of bent-core oxadiazole containing liquid crystals. **E. Scharrer**

9:10 336. Regulation of zinc cycling on non-zinc surfaces using permanent magnets. **W.T. McLeod**, S. Pedaballi, J. Bell

9:30 337. Advanced thin film polyampholyte coatings to prevent bacteria adhesion and biofilm formation in microgravity. **A.E. Shea**, S. Oneida, K.V. Waynant, M. Bernards

9:50 Morning Coffee/Snack Break.

10:20 338. Pore functionalization in metal-organic frameworks for enhanced carbon dioxide capture in humid environments. **A. Gladysiak**, K.C. Stylianou

10:40 339. Unveiling poly(2-chloro-3,5, 6-trisulfide-1,4-benzoquinone) (PCTB) as a potential cathode material for aqueous zinc ion batteries. **S. Pedaballi**, W.T. McLeod, K.A. McCracken, J. Gordon

11:00 340. Probing Nanomorphology of guest component in ternary organic photovoltaics. **T. Melody**, A. Patterson, B. Collins

11:20 341. Combing DFT based optical models with resonant X-ray reflectivity to measure orientation at buried interfaces. **H. Heilman**, B. Collins

11:40 342. Green solvent enables record performance in model PCDTBT:PCBM organic solar cells through reduced recombination. **A. Patterson**, B. Collins

Advancements and Training in Nuclear Materials Processing and Sensing in Harsh Environments

Smith Center for Undergraduate Excellence
CUE 418

Cosponsored by NUCL
S. A. Bryan, A. Schafer Medina, *Presiding*

8:25 Introductory Remarks.

8:30 344. Development and retention of a sustainable nuclear workforce. **J.L. Bryant**

9:10 345. Determination of ^{133}Cs, ^{135}Cs, and ^{137}Cs isotopes in the presence of Ba using ICP-MS/MS. T. McCall, **M. Lindberg**

9:30 346. Electrochemical investigation of Europium and Uranium redox kinetics using Boron-Doped Diamond electrodes in a molten salt environment. **J.M. Rakos**, N. Damjanovic, D. weber,

S. Kazemeini, A. Lines, S.A. Bryan, W.R. Heineman, S.D. Branch, C.A. Rusinek

9:50 Morning Coffee/Snack Break.

10:20 347. Development of online monitoring sensors and chemometric models for chemical composition analysis in molten salts. **A. Schafer Medina**, S. Choi, J.M. Rakos, S.D. Branch, H. Felmy, S.A. Bryan, A. Lines

10:40 348. Substitution of concentrated nitric for fuming nitric in Sr-90 separation for Hanford Tank Waste. **A. Killgore**

Breaking Borders in the Nuclear Science Enterprise

Smith Center for Undergraduate Excellence
CUE 419

Cosponsored by NUCL
J. M. Boncella, A. Lines, *Organizers*
N. J. Henson, *Presiding*

8:25 Introductory Remarks.

8:30 349. Progress in Hanford tank waste treatment. **T. Brouns**

9:10 350. Nuclear nanotechnology: Mechanisms behind the formation of uranium oxide nanoparticles. **L.M. Moreau**

9:50 Morning Coffee/Snack Break.

10:20 351. Towards real time optimization of chemical processing of a nuclear forensics sample. **N.E. Uhnak**, M. Dinpajooh, A.M. Ritzmann, R. Overstreet, L.A. Metz

11:00 352. Re-evaluating the value proposition of recycling used nuclear fuel. **A. Lines**, W. Nutt, S. Arm, G.B. Hall, G.J. Lumetta, P. Paviet, B. Riley, B.N. Seiner, P.K. Thallapally, A. Zbib

Breaking Borders and Building Bonds at the Limits of Detection

Smith Center for Undergraduate Excellence
CUE 209

Cosponsored by ANYL
E. Linskey, *Organizer*

8:45 Introductory Remarks.

8:50 274. Super-resolution IR microscopy that can be combined with simultaneous Raman and co-located fluorescence for a wide range of applications. **t. yan**, E. Dillon, J. Anderson, M. Kansiz

9:10 275. Spatially resolved cyano radical in nitromethane monopropellant combustion. **B.N. Dean**, O. Wolff, R.A. Walker

9:30 276. Pushing analytical detection limits to investigate high-purity materials for dark matter detectors. **M. di Vacri**, **T. Schlieder**, N. Rocco, I. Arnquist, K. Hobbs, A. French

9:50 Morning Coffee/Snack Break.

10:20 277. Extraction and analysis of SVOC in Hanford tank waste by SBSE/TD/GC-MS. **S. Bairai**

10:40 385. 1- and 2-dimensional imaging of high pressure monopropellant combustion. **O. Wolff**, B.N. Dean, J.B. Sinrud, R.A. Walker

11:00 390. Elemtal analysis of challenging Matsricies by ICP-MS. **E.T. Linskey**

Breaking Borders and Building Bonds Through Synthesis

Smith Center for Undergraduate Excellence
CUE 416

Cosponsored by CATL
W. D. Bailey, *Organizer*

8:45 Introductory Remarks.

8:50 363. Cr^{2+} in square planar coordination: durable and intense magenta pigments inspired by lunar mineralogy. **A. Verma**, J. Li, M. Subramanian

9:10 364. H-X addition to ruthenium complexes bearing PNNNP ligands. **N. Fisher**, J.M. Boncella

9:30 365. First-row transition metal pincer complexes for the electrochemical reduction of CO_2. **W.D. Bailey**, J. Smith, S. von Fuchs, S. Dillinger

NORM 2024 Shuttle Schedules

Marriott Shuttle

This shuttle services the Marriott Courtyard (1295 NE North Fairway Rd, Pullman, WA 99163) and the Residence Inn (1255 NE North Fairway Rd, Pullman, WA 99163) and provides transport to/from the hotels to the CUE and the Awards banquet.

Sunday, June 23rd		
Leave CUE	Leave Residence Inn	Arrive @CUE
	3:00 PM	3:05 PM
3:30 PM	3:35 PM	3:40 PM
4:00 PM	4:05 PM	4:10 PM
4:15 PM	4:20 PM	4:25 PM
4:30 PM	4:35 PM	4:40 PM
4:45 PM	4:50 PM	4:55 PM
5:00 PM	5:05 PM	5:10 PM
5:30 PM	5:35 PM	5:40 PM
6:00 PM	6:05 PM	6:10 PM
6:30 PM	6:35 PM	6:40 PM
7:00 PM	7:05 PM	7:10 PM
7:30 PM	7:35 PM	7:40 PM
8:00 PM	8:05 PM	8:10 PM
8:30 PM	8:35 PM	8:40 PM
9:00 PM	9:05 PM	9:10 PM
9:30 PM	9:35 PM	9:40 PM
10:00 PM	10:05 PM	10:10 PM
10:15 PM	10:20 PM	

Travel time between Marriott Hotels and CUE ~ 5 minutes

Monday, June 24th		
Leave CUE	Leave Residence Inn	Arrive @CUE
	7:00 AM	7:05 AM
7:15 AM	7:20 AM	7:25 AM
7:35 AM	7:40 AM	7:45 AM
7:55 AM	8:00 AM	8:05 AM
8:15 AM	8:20 AM	8:25 AM
8:35 AM	8:40 AM	8:45 AM
9:00 AM	9:10 AM	9:15 AM
9:30 AM	9:35 AM	9:40 AM
10:15 AM	10:25 AM	10:30 AM
11:00 AM	11:10 AM	11:15 AM
11:45 AM	11:50 AM	11:55 AM
12:15 PM	12:20 PM	12:25 PM
12:45 PM	12:50 PM	12:55 PM
1:15 PM	1:20 PM	1:30 PM
2:00 PM	2:05 PM	2:10 PM
2:45 PM	2:50 PM	2:55 PM
3:30 PM	3:35 PM	3:40 PM
4:15 PM	4:20 PM	4:25 PM
4:45 PM	4:50 PM	4:55 PM
5:15 PM	5:20 PM	5:25 PM
5:45 PM	5:50 PM	5:55 PM
6:15 PM	6:20 PM	6:25 PM
6:45 PM	6:50 PM	6:55 PM
7:45 PM	7:50 PM	7:55 PM
8:30 PM	8:35 PM	8:40 PM
9:15 PM	9:20 PM	9:25 PM
9:45 PM	9:50 PM	9:55 PM
10:05 PM	10:10 PM	10:15 PM

Travel time between Marriott Hotels and CUE ~ 5 minutes

Tuesday, June 25th				
Leave CUE	Leave Awards Banquet	Leave Residence Inn	Arrive @ CUE	Arrive @ Awards Banquet
		7:00 AM	7:05 AM	
7:15 AM		7:20 AM	7:25 AM	
7:35 AM		7:40 AM	7:45 AM	
7:55 AM		8:00 AM	8:05 AM	
8:15 AM		8:20 AM	8:25 AM	
8:35 AM		8:40 AM	8:45 AM	
9:00 AM		9:05 AM	9:10 AM	
9:30 AM		9:35 AM	9:40 AM	
10:15 AM		10:20 AM	10:25 AM	
11:00 AM		11:05 AM	11:10 AM	
11:45 AM		11:50 AM	11:55 AM	
12:15 PM		12:20 PM	12:25 PM	
12:45 PM		12:50 PM	12:55 PM	
1:15 PM		1:20 PM	1:25 PM	
2:00 PM		2:05 PM	2:10 PM	
2:45 PM		2:50 PM	2:55 PM	
3:30 PM		3:35 PM	3:40 PM	
4:15 PM		4:20 PM	4:25 PM	
4:45 PM		4:50 PM	4:55 PM	
5:15 PM		5:20 PM		5:25 PM
5:45 PM		5:50 PM		5:55 PM
	6:05 PM	6:10 PM		6:15 PM
	7:00 PM	7:05 PM		7:10 PM
	7:45 PM	7:50 PM		7:55 PM
	8:30 PM	8:35 PM		8:40 PM
	9:00 PM	9:05 PM		9:10 PM
	9:20 PM	9:25 PM		

Travel time between Marriott Hotels and CUE (or Awards Banquet) ~ 5 minutes

Wednesday, June 26th		
Leave CUE	Leave Residence Inn	Arrive @CUE
	7:00 AM	7:05 AM
7:15 AM	7:20 AM	7:25 AM
7:35 AM	7:40 AM	7:45 AM
7:55 AM	8:00 AM	8:05 AM
8:15 AM	8:20 AM	8:25 AM
8:35 AM	8:40 AM	8:45 AM
9:00 AM	9:05 AM	9:10 AM
9:30 AM	9:35 AM	9:40 AM
10:15 AM	10:20 AM	10:25 AM
11:00 AM	11:05 AM	11:10 AM
11:45 AM	11:50 AM	11:55 AM
12:15 PM	12:20 PM	12:25 PM
12:45 PM	12:50 PM	12:55 PM
1:15 PM	1:20 PM	1:30 PM
2:00 PM	2:05 PM	2:10 PM
2:45 PM	2:50 PM	2:55 PM

Travel time between Marriott Hotels and CUE ~ 5 minutes

Hampton Shuttle **This shuttle services the Hampton Inn (1190 SE Bishop Blvd, Pullman, WA 99163) and provides transport to/from the hotels to the CUE and the Awards banquet.**

Sunday, June 23rd		
Leave CUE	Leave Hampton Inn	Arrive @CUE
	3:00 PM	3:05 PM
3:30 PM	3:35 PM	3:40 PM
4:00 PM	4:05 PM	4:10 PM
4:15 PM	4:20 PM	4:25 PM
4:30 PM	4:35 PM	4:40 PM
4:45 PM	4:50 PM	4:55 PM
5:00 PM	5:05 PM	5:10 PM
5:30 PM	5:35 PM	5:40 PM
6:00 PM	6:05 PM	6:10 PM
6:30 PM	6:35 PM	6:40 PM
7:00 PM	7:05 PM	7:10 PM
7:30 PM	7:35 PM	7:40 PM
8:00 PM	8:05 PM	8:10 PM
8:30 PM	8:35 PM	8:40 PM
9:00 PM	9:05 PM	9:10 PM
9:30 PM	9:35 PM	9:40 PM
10:00 PM	10:05 PM	10:10 PM
10:15 PM	10:20 PM	
Travel time between Hampton Inn and CUE ~ 5 minutes		

Wednesday, June 26th		
Leave CUE eave CUE	Leave Hampton Inn	Arrive @CUE
	7:00 AM	7:05 AM
7:15 AM	7:20 AM	7:25 AM
7:35 AM	7:40 AM	7:45 AM
7:55 AM	8:00 AM	8:05 AM
8:15 AM	8:20 AM	8:25 AM
8:35 AM	8:40 AM	8:45 AM
9:00 AM	9:10 AM	9:15 AM
9:30 AM	9:35 AM	9:40 AM
10:15 AM	10:25 AM	10:30 AM
11:00 AM	11:10 AM	11:15 AM
11:45 AM	11:50 AM	11:55 AM
12:15 PM	12:20 PM	12:25 PM
12:45 PM	12:50 PM	12:55 PM
1:15 PM	1:20 PM	1:25 PM
2:00 PM	2:05 PM	2:10 PM
2:45 PM	2:50 PM	2:55 PM
3:00 PM	3:05 PM	3:10 PM
Travel time between Hampton Inn and CUE ~ 5 minutes		

Monday, June 24th		
Leave CUE	Leave Hampton Inn	Arrive @CUE
	7:00 AM	7:05 AM
7:15 AM	7:20 AM	7:25 AM
7:35 AM	7:40 AM	7:45 AM
7:55 AM	8:00 AM	8:05 AM
8:15 AM	8:20 AM	8:25 AM
8:35 AM	8:40 AM	8:45 AM
9:00 AM	9:10 AM	9:15 AM
9:30 AM	9:35 AM	9:40 AM
10:15 AM	10:20 AM	10:25 AM
11:00 AM	11:05 AM	11:10 AM
11:45 AM	11:50 AM	11:55 AM
12:15 PM	12:20 PM	12:25 PM
12:45 PM	12:50 PM	12:55 PM
1:15 PM	1:20 PM	1:25 PM
2:00 PM	2:05 PM	2:10 PM
2:45 PM	2:50 PM	2:55 PM
3:30 PM	3:35 PM	3:40 PM
4:15 PM	4:20 PM	4:30 PM
4:45 PM	4:50 PM	4:55 PM
5:15 PM	5:20 PM	5:25 PM
5:45 PM	5:50 PM	5:55 PM
6:15 PM	6:20 PM	6:25 PM
6:45 PM	6:50 PM	6:55 PM
7:45 PM	7:50 PM	7:55 PM
8:30 PM	8:35 PM	8:40 PM
9:15 PM	9:20 PM	9:25 PM
9:45 PM	9:50 PM	9:55 PM
10:00 PM	10:05 PM	
Travel time between Hampton Inn and CUE ~ 5 minutes		

Tuesday, June 25th				
Leave CUE	Leave Awards Banquet	Leave Hampton Inn	Arrive @ CUE	Arrive @ Awards Banquet
		7:00 AM	7:05 AM	
7:15 AM		7:20 AM	7:25 AM	
7:35 AM		7:40 AM	7:45 AM	
7:55 AM		8:00 AM	8:05 AM	
8:15 AM		8:20 AM	8:25 AM	
8:35 AM		8:40 AM	8:45 AM	
9:00 AM		9:05 AM	9:10 AM	
9:30 AM		9:35 AM	9:40 AM	
10:15 AM		10:20 AM	10:25 AM	
11:00 AM		11:05 AM	11:10 AM	
11:45 AM		11:50 AM	11:55 AM	
12:15 PM		12:20 PM	12:25 PM	
12:45 PM		12:50 PM	12:55 PM	
1:15 PM		1:20 PM	1:25 PM	
2:00 PM		2:05 PM	2:10 PM	
2:45 PM		2:50 PM	2:55 PM	
3:30 PM		3:35 PM	3:40 PM	
4:15 PM		4:20 PM	4:25 PM	
4:45 PM		4:50 PM	4:55 PM	
5:15 PM		5:20 PM		5:30 PM
5:45 PM		5:50 PM		6:00 PM
	6:05 PM	6:15 PM		6:25 PM
	7:00 PM	7:10 PM		7:20 PM
	7:45 PM	7:55 PM		8:05 PM
	8:30 PM	8:40 PM		8:50 PM
	9:00 PM	9:10 PM		9:20 PM
	9:20 PM	9:30 PM		
Travel time between Hampton Inn and CUE ~ 5 minutes				
Travel time between Hampton Inn and Awards Banquet ~ 9 minutes				

Coast Hilltop Inn Shuttle

This shuttle services the Coast Hilltop Inn (928 NW Olsen St, Pullman, WA 99163) and provides transport to/from the hotels to the CUE and the Awards banquet.

