January 2012
Volume 3, Issue 1

The Colloid and Surface Chemist

News of the ACS Division of Colloid and Surface Chemisty

In This Issue:

Greetings from the Chair

Dear Division Members,

As 2012 Chair of the ACS Division of Colloid and Surface Chemistry, I want to wish everyone a very happy and productive new year. This year as Chair of the Colloid and Surface Chemistry Division, I will work to ensure the Division remains an active and vibrant one that best reflects the needs of its members.

I would like to thank John Walz for his leadership during 2011. As past-chair, he continues to serve the Division by producing this annual newsletter with Bob Tilton. The annual newsletter helps keep the more than 2500 members of the Division up-to-date on recent and upcoming events in which the Division is involved. As you peruse this newsletter, consider what other information you would like to see for next year's newsletter and contact us with any ideas you may have. The website also serves as a source of information (www.colloidssurfaces.org) and provides members with useful materials, including descriptions of upcoming meetings, listings of job opportunities, résumés of job seekers, and descriptions of Division-sponsored awards. Eddie Tysoe, 2010 Division Chair, continues to be a valuable resource by serving as Webmaster.

There are many ways to get involved in the Division. Technical programming is a significant strength of the Division and we invite you to keep it strong by becoming an organizer. I also invite everyone to come to our business meeting held prior to the Division poster session at every national meeting. At these business meetings, officers will update you on Division activities. After the business meeting, you can help judge student posters with the officers. I promise you will be impressed with the great research being done by these undergraduate and graduate students. If you are planning to come to the spring meeting in San Diego, please also join us at the ACS Awards Lectures to recognize the accomplishments and achievements of Robert Hamers, Steven Sibener and Chad Mirkin who are the recipients of the ACS Award in Colloid and Surface Chemistry, Adamson Award for Service in Colloid and Surface Chemistry and ACS Award for Creative Invention, respectively.

I would very much like to hear from you, so if you have any good ideas or thoughts you would like to share about the ACS Division of Colloid and Surface Chemistry, please feel free to contact me or any of the other officers by email.

With Best Regards,

Vicki H. Grassian, 2012 Chair
Division of Colloid and Surface Chemistry
vicki-grassian@uiowa.edu

Next Meeting – San Diego

The Spring 2012 meeting of the American Chemical Society will be held March 25 – 29 in San Diego, CA with the theme *Chemistry of Life*. There will be a total of 764 papers presented in symposia sponsored or co-sponsored by the Division, making this one of our largest meetings yet. Listed below are the various symposia in which the Division is involved.

ACS Award: Symposium in honor of Robert J. Hamers
Chair: John C. Wright (wright@chem.wisc.edu)

Adamson Award for Distinguished Service in the Advancement of Surface Chemistry: Symposium in honor of Steven J. Sibener
Chair: Gilbert M. Nathanson (nathanson@chem.wisc.edu)

ACS Award for Creative Invention: Symposium in honor of Chad A. Mirkin
Chairs: Rongchao Jin (rongchao@andrew.cmu.edu), David S. Ginger (ginger@chem.washington.edu)

Awards Lectures (Invited lectures by award winners Robert Hamers, Steven Sibener and Chad Mirkin)
Chair: Ramanathan Nagarajan (ramanathan.nagarajan@us.army.mil)

Fundamentals and Applications of Particles at Fluid Interfaces
Chair: Robert D. Tilton (tilton@andrew.cmu.edu)

Interactions of Colloidal and Nanoparticles with Textiles and Fibers
Chairs: Juan Hinestroza (jh433@cornell.edu), Ramanathan Nagarajan (ramanathan.nagarajan@us.army.mil)

Surface Chemistry in Oncology
Chairs: Larry Nagahara (larry.nagahara@nih.gov), Nicole M. Moore (nicole.moore@nih.gov)

Proteins at Interfaces
Chairs: Thomas Horbett (horbett@u.washington.edu), John Brash (brashjl@mcmaster.ca), Willem Norde (w.norde@med.umcg.nl)

