

AMERICAN CHEMICAL

SOCIETY

PITTSBURGH

THE CRUCIBLE

POETS
EDITION

CXI No. 5
DECEMBER 2024

SSP/SACP Joint Meeting
Monday, January 13, 2025
Duquesne University Power Center



5:00 PM – Social Hour
6:00 PM – Dinner
6:45 PM – Business Meeting
7:15 PM – Technical Program

SACP Technical Program

“High Throughput LC and MS Using Droplet Microfluidics”
Dr. Robert Kennedy, Hobart H. Willard Distinguished University Professor of
Chemistry, Pharmacology, University of Michigan



Biography:

Robert Kennedy is the Willard Distinguished University Professor of Chemistry at the University of Michigan. His research has combined his interest in biology with chemical analysis, separations and microfluidics. A theme of his group has been development of new chemical analysis tools that can be used for engineering enzymes, monitoring neurotransmitters in the brain, and studying the secretion of insulin. Key technical areas including ultra-high pressure LC, droplet microfluidics, and mass spectrometry. His work has been recognized by several awards including the ACS Award in Chromatography and the Ralph Adams

Award in Bioanalytical Chemistry. He has held several service posts including Department Chair and is presently Associate Editor of *Analytical Chemistry* and *ACS Measurement Science Au*.

Abstract:

Manipulating samples as droplets within microfluidic devices has emerged as an interesting approach for chemical analysis and screening. In segmented flow, one embodiment of this technology, nanoliter samples are manipulated in microfluidic channels as plugs separated by an immiscible fluid, such as air or fluorinated oil. These plugs serve as miniature test-tubes in which reactions can be performed at high throughput. Microfluidic tools have been developed to split, dilute, extract, and filter such plugs at rates >1000 samples/s. Most experiments have been limited to fluorescence detection, but we have developed methods to analyze droplet content by mass spectrometry (MS), chromatography, and ion mobility spectrometry. A natural application of this technology is for high throughput experimentation. One area where we have applied this technology is for catalyst discovery. Biocatalysts can be developed by screening enzyme variants to identify active enzymes for a given reaction. Similarly, traditional organic catalysts require extensive exploration of reaction conditions and substrates to develop. We have developed droplet based approaches that has the potential to decrease the time required to develop such catalysts using droplet-MS. Droplet technology can also be used for chemical monitoring or sensing applications. In this approach samples emerging from a miniaturized sampling device are segmented for later analysis. We have used this method to monitor neurotransmitter dynamics in the brain. The technology and application to studies of neurotransmission will be demonstrated.

For complete details and to make a dinner reservation, please visit our society's website. Deadline for dinner reservations is Wednesday, January 1, 2025 by noon.

<https://chemistryoutreach.org/events/monthly-meeting/>



ACS Pittsburgh Elections

Our Newly Appointed Officers for 2025:

Chair-elect Ronghong Lin, PhD

Secretary-elect Kristin Nuzzio, PhD

Treasurer-elect Amalene Cooper-Morgan, PhD

Councilor Edward Zovinka, PhD

Directors Matthew Price, PhD, Evonne Baldauff, PhD

Congratulations and we wish them all the best!

Saint Francis University CERM 2024 Reflections

Friday 11/8/2024

On Friday, we arrived at CERM just before our poster session at 3:30 pm. During the poster session myself and my fellow students not only gained experience presenting our own research/outreach but also learned what undergraduates like us have been working on as well. In the voids between presenting my poster to interested people, I networked with the other students around me. Specifically, I talked a lot with Megan, from Duquesne university, not only about her Biochemistry research on *Listeria* but also about how a chemistry major can differ between universities. After talking with the other attendees from Saint Francis, I think we all had a similar experience and enjoyment from the session. Pictures of us presenting our posters can be seen below in Figures 1.