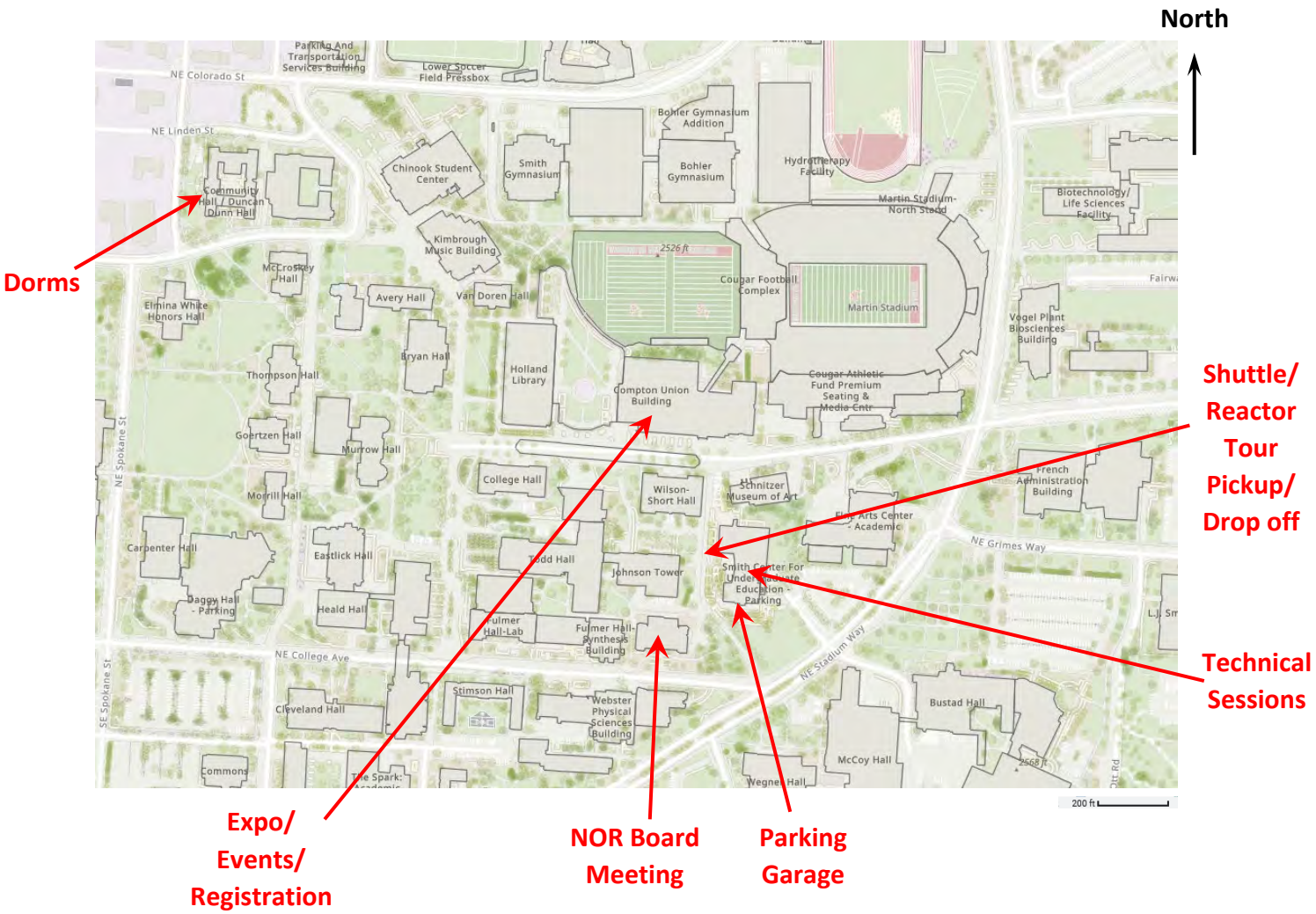
Sunday, June 23rd		
Leave CUE	Leave Hilltop	Arrive @CUE
	3:00 PM	3:10 PM
3:30 PM	3:40 PM	3:50 PM
4:00 PM	4:10 PM	4:20 PM
4:25 PM	4:35 PM	4:45 PM
4:50 PM	5:00 PM	5:10 PM
5:15 PM	5:25 PM	5:35 PM
6:00 PM	6:10 PM	6:20 PM
6:30 PM	6:40 PM	6:50 PM
7:00 PM	7:10 PM	7:20 PM
7:30 PM	7:40 PM	7:50 PM
8:00 PM	8:10 PM	8:20 PM
8:30 PM	8:40 PM	8:50 PM
9:00 PM	9:10 PM	9:20 PM
9:30 PM	9:40 PM	9:50 PM
10:00 PM	10:10 PM	10:20 PM
10:25 PM	10:35 PM	
Travel time between Hilltop and CUE ~ 8 minutes		

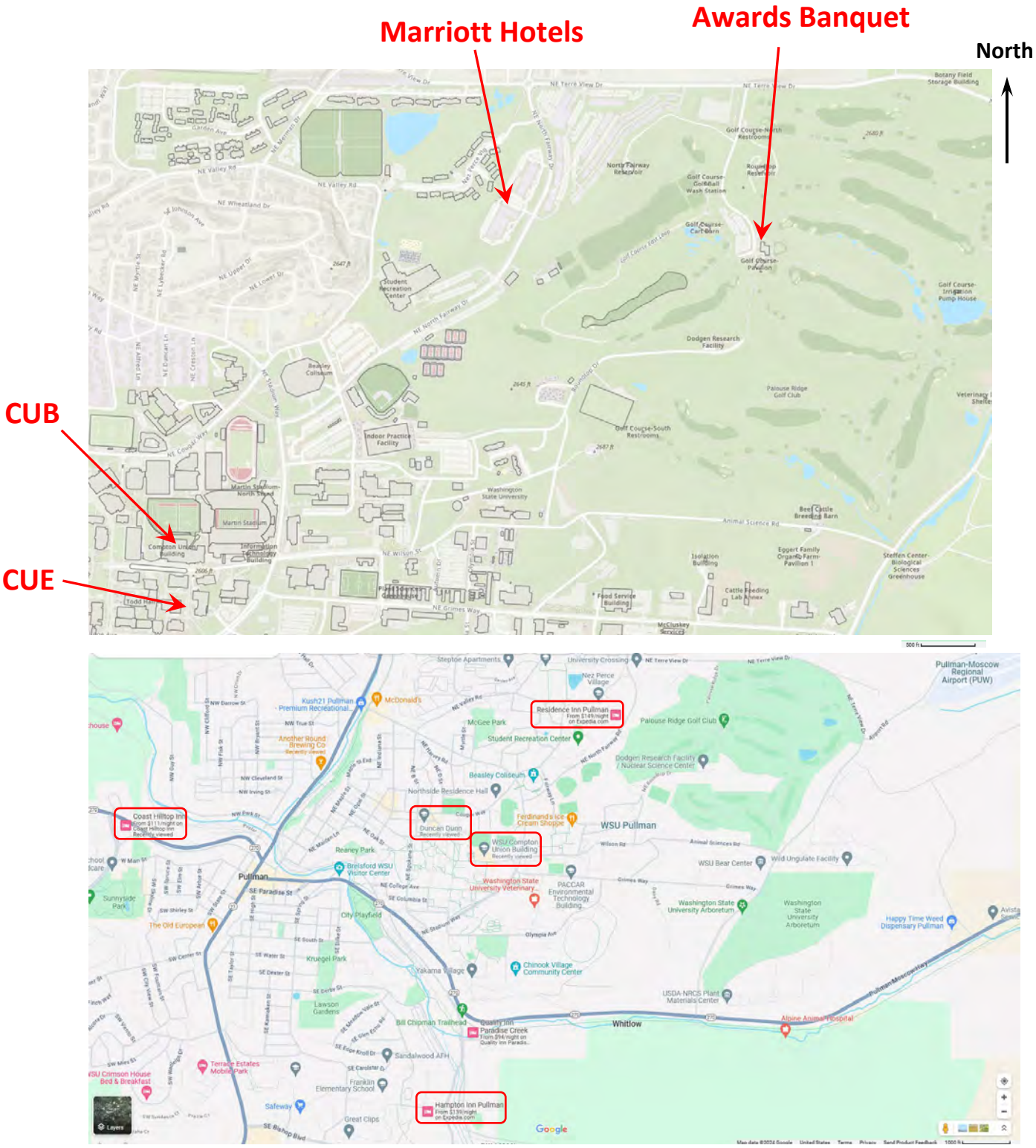
Monday, June 24th		
Leave CUE	Leave Hilltop Inn	Arrive @CUE
	7:00 AM	7:10 AM
7:15 AM	7:25 AM	7:35 AM
7:40 AM	7:50 AM	8:00 AM
8:05 AM	8:15 AM	8:25 AM
8:30 AM	8:40 AM	8:50 AM
8:55 AM	9:05 AM	9:15 AM
9:30 AM	9:40 AM	9:50 AM
10:15 AM	10:25 AM	10:35 AM
11:00 AM	11:10 AM	11:20 AM
11:45 AM	11:55 AM	12:05 PM
12:30 PM	12:40 PM	12:50 PM
1:15 PM	1:25 PM	1:35 PM
2:00 PM	2:10 PM	2:20 PM
2:45 PM	2:55 PM	3:05 PM
3:30 PM	3:40 PM	3:50 PM
4:15 PM	4:25 PM	4:35 PM
4:45 PM	4:55 PM	5:05 PM
5:15 PM	5:25 PM	5:35 PM
5:45 PM	5:55 PM	6:05 PM
6:15 PM	6:25 PM	6:35 PM
6:45 PM	6:55 PM	7:05 PM
7:45 PM	7:55 PM	8:05 PM
8:30 PM	8:40 PM	8:50 PM
9:15 PM	9:25 PM	9:35 PM
9:45 PM	9:55 PM	10:05 PM
10:10 PM	10:20 PM	
Travel time between Hilltop and CUE ~ 8 minutes		

Tuesday, June 25th				
Leave CUE	Leave Awards Banquet	Leave Hilltop Inn	Arrive @ CUE	Arrive @ Awards Banquet
		7:00 AM	7:10 AM	
7:15 AM		7:25 AM	7:35 AM	
7:40 AM		7:50 AM	8:00 AM	
8:05 AM		8:15 AM	8:25 AM	
8:30 AM		8:40 AM	8:50 AM	
8:55 AM		9:05 AM	9:15 AM	
9:20 AM		9:30 AM	9:40 AM	
9:45 AM		9:55 AM	10:05 AM	
10:15 AM		10:25 AM	10:35 AM	
11:00 AM		11:10 AM	11:20 AM	
11:45 AM		11:55 AM	12:05 PM	
12:15 PM		12:25 PM	12:35 PM	
12:45 PM		12:55 PM	1:05 PM	
1:15 PM		1:25 PM	1:35 PM	
2:00 PM		2:10 PM	2:20 PM	
2:45 PM		2:55 PM	3:05 PM	
3:30 PM		3:40 PM	3:50 PM	
4:15 PM		4:25 PM	4:35 PM	
4:45 PM		4:55 PM	5:05 PM	
5:15 PM		5:25 PM		5:35 PM
5:45 PM		5:55 PM		6:05 PM
	6:05 PM	6:15 PM		6:25 PM
	7:00 PM	7:10 PM		7:20 PM
	7:45 PM	7:55 PM		8:05 PM
	8:30 PM	8:40 PM		8:50 PM
	9:00 PM	9:10 PM		9:20 PM
	9:20 PM	9:30 PM		
Travel time between Hilltop and CUE (or Awards Banquet) ~ 8 minutes				

Wednesday, June 26th		
Leave CUE	Leave Hilltop Inn	Arrive @CUE
	7:00 AM	7:10 AM
7:15 AM	7:25 AM	7:35 AM
7:40 AM	7:50 AM	8:00 AM
8:05 AM	8:15 AM	8:25 AM
8:30 AM	8:40 AM	8:50 AM
8:55 AM	9:05 AM	9:15 AM
9:20 AM	9:30 AM	9:40 AM
9:45 AM	9:55 AM	10:05 AM
10:15 AM	10:25 AM	10:35 AM
11:00 AM	11:10 AM	11:20 AM
11:45 AM	11:55 AM	12:05 PM
12:15 PM	12:25 PM	12:35 PM
12:45 PM	12:55 PM	1:05 PM
1:15 PM	1:25 PM	1:35 PM
2:00 PM	2:10 PM	2:20 PM
2:45 PM	2:55 PM	3:05 PM
Travel time between Hilltop and CUE ~ 8 minutes		

Pullman and Washington State University Campus Maps

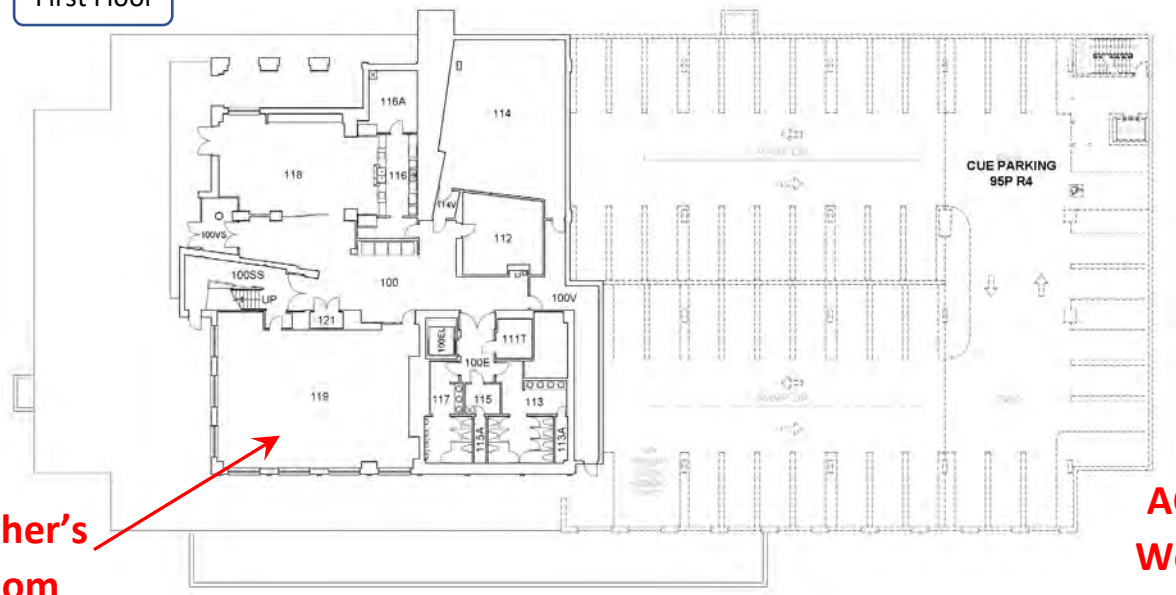



Marriott Hotels
Awards Banquet
North
CUB
CUE
Pullman
WSU Pullman
Whitlow
Residence Inn Pullman
Hampton Inn Pullman
Duncan Dunn
WSU Compton Union Building
Palouse Ridge Golf Club
Pullman-Moscow Regional Airport (PUW)
Google

Compton Union Building (CUB)

Center for Undergraduate Excellence (CUE)

