

Dr Megumi Yoshioka-Tarver: the 2025 ACS High School Chemistry TotY

first published 19 April 2025

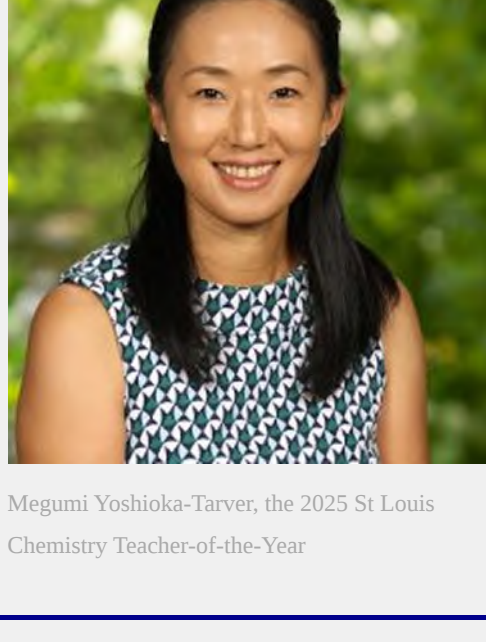
We are pleased to announce that Dr Megumi Yoshioka-Tarver, MICDS Upper School science faculty member, has been awarded the 2025 High School Chemistry Teaching Award. This prestigious recognition honors Dr Yoshioka-Tarver's outstanding commitment to chemistry education, student engagement, and innovative teaching.

With a PhD in Chemistry and experience in academia, industry, and government, Dr Yoshioka-Tarver brings depth and relevance to the classroom. She teaches a range of courses — including AP Chemistry, environmental science, and food science — with an emphasis on inquiry, hands-on learning, and real-world applications. Her standout “Chemistry of Cooking” interim course combines culinary exploration with chemical principles, turning everyday experiences into powerful science lessons.

Dr Yoshioka-Tarver's students are encouraged to take intellectual risks, ask questions, and connect science to their lives. She mentors independent research, supports participation in events like Battle of the Burets, and curates weekly “Molecule of Interest” flyers to spark curiosity in unexpected places. Her teaching philosophy emphasizes active learning and collaboration, fostering a space where students feel safe to explore, experiment, and grow.

Beyond the classroom, she is a life-long learner herself, and a leader in the chemistry education community. She regularly attends professional workshops and conferences, contributes to local teacher networks, and shares best practices with fellow educators.

“Dr. Megumi Yoshioka-Tarver inspires her students not only to understand chemistry, but to love it,” said her nominator. “She exemplifies the excellence ACS aims to celebrate.”



Megumi Yoshioka-Tarver, the 2025 St. Louis Chemistry Teacher-of-the-Year

College Awards at Awards Night 2025

first published 23 April 2025

FINAL REPORT OF THE COLLEGE AWARDS SUBCOMMITTEE

Michael A. Hauser, Chair

The Winners

The College Awards Subcommittee recognizes college students who have shown outstanding achievement in their chemistry curricula. Outstanding Junior Chemistry Awards were presented to students attending institutions in the St. Louis area on April 22, 2025, at Favazzas on the Hill during the Awards Night Banquet. Participating schools include the University of Missouri at St. Louis, Washington University, St. Louis University, Southern Illinois University at Edwardsville, Lindenwood University, Maryville University, McKendree University, Principia College, Greenville University, and Webster University. The names of the winners were sent for publication in the Chemical Bond.

The 2025 recipients of these awards were:

ACS 2025 WINNERS

OUTSTANDING JUNIOR CHEMISTRY STUDENT AWARDS

- Tyler Heldt, Greenville University
- Ally Sprague, Lindenwood University
- Birendra Karki, Maryville University
- MaryAnn Romagna, McKendree University
- Nina Ola Okike, Principia College
- Benjamin Wiseman, Saint Louis University*
- Cassandra Stirling, Southern Illinois University – Edwardsville*
- Nathaniel Kemp, University of Missouri – St. Louis*
- Edward Marvin Hao, Washington University*
- Nya Kearbey, Webster University

*ACS Approved Programs

For 2025 the award consisted of a \$100 cash award, a framed certificate, and an engraved brass plate, which is mounted on a perpetual plaque at each institution. Dinner was also provided for each student and for one mentor per student.



