

The Chemical Record

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Columbus Section of the American Chemical Society, Inc.

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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.



ACS
Chemistry for Life®



MEETING NOTICE

Columbus Section of the American Chemical Society, Inc.
columbus.sites.acs.org

Meeting #892

Dr. Zachary Meisel
Assistant Professor, Physics and Astronomy
Ohio University

Monday, February 12, 2018

BRAVO Cucina Italiana
1803 Olentangy River Road
Columbus, Ohio 43212

PROGRAM DETAILS

| | |
|---------------------------|--|
| 5:00 – 6:00 PM | Executive Committee Meeting – All members are welcome to attend. |
| 6:00 – 6:45 PM | Social Hour – Cash Bar |
| 6:45 – 7:30 PM | <p>Dinner:</p> <ul style="list-style-type: none"> • Family-style Salad • Bread with Butter • Menu of entrees available (each attendee selects at the event): <ul style="list-style-type: none"> ○ Focaccia bread ○ 2 Salad Options (Caesar Classica, Insalata Della Casa) ○ 1 Side (Seasonal vegetables) ○ 2 Pasta Options (Vegetarian Pasta Bravo, Chicken Fra Diavolo) ○ 1 Entrée (Chicken Caprese) ○ Beverages – water, coffee, tea, and soft drinks |
| 7:30 – 8:45 PM Program | Presentation by Dr. Zachary Meisel: Life after Death: Nuclear Chemistry in the Cosmos and The Birth of Elements in Stellar Death |
| Cost | ACS members: \$20 per person. Non-members: \$25 per person. \$5 for retired and unemployed section members and students. Payment will be collected at the door. Cash and checks accepted. There is no cost to attend the program only. <i><u>Remember that this is a dinner order and must be paid. Please help control costs by honoring your order.</u></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: <ul style="list-style-type: none"> ○ Emeritus member ○ Regular Member ○ Retired Member ○ Unemployed Member ○ Non-member ○ Student • Employer (if any) • Please indicate if you will join us for the: <ul style="list-style-type: none"> ○ <u>Dinner & Program</u> OR ○ <u>Program-Only</u> • Your phone number, in case we need to contact you. |
| Reservation Deadline | Thursday, February 8, 2018 at 5:00 pm. |
| Program Contact | Bob Kroshefsky , Email: columbusacs@gmail.com |
| Directions & Parking PARKING IS FREE | <p>From the North – Take I-71 South to Exit 119B toward Dayton for I-270 West. Take exit toward OH 315S and follow OH 315S. Take Kinnear Rd exit, turn left onto Kinnear Rd and continue onto Olentangy River Road. Restaurant will be on the right.</p> <p>From the East – Take I-70 West to exit 101A for I-71N. Continue on I-71N, take exit 109A for I-670W. Continue onto I-670W and take exit 2B to merge onto OH 315 North. Take the exit toward Lane Avenue, turn left onto Lane Ave and then merge toward OH 315 South. Continue on OH 315S and take Kinnear Rd exit, turn left onto Kinnear Rd and continue onto Olentangy River Road. Restaurant will be on the right.</p> <p>From the West – Take I-70 East and keep left at the fork to continue onto I-670E, follow sign for Airport. Take exit 2B to merge onto OH 315N. . Take the exit toward Lane Avenue, turn left onto Lane Ave and then merge toward OH 315 South. Continue on OH 315S and take Kinnear Rd exit, turn left onto Kinnear Rd and continue onto Olentangy River Road. Restaurant will be on the right.</p> <p>From the South – Take I-71 North to exit 106A/106B on the left and merge onto OH 315 North. Take Lane Avenue exit toward OSU. Turn left OH 315 South. Follow OH 315 S and take Kinnear Rd exit, turn left onto Kinnear Rd and continue onto Olentangy River Road. Restaurant will be on the right.</p> |



ABOUT THE TALK:

LIFE AFTER DEATH: NUCLEAR CHEMISTRY IN THE COSMOS AND THE BIRTH OF ELEMENTS IN STELLAR DEATH

Why are barns red? Why is your jewelry made of gold? Where did the iron in your blood come from?

Stellar explosions made all of the elements around of us, including the iron in our blood and the gold in our jewelry. The field of nuclear astrophysics investigates where and how the chemical elements were made in the universe. Reconstructing this nuclear chemistry of the cosmos involves reproducing stellar explosions on the computer and in the laboratory. This talk will discuss how elements are formed in dead and dying stars and how these questions are investigated, including a discussion of the 4.5 million-volt tandem accelerator laboratory on the campus of Ohio University that is used to reproduce the extreme conditions of stellar explosions.

