



DuPont, AstraZeneca HR representatives



Director of Delaware Career Services

Career Seminar



Resume Critique Session

Speakers with Diverse Experiences

Interdisciplinary Chemistry Seminar Series

TOPIC: *On Climate Changes and Sustainable Water Environment: Impacts and Strategic Adaptation.*

SPEAKER: Professor C. P. Huang, (University of Delaware)

Topic: **Recent Developments in the Conversion of Biomass to Renewable Fuels and Chemicals**

Speaker: Leo E. Manzer (Catalytic Insights, LLC)

Date: Tuesday, October 27, 2009

Place: DuPont, Chestnut Run

Time: 12:00 Lunch (Admin. Bldg.)
1:00 Lecture (Bldg. 713 auditorium)

Information: George Parshall (658-2066; parshallgw@aol.com)

Functional polymers: the importance of functionality, topology, and topography .

Jean M.J. Fréchet,
College of Chemistry, Univ. of California, Berkeley
and Lawrence Berkeley National Laboratory



TOPIC: *A Chemical (Ad) Venture in China*

SPEAKER: Paul R. Resnick (FluoroScience LLC)

DATE: Tuesday, March 17, 2009

PLACE: DuPont, Chestnut Run

TIME: 12:00 Lunch (Admin. Bldg.)
1:00 Lecture (Bldg. 713 auditorium)

INFORMATION:

George Parshall (658-2066 or parshallgw@aol.com)



Delaware Section ACS



TOPIC: **Early 19th Century Arsenic Detection Techniques: Experts Attacking Experts**

SPEAKER: Professor David Caudill, Villanova University

DATE: Tuesday, May 19, 2009

Securing Our Future – A Perspective From DuPont's Chief Security Officer
Mr. Raymond A. Mislock, Jr.,
Chief Security Officer of DuPont

Date: Thursday, April 9, 2009

Location: DuPont Country Club

Time: 6:00 PM – 8:30 PM

Cost: \$10 per person for Delaware ACS members
\$15 per person for non-ACS members
\$5 per person for students



TOPIC: **OLED Displays – Are We There Yet?**

SPEAKER: Dr. Norman Herron (DuPont)

DATE: Tuesday, January 27, 2009 (Note: 4th Tuesday)

PLACE: DuPont, Chestnut Run

TIME: 12:00 Lunch (Admin. Bldg.)
1:00 Lecture (Bldg. 713 auditorium)

OCTOBER GENERAL MEETING

Magnetic Nanoparticles for Novel Application:
Dr. George C. Hadjipanayis, RB Murray Professor and Chair, Physics and Astronomy, University of Delaware

Date: Thursday, October 22, 2009

Location: DuPont Country Club

Characterizing Biomaterial Interfaces with Phage-derived Peptide
Dr. Matthew L. Becker, NIST – Polymers Division

2009 Ulliot Public Affairs Lecture

SPEAKER:

Dr. Joseph M. DeSimone, Professor of Chemistry and Chemical Engineering at the University of North Carolina at Chapel Hill and North Carolina State University

Government Affairs



TOP: Members of the Delaware ACS Government Affairs Committee meet with Senator Thomas R. Carper in Wilmington on Friday, February 20, 2009. Participants are (from left to right) Martha Hollomon, Sujata Bhatia, Senator Thomas R. Carper, John Gavenonis, Al Denio, and Narmada Gunawardena.

RIGHT: Members of the Delaware ACS Government Affairs Committee meet with Congressman Michael N. Castle in Wilmington on Friday, February 27, 2009. Participants are (from left to right) Al Denio, Representative Michael N. Castle, John Gavenonis, and Martha Hollomon.



Members of the Delaware ACS Government Affairs Committee meet with Senator Ted Kaufman in Wilmington on Tuesday, February 17, 2009. Participants are (from left to right) Al Denio, Martha Hollomon, Senator Ted Kaufman, John Gavenonis, and Narmada Gunawardena.



Awards & Recognition



Delaware Section Textbook Award Recipients!



Let us congratulate the recent graduates listed below on being selected by their respective high schools to receive the 2009 Textbook Awards presented by the Delaware Section. Last year the Executive Committee initiated a new program to acknowledge one outstanding chemistry student at each of Delaware's 50 accredited high schools. Each school was allowed to select its awardee by its own criteria, and in return, the Section has provided that student with a voucher for reimbursement of up to \$100 for the purchase of a chemistry-related textbook. By recognizing outstanding chemistry students in Delaware's high schools, the Section seeks to encourage such students to pursue degrees in chemistry and related disciplines in order to provide our state with its next generation of leaders in science and engineering.

Awardee

Paul Fagan
Mary Francis Meier
Yazmyrn Crew
Scott Wroblea
Lauren Henry
Mary E. Iplenski
Eric Dickson-Peppier
Charlotte Lin
Lisa Ashley Wasik
Joshua Douglas Paine
Robert Liszkiewicz
Michael Anthony Rosauri
Hendrik Phillips
John Philip Betley
Michael Howard

High School

Archmere Academy
Brandywine High Sch
Concord High School
Delmar Senior High S
Delmarva Christian H
Dover High School
Thomas McKean Hig
Middletown High Sch
Paul M. Hodgson Vot
Red Lion Christian A
Salesianum High Sch
Sanford School
Seaford Senior High S
St. Elizabeth High Sch
Saint Mark's High Sch

