

The Chemical Record

Volume 59 — Number 3 — April, 2017

Columbus Section of the American Chemical Society, Inc.

James J. Wasil, Section Chair — jim.wasil@scenarial.com

Ashish Deshmukh, Editor — ashishdeshmukh@hotmail.com

Section Website: columbus.sites.acs.org

IN THIS ISSUE...

ABOUT THE COLUMBUS SECTION	1
MEETING NOTICE	2
PROGRAM DETAILS	2
ABOUT THE TALKS	3
SILVER CIRCLE NEWS	4
21ST ANNUAL GREEN CHEMISTRY & ENGINEERING CONFERENCE JUNE 13-15, 2017	4
UPCOMING ACS SHORT COURSES <i>FROM THE ACS WEBSITE</i>	4
UPCOMING ACS WEBINARS <i>FROM THE ACS WEBSITE</i>	5
STATE SCIENCE DAY 2017: VOLUNTEERS NEEDED!	6
FROM CHEMICAL & ENGINEERING NEWS APRIL 3, 2017	7
COLUMBUS SECTION ACS CALENDAR OF EVENTS	8
ABOUT <i>THE CHEMICAL RECORD</i>	8
CHANGE OF ADDRESS	8
ADVERTISING RATES	8

ABOUT THE COLUMBUS SECTION



The Columbus Section of the American Chemical Society comprises approximately 1,500 members who live and work in the following central Ohio counties: Delaware, Fairfield, Fayette, Franklin, Hocking, Knox, Licking, Madison, Marion, Morrow, Muskingum, Perry, Pickaway, Ross, and Union.

The Mission of the American Chemical Society (ACS) is to encourage in the broadest and most liberal manner the advancement of the chemical enterprise and its practitioners. Toward that end, the ACS advances scholarly knowledge, provides professional services and support, communicates with varied audiences, and is actively involved in the science, education, and public policy arenas.

The Columbus Section of the ACS adheres to this mission and the strategic thrusts of the national organization and leadership by providing programs and networking opportunities for Chemistry professionals in Central Ohio.

We invite ACS members and scientists in the community to lend their expertise and talents to our activities in science education, government and legislative policy issues, safety in our industrial plants and in our communities, and care of our land.



MEETING NOTICE

Columbus Section of the American Chemical Society, Inc.

columbus.sites.acs.org

Meeting #888

Speakers:

2017 Columbus Section Poster Competition Awardees

Maxx Q. Arguilla, Graduate Student, The Ohio State University

Brittany Trang, Undergraduate Student, The Ohio State University

Nate Wesley, Undergraduate Student, The Ohio State University

Wednesday, April 19, 2017

Spaghetti Warehouse
397 West Broad Street
Columbus, Ohio 43215
614-464-0143

PROGRAM DETAILS

5:00 – 6:00 PM	Executive Committee Meeting – All members are welcome to attend.
6:00 – 6:45 PM	Social Hour with Cash Bar
6:45 – 7:30 PM	Dinner <ul style="list-style-type: none">• Salad and Bread• Menu of entrees available (each attendee selects choice at the event):<ul style="list-style-type: none">○ Spaghetti and Meatballs○ Lasagna○ Fettuccini Alfredo○ Grilled Chicken Caesar Salad• Beverages – water, coffee, tea, and soft drinks• Dessert