ABOUT THE SPEAKER:

DR. ZACHARY MEISEL

OHIO UNIVERSITY – ASSISTANT PROFESSOR PHYSICS AND ASTRONOMY

Zachary P. Meisel is Assistant Professor in the Department of Physics and Astronomy at the Ohio University. He has been in the current position since Fall 2016. Prior to his appointment at the Ohio University, he was a Postdoctoral Fellow at the Physics Department of University of Notre Dame. He conducted graduate research in the National Superconducting Cyclotron Laboratory during his Ph.D. studies at the Michigan State University. Dr. Meisel has received several awards and recognition including an International Travel Grant from American Astronomical Society in 2016.

UPCOMING ACS WEBINARS
FROM THE ACS WEBSITE

Networking without Saying a Single Word: Silent but Deadly

February 8, 2018 @ 2-3pm ET

Matt Grandbois of Dow Chemical joins us for his third professional development installment to teach us how to build your network without saying a word.



Sexual Harassment in the Sciences: Steps Forward

February 15, 2018 @ 2-3pm ET

Join Kate Clancy of the University of Illinois as she discusses her several publications on sexual harassment in the sciences and how universities and individuals should address the problem moving forward.



Women in Drug Discovery and Development: How to Succeed as a Female in Academia and Industry

February 22, 2018 @ 2-3:30pm ET

We've gathered a drug discovery panel of experts to discuss what it takes to create a rewarding and successful career within academia or the pharmaceutical industry as a female.



Why Attend ACS Webinars®?

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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>



UPCOMING ACS SHORT COURSES
FROM THE ACS WEBSITE



Upcoming Courses in Tampa, FL

February 21 – 23, 2018

American Chemical Society will be holding Short Courses in Tampa, FL on February 21 – 23, 2018 to help you gain invaluable training in just a few days. 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. [See all courses »](#)



Upcoming Laboratory/Lecture Courses

ACS offers week-long courses that combine traditional lectures with a hands-on component. In conjunction with our partners, Virginia Tech and Axion Labs, these innovative courses are taught by world-renowned experts in their fields and have limited seats to ensure you make the most of your experience. [Register today to secure your seat.](#)

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



FROM CHEMICAL & ENGINEERING NEWS JANUARY 31, 2018
TINY POLLUTANT PARTICLES STRENGTHEN THUNDERSTORMS

Researchers studying thunderstorms in the Amazon rainforest have discovered that tiny pollution particles—each about 10,000 times as small as the period at the end of this sentence—can boost the power of storms (*Science* 2018).

Sulfates, nitrogen oxides, volatile organic compounds, and other molecules can conglomerate into these ultrafine aerosol particles (UAPs), which are less than 50 nm across. Scientists have long known that aerosol particles larger than 50 nm serve as starting points for clouds, but most researchers have discounted the role of UAPs in storm clouds because they thought the particles were too small to nucleate water droplets from moisture in the air.

Jiwen Fan of the Pacific Northwest National Laboratory and colleagues found otherwise. While larger particles nucleate droplets at the base of storm clouds, UAPs can nucleate droplets 2.5–3 km up. When the water condenses, it releases heat, which can push the tops of clouds higher and increase wind speeds.

The Amazon has very low levels of UAPs naturally, but the Brazilian city of Manaus in the heart of the Amazon basin produces a plume of pollution that flows with the prevailing winds over the pristine rainforest. In 2014 and 2015, an international team of researchers led by Scot Martin of Harvard University tracked air quality in Manaus' vicinity from planes and ground stations.

Fan's group looked at cloud data collected in that effort. They found that vertical wind velocity and reflectivity—a proxy for the amount of precipitation—as measured by radar increased with growing concentrations of UAPs.

Fan says studying UAPs has long been a challenge because it's difficult to separate their effects from other variables in storm clouds, such as humidity, temperature, and wind. Thanks to shifting wind patterns in the Amazon, his team could compare thunderstorms that were nearly identical except for the presence or absence of UAPs from Manaus.

"In this study we have this perfect setting," Fan says. "During the wet season, many of the storms are happening under very similar meteorological conditions, except for aerosol."

Joel Thornton, an atmospheric chemist at the University of Washington who was not involved in the study, points out that these small particles last only for a couple days at most in the lower atmosphere, so their effects have limits. But with human activity in almost every corner of the globe, there are plenty of places where UAPs could affect storms. Fan notes that researchers have found more lightning strikes in the Indian Ocean where ships—which emit UAPs—sail.

Fan and Thornton both agree that the paper will spur others to take a closer look at UAPs. "What this paper does is raise the stakes in needing to develop a deeper more accurate understanding of the sources and fates of atmospheric UAPs than we currently have," says Thornton.



COLUMBUS SECTION ACS CALENDAR OF EVENTS

| Year | Month | Date | Day | Location | Comments |
|------|----------|------|----------|-----------------------|--|
| 2018 | February | 8 | Thursday | | 12:00 noon: Deadline for reservations for October, 2017 Section meeting. |
| 2018 | February | 12 | Monday | Bravo Cucina Italiana | 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 Fishinger 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.