



ACS - DAC DIVISION NEWSLETTER NOVEMBER 2014

LETTER FROM THE CHAIRMAN

Dear Members of the ACS Analytical Division,



I am delighted to serve as the Chair of the ACS Analytical Division this year. For those who may not know me, I am currently the chair of the Department of Chemistry at Ohio State University. My recent research is focused on use of nanotechnology in separation science and surface assisted laser desorption ionization (SALDI) as well as efforts to expand the use of enhanced-fluidity liquids to the separation of polar compounds. You can read more about my work at this website: <https://chemistry.osu.edu/faculty/olesik>. I also have a long standing efforts in science outreach (<https://wow.osu.edu>) and in retention efforts for majors in STEM, Science, Technology, Engineering and Math (<http://ohse.chemistry.ohio-state.edu>). I provide this information so that you know a bit about me, what I care about and how I spend my research time.

From my perspective, the ACS Analytical Division is service organization to provide programming and other opportunities for its members. The primary goal that I have for my time as chair is to enhance engagement of the division members. The Analytical Division continues to provide programming at the Fall ACS meeting, the Pittsburgh Conference and the Spring ACS meeting. The Pittsburgh Conference program and the spring 2015 program are already finished. However, if you have session ideas for the Fall ACS meeting in Boston, I am sure that Doug Duckworth would be more than happy to hear from you. Also, ideas for future sessions would be appreciated. I would also like to hear from the members on other activities that would be useful to members and activities that members would be willing to help launch. As an example, the executive committee has discussed the possibility of providing webinars for Division members only. I would like to hear from the membership on this idea and also other ideas that you might have on how to engage as many members as possible in activities that will move the field of Analytical Chemistry forward. To collect your ideas I

In this Issue –

Donna Nelson – New ACS President-elect
Kolthoff National Historic Chemical Landmark Ceremony
Enke talk at Fall ACS Meeting
Our new division officers
Spring meetings
Pittcon (**Abstract deadline: November 22nd**)
ACS Spring National Meeting
Analytical Division Graduate Fellowships (**Deadline: 12/15**)
Kolthoff Undergraduate Awards (**Deadline: 12/15**)
SciX Innovation Award Winner – Garth Simpson

will send you a survey soon.

No doubt you have already heard that Donna Nelson, ANYL councilor, was elected to be chair of the ACS for 2016. I hope you agree with me that this is great news for the discipline of Analytical Chemistry.

Finally, I look forward to meeting many of you this year and also working together to move the field of Analytical Chemistry forward. Onward and upward!

DONNA NELSON IS NEW PRESIDENT-ELECT OF AMERICAN CHEMICAL SOCIETY

The results of the recent election for ACS President-Elect are In! Dr. Donna J. Nelson of University of Oklahoma is the new President-Elect of the Society. Dr. Nelson is a professor of chemistry at the University of Oklahoma. Nelson specializes in organic chemistry, which she both researches and teaches. Nelson's career has focused on five primary areas of research generally categorized in two areas, Scientific Research and America's Scientific Readiness. Within Scientific Research, Nelson's areas have been: (1) mechanistic patterns in alkene addition reactions and (2) Single-Walled Carbon Nanotube (SWCNT) functionalization and analysis. Under America's Scientific Readiness, she focuses on (3) science education, which includes classroom innovations and correcting organic chemistry textbook inaccuracies, (4) ethnic and gender diversity among highly-ranked science departments of research universities, and (5) improving the presentation of science and images of scientists to the public, such as serving as a science advisor to the AMC television show Breaking Bad.



On hearing that she had been elected, Donna said "Serving the ACS has been my professional services passion since I became a member as a graduate student. I have volunteered and worked in numerous capacities during those years, but serving as a Councilor for the Analytical Division was a new opportunity I was really excited about and looking forward to begin. The work of the Analytical Division is very important to the future of the ACS and the success of chemists. While I am not able to continue as your Councilor, I look forward to working with the Division during my Presidential succession.

Dr. Peter Dorhout, one of the other two candidates for the office, commented on Donna's election, saying "The ACS and the chemistry profession are under significant pressures and changes: jobs, safety, education, and new leadership in Congress as well as in ACS. As a key member of the new presidential succession with Diane Schmidt (president) and Tom Barton (past president), Donna Nelson will need the support of all ACS members to address these challenges. I congratulate her and will continue to devote my volunteer time to my passion - I'm proud to be an ACS member.

