

## SMS Connects - August 2022

Dear SMS community,

Welcome back to our new Fall Semester, we are looking forward to seeing you after a long and busy summer. Our Fall Semester holds promise for more excitement with lots of new students, seminars and events.

We kicked off the semester with Early Start and Fall Welcome for our new Chemistry and Biochemistry students. As in the past both these events were a success, our faculty presentations were an inspiration to all chemistry jocks! The first week of classes is always an exciting time for our faculty and students. The excitement in transitioning to a new environment and getting to know one another creates a mixture of hope and anxiety. Our students are eager to learn, and we are enjoying a buzz in the air as they return to campus.

We are delighted to welcome our new faculty, staff members, and new graduate students joining our school.

I wish you a productive, fun and most of all safe Fall semester. As a new year at SMS begins, we welcome everyone and look forward to a great year.

Best regards,  
Tijana Rajh  
SMS Director



**Colorful and Explosive Fall Welcome!**

The class of 2026 chemistry and biochemistry majors were warmly welcomed on 8/16/22 at 2:30 p.m. by SMS Director Tijana Rajh. Associate Director Chad Borges emceed the event which followed in spectacular style, including lots of bangs, with exciting and colorful demonstrations from four SMS faculty, two academic advisors and SAACS co-presidents.

Ian Gould, Jim Klemaszewski (Klem), Tim Lamb, Ashli Morgan, advisors Ruby Arjona and Sarah Johnson as well as SAACS co-presidents Lauren Harstad and Jesus Peralta, set fire to hydrogen balloons, explored gas temperature, pressure and volume relations, made water disappear and “Elephant’s Toothpaste”, dazzled with colorful chemistry in solution and in flames, and created a spectacular indoor cloud of water using liquid nitrogen, to show our incoming chemistry and biochemistry freshmen the magic and beauty of chemistry.

[Fall welcome video](#)

## SMS Welcomes New Graduate Students



This month, the School welcomed its new class of 35 graduate students, 27 doctoral and 8 masters. They are a diverse group, including 14 international students, from six countries including Ethiopia, Ghana, India, Iraq, Sri Lanka and Taiwan.

The students just completed an extensive two-week TA Training learning about the instructional philosophy of our undergraduate programs as well as orientations for the PhD and MS programs and the research within the School of Molecular Sciences.

They now embark on the next set of challenges: finding and settling into a research lab and finding a research topic into which they will pour countless hours and determination for the next several years.

## SMS Welcomes New Faculty Member

We are delighted to welcome associate professor Jie Xu who has just joined SMS and the Navrotsky Eyring Center for Materials of the Universe.

Jie grew up in Shenyang, China. She received her Bachelor of Science in materials science from Shanghai Jiao Tong University and her PhD in Geoscience from the University of Wisconsin, Madison. She worked as an assistant professor (promoted to associate professor with tenure in June 2022) in the Department of Earth, Environmental and Resource Sciences at the University of Texas-El Paso prior to joining ASU. Jie is a 2021 DOE Early Career awardee.



Jie's broad research interests revolve around naturally occurring nanomaterials. It has become evident that various nanophases (from oxides, sulfides, carbonates, to silicates) form in natural systems all the time. What remains largely unclear is under what conditions these nanophases form, what physicochemical properties they display, and what roles they play in the environment. To address these outstanding and potentially impactful questions, Jie's group is engaged in several lines of basic research using multidisciplinary tools. One current project in her group studies how anoxygenic photosynthetic bacteria utilize solid-phase metal sulfide nanostructures for the bacteria's energy needs. This work has important implications for fuel cell, bioelectronic, and biocatalyst designs as well as providing a holistic picture of how larger biogeochemical environments have evolved and continue to evolve. Jie's group always welcomes students, postdocs, and scientists who are interested in biological-nanoparticle interactions, structure-property relationships in nanomaterials, and high-pressure cryo TEM method development.

## News and Research



### [These women are leading the charge for more diversity in STEM](#)

SMS Director Tijana Rajh is one of four women leaders ASU hired over the last 18 months to head units in STEM-related areas.



### [Acquisition of mass spectrometry instrument positions ASU at leading edge of technology globally](#)

Alexandra Ros awarded Matrix Assisted Laser Desorption/Ionization (MALDI) instrument by National Institutes of Health.

### [ASU researchers to address local air-quality](#)



### concerns

Pierre Herckes and Matthew Fraser received funding from ABOR to investigate the sources of local air pollution and ways to ameliorate their influence and to improve the air we breathe.



### Summer academy provides hands-on STEM experiences for children of migrant farmworkers

SMS Faculty and staff provided hands-on laboratory activities and interacted with high school students in ASU's Migratory Student Summer Academy.

## Videos on the SMS YouTube Channel



### Graduate Student Research Spotlight

#### Jason Miech

"Fugitive Dust Mitigation via Enzyme Induced Carbonate Precipitation (EICP)"

<https://youtu.be/ZZXH9CMQPjM>



### Junior Faculty Spotlight

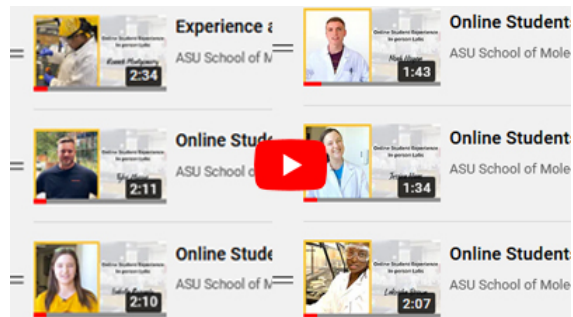
#### Po-lin Chiu

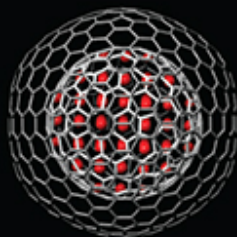
Structural biophysics and biochemistry

[https://youtu.be/V\\_fHPJ5Uog4](https://youtu.be/V_fHPJ5Uog4)

### New playlist for our online students

This summer, our online students attended in-person labs at the ASU Tempe campus. This playlist is a series of their overall experience in the labs. Check out each episode!





## Navrotsky Eyring Center for Materials of the Universe

You are invited to  
A Celebration of the Launch of the  
**Navrotsky Eyring Center for Materials of the Universe**  
**September 13th, 2022**

9:00 a.m. - noon

Surprise list of eminent speakers in the Biodesign B Auditorium  
(coffee break at 10:30 a.m.)

noon - 1:30 p.m.

Pizza Lunch Biodesign Courtyard

4:00 p.m. - 6:00 p.m.

Reception on the Crater Carpet, ISTB4  
with comments from ASU dignitaries

**RSVP:** <https://specialevents.asu.edu/699968>

### SMS is Hiring...

- Postdoc-Navrotsky Eyring Center for Materials of the Universe (MotU)
- Instructor-General Chemistry
- Teaching Assistant (TA)

Please visit <https://sms.asu.edu/About/Employment-Opportunities> for job descriptions.

Please feel free to send email to [ASUSMS@asu.edu](mailto:ASUSMS@asu.edu) at any time with questions, concerns, or suggestions. Please visit our website at [sms.asu.edu](https://sms.asu.edu) to learn more about our school.

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