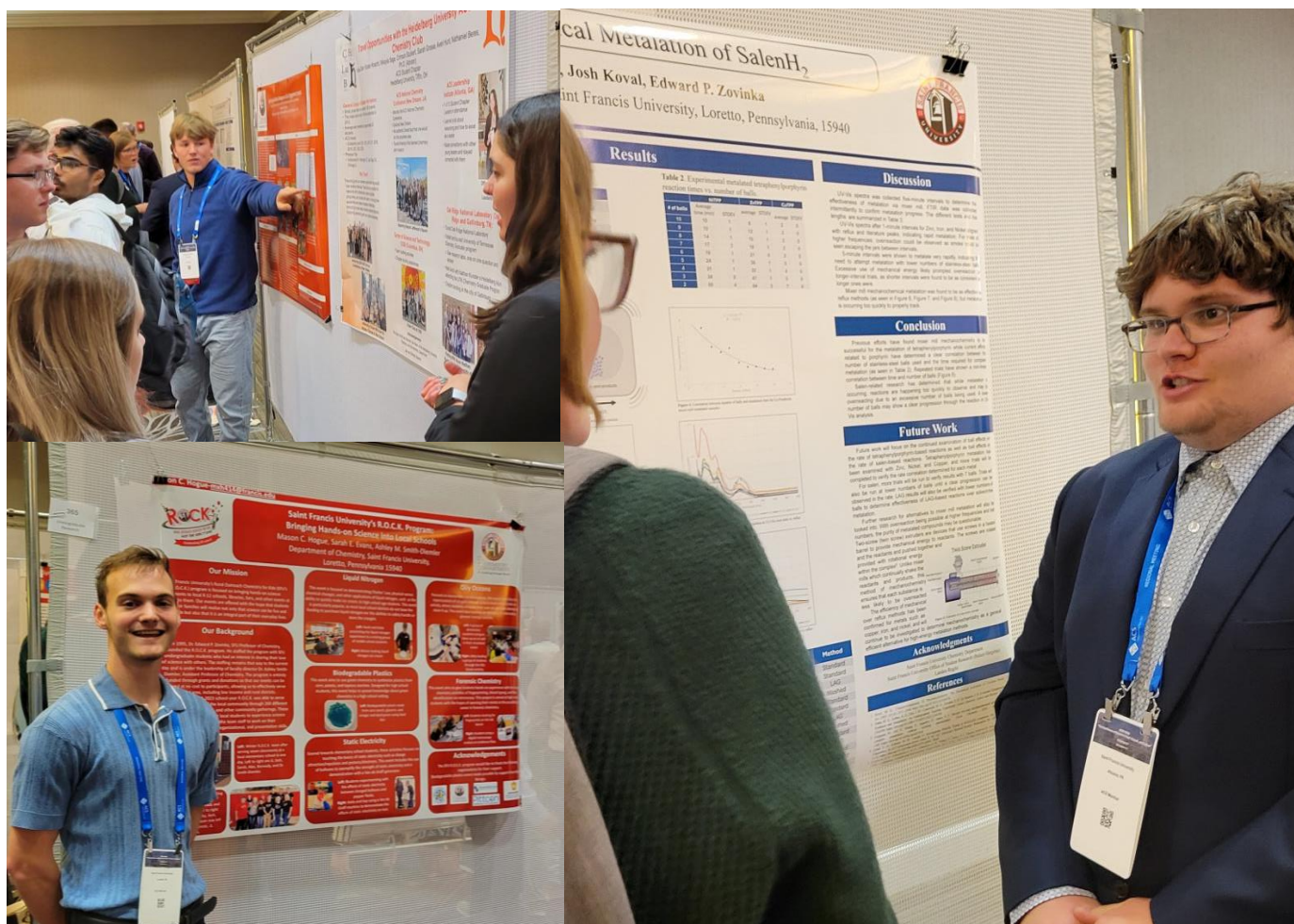


Figure 1. Saint Francis students presenting their posters at CERM. Top left: Mercury presenting his research with acid mine drainage. Bottom left: Mason presenting SFU's Rural Outreach Chemistry for Kids (R.O.C.K.) outreach program. Right: Gavin presenting his work with mechano-chemistry.

Following the poster session, the undergraduate networking reception provided a great opportunity to build bonds with students from other universities (Figure 2). For me, I met a handful of the students before from other conferences, and it was nice to catch-up. For others, it was their first time at a larger conference, so the opportunity to meet fellow undergrads was a great experience.



Figure 2. Saint Francis University and PennWest University students networking at the undergraduate reception.