Biomembrane Structure, Mechanics and Dynamics
Chairs: Subra Muralidharan (subra.murali@wsu.edu), Narayanan Srividya (nsrividya@gmail.com)

Nanoparticle Enhanced Spectroscopy
Chair: Amanda J. Haes (amanda-haes@uiowa.edu)

Biocidal Materials and Interfaces
Chairs: James Wynne (james.wynne@nrl.navy.mil), Kirk S. Schanze (kschanze@chem.ufl.edu)

Basic Research in Surfactants, Colloids and Nanomaterials
Chair: Ramanathan Nagarajan (ramanathan.nagarajan@us.army.mil)

Novel Surface Science Techniques Probing Solid-Liquid and Biological Interfaces
Chair: Michael R. Bockstaller (bockstaller@cmu.edu)

Nanomaterials and the Environment: The Chemistry and Materials Science Perspective
Chairs: Vicki Grassian (vicki-grassian@uiowa.edu), Robert Hamers (rjhamers@wisc.edu), Gordon Brown (gebjr@stanford.edu), Howard Fairbrother (howard@jhu.edu), Murray Johnston (mvj@udel.edu), R. Lee Penn (rleepenn@umn.edu)

Poster Session -- Fundamental Research in Colloid and Surface Science
Chair: Ramanathan Nagarajan (ramanathan.nagarajan@us.army.mil)

Officers of the Division

Listed below are the major offices in the division and the 2012 office holders. More information on each officer can be found at the Division's web page, www.colloidssurfaces.org.

Chair:	Vicki Grassian
Chair Elect:	William Ducker
Vice Chair:	Mike Trenary
Program Chair:	Ramanathan Nagarajan
Past Chair:	John Walz
Secretary:	Howard Fairbrother
Treasurer:	Tonya Kuhl
Councilors:	Robert Tilton, Tina Nenoff, Maria Santore, John Russell
Alternate Councilors:	Shaoyi Jiang, Sarah Rouse, Mike Trenary, David Thompson
Membership Secretary:	Kane Jennings
Newsletter Editors:	John Walz, Robert Tilton
Webmaster:	Eddy Tysoe
Symposium Chair:	Eric Furst

The 2012 Colloid and Surface Science Symposium

The Johns Hopkins University will host the 86th ACS Colloid and Surface Science Symposium in Baltimore, MD on June 10-13, 2012. The meeting will include 13 parallel sessions, a poster session, 28 invited speakers, and 28 session organizers. A new addition to this meeting is the Langmuir Student Awards presentation session with application details given on the conference website. Abstract submission is now open with a deadline of February 7, 2012. Up-to-date information on the meeting can be found at the website www.colloids2012.org. For further details about this meeting please contact one of the symposium co-organizers – Mike Bevan (mabevan@jhu.edu) and Joelle Frechette (jfrechette@jhu.edu).

In Memoriam – Dr. Noel Turner, former Division Chair

Noel H. Turner, former Chair of the Colloid and Surface Chemistry Division, passed away on Monday, August 15, 2011. He was 70. A native of San Rafael, CA, Dr. Turner received his bachelor's degree in chemistry from the University of California, Berkeley and a Ph.D. in chemistry from the University of Rochester. After earning his doctorate, he became a research chemist in the Surface Chemistry Branch at the US Naval Research Laboratory in Washington, D.C. for 30 years. Dr. Turner was an expert in the use of X-ray photoelectron and Auger electron spectroscopy for quantitative surface analysis. He was highly active in the American Chemical Society, having held every leadership position in the Chemical Society of Washington, the ACS local section. In addition to serving as chair of the COLL Division in 1997, Dr. Turner was a perennial COLL poster session judge, most recently judging at the spring 2011 symposium in Anaheim, CA. He served as a valuable resource for subsequent COLL division leaders. His affable personality and his keen interest in surface chemistry will be missed. Memorial contributions may be made in his name to Project SEED, c/o the Chemical Society of Washington, 1155 16th St. NW, Washington, DC 20036.
(contributed by John Russell, Naval Research Labs)