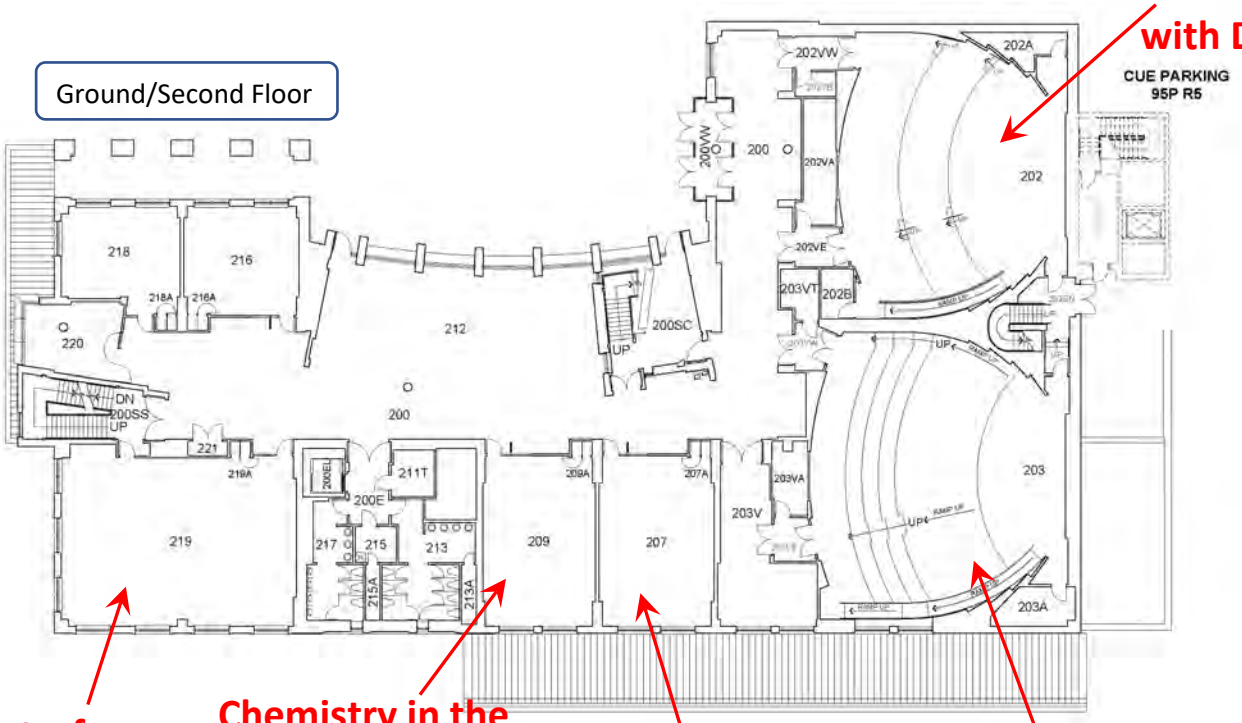
First Floor



Mother's Room

ACS Career Workshops/ Doughnuts with Directors

Ground/Second Floor

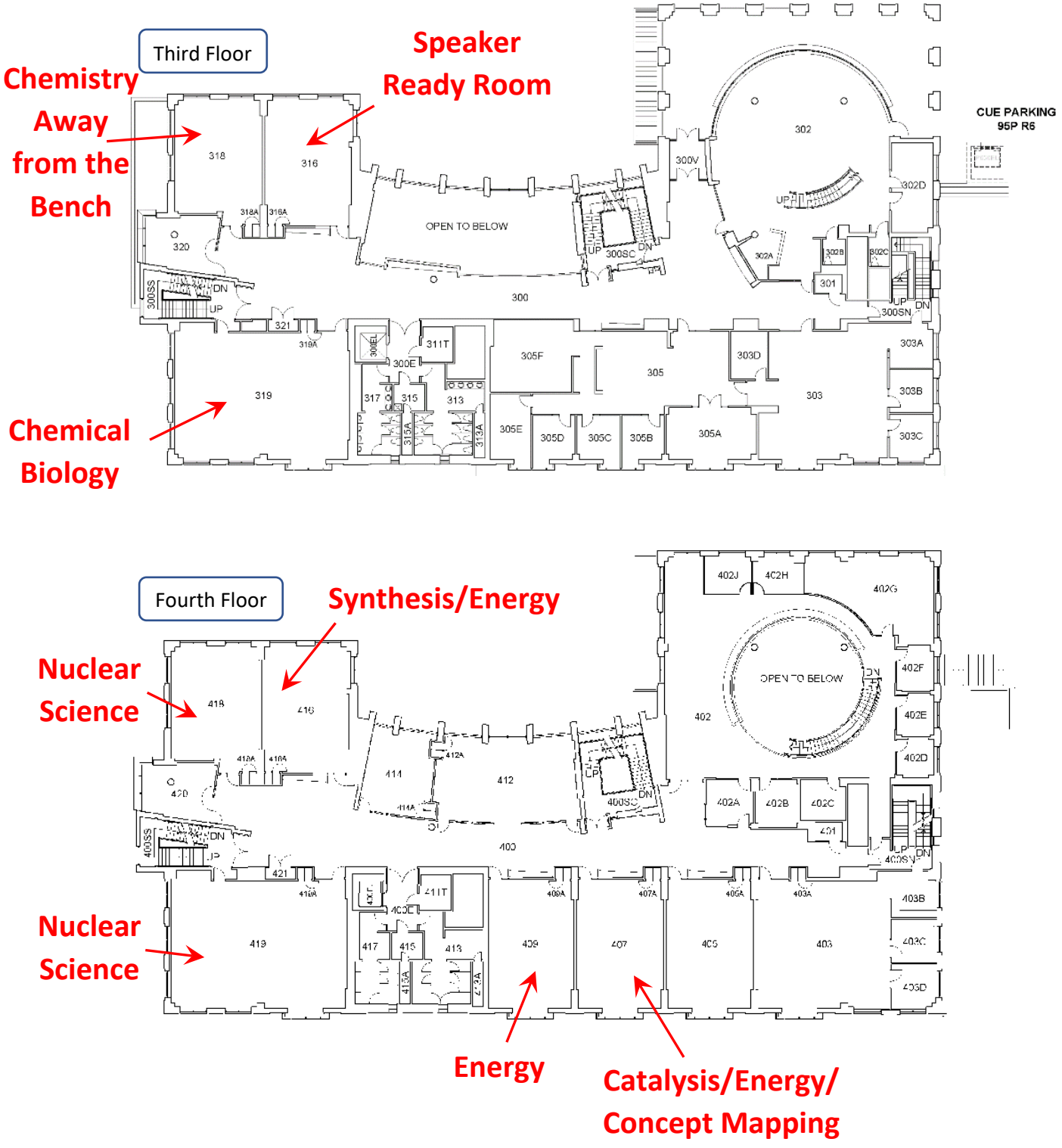


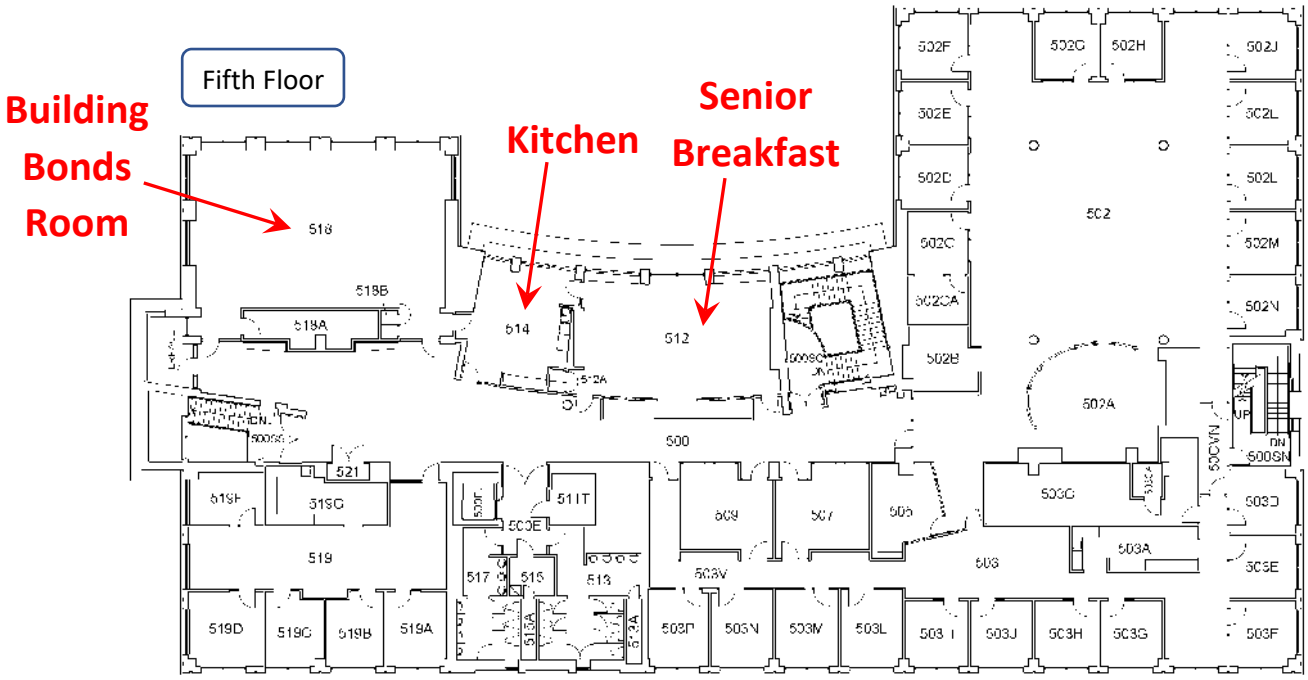
Interfaces

Chemistry in the Community/ Limits of Detection

Interfaces/ Environmental Challenges/ ACS Career Workshop

Innovation 2 Impact/ Safety Luncheon


Third Floor
Chemistry Away from the Bench
Speaker Ready Room
Chemical Biology
CUE PARKING 95P R6
OPEN TO BELOW
Fourth Floor
Synthesis/Energy
Nuclear Science
Nuclear Science
Energy
Catalysis/Energy/ Concept Mapping

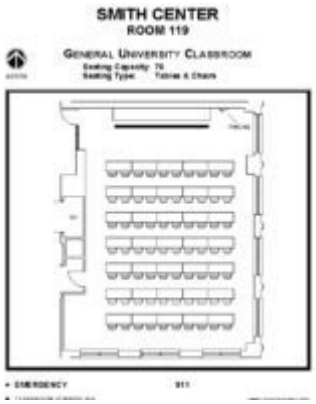

Fifth Floor
Building Bonds Room
Kitchen
Senior Breakfast
518
518B
518A
514
512
500
521
519
519D
519C
519B
519A
517
515
513
509
507
505
503C
503A
503D
503E
503F
503H
503J
503L
503M
503N
503P
502F
502G
502H
502J
502E
502L
502D
502
502C
502M
502CA
502N
502B
502A
500SN
UP
DN

8D. NORM 2024 Technical Session Room Layout

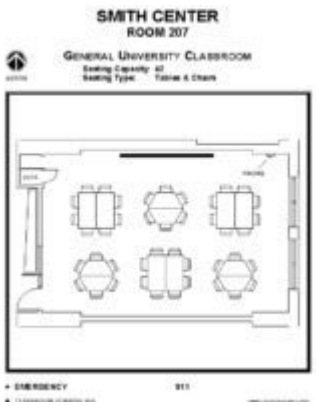
The technical program was held at the Smith Center for Undergraduate Excellence (CUE) on the WSU-Pullman campus. We reserved 13 classrooms with varying capacity from 36 to 112 for June 24th through the 26th. The CUE also has a parking garage located on the lower levels ($2.50/hour (5 am to 5 pm), $1.25/hour (5 pm to 5 am), $20.00 daily maximum).

Each of the classrooms are general university classrooms which contain a white board, a computer (PC) for connecting to the projection screen through HDMI, a document camera, movable seating, and a telephone.

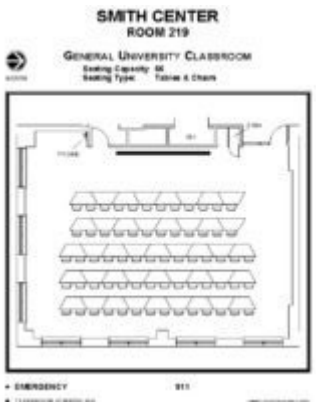
We utilized the following rooms (their capacity is in parentheses): CUE 119 (60), CUE 202 (112), CUE 207 (42), CUE 209 (44), CUE 219 (70), CUE 316 (36), CUE 318 (40), CUE 319 (70), CUE 407 (30), CUE 409 (44), CUE 416 (36), CUE 418 (40), and CUE 419 (70).

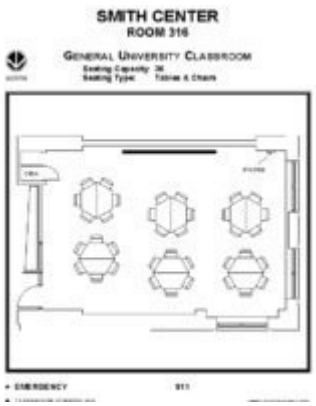

SMITH CENTER
ROOM 119
GENERAL UNIVERSITY CLASSROOM


SMITH CENTER
ROOM 202
GENERAL UNIVERSITY CLASSROOM

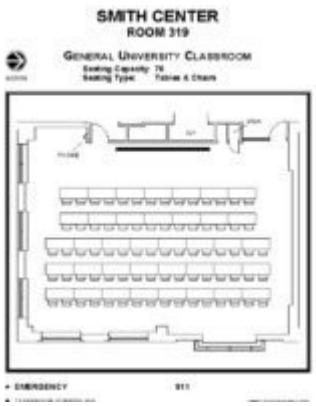

SMITH CENTER
ROOM 207
GENERAL UNIVERSITY CLASSROOM

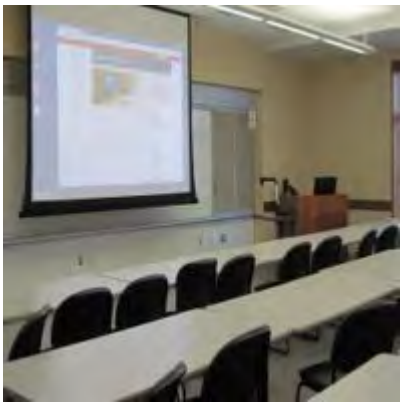

ROOM 209
GENERAL UNIVERSITY CLASSROOM

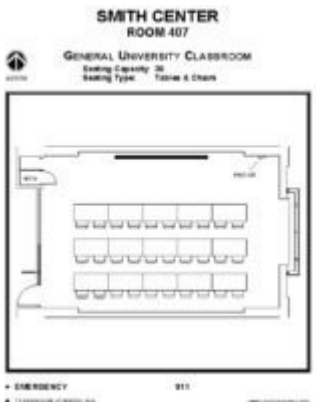

SMITH CENTER
ROOM 219
GENERAL UNIVERSITY CLASSROOM


SMITH CENTER
ROOM 316
GENERAL UNIVERSITY CLASSROOM

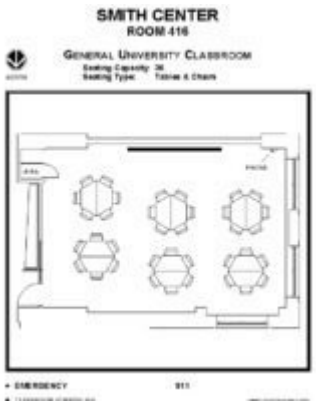

ROOM 318
GENERAL UNIVERSITY CLASSROOM


SMITH CENTER
ROOM 319
GENERAL UNIVERSITY CLASSROOM

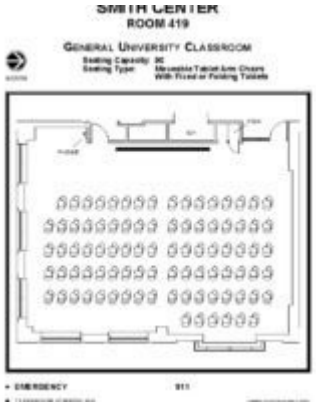



SMITH CENTER
ROOM 407
GENERAL UNIVERSITY CLASSROOM

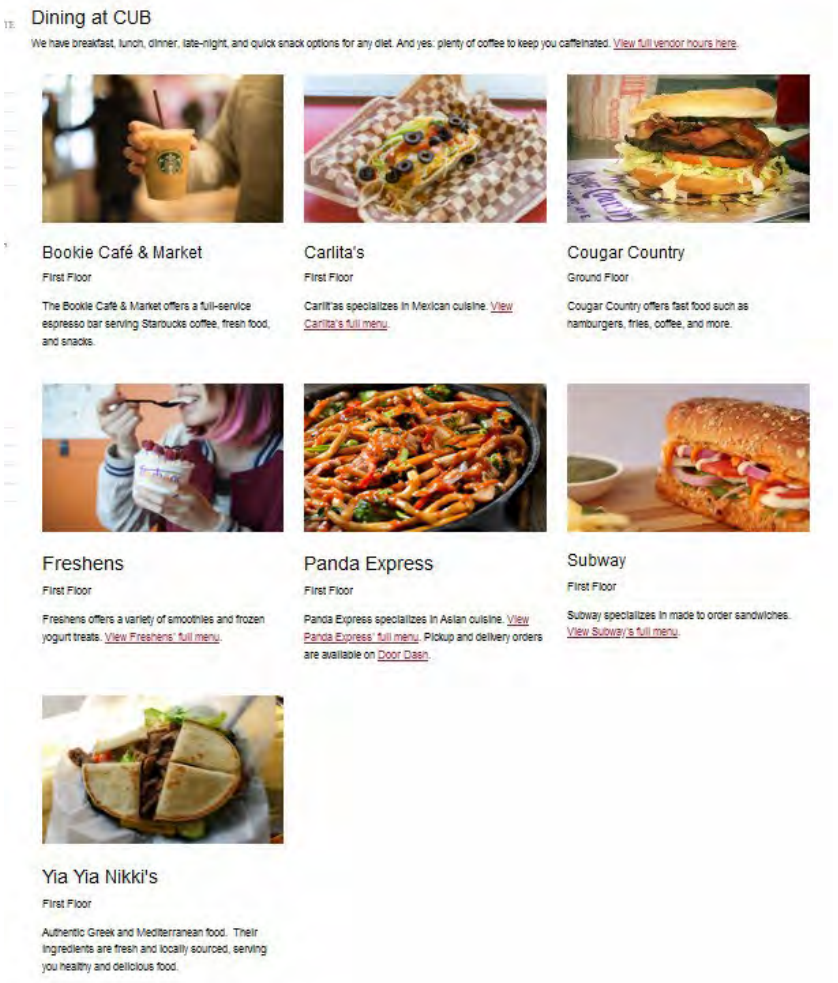

SMITH CENTER
ROOM 409
GENERAL UNIVERSITY CLASSROOM


SMITH CENTER
ROOM 416
GENERAL UNIVERSITY CLASSROOM


SMITH CENTER
ROOM 418
GENERAL UNIVERSITY CLASSROOM



The CUE is also very close walking distance (< 0.1 miles, 2-3 minute walk) to the Compton Union Building which hosts several food vendors (Subway (sandwiches), Carlita's (Mexican), Cougar Country (burgers), Panda Express (Asian), Yi Yia Nikki's (Greek), and Freshens (smoothies and Yogurt).



Dining at CUB

We have breakfast, lunch, dinner, late-night, and quick snack options for any diet. And yes: plenty of coffee to keep you caffeinated. View full vendor hours here.

Bookie Café & Market

First Floor

The Bookie Café & Market offers a full-service espresso bar serving Starbucks coffee, fresh food, and snacks.

Carlita's

First Floor

Carlita's specializes in Mexican cuisine. View Carlita's full menu.

Cougar Country

Ground Floor

Cougar Country offers fast food such as hamburgers, fries, coffee, and more.

Freshens

First Floor

Freshens offers a variety of smoothies and frozen yogurt treats. View Freshens' full menu.

Panda Express

First Floor

Panda Express specializes in Asian cuisine. View Panda Express' full menu. Pickup and delivery orders are available on Door Dash.

Subway

First Floor

Subway specializes in made to order sandwiches. View Subway's full menu.

Yia Yia Nikki's

First Floor

Authentic Greek and Mediterranean food. Their ingredients are fresh and locally sourced, serving you healthy and delicious food.

The opening program and poster session was hosted in the Senior Ballroom in the Compton Union Building (2-3 minute walk from CUE), which has a capacity of 1,500.

The Compton Union Building Auditorium, which has a capacity of 480, was used for any plenary talks.

We plan to host the WCC Luncheon, WSU and University of Idaho Alumni and Friends Reception, the Academica and Employment Recruitment Fair, and Undergraduate Poster Session was held in the Compton Union Building Junior Ballroom, which is down the hall from the Senior Ballroom, and has a capacity of 350.

8E. NORM 2024 Exposition/Sponsorship Prospectus

Prospectuses are available here: *HTTPS://NORM2024.ORG/DOWNLOAD/6629/?TMSTV=1710208186*
The prospectuses were given out at the Spring 2024 expo (should have had these for the Fall 2023 expo) and Fisher Product fairs. We handed out ~20 paper copies at the Spring ACS meeting.