Saturday 11/9/2024

On Saturday morning, we started our day with the graduate school fair. Of the attendees from Saint Francis, only one of us was graduating in the Spring, so we did not expect the fair to be very relevant to many of us. Unexpectedly, the universities attending had great information on summer internships along with their graduate schools which made for a much more relevant experience. The universities that piqued my interest the most were Florida State and University of Cincinnati for their polymer science/photochemistry and nanotechnology/optical materials focuses. Some of our group was more interested in pursuing a medical path following graduation, so we also attended the “Applying to Professional Schools” seminar/Q&A. This talk wasn’t very applicable to me, but I know that Cole and Abby both found the speakers’ advice valuable. Thank you for the funding, which offered us this valuable opportunity to network and develop professionally.

Contributed by Mason Hogue



Get to Know a Member – Marsha Grimminger, Ph.D.



1. What is your work and ACS (if applicable) title?

ACS: 2024 MARM Awards Chair

Work: Assistant Professor of Chemistry at the University of Pittsburgh Johnstown campus

2. How many years have you been in the ACS?

20 years as of spring 2025

3. What is the biggest benefit of ACS Membership?

Networking, Career assistance, and Conference discounts

4. What did you want to be when you were a child?

A High school teacher (English in Middle School then Chemistry after taking it in High School)

5. What made you fall in love with Chemistry?

My parents took me to demonstrations shows at their alma mater when I was in Elementary School, but the biggest influence was my excellent High School Chemistry Teacher Michelle Boore (née Anderson). She was dynamic, hands-on, and very inspiring. I still remember her particle in a box routine. I got my start in Chemistry demonstrations from her as well as the mobile education initiative, Science in Motion at Juniata College.

6. What is your favorite part of your career or job?

I enjoy creating a variety of active learning activities like group work and Process Oriented Guided Inquiry Learning (POGIL) during lecture. The best measure of how much you know is teaching others.

7. Which chemist, past or present, would you like to meet and why?

I would love to meet Rosalind Franklin to tell her that her contributions to the structure of DNA, RNA, viruses, coal, and graphite were acknowledged eventually.

Do you want to be our featured member? Please email hjuzwa@shimadzu.com to get onto the schedule!



National Chemistry Week 2024: Illustrated Poem Contest Winners (see following pages for the Poems, as listed)

The ACS Pittsburgh Local section congratulates the following winners of the NCW 2024 Illustrated Poem Contest. Student artwork was evaluated based on the rules and guidelines established by the ACS National Contest. All first-place winners were submitted for judging at the national prize level. The ACS Pittsburgh Local section recognizes and thanks local teachers (Ms. Tracey Johnson, Ms. Veronica Sankey, Mr. Todd Frank, Ms. Amanda Stanopieowicz) for encouraging their students to submit artwork:

<u>K-2</u>	Marley S.	(for <i>Cameras and Photos</i>)
<u>3-5*</u>	Sebastian B.	(for <i>The Chemistry of Camera Film</i>)
<u>6-8</u>	Ellen P.	(for <i>Lens</i>)
<u>9-12</u>	Ariella T.	(for <i>Picture Perfect Chemistry</i>)

* In addition to winning the local section, S.B. also placed 1st nationally

We extend our heartiest congratulations to these young poet laureates!

For further information visit:

<https://www.acs.org/content/acs/en/education/outreach/ncw/plan-an-event/illustratedpoem-contest.html>