Highlights of the Fall 2011 Meeting – Denver

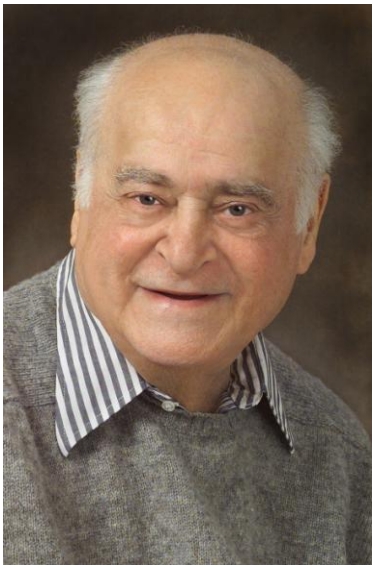
The Fall 2011 ACS meeting was held August 28 – Sept. 1 in Denver, CO with the theme *Chemistry of Air, Space and Water*. The Colloid and Surface Chemistry Division sponsored or co-sponsored 16 symposia, including the Langmuir Lectures, presented by Professors Steve Granick and Fleming Besenbacher (see article on the Langmuir lectures later in the newsletter). Over 100 posters were presented in the Monday evening poster session focused on *Fundamental Research in Colloid and Surface Science*. The Division was also a co-sponsor of the Gibbs Medal Centennial Symposium in honor of Professor Robert Bergman.

During each poster session, members of the Division Executive Committee select the four best posters presented by students (graduate or undergraduate). Each student receives a $250 award that is presented during the traditional Tuesday Division luncheon.

At left, winners of the student poster competition in Denver (l to r): Andre Frolov (The Max Planck Institute), Hong Xie (Auburn University), Division Chair John Walz, Lauren Graham (The University of Maryland), and Nathaniel Nelson (The University of Colorado).

Eli Ruckenstein at 86

One of the highlights of the Denver meeting was a five-session symposium honoring Professor Eli Ruckenstein, Distinguished Professor of Chemical and Biological Engineering at the University of Buffalo. Entitled 'Eli Ruckenstein at 86: Colloid and Surface Chemistry – Looking Back and Looking Forward', the symposium consisted of nearly 40 talks commemorating Eli's many contributions to the field over a professional career of more than 60 years, including a short biography of Eli given by Professor David Kofke, Chair of the Chemical & Biological Engr. Dept. at Buffalo. The Department and the COLL Division also hosted a dinner Sunday evening for Eli, his wife Velina, and all of the symposium participants.



The ACS Fellows Program

The ACS Fellows Program was created by the ACS Board of Directors in December 2008 "to recognize members of ACS for outstanding achievements in and contributions to Science, the Profession, and the Society." Nominees must be current members in good standing with ACS, and selection is based on demonstrated excellence in two defined areas: (1) excellence in science/profession, and (2) outstanding service to ACS. A total of 213 new fellows were named in 2011. Of these, the following 17 were members of the Division of Colloid and Surface Chemistry:

Charles. T. Campbell
Alvin L. Crumbliss
D. Howard Fairbrother
Andrew J. Gellman
Vicki H. Grassian
Joe W. Hightower
Paul L. Houston
Hedi M. Mattoussi
Tina M. Nenoff
Ralph George Nuzzo
Umit S. Ozkan
Debra R. Rolison
Kirk S. Schanze
Michael Trenary
Orlin D. Velev
Israel E. Wachs
John T. Yates, Jr.

The 2011 Langmuir Lectures

Each year since 1979, the Colloid and Surface Chemistry Division selects two outstanding researchers to present the Langmuir Lectures at the Fall ACS Meeting. (A list of prior lecturers can be found at the Division web page, http://colloidssurfaces.org/awards/langmuir.php). Since 2010, the lectures have been cosponsored by both the Division and the ACS journal *Langmuir*.

For 2011, 16 nominations were submitted to the selection committee, which consisted of John Walz (Division Chair), Vicki Grassian (Division Chair-elect) and David Whitten (Editor-in-Chief, *Langmuir*). The committee met during the spring meeting in Anaheim and selected Professors Steve Granick, University of Illinois, and Flemming Besenbacher, Aarhus University, as the 2011 Langmuir Lectures. The lecturers also have their work published in a special issue of *Langmuir*.