Dr. Nelson's position as Councilor for the Division will be filled by Michelle Buchanan (see item below on New Officers.)

KOLTOFF NATIONAL HISTORIC CHEMICAL LANDMARK CEREMONY

UNIVERSITY OF MINNESOTA, SEPTEMBER 12, 2014

“His research transformed the ways by which scientists separate, identify and quantify chemical substances and built the field upon solid theoretical principles and experimental techniques.”

A public ceremony celebrating the American Chemical Society National Historic Chemical Landmark designation, honoring the legacy of Izaak M. Kolthoff, and Smith Hall centennial, which included the unveiling of a plaque in Kolthoff's honor, was conducted, Friday, Sept. 12, on the steps of Smith Hall, Kolthoff's long-time academic home. The dedication ceremony featured remarks from the University of Minnesota and the American Chemical Society (ACS). Speakers included Professor William Tolman, chair of the College of Science & Engineering's (CSE) Department of Chemistry; Steven Crouch, dean of the CSE; Karen Hanson, provost and senior vice president for the University's Office of Academic Affairs; Clyde Allen, regent from the University's Board of Regents; Rebecca Guza, chair of the Minnesota Local Section of the American Chemical Society; Susan King, senior vice president of the ACS Journals Publishing Group; and Marinda Li Wu, immediate past president of the ACS.



Upper left: Plaque commemorating the designation of Izaak Maurits Kolthoff and Modern Analytical Chemistry as an American Chemical Society (ACS) National Chemical Historical Landmark. Above left: Rebecca Guza, chair of the Minnesota Local Section of the American Chemical Society; Susan King, senior vice president, ACS Journals Publishing Group; Marinda Li Wu, immediate past president, ACS; Steven L. Crouch, dean, College of Science and Engineering, University of Minnesota; Karen Hanson, provost and senior vice president, Office of Academic Affairs, University of Minnesota; William Tolman, chair, Department of Chemistry, University of Minnesota; Clyde Allen, regent, Board of Regents, University of Minnesota (Photo courtesy of the Department of Chemistry, University of Minnesota. Richard Anderson Photography)

The [brochure](#) for the celebration of the Landmark designation can be found on the ACS website, and the University of Minnesota's Chemistry Department has archived programs, videos, photos and other celebration items on its [website](#). A highlight of the symposium conducted in Kolthoff's honor, Saturday, Sept. 13, was a presentation by Professor Peter Carr (pictured at the top of the next page, left) in which he provided his perspective as Professor Kolthoff's long-time friend.



A reception and tours followed the dedication ceremony. The tours focused on the Department of Chemistry's research, its cutting-edge technology and equipment, and its education of more than 10,000 students annually. The tours provided a look at the department's teaching, laser, chemical biology, and organic synthetic laboratories and its instrument facility as well as the Center for Sustainable Polymers and the Chemical Theory Center

(Thank you to Eileen Harvala, UMN Department of Chemistry communications coordinator, for her invaluable assistance in getting together the information on the celebration.)

ENKE TALK AT FALL ACS MEETING

Dr. Chris Enke was not able to attend the Fall meeting in San Francisco, but his friend and former colleague Stan Crouch was kind enough to present his talk – a historical perspective of the ups and downs Chris has seen as an analytical chemist, with incisive comments and advice for the present and future.

Chris was kind enough to provide a [print version](#) of his remarks which can be found on the Division of Analytical Chemistry site.

OUR NEW DIVISION OFFICERS



Chair-Elect, Joel Harris

Joel M. Harris, DAC Chair-Elect, is Distinguished Professor of Chemistry at the University of Utah, and Fellow of the American Association for the Advancement of Science and of the Society for Applied Spectroscopy. He is recipient of the ACS Division of Analytical Chemistry Award in Chemical Instrumentation, the Pittsburgh Analytical Chemistry Award, the Distinguished Teaching Award of the University of Utah, the Bomem-Michelson Award of the Coblenz Society, and the American Chemical Society Award in Analytical Chemistry.

Treasurer: Adam Woolley

Adam T. Woolley, DAC Treasurer-Elect, is Professor and Associate Chair in the Department of Chemistry and Biochemistry at Brigham Young University in Provo, Utah. He has received the ACS Division of Analytical Chemistry Award for Young Investigators in Separation Science, a Presidential Early Career Award for Scientists and Engineers (PECASE), and the Karl G. Maeser Research and Creative Arts Award from Brigham Young University.