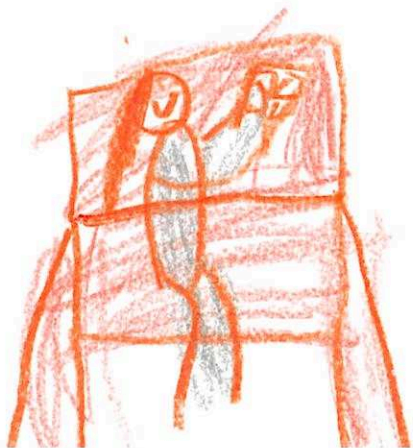
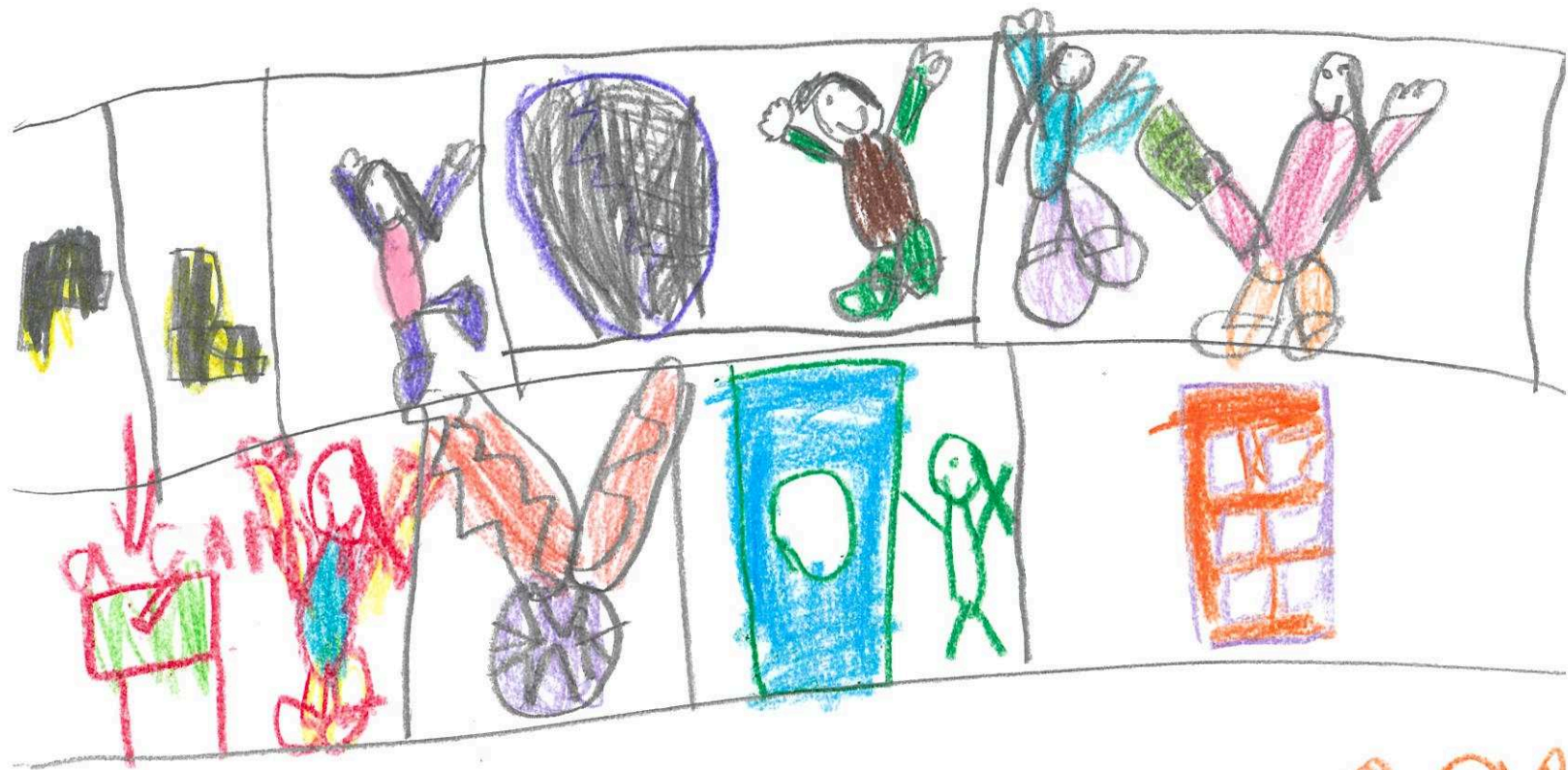
Cameras and Photos

People had to use film and chemicals to create photos.

They had to pay to get the film developed.

We now have digital cameras.

People also use their phones to take pictures.