Exhibitors were also given the option of purchasing a Lead Capture Option (see flyer on page 190)

NORM 2024

Breaking Borders: Building Bonds

NORM 2024
Exhibitor & Sponsorship Prospectus

Conference Dates: June 23rd – 26th, 2024

Exhibit Dates: June 23rd – 25th, 2024

Exhibition Location: Senior Ballroom of Compton Union Building

Washington State University Campus

Pullman, WA

NORM 2024 Fast Facts

- **Venue**
  - Compton Union Building
  - Pullman, WA

- **Exhibit Dates and Times**
  - Sunday, June 23rd
    - 5:00 pm – 7:00 pm
  - Monday, June 24th
    - 8:00 am – 5:00 pm
  - Tuesday, June 25th
    - 8:00 am – 3:30 pm

- **Installation Schedule**
  - Sunday, June 23rd
    - 12:00 pm – 5:00 pm

- **Dismantle Schedule**
  - Tuesday, June 25th
    - 3:30 pm – 5:00 pm

- **Contacts**
  - Zachariah Heiden
    - Expo/General Chair
    - Zachariah.heiden@wsu.edu
  - Kristopher Waynant
    - Technical Session Chair
    - kwaynant@uidaho.edu

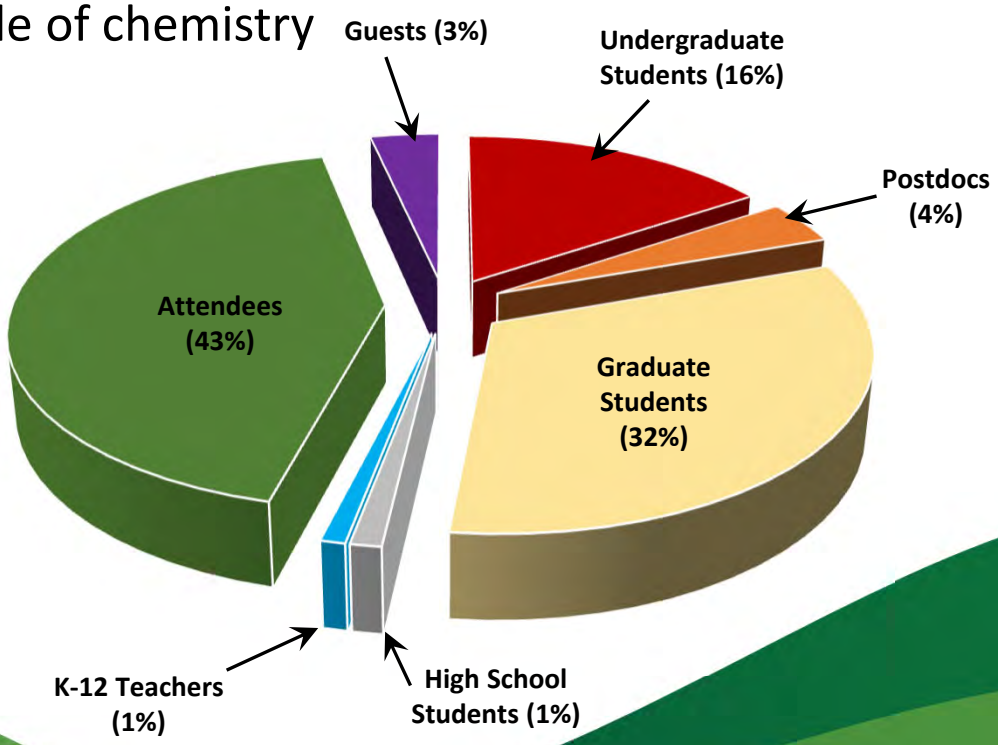
- **Space Assignments**
  - Priority for space assignment is based on sponsorship level (if relevant) and date on which the exhibit space is reserved

- **Booth Sizes and Fees**
  - Standard booth is an 8-foot-long table with two chairs, tablecloth, and pipe and drape
  - Power will be available upon request
  - Standard Booth…$1000
  - Double Booth……$1900
  - Literature Only (Commercial)……$250
  - Nonprofit…….$500
  - Literature Only (Nonprofit)…….$150

- **Hotel Accommodations**
  - Reservations for hotel accommodations at NORM 2024 can be made through the NORM 2024 website
  - https://norm2024.org/travel/

NORM 2024 Attendee Demographics

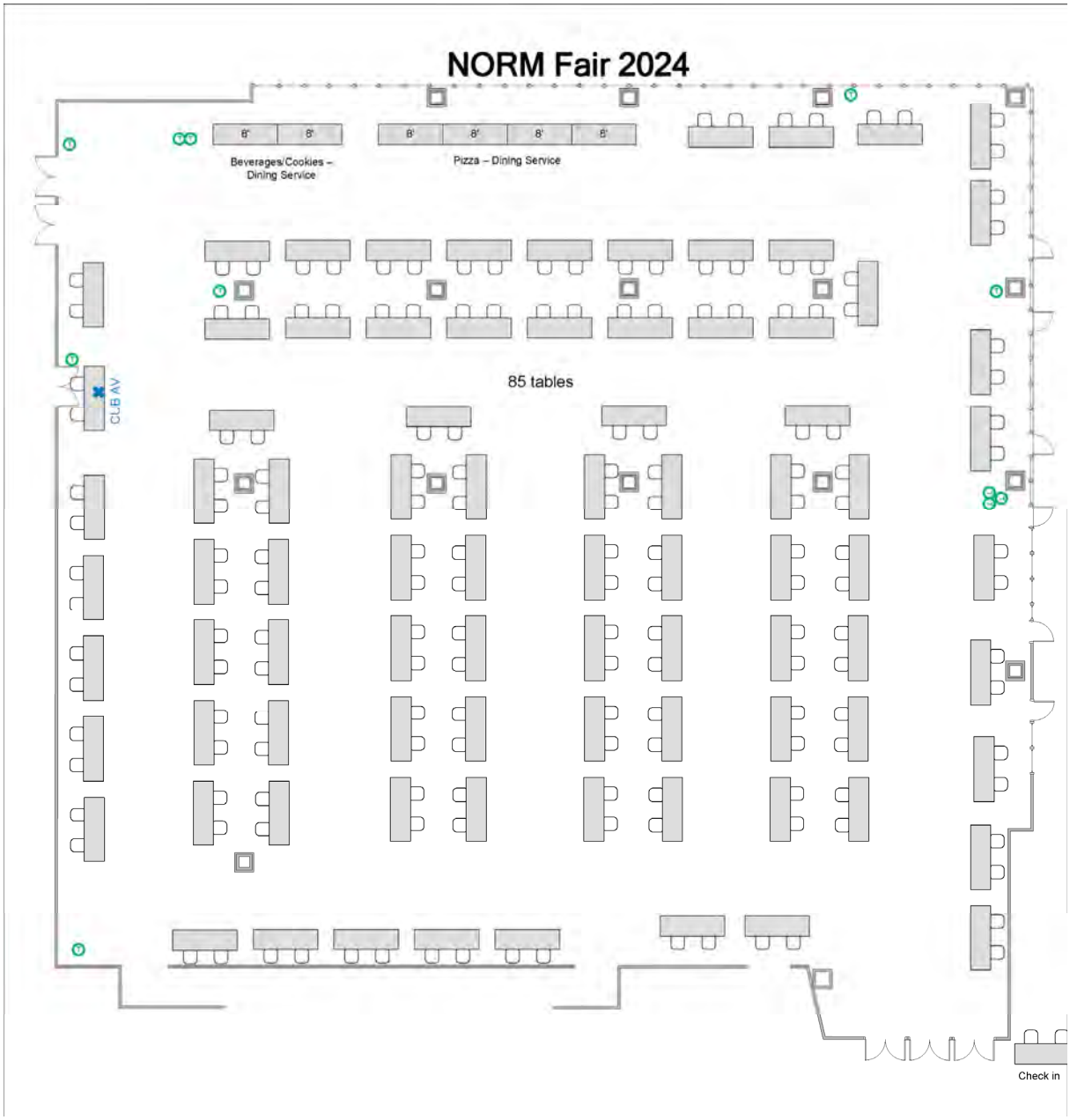
- 500-800 attendees
- About 75% of attendees are from the Northwest Region
- Roughly 40 states represented
- ~1 % of attendees come from outside the United States
- NORM 2024 sits within 600 miles (10-hour drive) of two national laboratories and will have many attendees from Pacific Northwest National Laboratory and Idaho National Laboratory
- NORM program is designed to be of interest to attendees in chemistry and disciplines outside of chemistry



NORM 2024 Booth Assignment Procedures and Cancellation Information

- All products and services exhibited must be of interest to the attendees of the Northwest Regional Meeting (NORM) of the American Chemical Society
- NORM organizers reserve the right to accept or refuse any application in its sole discretion, including but not limited to, refusing applications of organizations not meeting standard requirements or expectations. This applies to displays, literature, advertising novelties, souvenirs, conduct of persons, etc.
- **Space Assignments**
  - Space assignments are made in one of the following three ways:
  - Sponsors also exhibiting at NORM 2024 will be priority over general exhibitors
  - Space assignments for exhibitors will be given the option of selecting their booth location in the finalized exposition layout
  - Applications received after **May 3rd**, will be assigned space on a first-come, first-served, space availability basis.
- Selection of the locations of exhibitor booths for exhibitors registered on or before May 3rd, will start on **May 6th**
- Application for exhibit space must be made on the official NORM website (https://norm2024.org/expo/)
- No space will be assigned until both an application and full payment have been received.
- Exhibitors wishing to avoid assignment of space adjacent to that of a particular competitor should indicate the company during the booth selection process.
- Careful consideration will be given to all such requests, but relocation cannot be guaranteed.
- In the event of conflicts regarding space requests or conditions beyond the control of exhibit management, NORM 2024 organizers reserves the right to revise, relocate, or reassign exhibit booths at any time for the overall benefit of the meeting.
- A revised floor plan will be provided upon request.

NORM 2024 Tentative Exhibition Layout



A finalized layout will be available after May 3rd

NORM 2024 Additional Rules and Regulations

- **Food and Beverage Products**
  - All food and beverage service must be coordinated through the convention center caterer. Food preparation and cooking are prohibited in the exhibit hall.
  - Opportunities to sponsor snacks/lunches/socials are available through the NORM website: https://norm2024.org/support/
- **Handouts and Giveaways**
  - All items to be distributed must be useful to the participants at the meeting and/or in the professional activities of the booth visitor.
- **Lead Retrieval Tool**
  - All NORM 2024 badges will contain a QR code that can be scanned with a cell phone using an app provided by ACS/Cvent
  - App Cost: $249 single license, $149 for additional license
  - Will be purchased through ACS
- **Exhibitor Lounge**
  - CUB 204 will be stocked with coffee/refreshments and snacks for the exhibitors during the following hours
    - Monday, June 24th
      - 8 am – 4 pm
    - Tuesday, June 25th
      - 8 am – 4 pm
- **Admission of Guests**
  - All guests must at least have a guest registration to be admitted to the exposition area.
- **Exhibit Personnel Badges**
  - Each exhibitor will be issued a conference badge and must be worn at all times within the exhibition area.
  - The number of badges issued to each exhibitor may be limited.
  - Exhibitor registration should be completed online.
  - Badges will not be mailed in advance and must be picked up on site at the Registration Desk during the following hours:
    - Sunday, June 23rd (noon – 9:00 pm)
    - Monday, June 24th (7 am – 5 pm)
    - Tuesday, June 25th (7 am – 5 pm)
  - Business cards, ribbons from other meetings, and company logos do not supplement the NORM 2024 conference badge.
  - Exhibitor badges allow access to the exhibit and poster halls, in addition to the technical sessions.

NORM 2024 Sponsorship Opportunities

- **Diamond - $20,000**
  - Logo branding on all meeting materials and promotion
  - Linked logo on NORM website
  - Multiple large logos in all seminar room rotating slides
  - Logo in program on sponsors page
  - 4 meeting registrations
  - Up to four hours focus group or one full day invited speaker only symposium
  - Opening remarks (3 min) at Presidential/Governance Plenary on Sunday
  - Expo table in prominent location
- **Platinum - $10,000**
  - Linked logo on NORM website
  - Large logos in all seminar room rotating slides
  - Logo in program on sponsors page
  - 4 registrations
  - Up to four hours focus group or ½ day invited speaker only symposia
  - Expo table in prominent location
- **Gold - $5,000**
  - Linked logo on NORM website
  - Medium logos in all seminar room rotating slides
  - Logo in program on sponsors page
  - 3 registrations
  - Up to two hours focus group or one ½ day invited speaker only symposia
  - Expo table in prominent location
- **Silver - $2,500**
  - Linked logo on NORM website
  - Medium logos in seminar rooms of up to two selected tracks
  - Logo in program on sponsors page
  - 2 registrations
  - Up to one hour focus group time
  - Expo table
- **Copper - $1,000**
  - Linked logo on NORM website
  - Logo in program on sponsors page
  - 1 registration
- **Nickel – Up to $500**
  - Linked logo on NORM website
  - Logo in program on sponsors page

NORM 2024 Technical Program Sponsorship Opportunities

- Individual Symposia/Tracks (any amount in $250 increments)
- Symposia/Track sponsors receive:
  - Mention of the sponsorship at the beginning, breaks, and end of each sponsored symposium/track
- All breaks and receptions will be hosted in the exposition hall (Compton Union Building Senior Ballroom)
- Opening Reception ($10,000)
- Monday (June 24th) Morning Coffee Break ($3,000)
- Monday (June 24th) Lunch ($5,000)
- Monday (June 24th) Afternoon Snack/Coffee Break
- Tuesday (June 25th) Morning Coffee Break ($3,000)
- Tuesday (June 25th) Lunch ($5,000)
- Tuesday (June 25th) Afternoon Ice Cream Social ($3,000)
- Awards Banquet ($7,500)
- Hotel Shuttle ($5,000)
- Partial sponsorships in $250 increments available

NORM 2024 Technical Program and Symposia as of March 1st, 2024

- **Catalysis Track**
  - Integration of Thermal Catalysis and Electrocatalysis
  - Breaking Borders and Building Bonds Through Catalysis
- **Chemical Biology Track**
  - Advances in Medicinal Chemistry
  - Small Molecule Modulators of Aminotransferases and Amidases. Application to α-ketoacid Biochemistry
  - Biochemistry and Biomedicine/Cancer Biochemistry and Biology/Biomedical Engineering and Applications
  - Breaking Borders and Building Bonds in Chemical Biology
  - Emerging Technologies for Targeted and Controlled Drug Delivery
- **Environmental Challenges Track**
  - Advanced Analytical Methods for Discovery of Nutrient and Contaminant Cycling in the Environment
  - Engineering Solutions for Environmental Chemistry Challenges
  - Breaking Borders and Building Bonds Through Environmental Challenges
- **Interfaces Track**
  - 3D Printing of Biomaterials and Drug Delivery
  - Creating and Breaking the Borders in Molecular Recognition
  - Interfacial Chemistry Enables Sustainable and Resilient Infrastructure Materials
  - Electrochemistry
  - Structures, Kinetics, and Thermodynamics at Interfaces
  - Breaking Borders and Building Bonds at Interfaces

https://norm2024.org/program/

NORM 2024 Technical Program and Symposia as of March 1st, 2024

- **Nuclear Science Track**
  - Advances in Actinide and Lanthanide Chemistry
  - The Nucleus, Radiation, and Chemistry Today
  - Geochemistry and Mineralogy of Critical Metal Elements
  - Advancements and Training in Nuclear Materials Processing and Sensing in Harsh Environments
  - Materials in the Nuclear Fuel Cycle: From Cradle to Grave
  - Breaking Borders in the Nuclear Science Enterprise
- **Limits of Detection Track**
  - Pushing the Boundaries of Sensitivity
  - New Frontiers in Mass Spectrometry and Gas-Phase Ion Manipulation
  - Breaking Borders and Building Bonds at the Limits of Detection
- **Energy Track**
  - Chemical Theory and Mechanisms for Sustainable Energy Conversion and Production
  - Biobased Materials and Products
  - Unlocking a Sustainable Future: Harnessing the Power of the Hydrogen and Beyond
  - Exploring the Chemistry of Next-Generation Coolants and Solvents: Radiation-Induced Chemistry
  - Exploring the Chemistry of Next-Generation Coolants and Solvents: Structure and Properties of Coolants, Fuels and Solvents
  - Exploring the Chemistry of Next-Generation Coolants and Solvents: Interfacial Processes Under Extreme Environments
  - Breaking Borders and Building Bonds through Energy

https://norm2024.org/program/

NORM 2024 Technical Program and Symposia as of March 1st, 2024

- **Synthesis Track**
  - Creativity in Metal-Ligand Bonding
  - Breaking Borders and Building Bonds Through Synthesis
- **Chemistry in the Community Track**
  - Advances in STEM Education
  - Project SEED, REU's, and Partners in Science
  - Breaking Borders and Building Bonds through Chemistry in the Community
  - Undergraduate Research
- **Chemistry Away from the Bench Track**
  - The Chemistry of Historical Archaeology
  - Chemistry of Fermented Beverages
  - Computation in Molecular Sciences
  - Computational Chemistry: From Theory to Applications
  - Advancing Chemistry through Computation and Artificial Intelligence
  - Breaking Borders and Building Bonds through Chemistry Away from the Bench

https://norm2024.org/program/

NORM 2024 Dates to Remember

- **December 4th, 2023**
  - Registration for NORM 2024 Exposition opens
- **February 12th, 2024**
  - Abstracts open for technical program
- **March 25th, 2024**
  - Abstracts close for technical program
- **April 1st, 2024**
  - Registration for attendees opens
- **May 3rd, 2024**
  - Exhibit Space Application deadline for priority consideration
- **May 6th, 2024**
  - Selection of exposition booth location begins
- **June 3rd, 2024**
  - Onsite shipments accepted
- **June 14th, 2024**
  - Registration bag inserts due to NORM organizers
- **NORM 2024 Conference – June 23rd – 26th**

LeadCapture for NORM2024

NORM 2024
Breaking Borders: Building Bonds

Looking to purchase lead retrieval licenses? Continue to enhance your experience at the **NORM 2024** with an easy-to-use lead retrieval tool. We have partnered with Cvent to provide lead retrieval services through their LeadCapture product. We appreciate your support at our event and want you to be able to track the impact of attending our Conference.

How It Works:

- Scan badges to gather lead information
- Score leads and takes notes
- Export leads to any database on demand

APP LICENSE

Purchase an app license to download the Cvent LeadCapture app on your own Android or iOS device. Use the app to scan leads and capture relevant qualifying information.

$499	$249	$149
BEST VALUE 3-Pack LeadCapture License	Single LeadCapture License	Additional LeadCapture License

Badge Kit - $995

Purchase a badge kit to scan leads with your own lead retrieval solution at the event.

LeadCapture for NORM2024

NORM 2024
Breaking Borders: Building Bonds

1 FINISH SETTING UP YOUR EXHIBITOR ACCOUNT

- Click here - Enter your details and click **Create Account.**
- You will soon receive the email "Welcome to NORM 2024" from NORM Planning Team NORM@acs.org." Click **Log In** within the email.
- Don't remember your password? Click on "**Forgot?**" to set up your password. You will soon receive the email "Reset your Onsite Solutions Password"
    - If you have LeadCapture login credentials from past events, log in with your email and previously created password. Once logged in, click **Switch Event** (top right) and click Join Event. Search the Event Code: **CAED5C549C10** and add NORM 2024 to the list of events you're exhibiting at.

2 LOGGING BACK IN TO YOUR EXHIBITOR PORTAL

- Log back into your Portal with **this link**. Do not click ***Add your company.***
- Use this Portal to:
    - *Purchase additional LeadCapture licenses, if necessary*
    - *Assign licenses to registered onsite staff*
    - *Create lead-qualifying questions*
    - *Export your leads after the event*

SUPPORT

New to LeadCapture or want additional help? This how-to is all you need to get set up.