Michael Hauser (far left) with College Award winners.

Photo Gallery

Perspectives on Four Years of “Chemistry is pHun”

first published 29 April 2025

From Joe Smith, leader of Chemistry is pHun sub-committee:

The 2024-2025 “Chemistry is pHun” outreach program, sponsored by the St. Louis Section of the American Chemical Society, was wrapped up in March, and I would like to report on this year’s program. Due to a family move, this will be my last year with the program, so I will also offer some comments about my experience with the program over the last four years.

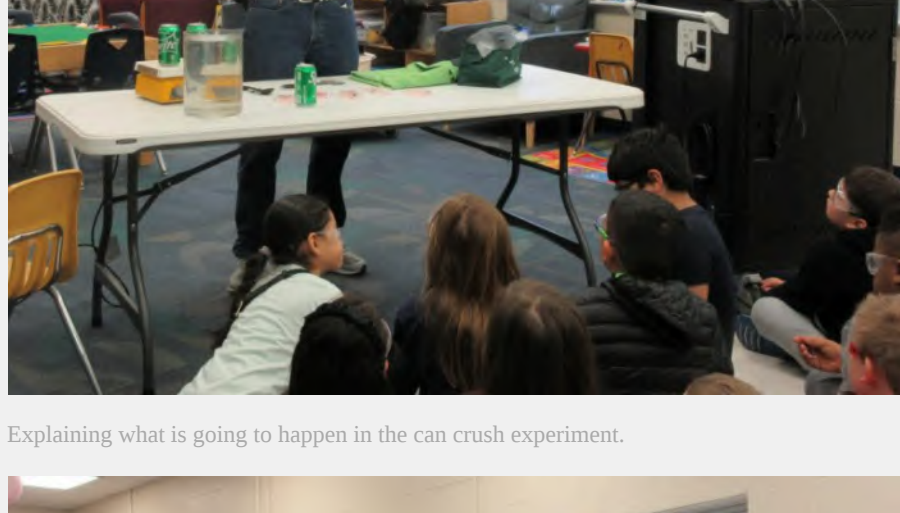
Thanks to Partners in Education in the Rockwood School District, a non-profit that interfaces with schools on schedules and room reservations, I was able to make 21 separate visits to 16 different Rockwood schools. This year, we also made one visit to New City School in St. Louis. In total, we gave 37 presentations to 1628 students.

This year’s program preserved the demonstration activities used in previous years, but made some tweaks in discussing the results. Presentations to both grades began by discussing the diversity of career activities carried out by STEM professionals, including chemists. Safety was emphasized by having all presentation participants wear eye protection and by urging students to get grown-up assistance before experimenting at home.

Second graders attended a presentation entitled “Observing States of Matter” that focused on matter in the states of solids, liquids, gases, and plasmas, and on the role of energy transfer and chemical reaction in causing changes of state. This year’s second grade presentation discussed the importance of reproducing experimental results and how scientists vary experimental conditions to improve understanding.

Fifth graders experienced a “Transforming Matter” presentation that introduced the concept of chemical reactions as transformations of reactants into products. We illustrated combustion and acid-base reactions. A discussion of the pH scale tied in well with math class, where students are learning about exponents. This year, we discussed how an exponential unit scale is helpful for quantities, such as hydrogen ion concentration, that vary by many factors of ten, but not as useful for quantities that do not vary as much, such as the heights of humans.

During the last four years, I have had an opportunity to interact with more than 5000 students. I suspect that many of these students would have had no other chance to engage with a scientist during their elementary school years. Gratifying feedback was received, including from students mentioning the experience long after the event, to students responding fondly to presenters. Giving these presentations is a great opportunity for retired professionals to introduce the idea of a STEM career to students in their formative years. Although this is my last year with the program, I have prepared detailed documentation of the presentations and the demonstrations for future volunteers. If you are interested in participating in future programs, contact Sue Wiedeger at swiedig@siue.edu.



Explaining what is going to happen in the can crush experiment.



The famous crushed can!