The Chemistry of Camera Film

By Sebastian L. Bartha

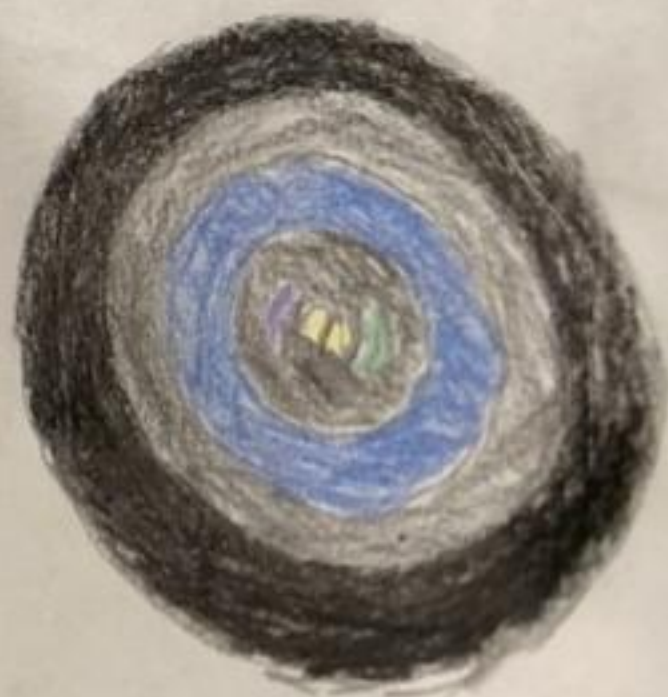
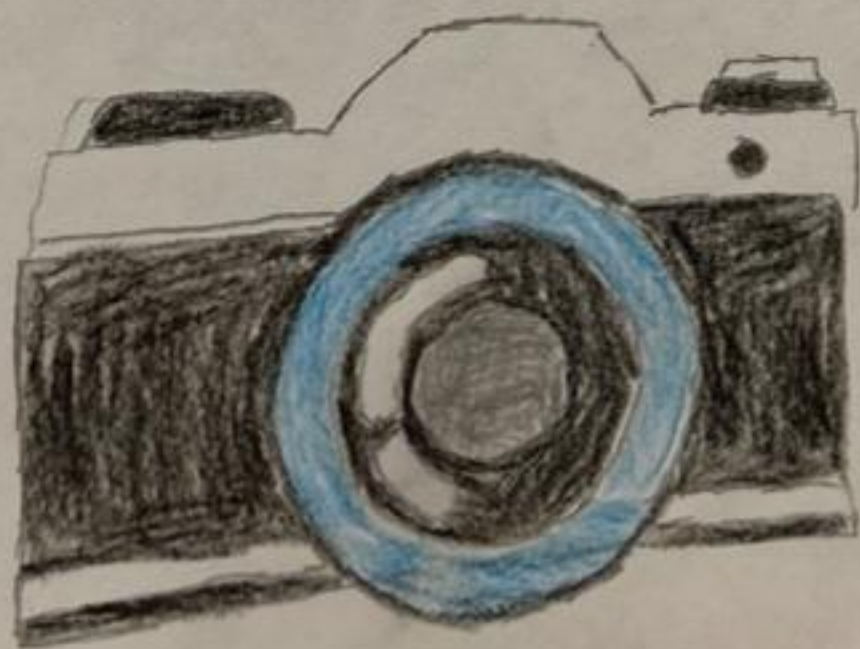
Camera film uses silver halides,
Exposed to light, it quickly guides.
Halides absorb the photons bright,
Attracting electrons in their flight.

Sensitivity specks are born,
Chemical reactions leave an image worn,
A captured moment, forever adorned.



LENSES

Lenses are helpful in so many ways. They help us to see things like diverging light rays. We use them in telescopes, microscopes, cameras and mirrors. Whether they're converging, diverging, convex, or concave. The power of lenses make everything clearer.



29th Annual GC&E Conference Blurb



2025 GC&E Call for Abstracts – Submit an Abstract by February 17!

The ACS Green Chemistry Institute's 29th Annual Green Chemistry & Engineering Conference (GC&E) will be held **June 23-26 in Pittsburgh, Pennsylvania**. The event features dynamic sessions, hands-on workshops, collaborative activities, and thought-provoking panel discussions.

The **Call for Abstracts will open on January 2, 2025, and close on February 17, 2025**. Abstracts in all areas of green chemistry and engineering are welcome, including those that address this year's theme, "Good Health & Well-Being Through Sustainable Chemistry." This theme aligns with UN Sustainable Development Goal #3: ensure healthy lives and promote well-being for all at all ages.