Councilor: Michelle Buchanan

Michelle Buchanan (at right) is the Associate Laboratory Director for the Physical Sciences at Oak Ridge National Laboratory, overseeing research divisions covering chemistry, materials science, physics and nanoscience. She has over 150 scientific publications and technical reports and holds two patents. She has held numerous positions in the Analytical Chemistry Division of the ACS and is a Fellow of both the ACS and AAAS. She has served the scientific community extensively with memberships on advisory boards of journals, universities, research centers, and national research organizations and funding agencies.

Alternate Councilor: Al Ribes

As a Senior Lean Six Sigma Consultant for Dow Benelux, Al Ribes (at left) applies the scientific method to solving business problems and reducing waste. Al has worked for over twenty years in industry at two companies and in four countries: Rio Tinto Mining Co (Spain), and Dow Chemical in the US (Louisiana, Texas), Argentina, and the Netherlands. Al earned a PhD from SUNY Buffalo in Electro-analytical chemistry. Upon joining Dow, Al developed expertise in long chain branching and molecular weight characterization using HT-GPC. He has also worked on international analytical technology transfer. In 2001, Al left the bench and moved to Six Sigma; he certified as a Master Black Belt, which is the highest technical leadership role in the field of Six Sigma. Al has served as Alternate Councilor, Treasurer and Newsletter editor of the ACS Analytical Division, has served in the ACS Committee on Community Affairs, and is finishing a three-year term as Chair of the ACS Committee on Minority Affairs.



SPRING MEETINGS

Pittcon – March 8-12, 2015

[Registration and hotel information](#) for the meeting can be accessed on the Pittcon website. Early Registration continues through February 20, 2015.

The Division has a number of symposium offerings this spring, spreading over the entire five days of the meeting.

DAY	AM/PM	SYMPOSIUM TITLE	ORGANIZER (S)
Sunday, March 8	PM	Silica Nanoparticles in Analytical Chemistry	Gabor Patonay
Monday, March 9	AM	Fieldable MS for Environmental and National Security Applications	David Koppenaal R. Kenneth Marcus
	PM	Analytical Advances Using Ion Chemistry for Mass Spectrometry	Matthew F. Bush
Tuesday, March 10	AM	Applications of Analytical and Radiochemistry for Harsh Environments	Brienne Seiner Samuel Bryan
	PM	ACS Separations Science Subdivision – Using Microfluidics to Automate Flow Biology	Yolanda Finschenko
Wednesday, March 11	AM	ACS Division of Analytical Chemistry Award for Young Investigators in Separation Science honoring Dwight R. Stoll	Neil Danielson
	PM	Analytical Challenges in the World-Wide Import/Export of Agricultural Commodities	Spencer Walse Wiley Hall
Thursday, March 12	AM	ACS Separations Sciences Subdivision – Novel Teaching Approaches in Chemical Separations and Analysis	Michelle Kovarik Christopher Harrison
	PM	ACS Separations Science Subdivision – New voices in Separation Science: Up and Coming Scientists from Industry, Government and Academia	Karen Phinney

ACS Spring National Meeting, Denver, CO – MARCH 22-26, 2015

...And then on to Denver. This spring the theme of the meeting is Chemistry of National Resources. The Division is sponsoring or co-sponsoring fourteen symposia as well as a poster session. Details regarding the individual symposia appear in the [preliminary list](#) on the ACS website. The preliminary program will appear on the site in January.

Symposium Title	Type	Organizer (s)	Cosponsor
Active Learning in the Undergraduate Analytical Chemistry Curriculum	Oral	Jill Robinson Thomas Wenzel	CHED
Advances in Analytical Separations	Oral	Jennifer Maclachlan	
Advances in Analytical Spectroscopy	Oral	Xiao-Ying Yu	
Advances in Bioanalytical Chemistry	Oral	Anna Cavinato Gabor Patonay	
Advances in Electrochemistry	Oral	Sandra Pratt	
Advances in Mass Spectrometry	Oral	Gary Glish	

Symposium Title	Type	Organizer (s)	Cosponsor
Analytical Chemistry of Natural Resources: Environmental Analysis	Oral	Bill Cooper	ENVR
Analytical Chemistry of Natural Resources: Instrumentation and Methods	Oral	Alan Koenig Athanasios Karamalidis Mostafa Fayek	GEOC
Environmental Analytical Chemistry – A Tool for Introducing Research - Invited	Oral	Jani Ingram Matt Crowe	
Frank H. Field and Joe L. Franklin Award for Outstanding Achievement in Mass Spectrometry: Symposium in Honor of Hilikka I. Kenttämäa - Invited	Oral	Linan Yang	WCC
General Analytical Posters	Poster	Douglas Duckworth	
Nakanishi Prize: Symposium in Honor of Fred W. McLafferty - Invited	Oral	Phil Compton Neil Kelleher	

