

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.



MEETING NOTICE

Columbus Section of the American Chemical Society, Inc.

columbus.sites.acs.org

Meeting #882

*A Modern Reprise of the Dark Ages?
The Socioeconomic and Geopolitical Consequences of Science
Denialism in America*

Dr. Michael Stamatikos

Ohio State University at Newark
Department of Physics, Department of Astronomy &
Center for Cosmology & AstroParticle Physics (CCAPP)

Thursday May 12, 2016
6:00 – 8:45 pm
Clintonville Women's Club
3951 North High Street
Columbus OH, 43214

PROGRAM DETAILS

5:00 – 6:00 PM	Executive Committee Meeting – All members are welcome to attend
6:00 – 7:00 PM	Social Hour – Appetizers and beverages Music Provided by Scott Ewing
7:00 – 7:45 PM	Dinner Mixed Field Green Salad with Seasonal Fruit



Choice of entrée

- Parmesan and herb-crusted Tilapia
- Chicken Piccata with lemon, wine and capers
- Stuffed Portobello Mushroom Cap (vegetarian and gluten free)

Dessert Buffet

7:45 – 8:45 PM
Program

**2016 Outstanding Teacher Award
Presentation - A Modern Reprise of the Dark Ages? The Socioeconomic and Geopolitical
Consequences of Science Denialism in America**

Cost

The charge for dinner is \$20 per person for members and non-members, \$10 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. *Remember that this is a dinner order and must be paid. Please help control costs by honoring your order.*

RSVP

To avoid dropped reservations please use the [Meeting Reservation Form](http://columbus.sites.acs.org) 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: acscols@wowway.com. Finally, you may also use the voice mail reservations service by calling 614-447-3600 extension 7047. Follow the template below for e-mail or voicemail reservations.

***Voicemail/e-mail
Reservations Template**

- First and last name: Please spell last name.
- Membership category: member, non-member, retired, emeritus, unemployed, student.
- Employer
- Your choice of entrée: Tilapia, Chicken or Mushroom Cap
- Please indicate if you will join us for Dinner & Program OR Program Only
- Your phone number, in case we need to contact you.

Reservation Deadline

Friday, May 6, 2016 at 5:00 pm

Program Contact

David R. Speth, 989-430-5123; drspeth@sbcglobal.net

Directions & Parking

From the North

Take Route OH 315 South to the Henderson Road exit. Turn left onto Olentangy River Road. Turn left onto Henderson Road and cross under Route 315. Within 0.25 miles turn right onto North High Street. Clintonville Women's Club is about 0.6 miles south on the right just past Whetstone Park.

From the East

Take I-670 West to I-71 North to Exit 114-North Broadway. Turn left onto East North Broadway. Within 0.25 miles turn right onto North High Street. Clintonville Women's Club is about 0.8 miles north on the left just before Whetstone Park.

From the West

Take Fishinger Road to Kenny Road. Turn left on Kenny Road and then turn right onto North Broadway. Take North Broadway to North High Street. Turn left onto North High Street. Clintonville Women's Club is about 0.8 miles north on the left just before Whetstone Park.

From the South

Take Route OH 315 North to the North Broadway-Olentangy River Road Exit. Stay right and merge onto North Broadway. Turn left onto North High Street. Clintonville Women's Club is about 0.8 miles north on the left just before Whetstone Park.

Parking is free



ABOUT THE TALK:

A MODERN REPRIS OF THE DARK AGES?

