

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 #896

Why Businesses Have Sustainability Agenda, Plus two bold predictions

Dr. Neil Drobny
Program Director, Environment, Economics, Development, and
Sustainability (EEDS) Program
Fisher College of Business, The Ohio State University

Wednesday, September 19, 2018

The Clintonville Woman's Club
3951 North High Street
Columbus, Ohio 43214

PROGRAM DETAILS

5:00 – 6:00 PM	Executive Committee Meeting – All members are welcome to attend.
6:00 – 6:30 PM	Check in, Social Hour – Cash Bar
6:30 – 7:15 PM	Dinner: Choose from <ul style="list-style-type: none">• Chicken Tuscany• Salmon• Sundried Tomato Ravioli



	<ul style="list-style-type: none"> • Two Side Dishes • Salad – House tossed salad • Drinks – Tea, coffee, iced tea, water • Dessert buffet
7:15 – 8:15 PM Program	Presentation by Dr. Neil Drobný: Why Businesses Have Sustainability Agenda, Plus two bold predictions
8:15 – 8:30 PM Closing remarks, if any	End of meeting
Cost	ACS members: \$20 per person. Non-members: \$25 per person. \$5 for retired and unemployed section members and students. New members attending first Section event: Free. Payment will be collected at the door. Cash and checks accepted. There is no cost to attend the program only. Dinner cost will be waived for new members who joined the local section in 2017 and 2018 when they attend their first local section meeting. <i>Remember that this is a dinner order and must be paid. Please help control costs by honoring your order.</i>
RSVP	Please e-mail at the following e-mail address: columbusacs@gmail.com providing the information listed below to reserve.
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 applicable) • Please indicate if you will join us for the: <ul style="list-style-type: none"> ○ <u>Dinner & Program</u> OR ○ <u>Program-Only</u> • Choice if entrée for dinner • If you are a new member and attending a Columbus Section event for the first time. • Your phone number, in case we need to contact you.
Reservation Deadline	Thursday, September 13, 2018 at 11:00 am.
Program Contact	Bob Kroshefsky , Email: columbusacs@gmail.com
Directions & Parking	<p>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.</p> <p>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.</p>



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:

WHY BUSINESSES HAVE SUSTAINABILITY AGENDA, PLUS TWO BOLD PREDICTIONS

Dr. Drobny will discuss why sustainability is an important and growing driver of strategy in nearly all industrial and commercial business sectors around the world. He will describe historical roots and then fast forward to economic, cultural and political factors propelling businesses worldwide to adopt sustainable business practices. He will draw upon examples from global and local companies that support his courses at Ohio State and from several decades of consulting, as well as visits to corporations in The Netherlands, Denmark and Sweden where he takes students annually for an academic study abroad. He will also provide some thoughts about where sustainable principles and practices will take corporate leaders in the future.

ABOUT THE SPEAKER:

DR. NEIL DROBNY

THE OHIO STATE UNIVERSITY, FISHER COLLEGE OF BUSINESS – PROGRAM DIRECTOR, ENVIRONMENT, ECONOMICS, DEVELOPMENT, AND SUSTAINABILITY (EEDS) PROGRAM

Dr. Drobny started his professional career in environmental consulting. He established and managed a regional environmental consulting firm that grew to over 125 people with operations in four states during this phase of his career. He transitioned into academic career nearly 12 years ago to apply his business experience in learning and promoting best practices in environmental sustainability. He teaches graduate and undergraduate courses in sustainable business practices in the Fischer School of Business. Additionally, he was appointed the first director of Environmental, Economics, Development, and Sustainability (EEDS) program at the Ohio State University. He has also undertaken the responsibility of establishing Sustainability Innovation Virtual Lab in order to bring experiential learning in sustainability to the Ohio State students. He received several awards and recognition for his leadership in promoting awareness in sustainability. Check out the following link for more on his sustainability endeavors:

<https://www.igsenergy.com/energy-resource-library/business-energy-articles/6-new-sustainable-business-practices/>

UPCOMING ACS WEBINARS
FROM THE ACS WEBSITE

The Proposal Writing Process: Practical Tips

Thursday, September 6, 2018 @ 2-3pm ET

Join Nancy Jensen, a Program Manager of the Office of Research Grants at ACS in this sequel webinar as she focuses on the proposal writing process and provides more practical tips for funding success.