Questions? Email leadcapture@cvent.com with any general LeadCapture questions.

8F. NORM 2024 Academic Recruitment & Employment Fair Prospectus

Prospectuses are available here: *HTTPS://NORM2024.ORG/DOWNLOAD/6629/?TMSTV=1710208186*

These were given out at the Spring 2024 expo (should have had these for the Fall 2023 expo). We handed out ~5 paper copies at the Spring ACS meeting, and left 10 copies on the Regional Meeting table at the 2024 Spring National ACS meeting.

NORM 2024

Breaking Borders: Building Bonds

NORM 2024
Academic & Employment Recruitment Fair Prospectus

Conference Dates: June 23rd – 26th, 2024

Academic & Employment Recruitment Fair Date: June 25th, 2024

Academic & Employment Recruitment Fair Location: Junior Ballroom of Compton Union Building

Washington State University Campus

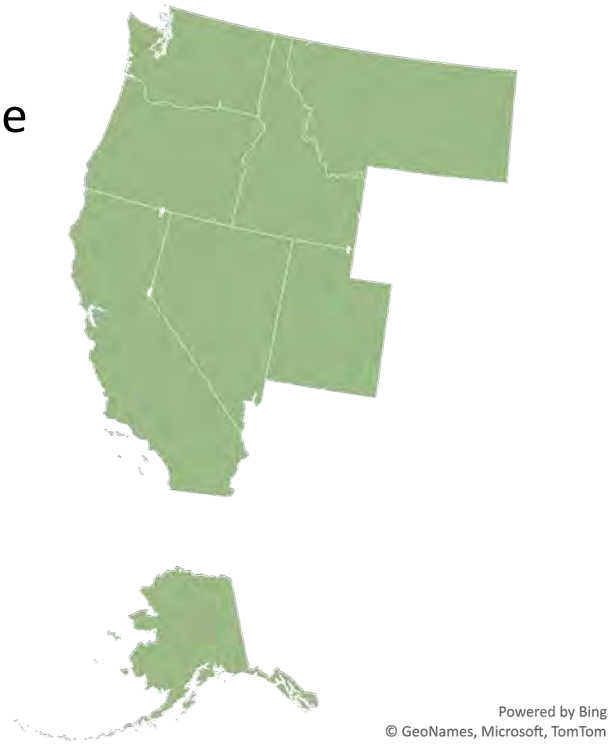
Pullman, WA

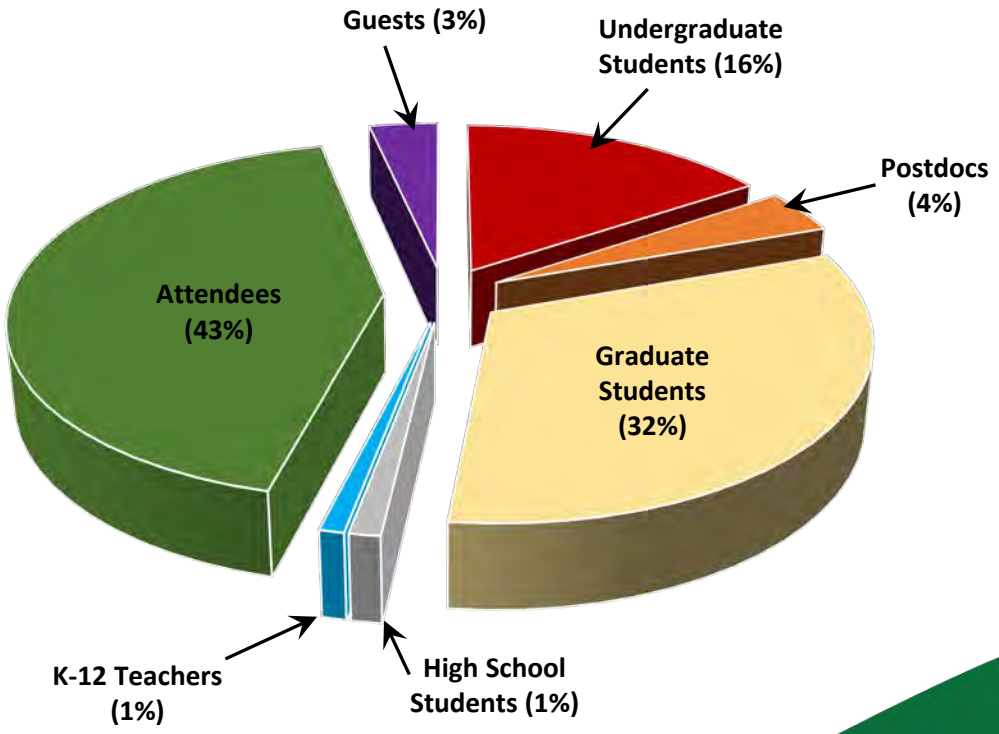
NORM 2024 Fast Facts

- **Venue**
  - Junior Ballroom
  - Compton Union Building
  - Pullman, WA
- **Academic & Employment Recruitment Fair Date and Time**
  - Tuesday, June 25th
    - 11 am – 2:30 pm
- **Installation Schedule**
  - Tuesday, June 25th
    - 9:00 am – 11 am
- **Dismantle Schedule**
  - Tuesday, June 25th
    - 2:30 pm – 5:00 pm
- **Space Assignments**
  - Priority for space assignment is based on the date on which the Academic Recruitment Fair space is reserved
- **Booth Sizes and Fees**
  - Standard booth is an 8-foot-long table with two chairs and a tablecloth
  - Power will be available upon request
  - Standard Booth…..$250
  - Literature Only……$150
- **Undergraduate Poster Session**
  - Tuesday, June 25th
    - 12 pm – 1:30 pm
  - The Academic & Employment Recruitment Fair will start one hour prior to and finish one hour after the undergraduate poster session
  - The undergrad poster session will be in the same room as the Academic & Employment Recruitment Fair
- **Hotel Accommodations**
  - Reservations for hotel accommodations at NORM 2024 can be made through the NORM 2024 website
  - https://norm2024.org/travel/
- **Contacts**
  - Zachariah Heiden
    - Expo/General Chair
    - Zachariah.heiden@wsu.edu
  - Kristopher Waynant
    - Technical Session Chair
    - kwaynant@uidaho.edu

NORM 2024 Attendee Demographics

- 500-800 attendees
- About 75% of attendees are from the Northwest Region
- Roughly 40 states represented
- ~1 % of attendees come from outside the United States
- Almost 20% of attendees are undergraduate students
- NORM program is designed to be of interest to attendees in chemistry and disciplines outside of chemistry



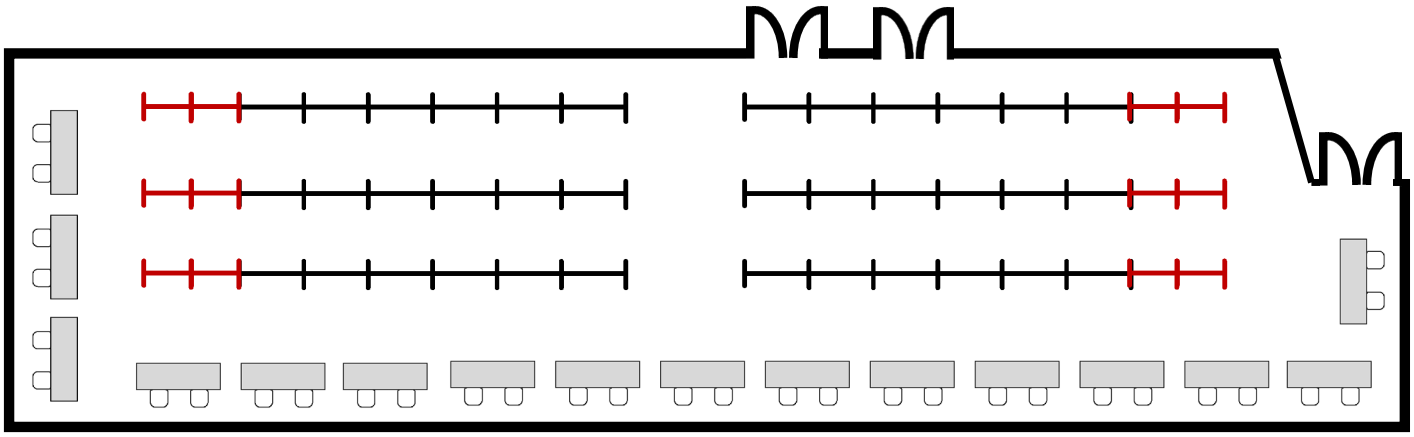


NORM 2024 Booth Assignment Procedures and Cancellation Information

- NORM organizers reserve the right to accept or refuse any application in its sole discretion, including but not limited to, refusing applications of organizations not meeting standard requirements or expectations. This applies to displays, literature, advertising novelties, souvenirs, conduct of persons, etc.
- **Space Assignments**
  - Space assignments are made in one of the following three ways:
  - Sponsors also exhibiting at Academic Recruitment Fair will be priority over general exhibitors
  - Academic Recruitment Fair exhibitors will be given the option of selecting their booth location in the finalized exposition layout
  - Applications received after **May 17th**, will be assigned space on a first-come, first-served, space availability basis.
  - Selection of the locations of recruitment booths for applications received on or before May 17th will start on **May 20th**
- Application for exhibit space must be made on the official NORM website (https://norm2024.org/expo/)
- No space will be assigned until both an application and full payment have been received.
- Exhibitors wishing to avoid assignment of space adjacent to that of a particular institution should indicate the institution during the booth selection process.
- Careful consideration will be given to all such requests, but relocation cannot be guaranteed.
- In the event of conflicts regarding space requests or conditions beyond the control of exhibit management, NORM 2024 organizers reserves the right to revise, relocate, or reassign exhibit booths at any time for the overall benefit of the meeting.
- A revised floor plan will be provided upon request.
- A table will be made available for literature only recruitment fair participants

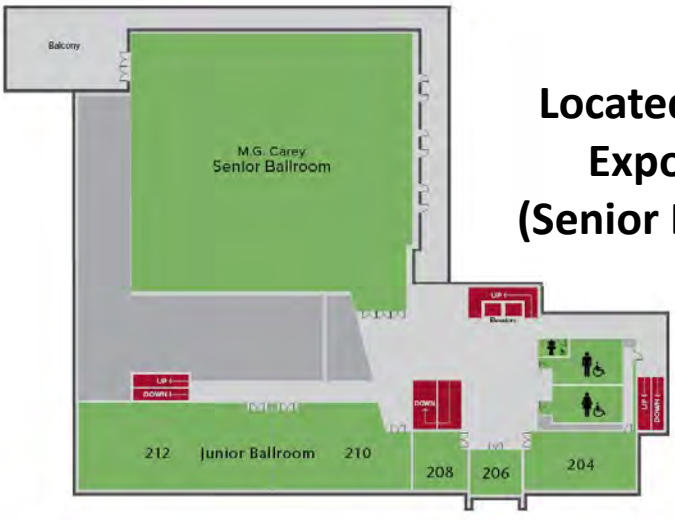
NORM 2024 Tentative Academic Recruitment Fair Layout

Junior Ballroom of Compton Union Building

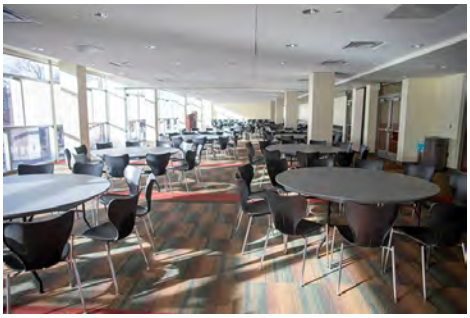


Capacity with current layout: 16 tables and 84 posters

A finalized layout will be available after May 20th



Located next to Exposition (Senior Ballroom)



NORM 2024 Dates to Remember

- **December 4th, 2023**
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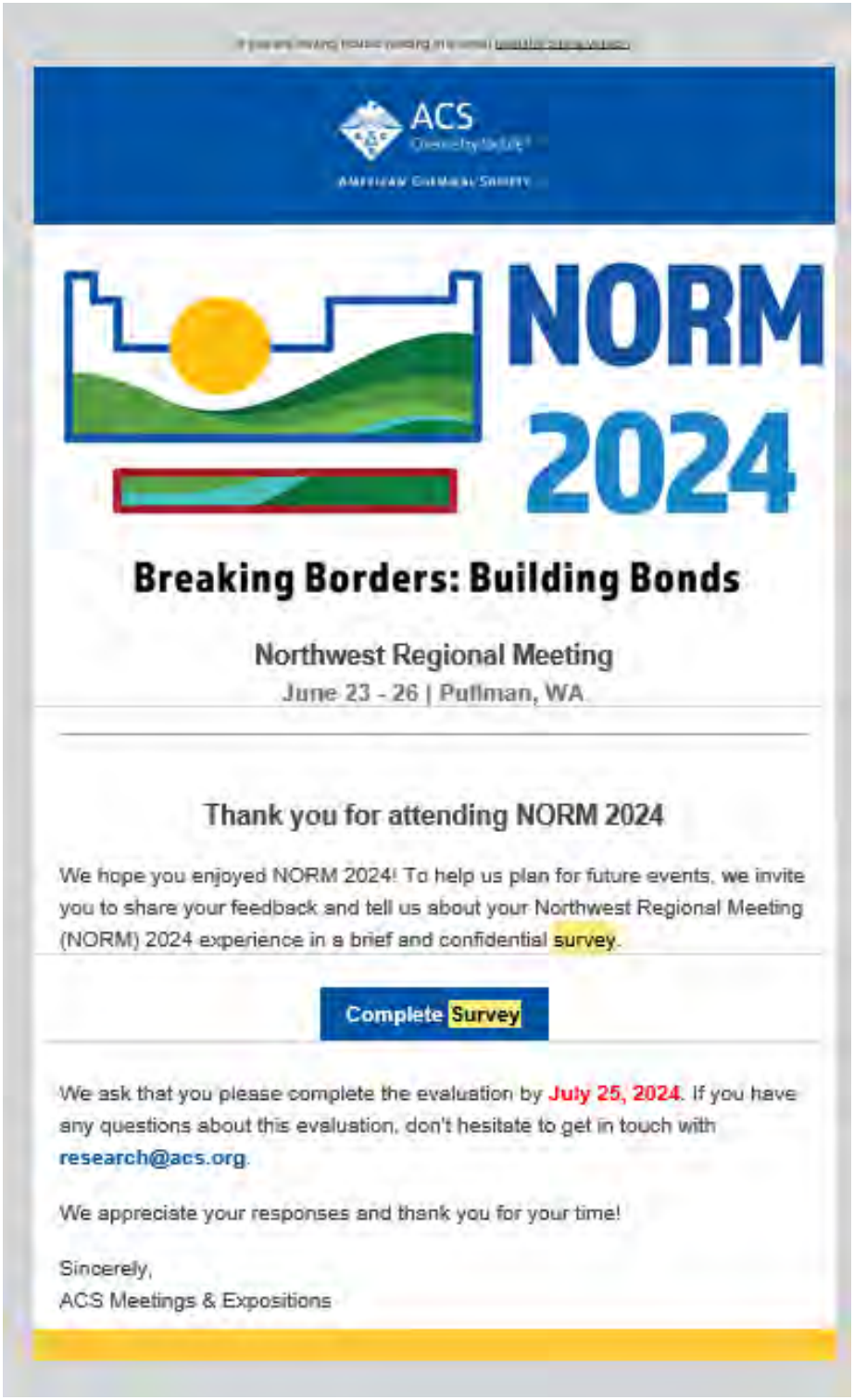
- **February 12th, 2024**
  - Abstracts open for technical program
- **March 25th, 2024**
  - Abstracts close for technical program
- **April 1st, 2024**
  - Registration for attendees opens
- **May 17th, 2024**
  - Academic & Employment Recruitment Fair Application deadline for priority consideration
- **May 20th, 2024**
  - Selection of Academic & Employment Recruitment Fair booth location begins
- **June 3rd, 2024**
  - Onsite shipments accepted
- **June 14th, 2024**
  - Literature-only option items due to NORM organizers
- **NORM 2024 Conference – June 23rd – 26th**

8G. NORM 2024 Exit Survey Results

Sent out to attendees on July 2nd, 2024



ACS

NORM 2024

Breaking Borders: Building Bonds

Northwest Regional Meeting

June 23 - 26 | Pullman, WA

Thank you for attending NORM 2024

We hope you enjoyed NORM 2024! To help us plan for future events, we invite you to share your feedback and tell us about your Northwest Regional Meeting (NORM) 2024 experience in a brief and confidential survey.

Complete Survey

We ask that you please complete the evaluation by **July 25, 2024**. If you have any questions about this evaluation, don't hesitate to get in touch with **research@acs.org**.

We appreciate your responses and thank you for your time!

Sincerely,
ACS Meetings & Expositions

Northwest (NORM) 2024 Regional Meeting Survey Report

Created by the ACS Research and Decision Support Team

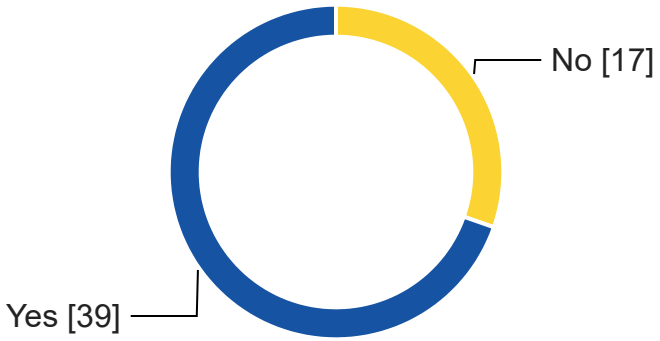
The Northwest (NORM) Regional Meeting survey was fielded July 2nd thru July 17th, 2024 to all NORM 2024 meeting attendees. The survey received a total of 56 responses.