At right (l to r): *Langmuir* editor David Whitten, 2011 Langmuir Lecturers Flemming Besenbacher and Steve Granick, and Division Chair John Walz, at the Langmuir Lectures symposium in Denver.

Fall 2012 – Philadelphia

The Fall 2012 meeting will be held August 19 – 23 in Philadelphia, PA, with the theme *Materials for Health and Medicine*. The program for this meeting is still being developed. Division members interested in organizing a symposium in Philadelphia are encouraged to contact the Division's Program Chair, Dr. Ramanathan Nagarajan at ramanathan.nagarajan@us.army.mil.

The 2011 Langmuir Lecturers

Steve Granick is Founder Professor of Materials Science and Engineering, Professor of Physics and Biophysics, and Professor of Chemistry at the University of Illinois. He received a B.A. in Sociology from Princeton and a Ph.D. in Chemistry from Wisconsin. He also studied as a post-doc at the College of France and the University of Minnesota before joining Illinois in 1995. Over the past five years, Granick's research has focused on four specific areas: Janus colloids, polymers at interfaces, interfacial water, and confined fluids. He has published more than 250 peer-reviewed papers in these areas and given over 100 invited lectures at conferences and universities. He has advised 36 PhD students and post-docs, 28 of whom hold tenured or tenure-track faculty positions. In addition to being named a Langmuir Lecturer, Granick has received the NSF Award for Special Creativity, the Polymer Physics Prize from the American Physical Society, and the Paris-Sciences Medal from the City of Paris. He is a Fellow of the American Physical Society and has presented the Dorn Lecture at Northwestern University and the Dow Lecture at MIT. Professor Granick's Langmuir Lecture was entitled "Janus Colloids".

Flemming Besenbacher is Professor of Physics and Astronomy and Director of the Interdisciplinary Nanoscience Center, iNANO, at Aarhus University in Denmark. He has degrees from the Department of Physics at Aarhus and has spent essentially all of his academic career there. Since 1980, his research has focused on the development and use of high speed, high stability Scanning Tunneling Microscopes, commercially known as the Aarhus STM. He uses STM and complementary surface-sensitive techniques to study the structure and reactivity of clean and adsorbate-covered metal, metal alloy and oxide surfaces. He has published over 480 papers in international journals that have been cited more than 14,000 times. He has also given more than 160 talks at international conferences plus another 90 at institutions and universities. He has won numerous awards for his work, including the Einstein Professorship from the Chinese Academy of Sciences. He presented the Bird-Stewart-Lightfoot lecture at the University of Wisconsin, and in 2007 was knighted by the Danish Queen. Professor Besenbacher's Langmuir Lecture was entitled "Catalytic Model Systems Studied by High-Resolution, Video-Rate Scanning Tunneling Microscopy".

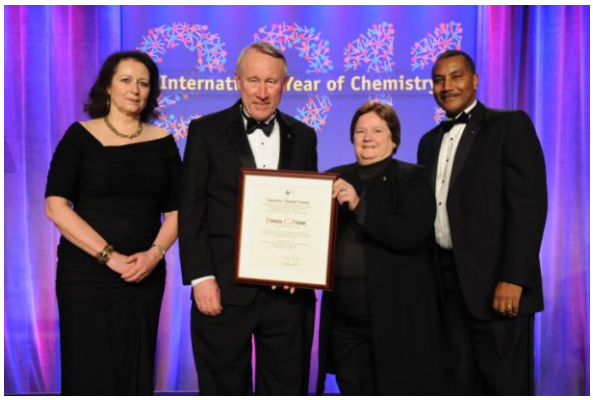
Highlights of the Spring 2011 Meeting – Anaheim

Anaheim, CA was the site of the the Spring 2011 ACS meeting, held March 27 – 31 with the theme *Chemistry of Natural Resources*. The Colloid and Surface Chemistry Division sponsored or co-sponsored 151 symposia, including a special symposium honoring Professor Dennis Prieve, winner of the 2011 ACS Award in Colloid and Surface Chemistry, and a symposium in memory of Professor Robert J. Good, who passed away in April 2010. In addition, over 130 posters were presented during the traditional Monday evening poster session.