ANALYTICAL DIVISION GRADUATE FELLOWSHIPS

The American Chemical Society Division of Analytical Chemistry Graduate Fellowship Program is designed to encourage basic research in the field of analytical chemistry, to promote the growth of analytical chemistry in academic institutions and industry, and to provide recognition of future leaders in the field of analytical chemistry. The program has endeavored to be a model of the benefits of cooperation between the academic and industrial communities, with chemical companies employing Ph.D. analytical chemists sponsoring the fellowships for outstanding analytical graduate students. The program has received support from Eli Lilly and Company, Agilent, Eastman Chemical Company, and the Society for Analytical Chemists of Pittsburgh.

The Graduate Fellowship Committee of the ACS Division of Analytical Chemistry, which is comprised of representatives from the sponsoring companies, analytical faculty from undergraduate institutions, and scientists from national laboratories, evaluate the applications and make the fellowship awards. Both nine-month (\$21,000) and summer (\$7,000) fellowships are available.

Eligibility criteria

The applicant must be a full-time student working toward a Ph.D. and must have completed the second year of graduate study by the time the fellowship period begins. Analytical chemistry must be a central part of the applicant's Ph.D. thesis. The applicant's research supervisor must be a member of the American Chemical Society Division of Analytical Chemistry, and only one nomination per research supervisor will be accepted.

A link to details of the application process is described in detail on the Analytical Division Graduate Fellowship [webpage](#). Application materials may be submitted beginning October 16, 2014. The deadline for receipt of application materials is **December 12, 2014**. Paper and e-mail applications will not be accepted.

Questions about the graduate fellowship program should be directed to [Dr. Emily Niemeyer](#)

KOLTHOFF UNDERGRADUATE AWARDS

Applications are also currently being accepted for the Kolthoff Undergraduate Awards. These awards, sponsored by the National ACS and the Division, are given annually to deserving undergraduates who have done undergraduate research in the field of analytical chemistry, broadly defined, in celebration of the life and accomplishments of the late Professor Izaak Maurits Kolthoff, viewed by many as the father of modern analytical chemistry. The Kolthoff awards provide travel funding up to \$750 for students to present a poster on their research at PITTCON 2015 (March 8-12, 2015; New Orleans, LA) or the Spring ACS National Meeting & Exposition (March 22-26, 2015; Denver, CO). Students presenting at the Spring ACS National Meeting are encouraged to present in the Analytical Division poster session. The deadline for submission is **December 15, 2014**. Details about the [application process](#) are available on the Division website. Please direct any questions to [Dr. Kim Frederick](#).

REPORT FROM SciX INNOVATION AWARD WINNER – GARTH SIMPSON

The recipient of the 2014 FACSS Innovations Awards is Garth Simpson of Purdue University for his presentation entitled ***Sub-PPM Detection Limits in Powder X-Ray Diffraction Guided by Second Harmonic Generation Imaging***.

The Simpson group is focused on instrument development for quantitative nonlinear optical imaging, and applications thereof in pharmaceutical analysis, structural biology, and biomedical microscopy. In the study cited for the Innovation Award, the Simpson group integrated SHG microscopy into a synchrotron X-ray diffraction beamline to enable serial crystallography of pharmaceutical formulations with parts per million (ppm) detection limits. The bioavailability of poorly soluble active pharmaceutical ingredients (APIs) is routinely increased by casting APIs into amorphous polymer matrices. However, even trace residual crystallinity can potentially



impact the subsequent dissolution kinetics, with few analytical methods available to enable routine analysis at low levels of crystallinity. SHG microscopy allows selective detection of chiral API crystals with limits of detection in the low ppm to address this need, but provides little meaningful structural characterization of the resulting crystallites. In the Innovation Award presentation, SHG was used to rapidly identify regions of interest for targeted analysis by confocal Raman spectroscopy and by synchrotron XRD using a 5 μm diameter “minibeam.” This one-crystal-at-a-time approach substantially improves the information compared to conventional PXRD, while at the same time lowering the detection limits into the ppm regime by targeting measurements just to the SHG-active locations.