Key Findings:

- Close to three fourths say this was the first ACS regional meeting they have attended (70%).
- Over half report being a member of ACS (54%).
- Top technical divisions, which participants report being a member of are Inorganic Chemistry (DIC), Nuclear Chemistry & Technology (NUCL) and Organic Chemistry (ORGN).
- The top two reasons for attending the meeting were to be a presenter (67%) and an interest in meeting content (36%)
- Almost all attendees say the meeting was worth the cost (27% well worth the cost/56% worth the cost)
- The most attended events at the meeting were Poster sessions (77%), Technical sessions (77%), and Exposition/Academic Recruitment Fair (53%)
- Most events received high levels of satisfaction (very + somewhat satisfied): Awards Banquet (100%), Technical Sessions (90%), Alumni Reception (83%), and Poster Sessions (83%).
- Almost all respondents agree that the registration process for the meeting went smoothly (96%) and that overall the meeting was a good experience (94%). Comments regarding the registration process include that it was easy and the cost was reasonable.
- Most respondents were satisfied with the meeting venue (90%)
- Over half of respondents reported staying at a hotel (55%). Asked which hotel, most popular responses were the Hampton Inn and Marriott Courtyard.
- A large majority found the meeting venue and facilities to be convenient (67% very convenient/29% somewhat convenient).
- When compared to other events respondents found ACS regional meetings to be extremely favorable (40%) and somewhat favorable (42%).
- Close to half of respondents say they are likely to attend an ACS regional meeting in the future.
- A majority of respondents said they would recommend an ACS regional meeting to a friend or colleague (86%).

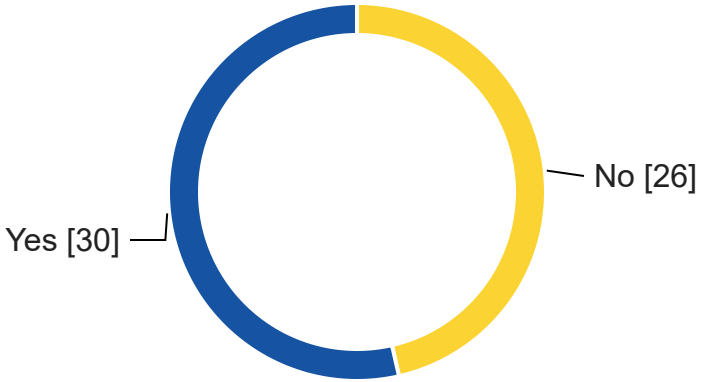
Q1 - Was this your first ACS regional meeting?

56 Responses



Q1a - Are you a member of ACS?

56 Responses



Q1 - Was this your first ACS regional meeting?

56 Responses

Field	Choice Count
Yes	39
No	17

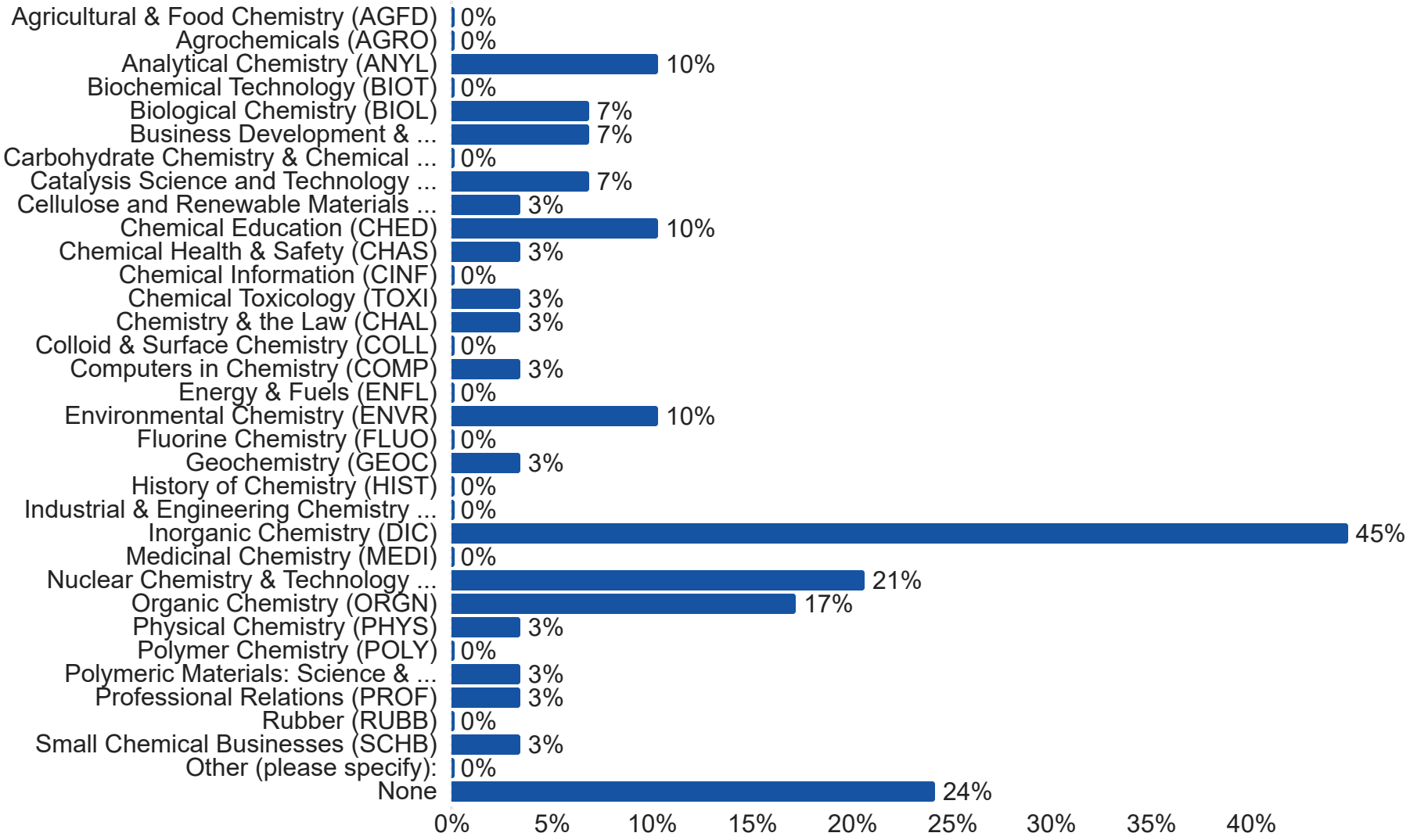
Q1a - Are you a member of ACS?

56 Responses

Field	Choice Count
Yes	30
No	26

Q1b - If you are an ACS member, which technical division(s) are you a member of? - Selected Choice

29 Responses



Q1b - If you are an ACS member, which technical division(s) are you a member of? - Selected Choice

29 Responses

Field	Choice Count
Agricultural & Food Chemistry (AGFD)	0
Agrochemicals (AGRO)	0
Analytical Chemistry (ANYL)	3
Biochemical Technology (BIOT)	0
Biological Chemistry (BIOL)	2
Business Development & Management (BMGT)	2
Carbohydrate Chemistry & Chemical Glycobiology (CARB)	0
Catalysis Science and Technology (CATL)	2
Cellulose and Renewable Materials (CELL)	1
Chemical Education (CHED)	3
Chemical Health & Safety (CHAS)	1
Chemical Information (CINF)	0
Chemical Toxicology (TOXI)	1
Chemistry & the Law (CHAL)	1
Colloid & Surface Chemistry (COLL)	0
Computers in Chemistry (COMP)	1
Energy & Fuels (ENFL)	0
Environmental Chemistry (ENVR)	3
Fluorine Chemistry (FLUO)	0
Geochemistry (GEOC)	1

History of Chemistry (HIST)	0
Industrial & Engineering Chemistry (I&EC)	0
Inorganic Chemistry (DIC)	13
Medicinal Chemistry (MEDI)	0
Nuclear Chemistry & Technology (NUCL)	6
Organic Chemistry (ORGN)	5
Physical Chemistry (PHYS)	1
Polymer Chemistry (POLY)	0
Polymeric Materials: Science & Engineering (PMSE)	1
Professional Relations (PROF)	1
Rubber (RUBB)	0
Small Chemical Businesses (SCHB)	1
Other (please specify):	0
None	7

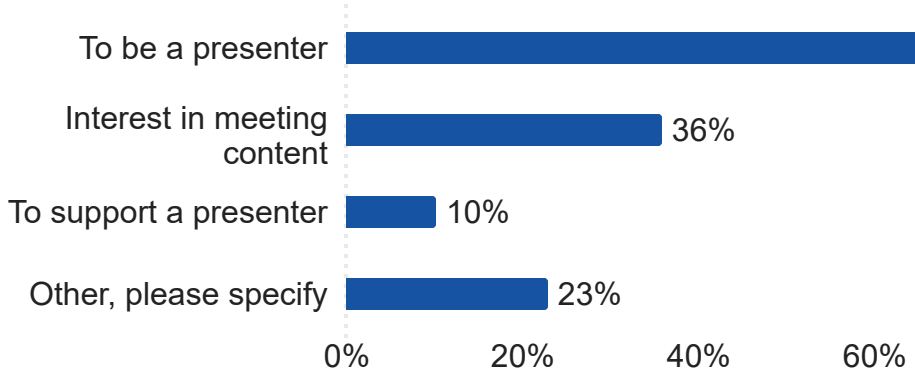
Qa_1 - If you are not a member of ACS, would you like to receive information about becoming a member? If yes, please provide your contact information below:

Name: Email Address:
Andrew Pemberton apemberton@uidaho.edu
ANU RANI anu.rani@wsu.edu
Aqib aqib.dar@wsu.edu
Kelsie Younce KYounce03@gmail.com
Kiwan Park kiwan.park@bettersize.us
Linu Malakkal linu.malakkal@inl.gov

Muhammad Umar Arshad Umararshaddd@gmail.com
Pardeep Dahiya pardeepdahiya446@gmail.com
Tom Hersey thersey7@icloud.com

Q2 - What were your main reasons for attending the meeting this year? Please select up to two responses.

39 Responses



39 Responses

Field	Choice Count
To be a presenter	26
Interest in meeting content	14
To support a presenter	4
Other, please specify	9

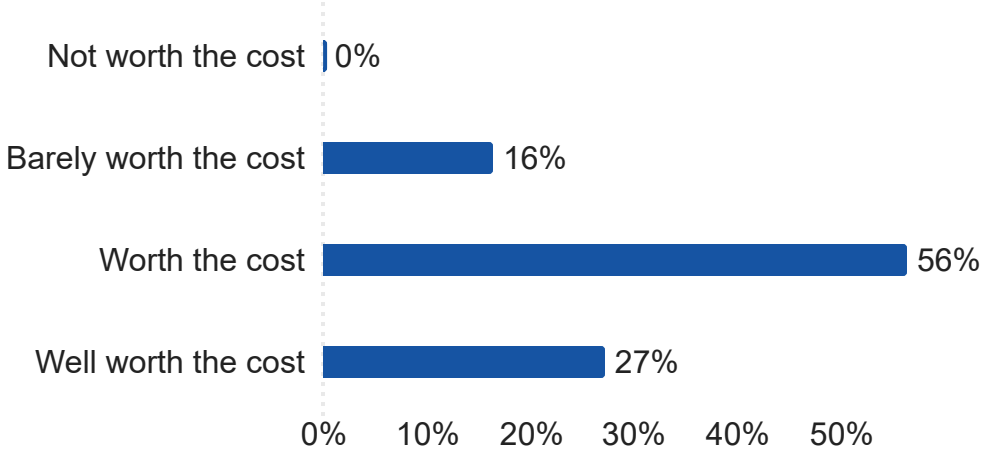
Q2_10_TEXT - Other, please specify - Text

9 Responses

Staff a booth
Expo show
Industry partner
volunteer
Part of EXPO
volunteer
Expo
Networking
Recruiting

Q3 - In terms of the cost of attending the meeting, please rate the value of the NORM 2024.

55 Responses

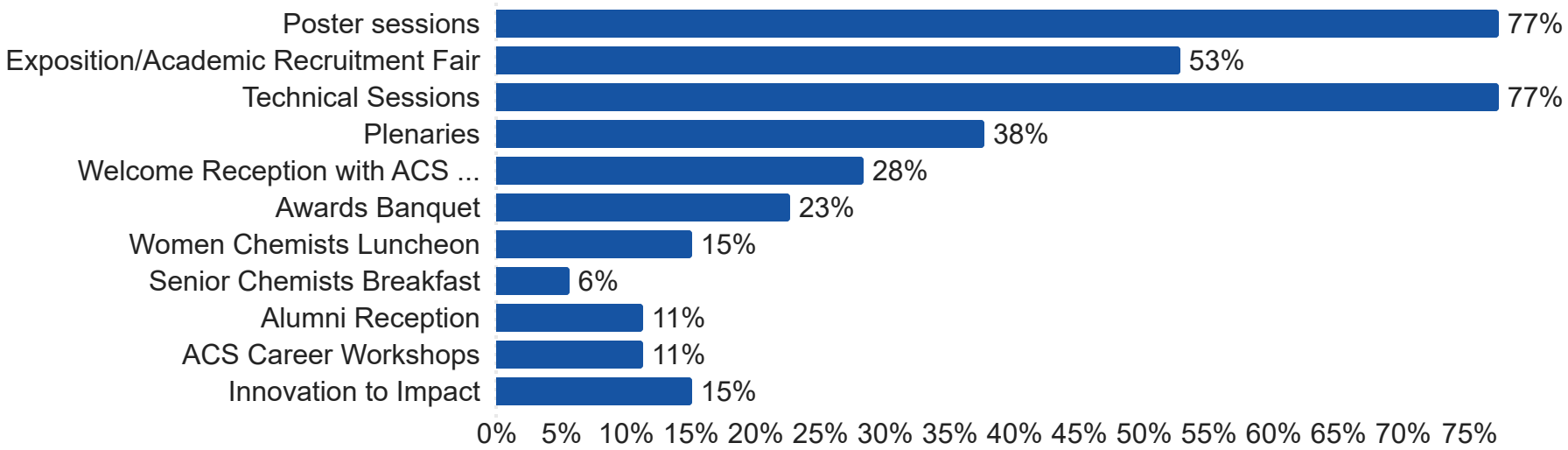


55 Responses

Field	Choice Count
Not worth the cost	0
Barely worth the cost	9
Worth the cost	31
Well worth the cost	15

Q4 - Which of the following events did you attend during the NORM 2024? Please select all that apply.

53 Responses



Q4 - Which of the following events did you attend during the NORM 2024? Please select all that apply.

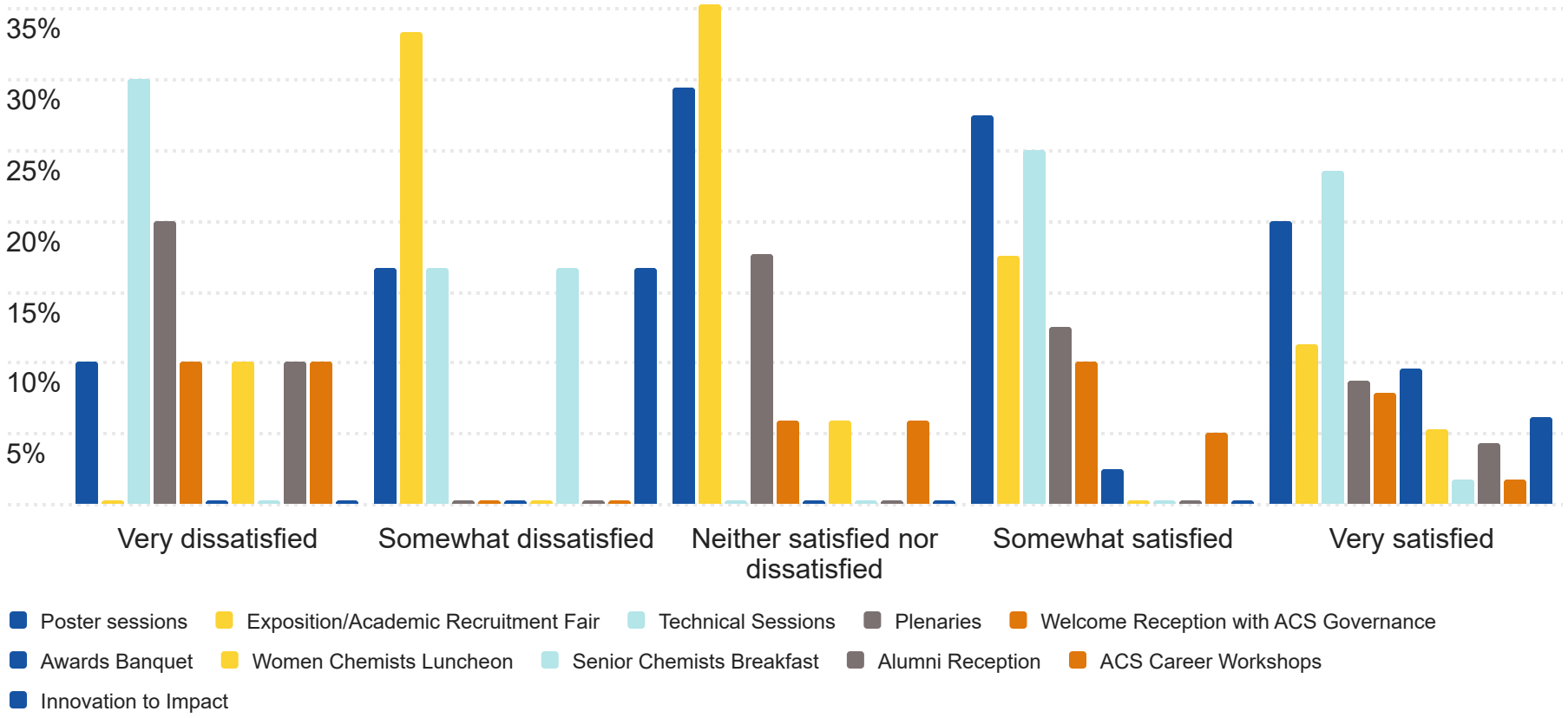
53 Responses

Field	Choice Count
Poster sessions	41
Exposition/Academic Recruitment Fair	28
Technical Sessions	41
Plenaries	20
Welcome Reception with ACS Governance	15
Awards Banquet	12

Women Chemists Luncheon	8
Senior Chemists Breakfast	3
Alumni Reception	6
ACS Career Workshops	6
Innovation to Impact	8

Q5 - Please rate your satisfaction with the events you attended.