Left: winners of the student poster competition in Anaheim were (l to r): Tsehai Grell (Morgan State University), J. Nathan Hohman (UCLA), Division Chair John Walz, Stacey Barnaby (Fordham University) and Sri Lakshmi Yedlapalli (West Virginia University).

Dennis Prieve Receives 2011 ACS Award in Colloid & Surface Chemistry

Dennis Prieve, the Gulf Professor of Chemical Engineering at Carnegie Mellon University, was the recipient of the 2011 ACS Award in Colloid and Surface Chemistry. This award, which is sponsored by Procter and Gamble, is given annually to "recognize and encourage outstanding scientific contributions to colloid and/or surface chemistry in North America." Prieve was specifically recognized for the development of the technique of Total Internal Reflection Microscopy (TIRM) for measuring weak colloidal interactions and Brownian motion in confinement. TIRM can detect nanometer changes in location of a microscopic sphere, levitated above a plate in a viscous liquid. From the equilibrium distribution of elevations, the (sub-piconewton) force on the sphere can also be determined. A two-session symposium featuring colleagues and former students of Prieve was held at the Anaheim meeting, along with a dinner hosted by the Department of Chemical Engineering at Carnegie Mellon.



Professor Dennis Prieve, second from left, receives the 2011 ACS Award in Colloid and Surface Chemistry.

The 2011 Victor K. LaMer Award Winner – Matthew Helgeson

Matthew Helgeson received his B.S. in Chemical Engineering with honors from Carnegie Mellon University in 2004. In 2009, he received his Ph.D. in Chemical Engineering from the University of Delaware under the supervision of Norman Wagner and Eric Kaler, with his thesis titled "Structure, rheology, and thermodynamics of wormlike micelle-nanoparticle mixtures". Helgeson is currently a Postdoctoral Associate at MIT in the Novartis-MIT Center for Continuous Manufacturing working with Patrick Doyle. In 2012, he will join the faculty of UC Santa Barbara as Assistant Professor of Chemical Engineering.

Helgeson's research explores the combination of bottom-up molecular and colloidal assembly with top-down processing methodologies to produce novel functional and responsive soft materials for applications in human health, energy, and sustainability. Specifically, his interests include fundamental studies of microstructure, rheology, and thermodynamics of colloids in self-assembling fluids, as well as the development of fluidic processing and characterization tools for colloid and nanomaterial synthesis. Currently, his research focuses on the design of hierarchically structured polymer-colloids as a generic material platform for next-generation pharmaceutical manufacturing.

The Victor K. LaMer Award is presented each year to the top Ph.D. thesis in the field of colloid and interfacial science in the United States and Canada. The winner receives $3,000 and the opportunity to present his/her work at the summer ACS Colloid and Surface Science Symposium.

The 2011 Unilever Award Winner – Ryan Hayward

Ryan Hayward is an Assistant Professor of Polymer Science and Engineering at the University of Massachusetts Amherst. He received his degrees in Chemical Engineering from Princeton University (B.S.E, 1999) and the University of California, Santa Barbara (Ph.D., 2004), after which he was a post-doctoral fellow at Harvard University.

His group's work covers a variety of topics in colloid and interface science, with a particular focus on materials at the biological interface. Recent areas of interest include swelling-induced deformation of constrained and micro-patterned stimuli-responsive gels, and solution state self-assembly of polymer and particle-based nanostructures.

Hayward has also received the NSF CAREER Award, the 3M Nontenured Faculty Award, the Presidential Early Career Award for Scientists and Engineers, and the Department of Energy Early Career Research Award.

The annual Unilever Award recognizes fundamental work in colloid and surfactant science carried out in North America by researchers in the early stages of their career. The winner receives $3,000 and the opportunity to present his/her work at the summer ACS Colloid and Surface Science Symposium.