7:30 – 7:45 PM	Student Awards – for outstanding collegiate Juniors and Seniors
7:45 – 8:45 PM Program	Presentations: 2017 Columbus Section Poster Session Awardees
Cost	The charge for dinner is \$20 per person for members and non-members, \$5 for retired and unemployed members, and \$5 for students. Payment will be collected at the door; cash and checks accepted. There is no cost to attend the program only. <i>Remember that this is a dinner order and must be paid. Please help control costs by honoring your order.</i>
RSVP	To avoid dropped reservations please use the Meeting Reservation Form on the section's website (http://columbus.sites.acs.org/). Alternatively, please send an e-mail with the same information to us at the following e-mail address: columbusacs@gmail.com providing the information listed below.
E-mail Reservations Template	<ul style="list-style-type: none"> • First and last name • Membership category: member, non-member, retired, emeritus, unemployed, student • Employer, if any • Please indicate if you will join us for <u>Dinner & Program</u> OR <u>Program Only</u> • Your phone number, in case we need to contact you.
Reservation Deadline	Monday, April 17, 2017 at 5:00 pm
Program Contact	James J. Wasil , 614-271-5970; jim.wasil@scenarial.com
Directions & Parking PARKING IS FREE	<p>From the North – Take I-71 South to Exit 108-B for US 40/Broad Street. Turn right onto US 40 (Broad Street). Restaurant will be on the left just beyond COSI between the railroad trestles.</p> <p>From the East – Take I-70 West to exit 100 B for Fourth Street (toward US 23 North). Turn right onto South 4th Street. Turn left onto West Broad Street. Restaurant will be on your left just beyond COSI between the railroad trestles.</p> <p>From the West – Take I-70 East to Exit 97 for US 40/West Broad Street. Turn left onto US 40 (West Broad Street). Restaurant will be on your right between the railroad trestles. If you see COSI, you've gone too far!</p> <p>From the South – Take I-71 North to exit 106A/106B on the left and merge onto OH 315 North. Take US 62/OH 3/Rich Street exit toward Town Street. Turn right onto OH 3/US 62/West Rich Street. Turn left at the 3rd cross street onto South Gift Street. Turn right onto West Broad Street. The restaurant will be on your right between the railroad trestles. If you see COSI, you've gone too far!</p>

ABOUT THE TALKS:

Maxx Q. Arguilla – Topological, Magnetic and Dirac Phases Based on 2D Honeycomb Sn Lattices.

Brittany Trang – An Indium Tin Oxide-Compatible Organic Dye for p-Type Dye-Sensitized Solar Cells.

Nate Wesley – Structure-Function Studies of NFU1 Mutations: Implications for Iron-Sulfur Cluster Biosynthesis and Mitochondrial Disease.

Silver

SILVER CIRCLE NEWS
By Tom Weeks

Silver

There will be a Silver Circle Meeting at the Byrd Polar and Climate Research Center, 1090 Carmack Road, Columbus, OH 43210 at 11:30 am on Monday, April 10. The topic will be "Climate and weather forecasting, climate models, and the impact of climate change on Ohio." After the 45 minute talk we will have a facility tour and questions. Lunch will be from Jason's Deli. Your sandwich choices are: ham and Swiss; turkey avocado BLT on croissant, tuna salad with egg, or spinach veggie wrap. Your salad choice is chicken club. All meals include water and cookie. Cost is \$5 unless you have to pay for parking; then there is no charge. Reservations and lunch choice due no later than noon, Friday, April 7. You will park in the West Campus lot (Carmack 3), walk over the most western of the two bridges over Carmack, past the greenhouses, and to the Byrd Polar building. Be sure to pay for parking. (If you are the driver, there is no charge for lunch). There is no easy handicap parking for the general public. Easier access can be achieved from the limited amount of metered parking associated with the OSU Speech and Language lab on Arthur Adams Dr. For more information contact tomweeks@aol.com.

21ST ANNUAL GREEN CHEMISTRY & ENGINEERING CONFERENCE
JUNE 13-15, 2017

Join us in 2017 at the must-attend event for green chemists and engineers. The 21st Annual Green Chemistry & Engineering Conference (GC&E), hosted by the ACS Green Chemistry Institute®, will be held in Reston, Virginia on June 13-15, 2017. GC&E provides an opportunity for a diverse network of over 500 academic, industrial and government stakeholders to network and learn about the newest ideas in sustainable approaches to chemistry, chemicals, processes and products. Featuring over 30 technical sessions, a robust poster session, keynote lectures, workshops, social events and a Green Expo, GC&E is the premiere forum for sustainable and green chemistry and engineering.