Congratulations to Student-Industry Poster Session Winners

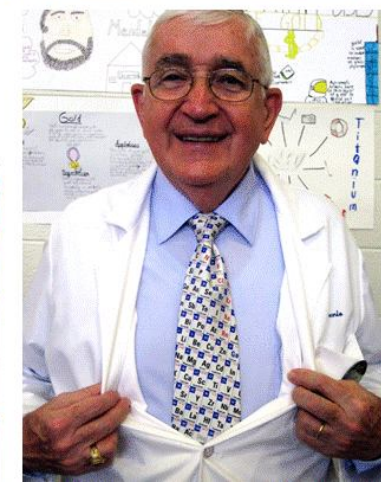
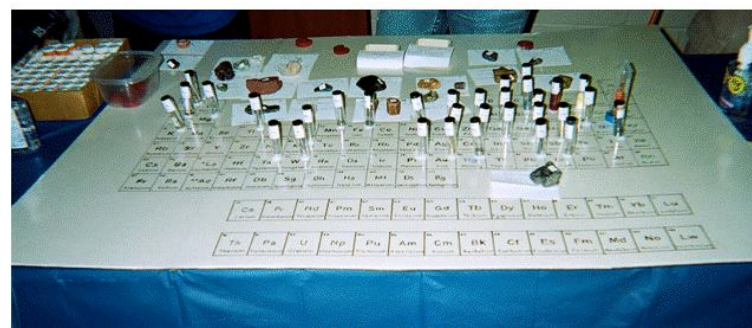
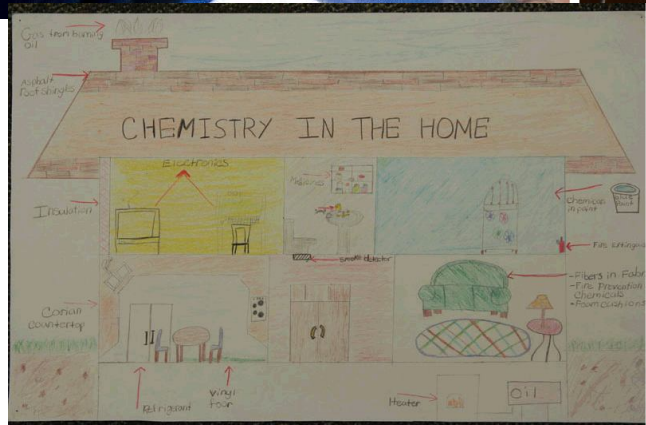
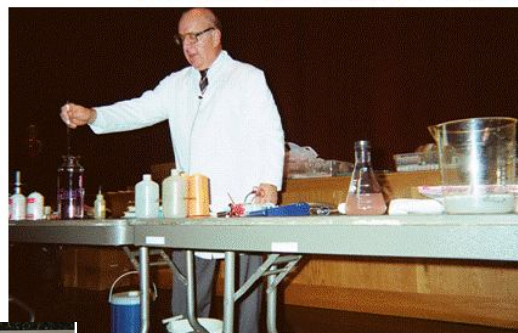
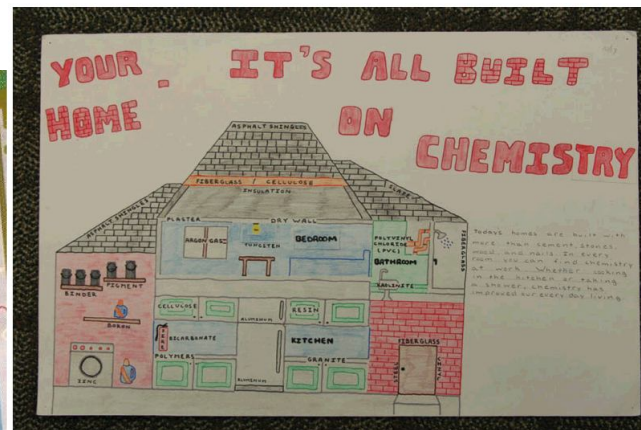
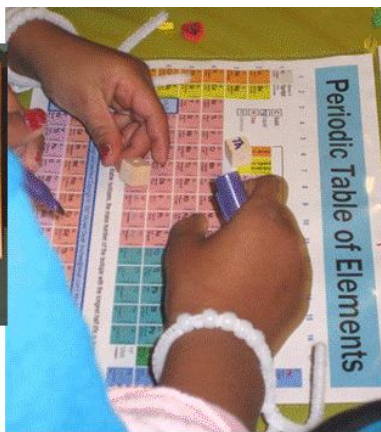
The Annual Delaware ACS Section Student-Industry Poster Session was held at the Department of Chemistry and Bio-Chemistry on April 22nd, 2009. A total of 35 undergraduate, graduate and postdoctoral researchers from various universities in the Delaware Valley area participated. There were also two industrial posters presented by DuPont and AstraZeneca.

The Delaware Section of the American Chemical Society would like to congratulate the

Carothers Award Symposium



National Chemistry Week



Industrial Involvement

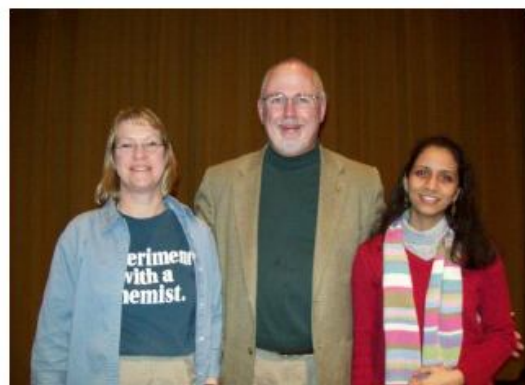
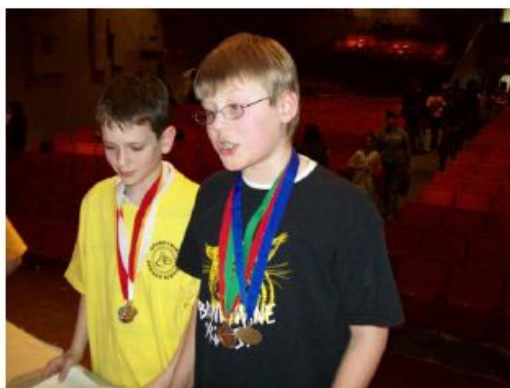


Kids and Chemistry

Principle Mark Freund (St. Marks High School),
Dr. Martha Hollomon (ACS Delaware Section
Councilor), and Dr. Sri Kidambi (ACS Delaware
Section YCC Chair) at the Elementary School
Science Olympiad



ACS Board Member,
Director-At-Large, Dr.
William F. Carroll, Jr.
visiting Delaware
Schools



Younger Chemists' Committee



**Delaware Section
Local Section Career Program Awards
ChemLuminary Award Nomination Supplementary Information**



DuPont HR representative Ms. MaryBeth Forester and DuPont scientist and corporate recruiter Dr. John McMinn are meeting members at the DuPont Table



AstraZeneca HR representative answering questions from a group of University Delaware college students at the AstraZeneca Table



The Director of University of Delaware Career Service Center, Ms. Joyce Henderson, handing out career resource CDs from ACS Career Center