Bioprivileged Molecules: A New Paradigm for Biobased Chemical Development

Thursday, September 13, 2018 @ 2-3pm ET

Join Brent Shanks and Peter Keeling of the NSF Engineering Research Center for Biorenewable Chemicals at Iowa State University as they share an alternative approach to producing biobased chemicals from biomass.



Who Will Win the #ChemNobel? Predicting the 2018 Nobel Laureate(s) in Chemistry

Thursday, September 27, 2018 @ 2-3pm ET

Join the Carmen Drahl and Lauren Wolf, editors at *Chemical & Engineering News* as well as a panel of special guests as they make their best guesses at who will claim chemistry's big prize during an interactive broadcast.



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

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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 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.](#)



Upcoming Courses at the ACS National Meeting

August 17 – 22, 2018

American Chemical Society will be holding Short Courses in Boston, MA on August 17 – 22, 2018 at the [ACS National Meeting & Exposition](#) 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 »](#)

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



2018 MIDWEST REGIONAL MEETING
OCTOBER 21-23, 2018



The Midwest Regional Meeting, will be held in Ames, Iowa on October 21-23, 2018. Highlighted Plenary and Symposium Sessions:

Special Symposia

- Biological Applications of Mass Spectrometry
- Bioanalysis: Sensing, Separations, and Spectroscopy
- Carbon Capture, Utilization and Storage
- Catalysts for Organic Synthesis
- Chemistry from the Computer: Methods
- Chemistry from the Computer: Applications
- Entrepreneurs Tool Kit: Resources and Best Practices
- Inorganic Chemistry for All
- Inorganic Materials Synthesis
- Materials for Biomedicine
- Materials for Energy
- Materials and Interfaces
- Materials for Optical, Magnetic, and Electronic Devices
- Materials Synthesis and Characterization
- Measurement and Evidence in Chemistry Education
- Solid-state NMR Spectroscopy: Materials and Methods

General Sessions

- Analytical Chemistry
- Chemical Education
- Inorganic Chemistry
- Materials
- Organic/Medicinal Chemistry



FROM CHEMICAL & ENGINEERING NEWS SEPTEMBER 3, 2018

HOW MERCK AND PURDUE HAVE TEAMED UP TO SOLVE MEASUREMENT CHALLENGES

The Merck-Purdue Center for Measurement Science is a win-win-win. Merck & Co. scientists get access to experts at one of the top U.S. programs in measurement science and the chance to contribute to projects outside their day-to-day work. Purdue University professors get real-world problems to work on and a source of new funding. And Purdue students get to collaborate with industry scientists and explore a potential career path.

This center is by no means the first academic-industrial partnership. But a distinguishing feature of this one is that it's not aimed at generating new intellectual property for the industrial half of the equation. The focus is instead on precompetitive technology that can help Merck solve some of its measurement challenges, such as reaction monitoring in flow systems and improved separation of proteins and peptides for therapeutics. And if things go well, the technologies could benefit the broader pharma industry.

"Merck and Purdue have established this Center for Measurement Science as a means to fast track collaborations between industry and academia," says Garth J. Simpson, a chemistry professor who's the main organizer on the Purdue side. Every time you want to pair up academic and industry scientists to work on a new project, it requires negotiating a brand-new research contract, Simpson says. "That can take several months under the best circumstances."

"Every single time, you start the process over again," says Roy Helmy, executive director of biologics and vaccines bioanalytics within PPDM (pharmacokinetics, pharmacodynamics, and drug metabolism) at Merck Research Laboratories. He's been involved with other partnerships before. "It's just too onerous."

A master agreement between Merck and Purdue circumvents such problems. Negotiating that master agreement, which was finalized in February 2017, took more than a year. But now that it's in place, the agreement saves both sides the hassle of ironing out a separate agreement for every new project. And setting up the deal with the university rather than a particular department widens the pool of possible collaborators.

Under the agreement, Purdue retains the intellectual property rights on any discoveries made or tools developed. Such an arrangement allows the scientists free rein to publish the work and enables the students to include it in their dissertations.



Either side can initiate projects. Purdue scientists can pitch their ideas to Merck scientists. Alternatively, Merck scientists can identify potential partners with overlapping interests through presentations at scientific meetings, informal networking, or even from websites of participating professors. If the two sides decide to work together, they submit a two-page proposal to fund the project.

"The best projects are ones in which someone at Purdue and someone at Merck get together and put together a collaborative proposal," Simpson says. "A lot of our effort is spent matchmaking, just getting the right people talking to each other."