The overarching theme of the conference in 2017 will be "Making Our Way to a Sustainable Tomorrow." The conference invites scientists and leaders from all sectors to come together to address critical topics such as the design of sustainable chemicals, flexible chemical manufacturing, more efficient processes, green chemistry curricula, circular economy considerations, sustainable materials, academic-industry collaborations, chemicals policy and more.

UPCOMING ACS SHORT COURSES
FROM THE ACS WEBSITE



Register for "Patent Law Fundamentals Online"

June 2 – 9, 2017

American Chemical Society will be holding "Patent Law Fundamentals Online" on June 2 – 9, 2017 to help you learn how to identify and document an invention, search for patents related to the invention, and apply for a patent application. Short Courses from the ACS give you the tools to stay on top of new technology, growing trends in the science industry and basic skills you need to advance in your career.

Editor's Note: For more details about the short courses described above, visit www.proed.acs.org/.



UPCOMING ACS WEBINARS
FROM THE ACS WEBSITE

Cystic Fibrosis: Discovery of CFTR Modulators

Thursday, April 20, 2017 @ 2-3pm ET

Join Peter Grootenhuys of Vertex Pharmaceuticals as he delivers a brief overview of the drug discovery approaches and challenges to identify small molecules CFTR modulators.



Being A Successful Scientist: Lessons in Self-Fulfillment

Thursday, April 27, 2017 @ 2-3pm ET

Darren Griffin from the University of Kent as he discusses how to find your base in the sometimes acidic reality of science and how to find self-fulfillment in your work.



Insourcing and Outsourcing in R&D: Trends in the Pharma Industry

Thursday, May 4, 2017 @ 2-3pm ET

Join Michael Trova of AMRI and Mike McCoy of *Chemical & Engineering News* as they provide an overview of the traditional outsourcing model for drug development as well as the rising trend of working with an insourced partner.



Why Attend ACS Webinars®?

FAST – Get right to the heart of addressing issues important to you in 60-minutes.

CONVENIENT – Listen from the comfort and convenience of your home or desk.

EASY – Online access is all you need. Register, then click the link in your email confirmation, and you're in!

ACTIONABLE – Learn from luminaries and subject matter experts on strategies and tactics you can use immediately after the webinar.

LEARN – Share with friends and engage group discussions on key issues in a fresh new manner.

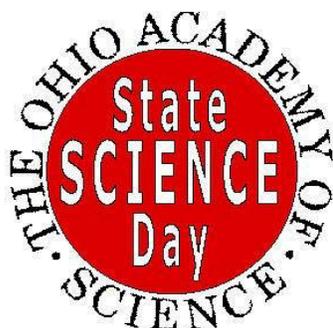
AFFORDABLE – A free weekly online event provided to by the American Chemical Society.

All recordings of ACS Webinars® are available as a benefit to current ACS members. Live weekly ACS Webinars® continue to be available to the general public.

Editor's Note: For more details about the webinars described above, please visit <https://www.acs.org/content/acs/en/acs-webinars.html>

STATE SCIENCE DAY 2017: VOLUNTEERS NEEDED!

By BOB KROSHEFSKY



On Saturday, May 13th, State Science Day 2017 will be hosted by The Ohio State University at the French Field House in Columbus – just up the road from the ‘Shoe. This is the Saturday BEFORE Mother’s Day this year. Since 1998, as part of its commitment to chemical education at all levels, the Columbus Section has sponsored awards for outstanding projects in the chemical sciences. The objective is to acknowledge and reward those students who have not only understood the scientific method, but also have exhibited creative thought. The section awards \$2,500 in prizes to the various winners.

Clearly, these students are some of the best that Ohio has to offer and are already showing an interest in chemistry. What better way to encourage them and show them the human face of the chemical enterprise? Professors and employers, it might also be a good way to do early recruiting for future students and interns.

WE NEED YOUR HELP!!!

The number of projects entered is large (~140) and we need around 30 judges to evaluate them and decide on the winners. A general knowledge of some branch of chemistry is desirable, but being a chemist or ACS member is not required. And even having limited knowledge in one area can be supplemented and effectively utilized through interactions with judges having complementary skills.