The 2025 conference tracks include:

- Good Health & Well- Being (conference theme)
- Synthesis & Catalysis
- The Circularity of Chemicals/Materials
- Sustainable Product Design
- Chemistry Education
- Polymers
- Green Energy & Fuels
- Sustainable Process Design

Abstracts should reflect ACS GCI's mission to catalyze the implementation of innovative approaches to chemistry and engineering that enable sustainable development across the globe.

Look for early registration and housing opening in February!

Learn more: <https://www.gcande.org/>

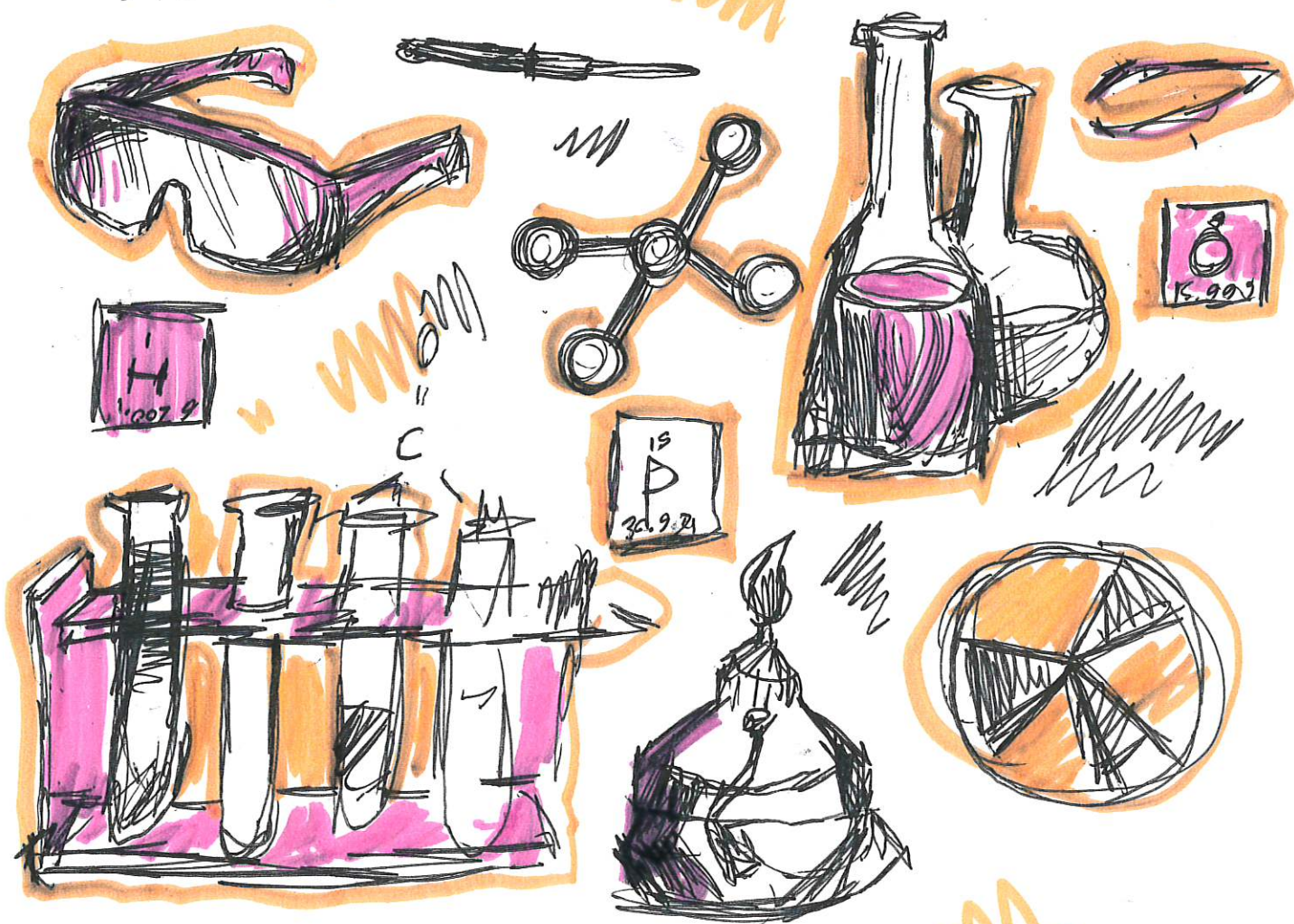
Picture Perfect CHEMISTRY

In the lab we mix and pour,
Watching reactions we can't ignore.