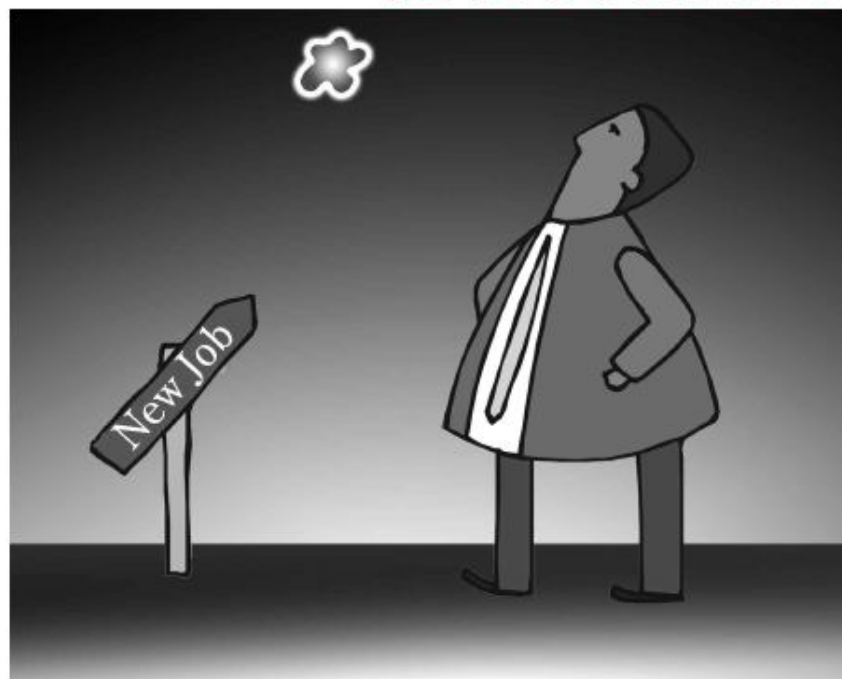
DuPont Corporate recruiters helping members at the Resume Critique Session

DEL-CHEM

MARCH 2009

Bulletin

Volume 66/3



Career Seminar

Co-Sponsored by the University of Delaware Career Services Center

Monday, March 16, 2009

Perkins Student Center
University of Delaware



For information on section activities visit our web site at:
<http://membership.acs.org/d/del/>

Delaware Section of the American Chemical Society March General Meeting

Career Seminar

Co-Sponsored by University of Delaware Career Services Center

Dr. Pat N. Confalone, Vice President, Global R&D, DuPont Health, Nutrition, and Crop Protection

Dr. William C. Golton, Vice President, The CECON Group, Inc.

James W. Parrett, Jr., Attorney at Law, Morris, Nichols, Arshat & Tunnell LLP

Dr. Masha Petrova, founder and CEO of MVP Modeling Solutions, LLC.

Dr. Cynthia H. Stahl, EPA

Professor Klaus H. Theopold, Chair, Department of Chemistry and Biochemistry, University of Delaware

Date: Monday, March 16, 2009

Location: Perkins Student Center, University of Delaware
325 Academy Street, Newark, DE 19716

Time: 4:00 PM – 9:00 PM

Cost: \$5 per person for students and Delaware ACS members
\$8 per person for non-ACS members

For reservations or additional information: No reservation is needed.

Agenda:

Resume Critiques and Sponsor Exposition from AstraZeneca and DuPont
4:00 – 6:00 pm at Kirkwood Room (Perkins Student Center)
Pizza Dinner and Social
6:00 – 6:30 pm at Perkins Student Center

Career Seminar

6:30 – 9:00 pm at Collins Rooms (Perkins Student Center)

In addition to the career seminar speakers, Ms. Sally Wojcieszyn from Delaware Economic Development Office will talk briefly about their internship opportunities for undergraduate students.

Dr. Pat N. Confalone

Biography: A graduate of M.I.T. [1967], he obtained a Ph.D. at Harvard [1970] with Nobel laureate Prof. R.B. Woodward for whom he also did a post-doc. After ten years at Hoffmann-La Roche, he joined Dupont Life Sciences [1981] where his Bioorganic Chemistry group developed the fluorescent dye-labeled reagents that were used in automated DNA sequencing, eventually employed in the human genome project. With Dupont Pharmaceuticals, Dr. Confalone recruited a world class Medicinal Chemistry department that discovered Cozaar™, a major anti-hypertensive based on angiotensin II antagonism. After 22 years in Discovery Research, he moved into pre-clinical development and built a highly successful Chemical Process R&D organization that carried out the chemical development of Cozaar™ and Sustiva™, a highly successful NNRTI used to treat AIDS. Currently, he is



continued on page 6

continued from page 5 *Dr. Pat N. Confalone*

Vice President, Global R&D, DuPont Health, Nutrition, and Crop Protection. Dr. Confalone has presented >110 invited or plenary lectures worldwide, published >140 papers and obtained >40 U.S. Patents. He has received honors and awards, including the Harvard Graduate Society Prize, the Alpha Chi Sigma Award, and was nominated to the Harvard Society of Fellows. Dr. Confalone was Chairman of the Natural Products Gordon Conference and appointed to Editorial Advisory Boards of Current Drugs, Bioorganic and Medicinal Chemistry, The Journal of Organic Chemistry, Synlett, Progress in Heterocyclic Chemistry, Synthesis, Medicinal Chemistry Research, and Drug Design and Discovery. He was elected chair of the Organic Division of the ACS, was chairman of the ACS Committee on Chemistry and Public Affairs, and was recently elected to the ACS Board of Directors. He is an elected Fellow of the American Association for the Advancement of Science.

Dr. William C. Golton

Biography: A Ph.D. in Analytical Chemistry, Bill left DuPont in 1994 and became a consultant. While in DuPont, he managed a large analytical and physical measurement group, started and managed the quality program for a \$2 billion business, and late in his career, moved to the pharmaceutical business to run an important corporate LIMS project. Bill currently is on the staff of The CECOM Group, a broker for independent consultants in science and engineering. Bill is a founder and past president of the Chemical Consultants Network, and has been widely quoted as an authority on consulting as a career alternative for chemists and chemical engineers.

Abstract: Various issues need to be considered to succeed as a consultant. This talk is aimed at stimulating discussion on what chemical consultants do, defining your clients, preparing a good résumé, marketing your services, how much to charge, legal and tax considerations.

James W. Parrett, Jr., Esq.

Biography: A graduate of James Madison University and the College of William and Mary, he started work in 2002 as an associate in the Intellectual Property Litigation Group at the law firm of Morris, Nichols, Arsh & Tunnell LLP. His practice includes patent, copyright and trademark cases encompassing many different areas of technology. He has represented a number of pharmaceutical and chemical companies including AstraZeneca, Pfizer, Merck, Sanofi-Aventis and DuPont. He is active in the legal community in Delaware and currently serves as the President of the Delaware Chapter of the Federal Bar Association.

Abstract: Not all careers in chemistry have to take place in the lab. During this talk I'll discuss alternative career paths in the legal field. In particular, I'll describe opportunities for chemists in the field of patent law as litigation attorneys, patent prosecutors and expert witnesses and consultants.