Judging is scheduled to run from 9:00 a.m. to noon. Refreshments and orientation will occur from 7:00 to 8:30 a.m. Access and parking get more difficult the later it gets, but you really need not be there much before 8:00 a.m. in order to get a clear idea of what will be happening that morning. You will be well-informed in advance. Previous judges have thoroughly enjoyed the experience.

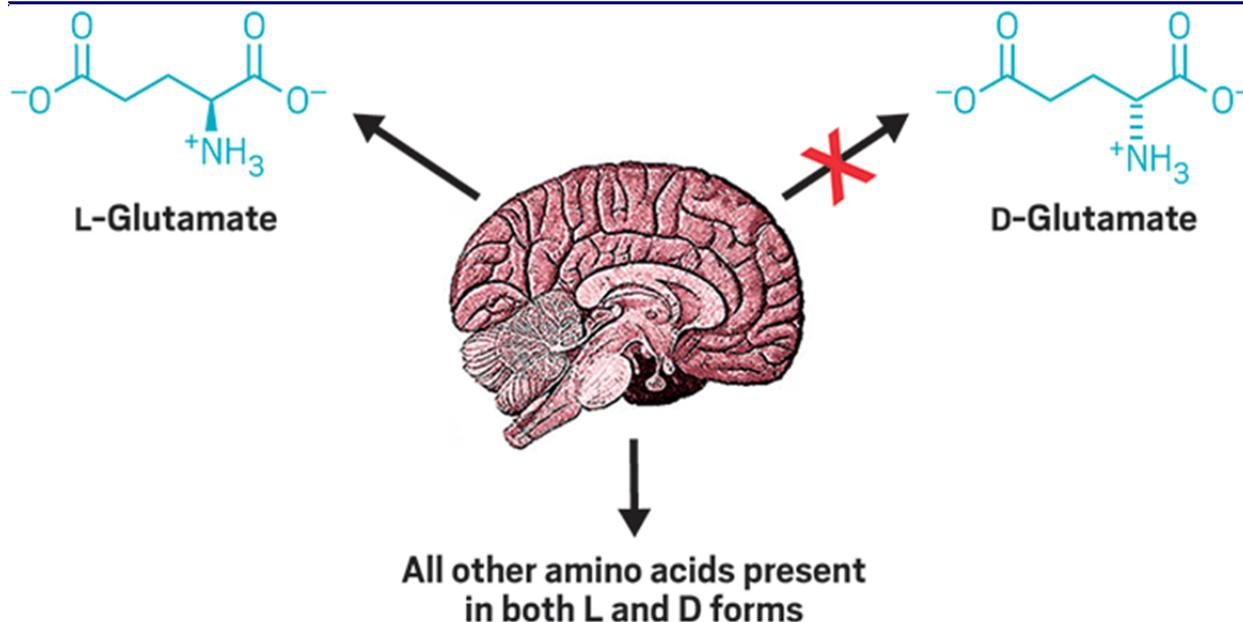
Please consider taking one morning out of the entire year to offer encouragement and advice to someone who could be taking the first steps in an illustrious career. If you would enjoy the opportunity to meet the next generation of chemical scientists, e-mail me at bobkro@embarqmail.com or call me at 937-707-9276.

Refer to The Ohio Academy of Science Web site <http://www.ohiosci.org/ssd.htm> for more details.



FROM CHEMICAL & ENGINEERING NEWS APRIL 3, 2017

AN AMINO ACID MYSTERY



Right-handed amino acids—found in small doses in nature—are largely a mystery. In humans, most linger at low concentrations yet play unknown roles in the body. A new survey of right- and left-handed amino acids in mouse brains thickens the plot. The study's findings imply that the brain tightly regulates the levels of right-handed amino acids and that undiscovered enzymes might flip lefties to righties (*ACS Chem. Neurosci.* 2017, DOI: 10.1021/acscemneuro.6b00398).