Colors change and bubbles rise
a perfect picture before our eyes.

What is matter? Hows it work?
beneath the surface these answers

work



Employment as Organic Chemistry Faculty – Waynesburg University

AVAILABLE: Beginning August 2025. Applications will be accepted until the position is filled.

SALARY/RANK: Rank and tenure track status will be determined based upon the qualifications, skills and experience of the successful candidate.

QUALIFICATIONS: Ph.D. in Organic Chemistry or similarly related discipline, teaching experience preferred. Excellent communication skills required. Candidates must be committed to teaching at the undergraduate level and have the ability to perform research involving undergraduate students. The successful candidate must demonstrate a strong Christian faith, a commitment to the University's Mission, and a demonstrated commitment to that faith through his/her professional responsibilities, relationships and the mentoring of students.

As a Christian University, Waynesburg University hires as full-time faculty and staff only persons who profess faith in Jesus Christ and demonstrate that faith in a manner consistent with the mission and institutional commitments of the University.

RESPONSIBILITIES: The successful candidate will teach twelve credit hours per semester in chemistry, depending on experience and curriculum needs. Currently, this position will be responsible for maintaining the 400 MHz NMR spectrophotometer and LCMS. Likely courses include all levels of Organic Chemistry (beginner, fundamental, and advanced), spectroscopy, and associated labs. He or she will be expected to advise chemistry majors, participate in extracurricular activities and programs, help with recruitment of prospective students, work with undergraduate students in a research capacity and serve on faculty committees

THE UNIVERSITY: Waynesburg University is a Christian higher education institution offering undergraduate and graduate programs both on the Waynesburg Campus and in adult centers in the Pittsburgh region. Directed by its Christian values, the University provides opportunities for scholarship, leadership and service to all of our students through an academic foundation for lifelong learning and compassionate contribution to others. Special care is taken to employ people who embody the values and perspectives of the institution in their teaching, their personal lives, and their relationships with students. Serving more 1,100 students, the University is a member of the Association of Presbyterian Colleges and Universities (APCU). For further information, please refer to the respective web page.

APPLICATION PROCESS: Candidates must submit a resume/cv, letter of interest, along with a written statement that articulates how the candidate intends to demonstrate his/her Christian faith through the Mission of the University, his/her professional responsibilities, relationships and the mentoring of students. Also include names/addresses/phone numbers of five references. Include transcripts (unofficial copies are acceptable initially).

Apply to:

Human Resources Office
Waynesburg University
51 West College Street
Waynesburg, PA 15370

Email: hr@waynesburg.edu



American Chemical Society Pittsburgh Section

www.pittsburghacs.org

Dear Academic ACS Pittsburgh Section Members,

The Pittsburgh Section of the American Chemical Society has budgeted funds to help encourage undergraduate/graduate student participation in national and regional ACS meetings. The awards are intended to help defray meeting registration and travel-related expenses (lodging, transportation, per diem) for eligible students. Awards will be made based on the scientific merit of the paper/poster to be presented, financial need, and preference will be given to ACS members.

To apply for the funds, applicants should complete the attached application and return it by the relevant deadline. The deadlines for receipt of applications are as follows:

- **06/01 (for travel to be completed by 12/31)**
- **12/01 (for travel to be completed by 06/30)**

As noted on the application, students should include an abstract and confirmation (if received) of the paper/poster being accepted for the Meeting. In addition to the application form, applicants should include a recommendation letter from the PI of the project being presented and/or a recommendation letter from another and a personal statement as to the anticipated benefits of meeting attendance.

Applications can be made electronically (*preferred*) by emailing the application to Heather Juzwa (hljuzwa@shimadzu.com or heather_sapko@hotmail.com) or by mailing a hard-copy application (Pittsburgh Section ACS Travel Grants / Heather Juzwa / Center / 321 Winners Circle / Canonsburg, PA 15317).

Since 2013, the Pittsburgh Section of the ACS has awarded up to four \$500 grants each year to aid our undergraduate/graduate student members in presenting papers or posters at ACS Meetings. This is an ongoing program in our Section, and details will be updated on our website (www.pittsburghACS.org) as necessary.