Dr. Masha V. Petrova

Biography: Masha Petrova is the founder and CEO of MVP Modeling Solutions, LLC – a company dedicated to providing information and training to the reactive flow modeling community. She received her Ph.D. from the University of California at San Diego in combustion chemistry, working under professor Forman A. Williams. After receiving her doctorate, she went to work in industry as a development engineer conducting research in chemical-kinetics



continued on page 7

continued from page 6 *Dr. Masha V. Petrova*

at Reaction Design, and then as a sales and marketing engineer where she was the go-to technical person for the company's customers and distributors. As the training manager, she has taught courses on computer simulation of reactive flows and gave presentations to customers all over the globe, including USA, Canada, China, Japan and Germany.

She has published papers in peer-reviewed journals and has presented technical talks at conferences such as International Symposium on Combustion, ASME Turbo Expo and AIAA Aerospace Sciences Meeting and Exhibit. She has served on a National Science Foundation Review Panel on Materials and Combustion. She was a co-founder of the first ever Women in Combustion group. She is an active member of the American Chemical Society, the Society of Automotive Engineers and the Greater Newark chapter of Toastmasters International.

Title and Abstract: "Successful Unemployment: 10 things you need to do to increase your professional value"

So you got laid off. As did thousands of other highly qualified scientists and engineers. What can you do to stand out of the crowd while looking for your next job? What will you do in case your one-month layoff stretches into six months or a year? How can you make yourself more qualified and more appealing to future employers while being unemployed? During this talk I will give you 10 specific action items that you can do while searching for your next job, that will dramatically improve your resume, greatly increase your interviewing skills, provide many more opportunities for employment and set you apart from the rest of the job seekers in your field. Come prepared to take your professional skills to the next level.

Dr. Cynthia H. Stahl

Biography: Dr. Stahl received her Ph.D. in environmental policy analysis from the Center for Energy and Environmental Policy at the University of Delaware, her M.S. in toxicology from the University of Texas, School of Public Health, and her B.A. in biology from the University of Pennsylvania. Ms. Stahl is currently an environmental scientist at the U.S. Environmental Protection Agency, specializing in environmental policy analysis. Her expertise includes air quality programs, integrated health and ecological analyses, and addressing uncertainty in decision making.



Dr. Klaus H. Theopold

Biography: Born and raised in Germany, Klaus Theopold aimed for a teaching and research career from a young age. His path led from the Universität Hamburg, via UC Berkeley and MIT to an Assistant Professorship at Cornell University. In Delaware since 1990, he is currently the Chair of the Department of Chemistry and Biochemistry at UD. His research involves the organometallic and coordination chemistry of transition metals in the pursuit of homogeneous catalysis.

Abstract: Life as a chemist in academia can be a tremendously fulfilling experience, but it is not for everyone. We'll talk about what it takes to get an academic job, how to keep it, and what to expect in today's university environment. It's not all 'ivory tower' any more.



**Delaware Section
Most Innovative New Activity or Program in a Local Section
ChemLuminary Award Nomination Supplementary Information**



Dr. Kai Qi, Chair of the Delaware Section, presenting 2009 Carothers Award to Dr. Jean M. J. Fréchet



50-year and 60-year members and their families



Dr. Kai Qi, Chair of the Delaware Section, presenting certificate to one of this year's 50-year ACS member Dr. Ralph Nelson



Delaware Section Award Committee Chair, Mr. Norm Henry, presenting the ACS Delaware Section Junior Award to Ms. Amy L. Styer, University of Delaware



Dr. Virgil Percec from the University of Pennsylvania introducing Dr. Jean Fréchet



Dr. James Thackery from Dow Chemical introducing Dr. Hiroshi Ito in his absence



Dr. Christine Luscombe (University of Washington), Dr. Dr. Kathryn Uhrich (Rutgers University), and Dr. James Thackeray (Dow Chemical Company) before the Carothers Award Banquet

DEL-CHEM

MAY 2009

Bulletin

Volume 66/5

*Carothers Award Symposium Honoring
Drs. Jean M. J. Fréchet and Hiroshi Ito*

Monday, May 11, 2009

DuPont Country Club



VOTE

and be counted



For information on section activities visit our web site at:
<http://membership.acs.org/d/del/>

DEL-CHEM

SEPTEMBER 2009

Bulletin

Volume 66/6



Participate, Today.



For information on section activities visit our web site at:
<http://membership.acs.org/d/del/>



Fréchet And Ito Accept Carothers Award



FRÉCHET, ITO

Text Size A A

Jean M. J. Fréchet and **Hiroshi Ito** are the recipients of the 2009 Carothers Award, presented annually by the ACS Delaware Section to honor scientific innovators who have made outstanding contributions and advances in industrial applications of chemistry. The award consists of a sculpture and a \$2,000 cash award.

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More Awards

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- [Carolyn Bertozzi Is Nichols Medal Winner](#)
- [Linus Pauling Medal To Stephen Lippard](#)

Topics Covered

[Awards](#), [Carothers Award](#)

Fréchet, Henry Rapoport Chair of Organic Chemistry at the University of California, Berkeley, is conducting research at the interface of organic and polymer chemistry. His work is directed toward functional macromolecules and their design, synthesis, and applications. He also serves as a scientific director of the Molecular Foundry nanoscience institute at Lawrence Berkeley National Laboratory.

Ito, an IBM Fellow at IBM Almaden Research Center, in San Jose, Calif., is doing fundamental research on polymer synthesis, reactivity and kinetics in polymerization, and spectroscopic characterization of polymers.

Linda Wang compiles this section. Announcements of awards may be sent to l_wang@acs.org.

Chemical & Engineering News

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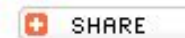
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Fréchet wins 32nd Carothers Award



Professor Jean M. J. Fréchet

May 15, 2009



Jean M. J. Fréchet, Henry Rapoport Professor of Chemistry and professor of chemical engineering, has won the 32nd Carothers Award, presented by the Delaware Section of the American Chemical Society.

Fréchet shares the award with Hiroshi Ito of the IBM Almaden Research Center in San Jose, CA, in recognition of their contributions to the development of chemically amplified resist. This technique allows the manufacturing of microelectronic chips using nanoscale lithography, an enabling technology for further miniaturization of electronic devices as predicted by Moore's Law.

In addition to being a Berkeley professor, Fréchet is a scientific director of the Molecular Foundry, Lawrence Berkeley National Laboratory, and a member of the U.S. National Academy of Science and the U.S. National Academy of Engineering. Fréchet has authored over 750

scientific papers, holds over 70 patents, is involved in numerous start-up companies, and has received numerous awards worldwide. His research at the interface of organic and polymer chemistry is directed towards functional macromolecules, their design, synthesis, and applications.