53 Responses



Q5 - Please rate your satisfaction with the events you attended.

53 Responses

Field	Very dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Very satisfied
Poster sessions	1	1	5	11	23
Exposition/Academic Recruitment Fair	0	2	6	7	13
Technical Sessions	3	1	0	10	27
Plenaries	2	0	3	5	10
Welcome Reception with ACS Governance	1	0	1	4	9
Awards Banquet	0	0	0	1	11
Women Chemists Luncheon	1	0	1	0	6
Senior Chemists Breakfast	0	1	0	0	2
Alumni Reception	1	0	0	0	5
ACS Career Workshops	1	0	1	2	2
Innovation to Impact	0	1	0	0	7

Q6 - How much do you agree or disagree with the following statements?

52 Responses

Field	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
The registration process for the meeting went smoothly.	0%	4%	0%	20%	76%
The regional meeting website was easy to use.	2%	4%	6%	25%	63%
The Mobile App was user friendly.	6%	19%	13%	35%	26%

The abstract submission process worked efficiently	0%	0%	3%	28%	69%
The programming and content were informative.	0%	4%	2%	22%	71%
The live presentations were well delivered	2%	0%	9%	21%	67%
Overall, the meeting was a good experience for me.	0%	2%	4%	16%	78%
Other events applicable to meeting	4%	0%	4%	21%	71%

Q7 - Do you have any comments specifically pertaining to your experiences with the meeting registration process?

23 Responses

Not clear how to register a guest who is a retired member.

Industry partners or suppliers only need 2 days, not three. It would be great to have an opportunity to present on new technology as relevant to the ACS community - a real scientific presentation. Did not see that option. Appreciated all who were there to learn from each other! Great connecting event!

Kindly provide a Certificate of Participation (Poster Presentation).

My Confirmation Number is:
6NNMM3MDGM7
ABSTRACT TITLE: Hydrogenation and dehydrogenation of N-heterocycles under Cp*Co (III)-catalysis
SESSION: Breaking Borders and Building Bonds Through Catalysis
SESSION DATE & TIME: June 23, 2024 from 5:00 PM to 7:00 PM
SESSION LOCATION: CUB Senior Ballroom (220) (Compton Union Building)
PRESENTATION FORMAT: Poster
POSTER BOARD NUMBER: 46

If you needs anything else from my end to provide the certificate of participation, kindly feel free to write back to me at pardeepdahiya446@gmail.com .

I hadn't accounted for the additional cost of not being a premium member, which was a frustrating experience (but also what I paid for). I have switched over to premium membership to avoid this frustration in the coming years.

Quick and easy.

Very easy, cost was really reasonable and I felt we got a lot of value for the dollar amount (especially compared to larger national/international conferences that I attend like TMS and MRS).
I attended as a guest, so my experience is limited.
Very smooth process, I had no issues finding it
NA
None
Having the wine/beer reception on Sunday at 8:30pm was so late was ineffective.
no
Great
This is my first ACS conference, great experience. Thanks.
Not really
It was very simple and easy to follow along with.
It went well and was very smooth and efficient.
None
I was not informed during the meeting registration process, or at any other point, that I would have a roommate in the dorm accommodations, until he showed up. He was also not informed that he would be sharing a room.
It was smooth and easy
The app is horrible to use, would highly suggest updating that somehow
There is no attendance certificate given to presenter. I would like to have one. Thank you.
As an employer, it was clear that the academic career fair was very organized and went smoothly. The refreshments and lunch were great and I enjoyed looking at the posters as well.

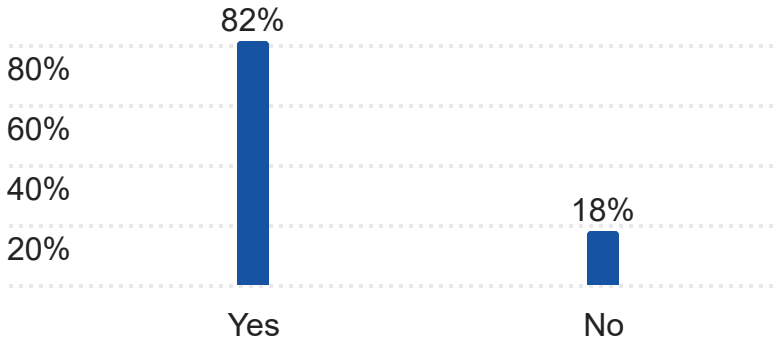
Q8 - Do you have any comments specifically pertaining to your experiences using the Mobile App? Please specify

23 Responses

Parking app useless. When I set up my schedule, app kept booting me out of meeting app. Otherwise meeting app useful.
Wonky. Always reloaded to start page.
NA
N/A
No
I know that this was the first ACS meeting that them mobile app was used, but I heard a lot of complaints.
It was good
None
some program errors on the Mobile App
Did not use the app
N/A
The app was working slow sometimes
Did not use
The load times were bad sometimes, but it still worked
N/A
It was a very bad experience as an Android user. The app did not load and asked permission to access photos and files, posing a great security risk.
Did not use it
The app was a little clunky. The categorization of the "tracks" could have been better, to match the titles of the activities instead of simply saying "special events" or "workshops."
ACS app is unfortunately quite glitchy
The Mobile app was good, however, at first it did show some issues, which got solved later. Overall a very great thing.
It wasn't intuitive to use, some sections had the talks under it and some didn't, difficult to navigate and search
It is easy to use
N/A (didn't use it)

Q9 - Did you receive marketing communications advertising pertinent deadlines relative to the event?

49 Responses



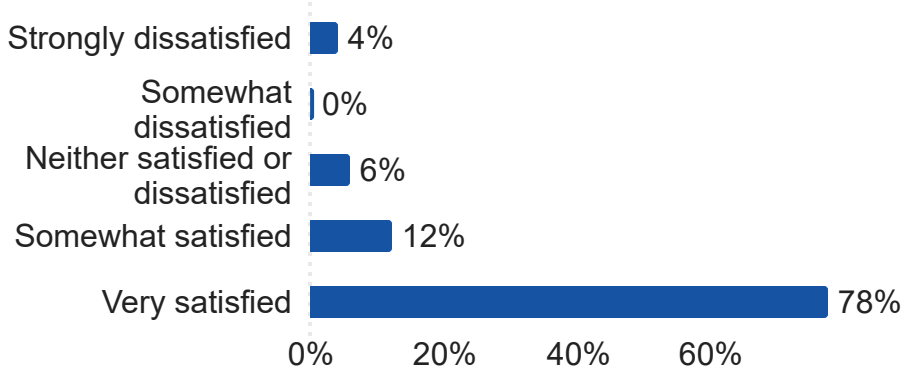
Q9 - Did you receive marketing communications advertising pertinent deadlines relative to the event?

49 Responses

Field	Choice Count
Yes	40
No	9

Q10- How satisfied are you with the choice of the meeting venue and/or hotel?

49 Responses

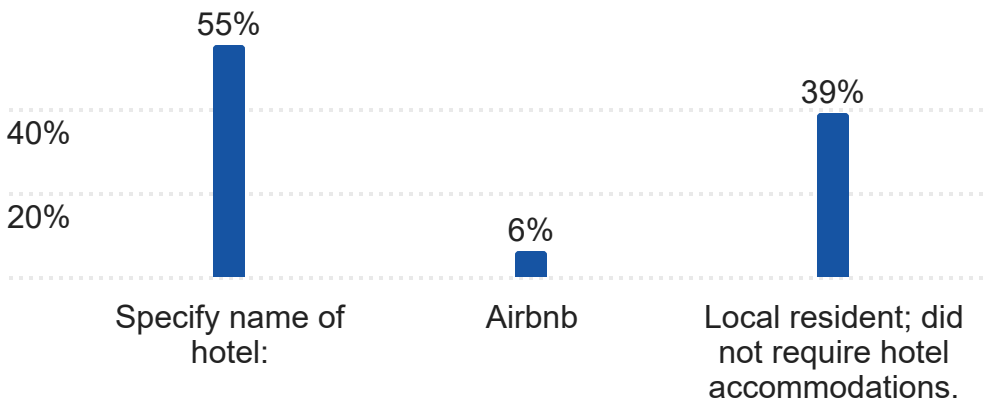


49 Responses

Field	Choice Count
Strongly dissatisfied	2
Somewhat dissatisfied	0
Neither satisfied or dissatisfied	3
Somewhat satisfied	6
Very satisfied	38

Q11 - Please specify your housing accommodations: - Selected Choice

49 Responses



Q11 - Please specify your housing accommodations: - Selected Choice

49 Responses

Field	Choice Count
Specify name of hotel:	27
Airbnb	3
Local resident; did not require hotel accommodations.	19

Q11_1_TEXT - Specify name of hotel: - Text

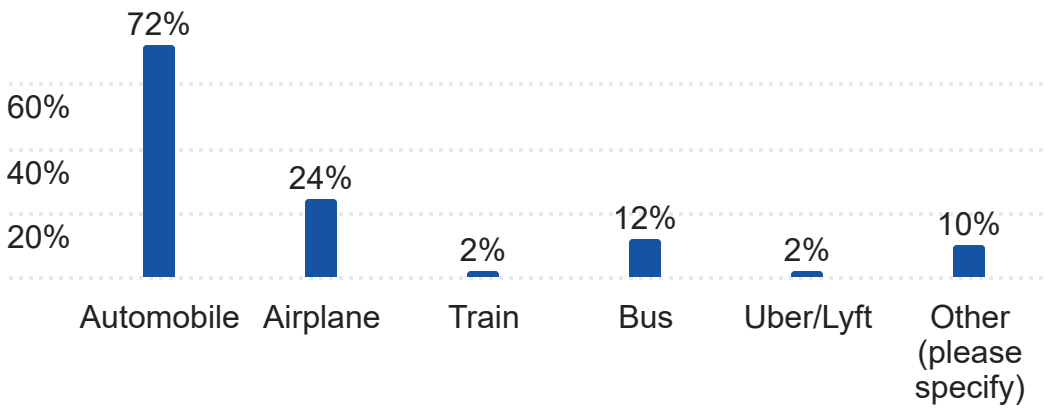
27 Responses

Specify name of hotel: - Text
Residence Inn
Hampton
Courtyard Marriott
Courtyard
Marriott Courtyard
Quality Inn
WSU dormitory
Resident Inn
Residence Inn Pullman
Campus Dorm
Coast Hilltop Inn

Hampton Inn
marriott
Hampton Inn
community Duncan Dunn
Not applicable
The Campus Dorm
Hampton Inn Pullman
Hampton Inn and Suites
Hampton Inn
Duncan Dunn Dorm
Marriott
WSU Dorms
Quality inn
DD Dorm
Courtyard
Hotel McCoy

Q12 - What form of transportation did you use to travel to the meeting? Select all that apply

50 Responses



Q12 - What form of transportation did you use to travel to the meeting?

50 Responses

Field	Choice Count
Automobile	36
Airplane	12
Train	1
Bus	6
Uber/Lyft	1
Other (please specify)	5

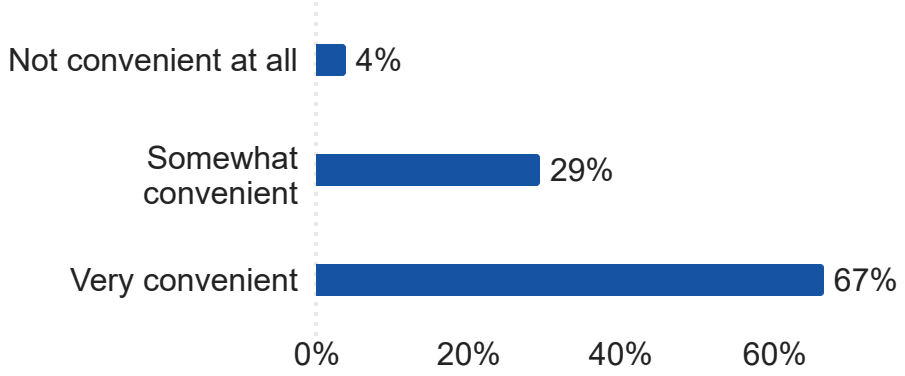
Q12_8_TEXT - Other (please specify) - Text

5 Responses

Other (please specify) - Text
Walked to campus
Car
Enterprise
Walking
Bicycle

Q13 - How convenient was the venue and its facilities?

51 Responses



Q13 - How convenient was the venue and its facilities?

51 Responses

Field	Choice Count
Not convenient at all	2
Somewhat convenient	15
Very convenient	34

Q14 - What was your most memorable experience at the meeting? Describe.

29 Responses

Giving a talk! But getting to see people and their chemistry was a great experience.
Reactor tour and a couple of the technical presentations.
Meeting the researchers and connecting with colleagues to learn more about what they are working on!
Fun Run
My Poster presentation
Awards Banquet
Reconnecting with colleagues/PIs in my field at the doctoral institutions in my region. As a PUI faculty member, it is great to have the opportunity to reconnect with these folks and strengthen ties.
Giving my presentation on safety in the lab and meeting two ACS board members.
Nuclear reactor tour

Very good technical sessions that I attended. Even though it was mostly invited talks from people outside the northwest region, the talks were so high quality and relevant to my current interests. Learned a lot!

While at the award banquet a lady announced that she's seen an increase in women over the decades and I wasn't aware that it was so noticeably male dominated given my undergrad and entry level industry experience where the ratio was about 1:1.

Meeting Dr. Jorge Cham

I enjoyed presenting to likeminded people who understood the basics, so that I could share higher level ideas! Aside from that, I thought the teaching seminar (Wednesday) and the biochemical technicals were very informative and interesting.

Networking

The most memorable experience was meeting reps from different companies at the expo

The give-away bags were fabulous.

Technical session and women chemist luncheon

meeting different field experienced persons.

Poster sessions

Met lots of great people

I had a lot of fun listing to the talk on chemistry in identifying historical objects

I was able to make important connections to a few college professors and researchers, this will help me build important connections with my community.

Meeting new people and reconnecting with old friends

It allowed my students to give their first presentation. Also, the conference organizers were very helpful to session organizers.

Poster presentation

Having my roommate walk in to our room unannounced while I was in my underwear. Neither of us were informed that we would be sharing a room.

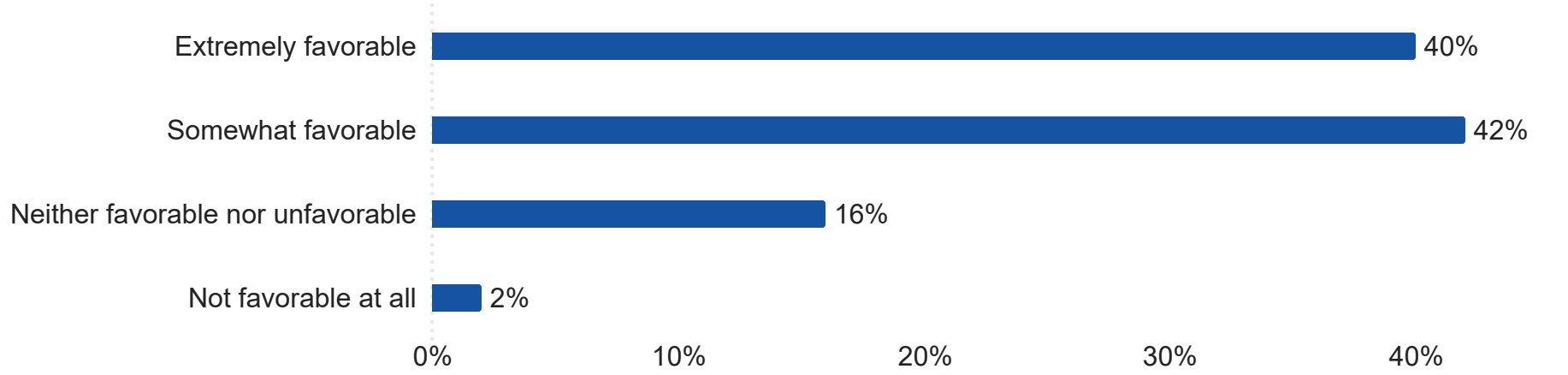
Presenting my first poster in the first poster session, which was the most memorable for me. However, meeting so many new people from different background and places were also great!

Technical Session

The fun run was a great touch, as was the local ice cream social. I really appreciate the thought put into the mid-session breaks. The sessions themselves were top notch, unusually high caliber. Frankly those were the highlight, as they should be.

Q15 - How do ACS regional meetings compare to other events you have attended?

50 Responses



Q15 - How do ACS regional meetings compare to other events you have attended?

50 Responses

Field	Choice Count
Extremely favorable	20
Somewhat favorable	21
Neither favorable nor unfavorable	8
Not favorable at all	1

Q16 - Was there anything about the event that could be improved? Please specify.

24 Responses

I understand the limits of the CUE and CUB, but having parts of the day going from the bottom of the hill to the top wasn't the most ideal. I saw plenty of older folks who weren't the most satisfied with that. That said, the CUB ballroom was the perfect place for what was held there. And the CUE was perfect for the number of events going on! I just wish the buildings could have been at the same altitude

There should be a bus service to pick up attendees at the airport as there are only 2 airplanes coming in a day. There is no uber service and taxi service is barely available.

It would be great if the abstract was included in the program. This can help me better guess the content of talks.

App did not list where presenter was from under talk. You had to go to speaker list. Posters should be presented on more than 1 night. Should have scheduled a 2 hr poster review during day like ASMS.

Please provide certificate of Participation.

The dormitory accommodations were poorly managed by WSU housing. (1) We were not told until 2 days before the event that we had to check in by 7 pm or else we wouldn't be able to stay in the dorm that night. We are lucky we hadn't reserved a late evening flight! (2) Signage did not explain that all entrances were locked except for one side door, but did communicate that the building was fully closed for the summer. (3) My room key was coded for the wrong room. It took several calls and me having to bother the conference organizer directly to get this fixed, as WSU housing's public lines were straight-to-voicemail. (4) The parking instructions provided by the organizers were inaccurate or incomplete and resulted in me getting a parking ticket during my dorm stay.

Time of plenary speakers move to start instead of end of day

Parking was a little challenging to figure out, but just took a few minutes of thinking and pre-planning to figure out where to park and how to pay for it.

For staying at the dorms it'd be nice to have a working key or rather told which doors wouldn't work. Also the option to know the room layout as some had high beds to climb into.