Applicants will be notified via email that their application was received. All efforts will be made to announce awards within two weeks of the application deadline, and all applicants will be notified of the final committee decisions. Our Section is looking forward to helping increase the participation of local students in ACS conferences. If you have any questions, please do not hesitate to contact me.

Sincerely,

Heather Juzwa, ACS Pittsburgh Section Student Travel Grants, Chair
Senior Field Sales Engineer, Shimadzu Scientific Instruments, Inc



American Chemical Society
Pittsburgh Section

www.pittsburghacs.org

Application Deadline	Travel Completion Date
December 1	June 30 (subsequent year)
June 1	December 31 (same year)

Name of Applicant: _____

Name of Institution: _____

_____ Undergraduate Student / Year

_____ Graduate Student / Year

Mailing Address to Receive Payment if Awarded:

Email: _____ Phone: _____

PI: _____

ACS Membership No.*: _____

**If you do not know your ACS number, please email hljuzwa@shimadzu.com to receive it by email.*

Meeting Location: _____ Meeting Date: _____

Project Title: _____

_____ Paper Presentation _____ Poster Presentation

**Please attach a copy of your project abstract to the application.*

Has your project been accepted? Yes No

**Attach documentation regarding acceptance if received at point of application.*

Will this be your first presentation at an ACS national or regional meeting? Yes No

If no, please list conferences at which you have presented: _____

Purpose of grant: _____

Other funding sources (if any): _____

Personal Statement of anticipated benefits of meeting attendance: _____

Has the applicant received a travel grant from the ACS Pittsburgh Section in the past? Yes No

If your application was selected, the Pittsburgh Section of the ACS would like you to write a short (one page) description of your activity upon completion of the conference for publication in our monthly newsletter, The Crucible, and on our website. The description is due within 30 days of the meeting attended. Photos are welcomed and encouraged.

I am willing to complete this report: Yes No

Signature: _____

Date: _____

Send completed hard-copy applications and supporting documentation to:

Pittsburgh Section ACS Travel Grants

Heather Juzwa, 321 Winners Circle, Canonsburg, PA 15317

Electronic copies of completed applications should be sent to hljuzwa@shimadzu.com and heather_sapko@hotmail.com. Be sure to place "Pittsburgh Section ACS Travel Grants" in the subject line.



The Crucible

The Crucible is published monthly, August through May. All statements and opinions expressed herein are those of the editors or contributors and do not necessarily reflect the position of the Pittsburgh Section.

Editor: Sarah Scrivener, crucible@pittsburghacs.org

2024 Pittsburgh Section Officers

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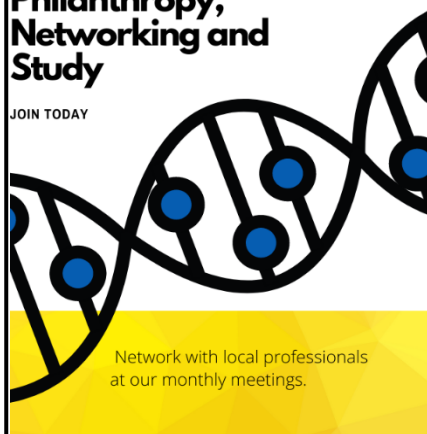
Spectroscopy Society of Pittsburgh



chemistryoutreach.org

Science Outreach through Philanthropy, Networking and Study

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Society for Analytical Chemists of Pittsburgh
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Advancing Analytical Chemistry through Science Education

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Advertise in The Crucible

	1X	3X	6X	10X
Full Page	\$120	\$115	\$100	\$75
Half Page	\$75	\$70	\$60	\$45
3.5" x 2"	\$50	\$45	\$25	\$20

Volunteer with Us!

We are always looking for new people to join the Pittsburgh Section Executive Committee. Email our Chair to inquire about opportunities.

The Crucible Deadline

The deadline for items submitted to The Crucible is the 25th of the month prior to publication. For example, all items for the February 2024 issue must be to the editor by January 25th, 2024.

ACS Regional Awards – Apply Today!

More information can be found [here](#)

COVER illustration
Goethe (1982, Warhol)