The Wallace H. Carothers Award was established by the Delaware Section of the American Chemical Society in 1976 in memory of Wallace H. Carothers, one of the founders of modern polymer chemistry. The purpose of the award is to honor scientific innovators who have made outstanding contributions and advances in industrial applications of chemistry.

http://chemistry.berkeley.edu/publications/news/2009/frechet_wins_carothers_award.php

Delaware Section of the American Chemical Society
May General Meeting

*50- and 60-Year Membership Recognition Luncheon
and Carothers Award Symposium Honoring*

Drs. Jean M. J. Fréchet and Hiroshi Ito

Date: Monday, May 11, 2009

Location: DuPont Country Club

Time: 11:30 AM – 9:00 PM

Cost for 50- and 60-Year Membership Recognition Luncheon

\$25 per person for Delaware ACS members and guest

\$30 per person for non-ACS members

\$15 per person for students

Free to just attend the seminar (space limited)

Cost for Carothers Award Banquet

\$30 per person for Delaware ACS members and guest

\$40 per person for non-ACS members

\$15 per person for students

Free to just attend the seminar (space limited)

Five dollars off the total cost for attending both events

For reservations or additional information: Please contact Kai Qi at:
Kai.Qi@usa.dupont.com (preferred) or 302-999-2771 by Friday, May 8, 2009.

Agenda:

50- and 60-Year Membership Recognition Luncheon

11:30 AM Registration

12:00 PM– 1:00PM Luncheon and Recognition

Carothers Award Symposium

1:00 PM– 5:30 PM (Christiana Room) Carothers Award Symposium

Symposium Speakers

Dr. Christine Luscombe, Dr. Virgil Percec, Dr. James W. Thackeray, Dr. Kathryn Uhrich

Carothers Award Presentation

5:30 PM Carothers Award Dinner Registration and Reception

6:30 PM Carothers Award Dinner

7:30 PM Award Presentation and Award Lectures by Drs. Jean M. J. Fréchet and Hiroshi Ito

2009 Carothers Award Recipients

*Dr. Jean M. J. Fréchet
University of California, Berkeley*

Biography: Jean Fréchet was born in France and received his first university degree at the Institut de Chimie et Physique Industrielles (now CPE) in Lyon, before moving to the US to earn Ph.D. degrees in organic and polymer chemistry from the State University of New York and from Syracuse University. He joined the Chemistry Faculty at the University of Ottawa in Canada in 1973 then moved to Cornell University in 1987 as the IBM Professor of Polymer Chemistry then the Peter J. Debye Chair of Chemistry. In 1997, Jean



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Dr. Jean M. J. Fréchet continued from page 6

Fréchet joined the Chemistry Faculty at the University of California, Berkeley where he holds the Henry Rapoport Chair of Organic Chemistry and is also Professor of Chemical Engineering and a Scientific Director of the Molecular Foundry, Lawrence Berkeley National Laboratory. A member of the US National Academy of Science and the US National Academy of Engineering, he has authored about 750 scientific papers, holds over 70 United States patents as well as numerous foreign patents, and has been involved in numerous start-up companies. His research at the interface of organic and polymer chemistry is directed towards functional macromolecules, their design, synthesis, and applications. A variety of topics ranging from the design of materials for energy harvesting and conversion to artificial enzyme-like catalysts and polymers for targeted drug delivery and immunotherapy are being explored.

Title: Functional Polymers: the importance of functionality, topology, and topography.

Abstract: This lecture will utilize three case studies to illustrate the importance of polymer topography, functionality and topology on the functional properties of specialty polymers and polymeric surfaces. The first illustrating example will focus on the design of super-hydrophobic surfaces where both topography and functionality play major roles [1]. Therefore, the preparation of surfaces with both microscale and nanoscale topological features will be described as will the chemical modification of these surfaces to prepare microfluidic “channels” with virtual channel walls consisting of zones of contrasting hydrophobicities. The second example will explore the use of localized functionality, in this case the ability to absorb radiation, to effect the conversion of solar light into work through the modulation of surface tension forces. Finally, the third illustration will examine dendritic drug carriers, an application where the shape of a molecule as well as its size and functionality are determinant in its application as a chemotherapeutic agent.

Dr. Hiroshi Ito

IBM Almaden Research Center

Biography: Hiroshi Ito is an IBM Fellow at IBM Almaden Research Center in San Jose, CA. He obtained B. S. and M. S. degrees from the University of Tokyo. After receiving a Ph. D. in chemistry from the University of Tokyo in 1976, he worked as a research associate on synthesis of stereoregular polysaccharides at the chemistry department of the State University of New York in Syracuse (1976-1980). He joined IBM Research Division in San Jose in 1980 and has played a pivotal role in inception, development, and advancement of chemical amplification resists for use in semiconductor manufacturing. Dr. Ito has been active also in fundamental research on polymer synthesis, reactivity and kinetics in polymerization, and spectroscopic characterization of polymers. He holds ca. 50 U. S. patents and has more than 200 publications in the area of microlithography and polymer chemistry. Dr. Ito is an ACS PMSE Fellow and is a recipient of the Arthur K. Doolittle Award (ACS PMSE 1989), the Award of the Society of Polymer Science, Japan (1990), the Cooperative Research Award (ACS PMSE 1994), the Photopolymer Science and Technology Award (Photopolymer Conference, Japan, 1997), the Kosar Memorial Award (The Society of Imaging Science and Technology, 1999), The Outstanding Achievement Award in Polymer Science and Technology (The Society of Polymer Science, Japan, 2005), the Heroes of Chemistry Award (American Chemical Society, 2005), and the Photopolymer Science and Technology Outstanding Achievement Award (The Technical Association of Photopolymers, Japan, 2007).

Title: Advancement of Chemical Amplification Resists for Semiconductor Manufacturing

Abstract: Willson, Fréchet, and I reported the concept of chemical amplification resists in 1982, which aimed at dramatically boosting the resist sensitivity. The sensitivity enhancement

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Dr. Hiroshi Ito *continued from page 7*

is achieved by generating acid by irradiation, which induces a cascade of chemical transformations in a resist film. Although initially considered laboratory curiosity even within IBM, the tBOC resist based on acid-catalyzed deprotection was employed in a negative mode in mass production of 1 Mbit DRAMs by deep UV lithography in IBM in the mid 80's. Development of positive 248 nm resists faced a devastating postexposure delay problem, which threatened the future of chemical amplification resists. Tracing the cause to contamination of the resist film surface with airborne basic substances resulted in my development of an environmentally stable resist ESCAP, which cemented the industry-wide acceptance of chemical amplification resists, enabling the semiconductor industry to keep pace with the Moore's law. The migration from 248 to 193 nm necessitated abandonment of the etch-resistant but absorbing phenolic structure and introduction of alicyclic structures for transparency and etch resistance. Replacement of phenol with carboxylic acid for transparency and aqueous base development resulted in swelling. I introduced hexafluoroalcohol to replace carboxylic acid, which became employed ubiquitously in 157 nm resists, for transparency and base development. Although 157 nm lithography has been abandoned, the fluoroalcohol group has been heavily utilized in dry and wet 193 nm resists and immersion topcoats, and as additives for surface segregation. The chemical amplification resists initially developed for 1 μ m patterning can now print 20 nm features. All the advanced lithographic technologies (248 nm, current workhorse 193 nm, extreme UV at 13.4 nm, and projection electron-beam) depend on chemical amplification resists. The question is how far chemical amplification resists can go in terms of resolution, maintaining sensitivity (or even increasing the sensitivity) while improving line edge roughness. This talk describes the invention, implementation in device manufacturing, current status, and future perspective of chemical amplification resists.