Pizza is not to everyone's liking.

The ACS career workshop was not very good. The gentleman had a lengthy powerpoint that my peers and I considered mostly common sense, and there was very little networking actually done. The speaker mostly discussed his time working for Kodak and one-off jobs. For what it’s worth, peers and I didn’t trust the speaker to revise our resumes after the workshop.

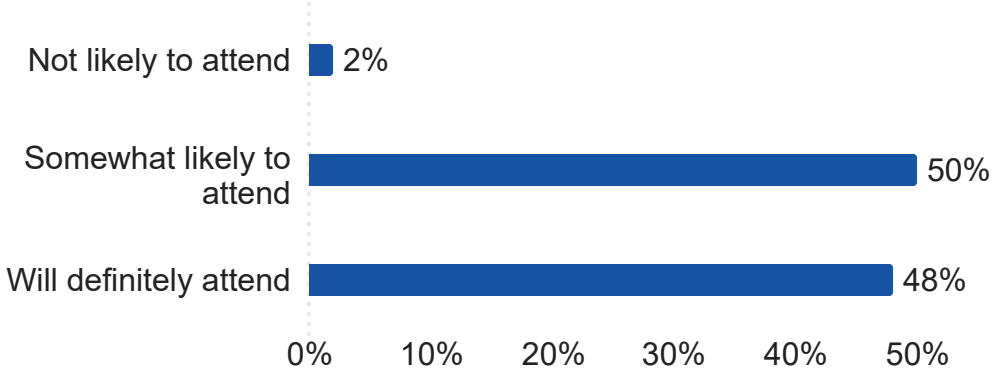
The wifi.
In the CUE building was really bad.

I think that making sure that all presenters are present would be a good idea

Clearly marked coffee break locations, clearly communicated directions to events
Transportation
More oral and poster presentations for the students and other faculties.
Room for posters was a little small, could use a bigger space.
The time for plenary talks and main events were too late in the day, with too much time between the last technical session.
It was difficult to find abstracts. I'm still not sure if they were available or not.
Yes. First, it was hard to find the entrance to the dormitory building. There were no signs, and all but one of the building entrances were locked. Parking instructions were also incorrect. The lot I was directed to park in did not allow overnight parking, and weekly passes were not available for that lot. I ended up having to park in the main garage, where I received a parking ticket even though I had paid for my parking. The ticket ended up being dismissed.
National meetings are usually very big, as much as I'm concerned. So these regional meetings could be very effective in some instances, for disseminating knowledge and connecting people.
Certificate and halal food for would be great addition
As an employer, it may have been more helpful to understand the core audience of the attendees in terms of if they were undergrads, graduates, etc.
I hear Pullman will get flights to a couple more cities soon, that will certainly help in getting there. That's about it, though!

Q17 - How likely are you to attend an ACS regional meeting in the future?

50 Responses



Q17 - How likely are you to attend an ACS regional meeting in the future?

50 Responses

Field	Choice Count
Not likely to attend	1
Somewhat likely to attend	25
Will definitely attend	24

Q17a - What other conferences have you attended this year?

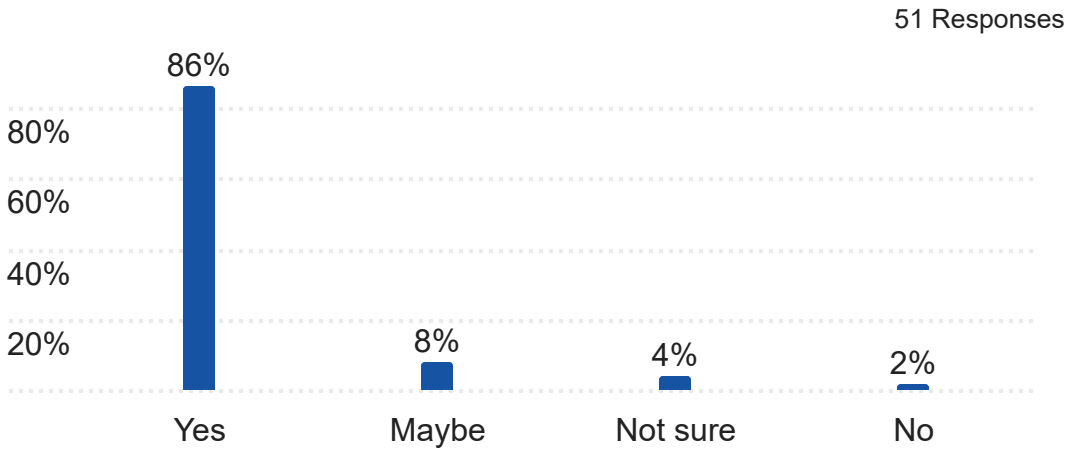
26 Responses

Conferences on semi packaging; SPIE
None
Many Biotech and life science events.
ACS national NOLA
NA
Neuroscience
ACS PSS Undergraduate Research Symposium, West Cost Theoretical Chemistry Meeting, Open Sustainability Policy Summit, Telluride Workshop on Multiscale Methods
New Orleans ACS meeting Leadership, BEYA, Society of Brazilian Chemists
The Minerals Metals & Materials Society (TMS) Annual Meeting (March 2024), Materials in Nuclear Energy Systems (December 2023)

None.
none
None this year
Green Chemistry 2024 - Atlanta, GA
None
Spring and Fall meetings. USBC national convention with my spouse.
ACS Spring in New Orleans
ACS Spring 2024 at New Orleans
Don't know
Innovation NW 2024
N/A
None this year
ACS Spring National Meeting
Sigma Xi
N/A
American Nuclear Society

Q18 - Would you recommend an ACS regional meeting to a friend or colleague?

51 Responses



51 Responses

Field	Choice Count
Yes	44
Maybe	4
Not sure	2
No	1

Q19 - Are there any additional comments or suggestions you would like to share?

17 Responses

Everything was put together very well. Things went very smoothly and presiders did a good job at staying on time. If anything, people would start EARLY which was awkward at times for people entering on time for a scheduled talk (but consequently late).

Please provide Certificate of Participation.

Dormitory accommodations for NORMs hosted at universities NEED real-time support. I was almost homeless / sleeping in my car the first night had the key card issue not been fixed at the last minute, after hours of calls and stress.

NORM - Great regional meeting

Thank you for the option of staying at a dorm on campus! I commuted to college and it was an interesting experience as well as more affordable and convenient to the events of the conference.

I was attending with my spouse, the conference provided a nice opportunity to see eastern Oregon and Washington state, and I loved chatting with the grad student shuttle drivers, especially Shuen Yu from Chungdu, Sichuan Province, China; and a young man who is studying immunology.

Great meeting that I can tell a lot of thought and planning went into! I have a lot of thanks to the organizers!

To have fresh water available in more places. I just saw one and it was not even cool.
To improve the reservation tickets when we have a guest. I bought on line the Award dinner ticket for me but I could not for my guest.
The wifi in all the places where there are sessions.

none

PROF sent me as an Ambassodor, so I spent Tuesday talking about Divisions

None

not applicable

The WSU team (Zach, et al) did a terrific job and checked in with EXPO participants often to make sure we had what we needed. Great work!

I enjoyed my time here and I learned a lot, networked, and hope I can attend another ACS meeting

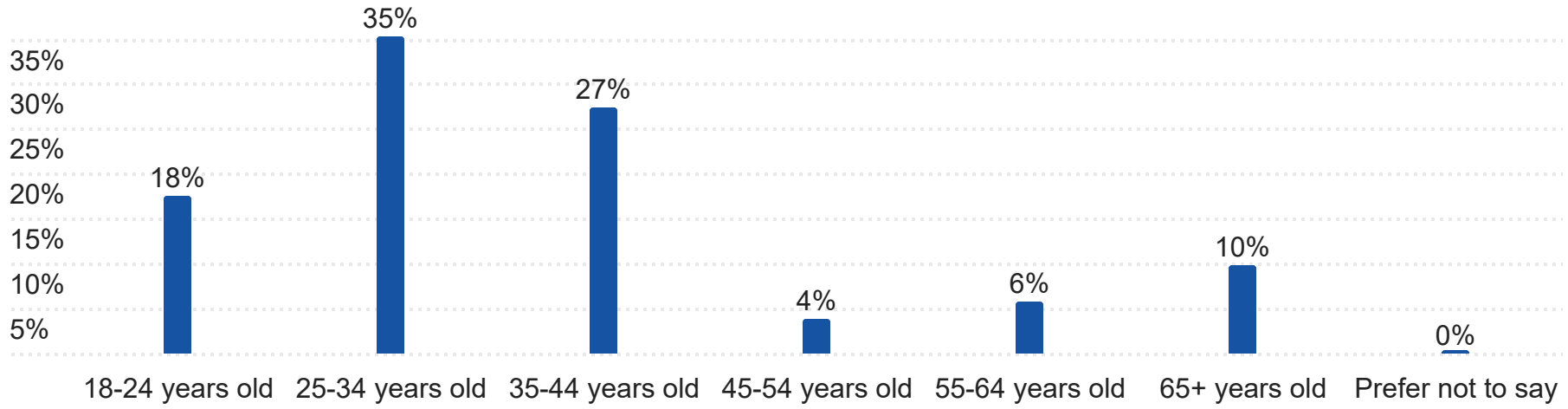
Enjoyed the meeting a great deal. Great venue.

None

It was a great event, for a first time experience. It brought together many brilliant minds under one umbrella, which is worthy of appreciation. It also opened ways for novice researchers, which is a great opportunity for some, and a great stage for bridging gaps and building bonds.

Q20 - What is your age?

51 Responses



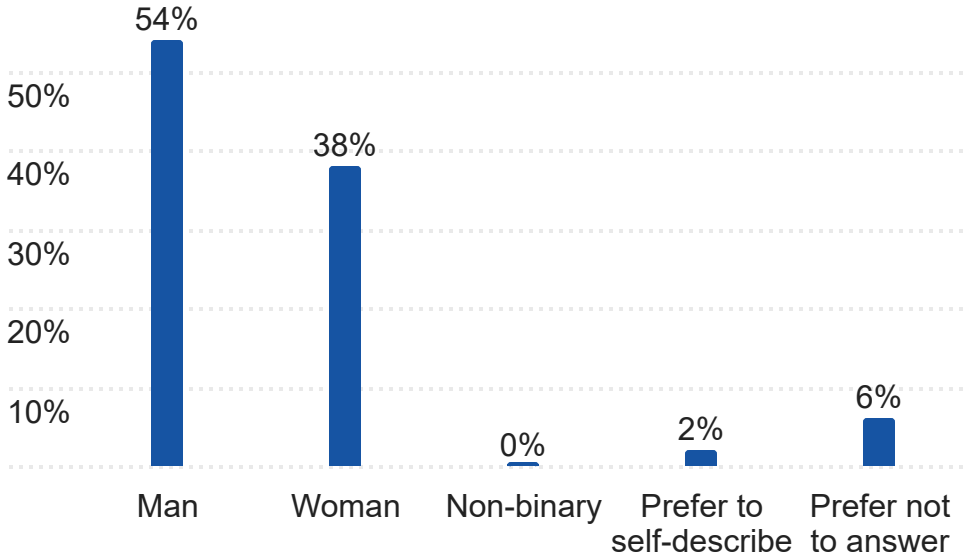
Q20 - What is your age?

51 Responses

Field	Choice Count
18-24 years old	9
25-34 years old	18
35-44 years old	14
45-54 years old	2
55-64 years old	3
65+ years old	5
Prefer not to say	0

Q21 - What is your gender? - Selected Choice

50 Responses



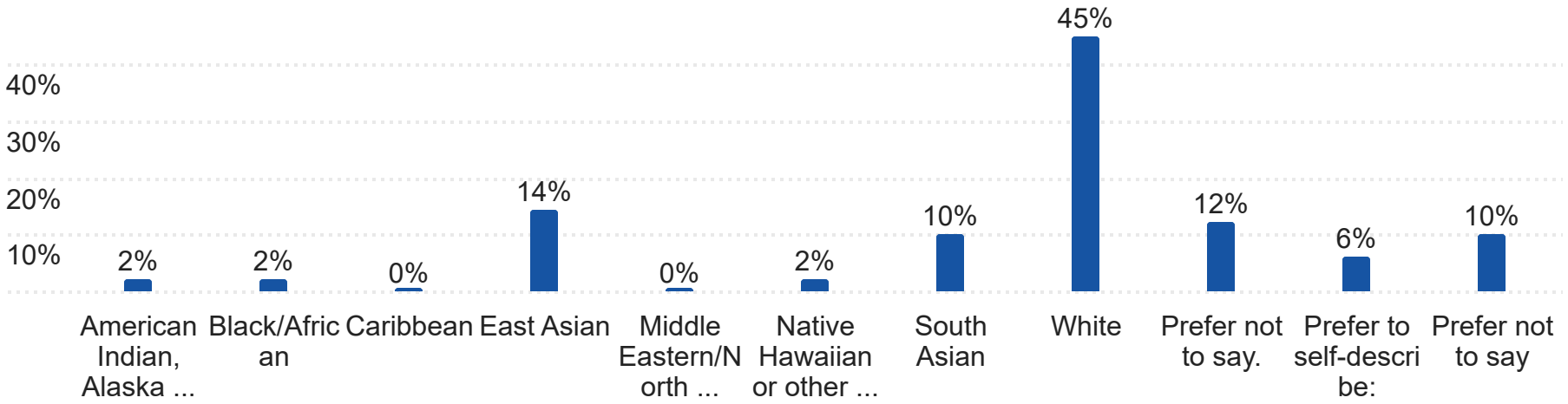
Q21 - What is your gender? - Selected Choice

50 Responses

Field	Choice Count
Man	27
Woman	19
Non-binary	0
Prefer to self-describe:	1
Prefer not to answer	3

Q22 - What is your racial background? Please select all that apply. - Selected Choice

49 Responses



Q22 - What is your racial background? Please select all that apply. - Selected Choice

49 Responses

Field	Choice Count
American Indian, Alaska Native, First Nations, Aboriginal Australian or other Indigenous Group	1
Black/African	1
Caribbean	0
East Asian	7
Middle Eastern/North African	0
Native Hawaiian or other Pacific Islander	1
South Asian	5
White	22
Prefer not to say.	6
Prefer to self-describe:	3
Prefer not to say	5

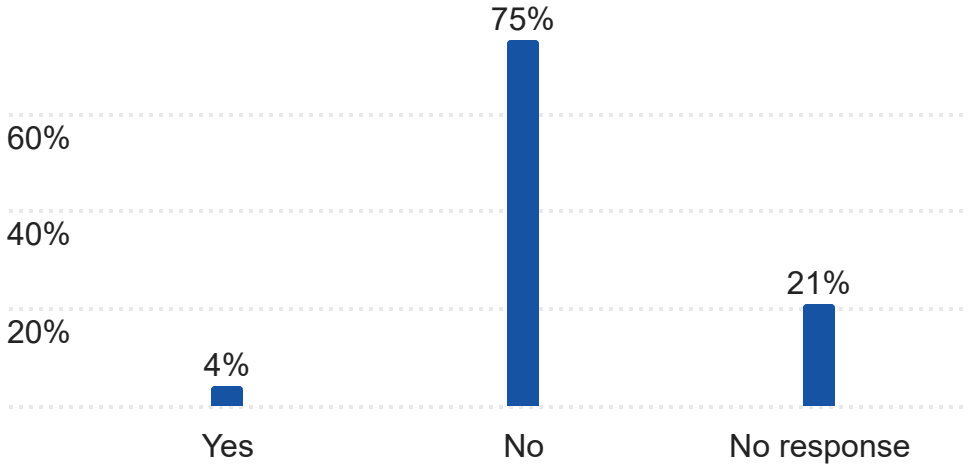
Q22_8_TEXT - Prefer to self-describe: - Text

3 Responses

Prefer to self-describe: - Text
Indian
Human race
South East Asian

Q23 - Are you of Hispanic or Latino origin or descent?

48 Responses



48 Responses

Field	Choice Count
Yes	2
No	36
No response	10

8H. Messages From Attendees Regarding NORM 2024

University of Idaho

DEPARTMENT OF CHEMISTRY
College of Science
875 Perimeter Drive MS 2343
Moscow ID 83844-2343

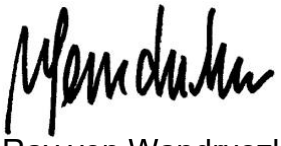
208-885-6552
chemoff@uidaho.edu
uidaho.edu/sci/chem

ACS Regional Meeting Directors

October 4, 2024

Dear Colleagues,
It is my pleasure to state on behalf of the Chemistry Department at the University of Idaho, that the 2024 Northwest Regional Meeting (NORM 2024), held in nearby Pullman, WA, was and all-round success. I was recently made aware of the fact that the University of Idaho had 108 of the 512 attendees, with many coming from the Chemistry Department. Kudos to Drs. Heiden and Waynant for organizing such an excellent event.

Sincerely,



Ray von Wandruszka
Professor and Chair

WASHINGTON STATE UNIVERSITY
PULLMAN

College of Arts and Sciences
Department of Chemistry

October 8th, 2024

Dear ACS NORM 2024 Conference Committee,

I want to express my gratitude for your outstanding efforts in organizing the ***NORM 2024 Conference***. Both from my own experience and feedback from other attendees, it's clear that NORM 2024 stands out as one of the best ACS regional meetings we've attended. The seamless organization of the sessions, the ease of navigating the venue, and the exceptional networking and promotional events were truly impressive.

I would like to highlight three aspects that received a lot of praise from attendees. First, providing lunch for all participants was a unique and much-appreciated gesture – something not commonly seen at other conferences. Second, the joint alumni event for WSU and UI was a fantastic opportunity for alumni to reconnect and strengthen ties. Finally, the shuttle service was invaluable, especially for attendees with mobility challenges or parking difficulties. It greatly enhanced the accessibility and overall experience of the conference.

I'm particularly proud that the WSU Department of Chemistry could contribute to the success of the alumni event and the shuttle arrangements. Both elements ran smoothly and added to the positive feedback we've been hearing.

Once again, congratulations on hosting the best regional conference I've had the fortune of attending – I look forward to future NORM meetings!

Sincerely,

Dr. Cliff Berkman
Professor & Chair
Email: cberkman@wsu.edu
Phone: 509-335-1923