THE SOCIOECONOMIC AND GEOPOLITICAL CONSEQUENCES OF SCIENCE DENIALISM IN AMERICA

We live in an Information Age that is defined by ever increasing computational benchmarks, which further enable discoveries in traditional STEM (Science, Technology, Engineering and Mathematics) fields. However, average cell phones with more computing power than all of NASA circa 1969 are bluntly juxtaposed with a rapidly eroding national capacity for accepting unbiased scientific results. Why is the first nation to reach the Moon scientifically regressing towards the Dark Ages? Although there are several contributing factors, Science Denialism is playing a major role in this disturbing national trend. Science Denialism is the irrational denial of otherwise conclusive scientific evidence, solely based upon a perceived conflict with antecedent political, economic and/or religious worldviews, which results in a selective distortion of scientific understanding. The conflation of skepticism with denialism leads to ambiguous inferences regarding the nature of consensus amongst scientists and provides a historical context for the apparent verisimilitude of pseudoscience, which some have attempted to include into academic curricula. In that regard, I'll give an astrophysicists' perspective on common topics such as: evolution, climate change, intelligent design and young earth creationism, which are periodically the subjects of high-profile public "debates". This national regression is further exacerbated by a STEM educational crisis and rampant scientific illiteracy/innumeracy amongst the electorate and its appointed government officials, which systematically obstructs our ability to formulate and implement evidence-based policies with bipartisan support. The resulting political dissonance resonates in cyber echo chambers and is further amplified in an era of the 24-hour cable news cycle – especially in a presidential election year. But what is science? How is it done? How do we "know" things? Why is it important? How can we combat this internal threat? Unfortunately, there is no silver bullet. As practitioners of science, we need to help each other understand on all levels, which means enhancing the quality and content of information when communicating our results, their implications and the scientific process, via education and public outreach. Science is not an absolute collection of facts to be memorized, but rather it can be thought of as the art of asking the right question(s) - this distinction is paramount. The scientific method allows for a statistical analysis of different models, whose selective predictions are confronted with independent observations, thus allowing for an evolving empirical understanding of Nature. Critical thinking and analytical reasoning are ubiquitous problem solving skills that are also crucial characteristics of an educated citizenry, which is essential to a thriving democracy and national security. Most importantly, we'll need to collaborate with science advocates embedded within the insular communities that harbor each particular strand of Science Denialism. If left unchecked, Science Denialism threatens to cripple our long term national economy, short-change future generations of crucial self-investments in our education system and impede our ability to compete as a world leader in STEM research.

ABOUT THE SPEAKER:
DR. MICHAEL STAMATIKOS

Dr. Michael (Mike) Stamatikos is currently an Assistant Professor of Physics & Astronomy at The Ohio State University (OSU) and an Astrophysicist affiliated with the National Aeronautics and Space Administration's (NASA) Goddard Space Flight Center (GSFC), near Washington D.C., and the Center for Cosmology and AstroParticle Physics (CCAPP) at OSU in Columbus, OH. He joined OSU as a CCAPP Fellow in January 2009, after serving as a NASA Postdoctoral Fellow at GSFC since 2006. He earned a Bachelor of Arts degree (B.A.) in 1998, with a major in Physics and a minor in Teaching, from the State University of New York at Buffalo (UB). After teaching high school physics in Western New York for a couple of years, he returned to UB and earned additional degrees in Physics consisting of a Master of Science (M.S.) in 2003 and a Doctor of Philosophy (Ph.D.) in 2006. His Ph.D. was based upon work performed while at the University of Wisconsin (UW) Madison, using the Antarctic Muon and Neutrino Detector Array (AMANDA) located at the Amundsen-Scott South Pole Station in Antarctica, where he spent three weeks in November of 2003. His continued passion for education and public outreach has been recognized with awards from the Buffalo Research Institute on Education for Teaching (1998), the American Association of Physics Teachers (2002), the UB Graduate School (2005) and a nomination for the NASA Robert H. Goddard Honor Award for Outreach (2011). He gives frequent public lectures, contributes to the "Ask the Expert" segment of OSU's *onCampus* newspaper, and makes invited media appearances on WOSU, NPR's "All Sides with Ann Fisher" and NASA-TV.



At OSU, he leads research in high-energy particle astrophysics featuring gamma-ray bursts (GRBs) - transient beacons of high-energy electromagnetic radiation that have challenged astrophysicists for over four decades. Since their serendipitous discovery in the 1970's, an international ensemble of dedicated satellite missions and ground-based observatories have exposed these cosmological events as the "death cries" of either imploding massive stars or the merger of (binary) stellar companions. Both ultimately result in one of Nature's most enigmatic creations: a black hole. His work focuses on understanding GRBs in a multi-messenger context. In that regard, he serves as the Principal Investigator (PI) of the GRB Temporal Analysis Consortium (GTAC) and International Space Station Interdisciplinary Research Team (ISS-IRT), guest PI on the Gamma-ray Burst Monitor (GBM), an affiliated scientist on the Large Area Telescope (LAT), both of which comprise the Fermi Gamma-ray Space Telescope (FGST), a Burst Alert Telescope (BAT) Instrument Scientist within the Swift Team, and a member of the IceCube Collaboration (AMANDA's successor). As a member of Swift and Fermi-LAT, he was awarded the Bruno Rossi Prize in 2007 and 2011, respectively, from the High Energy Astrophysics Division (HEAD) of the American Astronomical Society (AAS) for major advances in the scientific understanding of GRBs. He's co-authored over a hundred scientific articles in peer-reviewed journals such as *Science* and *Nature*, and serves as an invited peer reviewer for NASA (Swift, Fermi & Chandra) science proposals, as well as *The Astrophysical Journal*. He lives in Heath, OH with his wife and son.