Carothers Award Symposium Speakers

Dr. Christine Luscombe
University of Washington, Seattle



Title: Towards highly ordered films for organic photovoltaic devices

Abstract: Semiconducting polymers are actively under development for use in light-weight, flexible, disposable organic light-emitting diodes, and thin-film transistors. A key application which is currently attracting a lot of interest for semiconducting polymers is their use in organic photovoltaic devices (OPVs). The main drive for developing OPVs is the lower cost associated with their manufacturing, because of the fact that organic semiconducting polymers can be solution processed. Additionally, because of the potential of being able to produce an all-organic device, one can foresee the production of flexible solar cells for portable applications. In order for the organic materials to become competitive with existing inorganic semiconductors, there is a great need to improve their efficiency to >10% (the greatest efficiency achieved for organic devices is currently only 5-6%), and to improve their device lifetimes. Early testing of the newly prepared polymers confirm that the new designs result in improved air stability as well as enhanced performances in transistors. Our work towards improving both the device lifetime and efficiency will be presented.

Dr. Virgil Percec
University of Pennsylvania

Title: Bioinspired Synthesis of Nonbiological Systems Exhibiting Biological Functions

Abstract: Our laboratory is involved in the use of biological systems as models for the elaboration of new concepts at the interface between macromolecular, supramolecular and

continued on page 9



Dr. Virgil Percec *continued from page 8*

biological sciences by using self-assembling non-biological macromolecules as building blocks. These concepts are subsequently used in the design of nanostructures, and functional systems by following the biological principles structure determines functions. This lecture will first discuss the principles used in the design, synthesis of libraries of self-assembling building blocks via structural and retrostructural analysis.

Subsequently the use of these building blocks for the elaboration of non-biological functional systems (Science 1997, 278, 449-452; Nature 1998, 391, 161-164; Nature 2002, 419, 384-387; Science 2003, 299, 1208-1211; Nature 2004, 428, 157-160; Nature 2004, 430, 764-768; PNAS 2006, 103, 2518-2523; JACS 2007, 129, 11265-11278; JACS 2007, 129, 11698-11699; JACS 2008, 130, 7503-7508; JACS 2008, 130, 13079-13094; JACS 2008, 130, 14840-14852; JACS 2009, 131, 1294-1304) that exhibit biological functions will be elaborated.

Dr. James W. Thackeray
Rohm and Haas



Title: Chemical Amplification Resists: Their Practical Use and Development in the Semiconductor Industry.

Abstract: Dr. Hiroshi Ito and Prof. Jean Fréchet are two pioneers in the field of microlithographic resist materials. These gentlemen, along with Prof. C. Grant Willson, discovered the now famous chemical amplification concept which allowed the development of fast, high resolution resist materials that changed forever the electronics industry. In order to increase chip densification, resist materials sufficiently fast and high resolution needed to be developed quickly. The Chemically Amplified resist concept has been the choice for modern resist materials since their breakthrough in the early 1980s. In my work, I have spent nearly 25 years developing chemically amplified resists. I will discuss my first commercial chemically amplified resist material, SNR248, a negative-tone resist which provided a much needed stepping stone in the march of chemically amplified resist into the semiconductor industry. I will also discuss the joint work done with Dr. Ito that led to the development of ESCAP technology, which exists in a myriad of products at RHEM in many variants, and has sales upwards of \$100M annually in the semiconductor market. Lastly, I will discuss our recent efforts to extend chemically amplified resists to the 22nm node using EUV lithography.

Dr. Kathryn Uhrich
Rutgers University



Title: Nanoscale Amphiphilic Macromolecules: From selective retention of low density lipoproteins to enhancing drug transport"

Abstract: Amphiphilic macromolecules (AMs) self-assemble into water-soluble micellar, nanocarriers with potential for delivering hydrophobic drugs. These water-soluble polymers are comprised of a highly branched, hydrophobic interior (core) and hydrophilic exterior (shell) to maintain physical properties characteristic of conventional micelles. The variation of alkyl chain length controls the solution and hemolytic stability as well as drug loading capacity and release rate, whereas the carboxylate or amine functional groups of the PEG chain ends are utilized to conjugate targeting molecules or complex with DNA.

The Delaware Section of the American Chemical Society

The Delaware Section of the American Chemical Society is a professional organization representing more than 2000 chemists and chemical engineers. The majority are employed by DuPont, AstraZeneca, Siemens, Ashland, Syngenta, Basell, W.L. Gore, and the University of Delaware. The Section serves its members and the community through enrichment, professional development, education, and the promotion of the public understanding of chemistry.

The Award

The Wallace H. Carothers Award was established by the Delaware Section of the American Chemical Society in 1976 in memory of Wallace H. Carothers, one of the founders of modern polymer chemistry. The purpose of the award is to honor scientific innovators who have made outstanding contributions and advances in industrial applications of chemistry. The 2009 award is sponsored by the ACS Delaware Section, AstraZeneca, DuPont Crop Protection, Incyte, Infineum, and University of California, Berkeley.

The award is a sculpture that was commissioned by the Delaware Section. It consists of two hands holding a benzene ring, depicting a person shaping molecules. The artist is Mr. Domenico Mortellito, a well-known local sculptor, muralist and painter, who has pioneered the use of synthetic materials in the fine arts.