During the first year of the partnership, projects involved Merck scientists in the bioanalytical organization of PPDM, analytical chemistry, and analytical sciences. (The difference between the latter two is that analytical chemistry supports making drug molecules, and analytical sciences supports the formulation of those drugs for delivery.) This year, scientists working in vaccines, biologics, and manufacturing have also joined. "They joined us after seeing the success of the first year," Helmy says.

Merck scientists can join the center only if their department has allocated funds. Participating Merck departments budget money for the center in different ways, says Kevin Bateman, scientific associate vice president at Merck Research Laboratories. Some earmark a set amount for external collaborations. Others require ideas to be pitched internally to receive funding.

"We vet projects before they go forward," Bateman says. "You don't want to get all the way down the path of 'This is a really good project' and then yank it because there's no money."

Merck has so far funded more than 10 projects through the center. Each project receives a flat amount of \$50,000 regardless of whether it takes a couple of weeks, a couple of months, or the maximum time of one year to solve the scientific problem in the project pitch. "If you can solve the problem in four weeks, fantastic," Helmy says. "We've had teams who were able to solve their problem in three months. Then they're done." In the 18 months since the center got up and running, researchers have already had five or six publications and one patent application.

If the collaborative teams find that they want to work on something longer term, "that would be outside the scope of the center, and a stand-alone agreement would be put in place," Bateman says. "The center is really about being an incubator." For the academics, the collaborations let them know what's important in the real world. "We can live in an academic bubble, where we go to meetings and talk about what we think is important in the real world," Simpson says. "But working with people who live in the real world helps ground us."

Simpson has had a project on using triboluminescence—light emitted as a result of mechanical disruption in a crystal—to detect microcrystallinity in amorphous materials. Such residual microcrystallinity is important because it can affect the solubility of a drug.

"We had already designed and created the instrument before Merck came on," says Casey Smith, a graduate student in Simpson's lab. The Merck scientists "asked a lot of really good questions. They helped us know which questions were pertinent to industry."

In another project, R. Graham Cooks's group at Purdue used microdroplet reaction acceleration to speed up forced degradation analyses. Pharma companies use such analyses to demonstrate the shelf life of a drug and determine whether any toxic products form as it ages and breaks down. "The methodologies in current use are slow, to say the least," Cooks says. When his team used microdroplet reaction acceleration to study the degradation, the researchers observed the same results as standard techniques, but they got to those results 100 times as fast. This microdroplet method was the first patent application to come out of the center.

"The Merck-Purdue relationship is a really terrific thing for Purdue, hopefully for Merck as well," says Paul W. Bohn, a chemistry professor at the University of Notre Dame. Bohn is helping set up the Center for Bioanalytic Metrology, which is modeled on a similar industry-academic collaboration. That center will include researchers in the analytical sciences at Notre Dame, Purdue, and Indiana University and will operate under a membership model with multiple companies. The organizers hope to get start-up funding for the center from the National Science Foundation's Industry-University Cooperative Research Center program.



"All of us recognize that the model where the funding for students comes from individual grants is starting to creak under its own weight," Bohn says. Those funds are no longer readily available. "There's not going to be one answer to the problem," Bohn adds. "Compared with the current situation, there's going to be a whole portfolio of different funding models that go into making graduate student funding and support 20 years from now."

But the biggest payoff for the Merck-Purdue partnership may come from educating young scientists who already know the challenges that industry faces in measurement science. They get to interact with Merck scientists through monthly web conferences and by presenting their results at a symposium at Merck.

"We've created for the industry—not just Merck—a team of scientists and professors who understand what we face every day to put cutting-edge medicine on the market," Helmy says. "Merck is very proud that these students can go work anywhere in the world and be ready and supportive of what we're doing in industry."

"It's hard to translate your student experience to what it would be like to work in industry," Smith says. He goes back and forth between wanting to teach and wanting to work in industry. Collaborating with Merck scientists has helped him appreciate the options. "I could actually see myself working in industry and being happy there."

COLUMBUS SECTION ACS CALENDAR OF EVENTS

Year	Month	Date	Day	Location	Comments
2018	September	13	Thursday		11:00 am: Deadline for reservations for September, 2018 Section meeting.
2018	September	19	Wednesday	The Clintonville Woman's Club	Monthly Section Meeting; see details elsewhere in this issue of <i>The Chemical Record</i> .
2018	October	24	Wednesday	Chemical Abstracts Services	Meet and greet Dr. Bonnie Charpentier, President-Elect, ACS

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.