Meeting & Seminars

Board of Directors

St Louis Section–ACS Board of Directors meets the second Thursday of each month, usually over Zoom. E-mail chair@stlacs.org for the Zoom link to the next meeting.

Date: May 8th

Join internet meeting at 6:00 pm for social/chit-chat

Business meeting begins at 6:30 pm

Future meetings: June 12th, July 10th

Maryville University

Seminars are approximately once a month on Thursdays, 4-5 pm. Details are available on the university's [seminar page](#). All seminars are free and open to the public. Contact [Jason Telford](#) for more information.

Saint Louis University

Seminars are generally on Fridays at 12 noon in Carlo Auditorium, Tegeler Hall, unless noted otherwise. Refreshments follow. For the most up-to-date information, refer to the department's [home page](#) and follow the link to the Seminar Schedule.

University of Health Sciences & Pharmacy in St. Louis

The Center for Clinical Pharmacology hosts a monthly seminar series in ARB 212 unless otherwise noted. For the most up to date information refer to the center's [seminar page](#) or contact [Jodi Maslin](#).

University of Missouri–St Louis

Mondays at 4 pm in 451 Benton Hall, unless otherwise specified. Refreshments 15 minutes prior to seminar time. For timely information on visiting seminar speakers, contact the Chemistry Department, 314.516.5311, or visit the [seminar schedule](#). The department has additional seminar series which are also accessible from this page.

Washington University

Seminars are in McMillen 311 at 4 pm unless otherwise noted. For information, consult the departmental [events page](#). Related seminars, including endowed seminar series and the WU med school biochemistry series, are linked here as well.

UMSL Department of Chemistry and Biochemistry

M.S. Program in Chemistry
M.S. Program in Biochemistry and Biotechnology

- ✓ All classes offered in the evening
- ✓ Affordable
- ✓ Research opportunities for credit available
- ✓ Professional Science Masters available in both programs – interfacing chemistry, biochemistry and business

www.umsel.edu/chemistry

UMSL Microscopy Imaging and Spectroscopy Technology Lab (MIST Lab)
University of Missouri–St. Louis



Contact
Prof. Keith J. Stine
Chair Department of Chemistry and Biochemistry
Email: kstine@umsel.edu

Facilities Available

- **Electron Microscopy**
ThermoFisher Scientific Apreo 2 Field Emission Scanning Electron Microscope (FE-SEM)
- **Atomic Force Microscopy**
Bruker Bioscope Resolve Bio AFM with Nanoscope V controller
Digital Instruments Multimode AFM with Nanoscope III controller
- **Confocal Microscopy**
Zeiss LSM 900 Laser Scanning Confocal Microscope on Axio Observer 7 inverted frame
- **Thermal Analysis**
TA Instruments TGA Q500 for Thermogravimetry
TA instruments DSC Q2000 for Differential Scanning Calorimetry
- **Surface Area and Pore Size Analysis**
Coulter SA3100 Surface Area and Pore Size Analyzer
- **Elemental Analysis**
ICP-AES, Vista Inductively Coupled Plasma Atomic Emission Spectrometer
EDS, Energy-Dispersive X-ray Spectroscopy using 30mm² detector in Apreo 2 SEM
- **Liquid Chromatography-Mass Spectrometry**
ThermoFisher Scientific TSQ Altis Triple Quad Mass Spectrometer equipped with Vanquish binary pump and Triplus autosampler

About the Chemical Bond

The *Chemical Bond* is published at www.stlacs.org January through May and September through December by the St Louis Section–American Chemical Society. If you would like to receive email notification when each issue is posted, you can subscribe to our email list and join the “Chemical Bond reminders” group.

Correspondence, letters to the editor, etc., should be emailed to editor@stlacs.org or mailed % St Louis Section–ACS, PO Box 410192, Saint Louis, MO 63141-0192.

Copyright © 2025 American Chemical Society and the St Louis Section–ACS

| | | |
|--|----------------|--|
| Editor | JB Carroll | editor@stlacs.org |
| Associate Editor | Eric Ressler | 314.962.6415 editor@stlacs.org |
| Assistant Editor & Advertising Manager | Keith Stine | 314.516.5346 advmgr@stlacs.org |
| Business Manager | Donna Friedman | 314.513.4388 bizmgr@stlacs.org |