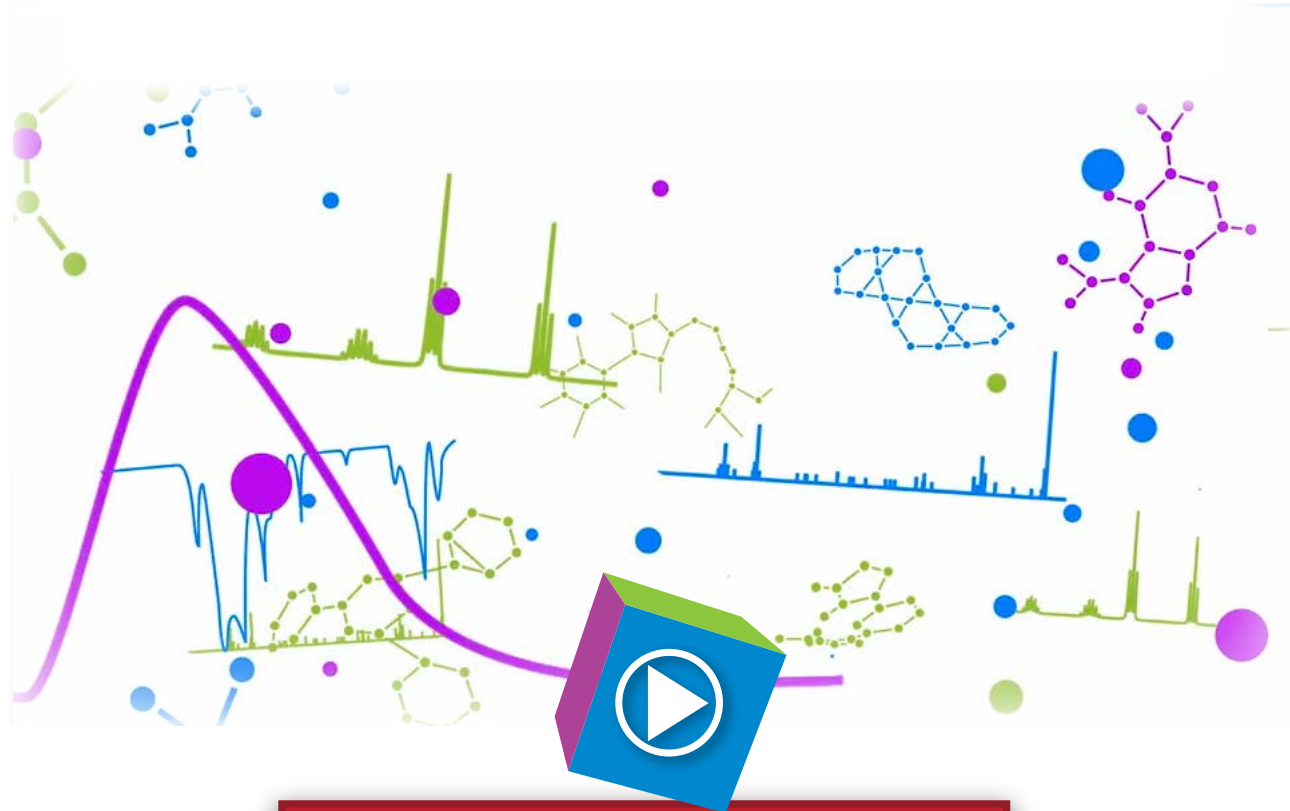
The Innovation Awards were founded in 2011. They recognize innovative and outstanding new research advancements, presented for the first time in the public domain, in oral presentations at the SciX Conference.

THANK YOU!!!

Last, but definitely not least, a thank you from the outgoing editor (Faye Rubinson) to all of those who have helped by contributing information for the Newsletter over the last few years. – in particular Cindy Larive, Anna Cavinato, Roland Hirsch, David Koppenaal, and Thom Rossi.

Beginning with the January issue, the Newsletter will be in the capable hands of [Sayo Fakayode](#), Department of Chemistry, North Carolina A&T State University.

Let Your Data Live On



Watch the Movie

- Unify and structure analytical information
- Capture chemical context and retain analytical intelligence
- Make information accessible
- Apply knowledge for faster decision-making

Exploit the Power of Live Data with

ACD/Spectrus



ACD/Labs

www.acdlabs.com/LetYourDataLiveOn