Ubiquitous left-handed L-amino acids serve as the building blocks of all proteins. The roles of their right-handed counterparts, D-amino acids, are still not fully understood. In 2000, scientists figured out that one of them, D-serine, is a neurotransmitter. But, to find the functions of others, scientists must conduct baseline surveys that determine normal levels of D- and L-amino acids in various parts of the body, says Daniel W. Armstrong of the University of Texas, Arlington.

Armstrong's group collaborated with Adam L. Hartman's laboratory at Johns Hopkins University to measure amounts of D- and L-amino acids in the cortices and hippocampi of mice. The collaborators separated blood from brain tissue and then purified the amino acids in the samples. They measured them by separating the D and L varieties with chiral high-performance liquid chromatography.

"Many curious things turned up," Armstrong says. Levels of most of the 12 D-amino acids measured were 10 to 2,000 times as high in the brain as in the blood. The concentration of the neurotransmitter D-serine was among the highest, but D-aspartate and D-glutamine were even higher. Such quantities suggest many of the D-amino acids play an active role in the brain, Armstrong says.

Particularly striking was the conspicuous absence of D-glutamate anywhere in the brain or blood. L-glutamate is the most abundant amino acid in the brain—it is also a neurotransmitter—so Armstrong expected to see at least some D-glutamate. Yet his team couldn't detect it at all with a detection threshold of 0.05 ng per mg of tissue.

The unexpected absence, Armstrong says, implies that the body keeps D-glutamate low for a physiological reason. It also implies that the brain has a mechanism for efficiently removing D-glutamate or keeping its levels very low.



Armstrong surmises that undiscovered enzymes may be at work. A known enzyme converts D- and L-glutamate to D- and L-glutamine, so perhaps a stereoselective enzyme takes L-glutamine back the other way but doesn't take D-glutamine, making D-glutamine a sink for D-glutamate, he says. High brain levels of D-glutamine support that hypothesis, Armstrong says.

Herman Wolosker of Technion—Israel Institute of Technology notes that for some of the less abundant amino acids, relatively high fractions exist in the D form. Isoleucine, for instance, is 24% right-handed in the hippocampus. "It points to the possibility of additional enzymes in the brain that transform L- into D-amino acids," he says.

COLUMBUS SECTION ACS CALENDAR OF EVENTS

Year	Month	Date	Day	Location	Comments
2017	April	7	Friday		5:00 pm: Deadline for reservations for April, 2017 Silver Circle meeting.
2017	April	10	Monday	Byrd Polar and Climate Research Center	Silver Circle Meeting
2017	April	17	Friday		5:00 pm: Deadline for reservations for April, 2017 Section meeting.
2017	April	19	Wednesday	Spaghetti Warehouse	Monthly Section Meeting; see details elsewhere in this issue of <i>The Chemical Record</i> .

ABOUT *THE CHEMICAL RECORD*

The Chemical Record, official newsletter of the Columbus Section of the American Chemical Society, Inc., is published monthly, February-May and September-December (eight issues per year.) Opinions expressed by editors or contributors do not necessarily represent the official position of the Columbus Section or of the editorial staff. We welcome your contributions to your *Chemical Record*. Please submit them via postal or electronic mail to **Ashish Deshmukh**, 2690 Fisinger Road, Columbus, Ohio 43221, ashishdeshmukh@hotmail.com. Electronic mail contributions should be in MS Word file attachments (preferred) or plain-text messages. *Thank you very much!*

CHANGE OF ADDRESS

Changes in postal or e-mail address should be reported to the Membership Chair, **David Speth**, 614-688-5162, drspeth@sbcglobal.net. David will forward the change-of-address information to ACS Headquarters.

ADVERTISING RATES

Advertising rates for *The Chemical Record* are as follows (per single insertion): Full Page, \$250; Half page, \$150; Quarter Page, \$120; Eighth Page: \$60; Business Card, \$50. Discounts: 5% for four insertions or 10% for eight insertions during a calendar year. There is no charge for "help wanted" ads.