STATE SCIENCE DAY 2016: VOLUNTEERS NEEDED!

By BOB KROSHEFSKY



On Saturday, May 14th, State Science Day 2016 will be hosted by The Ohio State University at the French Field House in Columbus – just up the road from the ‘Shoe. 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.



UPCOMING ACS WEBINARS
FROM THE ACS WEBSITE

Upcoming Webinars

Chemistry of Go: Solar Powered Flight

Thursday, May 5, 2016 @ 2-3pm ET

Claude Michel explains the materials and science that allowed for the creation of the Solar Impulse, a solar powered plane



Forensic Toxicology: Cracking the Case with Chemistry

Thursday, May 12, 2016 @ 2-3pm ET

Jason Schaff will paint a more accurate picture of how chemists work to gather the facts and evidence that can be presented in court.



Ice Cream Chemistry

Thursday, June 9, 2016 @ 2-3pm ET

Rich Hartel returns to explain the surprisingly complex chemistry of everyone's favorite summer treat.



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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 http://www.acs.org/content/acs/en/acs-webinars.html?cid=home_4up

UPCOMING ACS SHORT COURSES
FROM THE ACS WEBSITE



Upcoming Short Courses in Boston, MA

May 16 – 19, 2016

American Chemical Society will be holding Short Courses in Boston, MA on May 16 – 19, 2016 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 »](#)



Learn the Science Behind Running Successful Teams

June 20 – 21, 2016

American Chemical Society will be holding [Project Management for Technical Professionals](#) in Columbus, OH on June 20 – 21, 2016 to help you gain invaluable training in just a few days. In this course, you'll work with [Barry M. Weinstein](#), who has over 35 years of experience in project management and process development. [Read more »](#)



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.

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

FROM THE ACS PRESSPAC APRIL 27, 2016

CREATING A REDUCED-FAT CHOCOLATE THAT MELTS IN YOUR MOUTH

Chocolate is divinely delicious, mouthwateringly smooth and unfortunately full of fat. But reducing the fat content of the confection makes it harder and less likely to melt in your mouth. That's why scientists are investigating additives that could reinstate chocolate's delightful properties in these lower-fat treats. Now, researchers report in ACS' *Journal of Agricultural and Food Chemistry* an analysis that sheds light on how adding limonene could improve lower-fat versions' texture and ability to melt.

Flavor and sweetness make strong contributions to the pleasant experience of eating chocolate, but so do look and feel. Reducing the fat in chocolate, however, often ruins its texture and viscosity. Previous research has shown that adding limonene – a compound found in lemons and oranges – results in a smoother, softer chocolate that melts more easily than typical reduced-fat chocolates. Annelien Rigolle and colleagues at KU Leuven in Belgium sought to investigate exactly how limonene impacts chocolate production. They focused on one part of this process: the crystallization of one of its main ingredients, cocoa butter, which undergoes several important transformations at different times and temperatures.

The researchers examined crystallization at 63°F and 68°F using differential scanning calorimetry and X-ray diffraction to examine cocoa butter profiles when limonene was added. Surprisingly, they found that adding the compound accelerated cocoa butter crystallization at 63°F, but inhibited cocoa butter crystallization at 68 °F. Varied concentrations of limonene also affected the crystallization steps of the cocoa butter differently, so they could ultimately affect the texture of chocolate. The study suggests that carefully choosing the amount of limonene and the temperature at which chocolate is processed could lead to a smoother, more luxurious reduced-fat chocolate.

The researchers acknowledge funding from the [Fund for Scientific Research-Flanders, Belgium \(FWO\)](#), and [KU Leuven University](#).

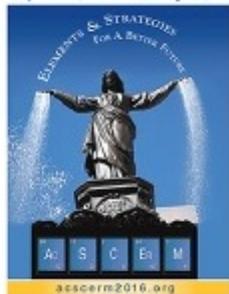
Editor's Note: For more details about the short courses described above, visit <http://www.acs.org/content/acs/en/pressroom/presspacs/2016.html>.

47TH CENTRAL REGIONAL MEETING - MAY 18-21 2016



47th Central Regional
Meeting
ELEMENTS AND
STRATEGIES FOR A BETTER
FUTURE

CENTRAL REGIONAL MEETING
May 18-21, 2016 • Covington, KY



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Workshops

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COLUMBUS SECTION ACS CALENDAR OF EVENTS

Year	Month	Date	Day	Location	Comments
2016	May	6	Friday		5:00 pm: Deadline for reservations for May, 2016 Section meeting.
2016	May	12	Thursday	Clintonville Women's Club	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.