Past Awardees:

2008 Harry Spinelli	1997 Walter Kaminsky	1987 Paul Wiesz
2007 Richard DiMarchi	1996 Edith Flanigen	1986 Lewis Sarett
2006 Alan Davison	1995 Herbert Eleuterio	1985 Paul Flory
2005 Richard F. Heck	1994 Ralph Hirschmann	1984 Alan Hay
2004 James C. Stevens	1993 David Bryant	1983 Louis Plambeck
2003 Frances Arnold	1992 C. Grant Willson	1982 Jon Sinfelt
2002 Joseph DeSimone	and Murrae Bowden	
2001 Ching W. Tang	1991 Frank Bovey	1981 William Baker
2000 Robert S. Langer	1990 Paul Janssen	1980 Carl Marvel
1999 Barry Sharpless	1989 John Franz	1979 Herman Mark
1998 Mario Geysen	1988 Paul Morgan	1978 Edwin Land

50- and 60-Year Membership Recognition Luncheon and 32nd Annual Carothers Award

for

Outstanding Contributions and Advances in Industrial Applications of Chemistry

Carothers Award Lecture

Presented by 2009 Recipients:

Dr. Jean M. J. Fréchet

*Henry Rapoport Professor of Chemistry and Professor of
Chemical Engineering at UC Berkeley*

Dr. Hiroshi Ito

IBM Fellow at IBM Almaden Research Center

DuPont Country Club
Wilmington, Delaware
May 11, 2009

About the awardees: The 2009 Carothers Award is awarded to Dr. Jean M. J. Fréchet and Dr. Hiroshi Ito in recognition of their contributions to the development of chemically amplified resist. Chemically amplified resist allows for the manufacturing of microelectronic chips using 248 nm and 193 nm lithography, and therefore is the enabling technology for further miniaturization of electronic devices as predicted by Moore's Law. The concept of chemical amplification for polymer resist imaging has had a major impact on the fields of imaging materials, photopolymers, and microlithography. Chemically amplified resist has cumulative revenue well over \$2 billion in addition to its profound impact on IC business with cumulative revenue over \$500 billion.



Dr. Fréchet is the Henry Rapoport Professor of Chemistry and Professor of Chemical Engineering at University of California, Berkeley. He is the Scientific Director of the Molecular Foundry, Lawrence Berkeley National Laboratory, and a member of the US National Academy of Science and the US National Academy of Engineering. Dr. Fréchet has authored over 750 scientific papers, holds over 70 patents, involved in numerous start-up companies, and has received numerous awards

worldwide. His research at the interface of organic and polymer chemistry is directed towards functional macromolecules, their design, synthesis, and applications.



Dr. Ito is an IBM Fellow at IBM Almaden Research Center in San Jose, CA. He has played a pivotal role in inception, development, and advancement of chemical amplification resists for use in semiconductor manufacturing. Dr. Ito has been active also in fundamental research on polymer synthesis, reactivity and kinetics in polymerization, and spectroscopic characterization of polymers. He holds over 50 patents and has more than 200 publications in the area of

microlithography and polymer chemistry. Dr. Ito is an ACS PMSE Fellow and the recipient of numerous awards: including the Arthur K. Doolittle Award and the Heroes of Chemistry Award.



Program

50- and 60-Year Membership Recognition Luncheon

11:30 AM Registration

12:00 PM – 1:00 PM Luncheon and Recognition



Carothers Award Symposium

Dr. Christine Luscombe, University of Washington

1:15 PM – 2:00 PM

Title: Towards highly ordered films for organic photovoltaic devices

Dr. Virgil Percec, University of Pennsylvania

2:15 PM – 3:00 PM

Title: Bioinspired Synthesis of Nonbiological Systems Exhibiting Biological Functions

Dr. James W. Thackeray, Rohm & Haas

3:15 PM – 4:00 PM

Title: Chemical Amplification Resists: Their Practical Use and Development in the Semiconductor Industry

Dr. Kathryn Uhrich, Rutgers University

4:15 PM – 5:00 PM

Title: Nanoscale Amphiphilic Macromolecules: From selective retention of low density lipoproteins to enhancing drug transport

Carothers Award Presentation

5:30 PM Carothers Award Dinner Registration and Reception

6:30 PM Carothers Award Dinner

7:30 PM Award Presentation and Award Lecture

Opening Remarks and Presentation of Carothers Award

Dr. Kai Qi DuPont, Chair ACS Delaware Section

Introduction by Dr. James W. Thackeray (Rohm & Haas)

and Dr. Virgil Percec (University of Pennsylvania)

Carothers Award Address

Dr. Jean M. J. Fréchet, University of California, Berkeley

Title: Functional Polymers: the importance of functionality, topology, and topography.

**Delaware Section
ACS President's Award for Local Section Government Affairs
ChemLuminary Award Nomination Supplementary Information**



Members of the Delaware ACS Government Affairs Committee meet with Senator Thomas R. Carper in Wilmington on Friday, February 20, 2009. Participants are (from left to right) Martha Hollomon, Sujata Bhatia, Senator Thomas R. Carper, John Gavenonis, Al Denio, and Narmada Gunawardena.

**Delaware Section
ACS President's Award for Local Section Government Affairs
ChemLuminary Award Nomination Supplementary Information**



Members of the Delaware ACS Government Affairs Committee meet with Senator Ted Kaufman in Wilmington on Tuesday, February 17, 2009. Participants are (from left to right) Al Denio, Martha Hollomon, Senator Ted Kaufman, John Gavenonis, and Narmada Gunawardena.

**Delaware Section
ACS President's Award for Local Section Government Affairs
ChemLuminary Award Nomination Supplementary Information**



Members of the Delaware ACS Government Affairs Committee meet with Congressman Michael N. Castle in Wilmington on Friday, February 27, 2009. Participants are (from left to right) Al Denio, Representative Michael N. Castle, John Gavenonis, and Martha Hollomon.

America Needs Renewed Emphasis on Science and Engineering to Rebuild the Economy

United States

Senator Ted Kaufman

Scientists and engineers have always been the world's problem solvers, making a huge difference in people's lives and their quality of life. Clean water, life saving cures for cancer and disease, clean, renewable petro-free energy, affordable health care and environmental sustainability: these are just a handful of the great challenges that young scientists and engineers can set as personal goals and help to achieve.

If we are to tackle these immense challenges, we can no longer wait to begin training our nation's future scientists and engineers until after they leave the K-12 education pipeline.

I know from personal experience that if you can't get a young person interested in tackling and learning calculus while they're in high school – or pre-calculus while they're in middle school – they're lost as possible scientists or engineers. We all know, however, how difficult it is to convince a teenager that calculus is fun. We must show them that the way to make a difference is through science and engineering – which means taking calculus. I have no doubt that in return, students will dedicate themselves to making it through this gateway course.

America has pressing needs, and our next generation of scientists and engineers will play a key role. There are four things I think we must do better:

First, we must build on the theme that science, engineering, and innovation are the keys to American economic success in a global economy. I am so pleased that President Obama has set a goal of devoting more than three percent of our economy to research and development – a feat that will require significant federal as well as private investment. The American Recovery and Reinvestment Act has already provided over \$20 billion of federal funds to science research as a down payment on this target.

Second, the science and engineering community must show that stimulus funds dedicated to research and development are delivering positive and innovative results that will help



continued on page 10

Senator Ted Kaufman *continued from page 9*

lead America on the path to economic recovery and prosperity. They will help us build a clean energy economy, stay competitive in a globalizing world, and drive real-world applications from health and science research that will improve the quality of our lives. The science community, however, must connect the dots for the public to see that stimulus funds spent on science research deliver dividends, including millions of new jobs, for us all.

Third, we must encourage a new generation of engineers through policies that promote STEM education — science, technology, engineering and math. Earlier this summer, I introduced the STEM Education Coordination Act [S.1210], which tasks the National Science and Technology Council with coordinating STEM activities for federal programs that have often worked independently of each other. These include the Federal STEM programs at the National Science Foundation, the Department of Energy, NASA, NOAA, the Department of Education and others.

This bill is almost identical to a version that passed overwhelmingly in the House. It will ensure that our federal STEM education programs are working as efficiently and effectively as possible, so that our investments succeed in bolstering achievement and interest in engineering education.

Lastly, we must also promote policies that encourage women and under-represented minorities to enter science and engineering. Women constitute about half of the students in our higher education system and about half of the overall workforce. But they comprise just slightly more than twelve percent of the science and engineering workforce. African Americans hold only 4.4 percent of science and engineering jobs and Hispanics hold just 3.4 percent. We can, and must, do better.

Earlier this year, a group of thirteen Senators — both Democrats and Republicans — joined me in sending a letter to the Appropriations Subcommittee on Agriculture to express strong support for funding to increase the participation of women and under-represented minorities from rural areas in STEM fields. The House and Senate conference report, which will be sent to the President, includes \$400,000 for research funding at land grant universities for women and minorities in STEM fields. This is a small, though important, first step that we can continue to build on from year to year.

The silver lining in the financial crisis is the opportunity to shift our priorities in many positive ways. This includes inspiring our students, as we did during the race to the moon, to address the extraordinary challenges facing our country and our world. What better way to do this than through STEM education. I know that if given the opportunity, a new generation of engineers and scientists will step up to meet these challenges.

CHEMVETS

TOPIC: *On Climate Changes and Sustainable Water Environment: Impacts and Strategic Adaptation.*

SPEAKER: Professor C. P. Haung, (University of Delaware)

DATE: Tuesday, February 17, 2009

PLACE: DuPont, Chestnut Run

TIME: 12:00 Lunch (Admin. Bldg.)
1:00 Lecture (Bldg. 713 auditorium)

INFORMATION:

George Parshall (658-2066; parshallgw@aol.com)

BIOGRAPHY:

C. P. Huang received his BS (Civil Engineering) from the National Taiwan University in 1964. He earned his MS in environmental engineering and a Ph. D. in aquatic chemistry from Harvard. He taught at Wayne State 1971-74 before joining the University of Delaware. Presently, Dr. Huang is the Donald C. Phillips Professor in Civil and Environmental Engineering. Dr. Huang's research and professional expertise are in the environmental physical-chemical processes for water treatment. He has extensive research and practical experience in the chemistry and control of heavy metals and the removal of trace organic contaminants from water and wastewater. Dr. Huang is the author and coauthor of over 300 technical publications in three subject areas: adsorption from solutions, advanced chemical oxidation, and electrochemical. Dr. Huang has supervised thesis research of approximately 100 graduate students. He is the co-founder of the International Conference on Sustainable Water Environment and the International Conference on Drinking Water Quality Management and Control Technology.

Delaware Section of the American Chemical Society

April General Meeting

Securing Our Future – A Perspective From DuPont's
Chief Security Officer

Mr. Raymond A. Mislock, Jr., Chief Security Officer of DuPont

Date: Thursday, April 9, 2009

Location: TBA

Time: 6:00 PM – 8:30 PM

Cost: TBA

For reservations or additional information:

Please contact Kai Qi at: Kai.Qi@usa.dupont.com (preferred) or 302-999-2771 by Monday, April 6, 2009.

Biography:

Dr. Raymond A. Mislock, Jr.

Ray Mislock was appointed Director, DuPont Corporate Security on January 1, 2001. After a public service career of more than thirty years, Ray joined Corporate Security on December 1, 1999, as the Assistant Director. On September 1, 2007, Ray was appointed as DuPont's first Chief Security Officer.

Immediately prior to joining DuPont, Ray served for two years as the Associate Deputy Director for Administration for Security for the Central Intelligence Agency. As the senior security executive for the Agency, Ray managed information, personnel, and technical and physical security operations worldwide.

Prior to his Agency service, Ray completed a 25-year career with the Federal Bureau of Investigation as the Special Agent in Charge of the FBI's National Security Division of the Washington Field Office where he directly managed counterintelligence, counterespionage and counterterrorism investigations.

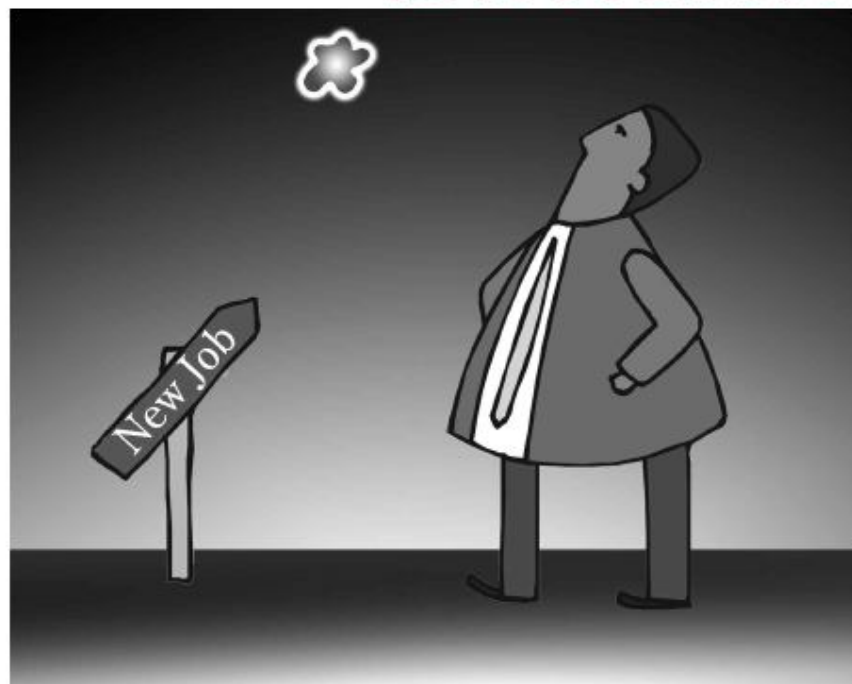
Ray was appointed as a Special Agent in May 1972, and following graduation from the FBI Academy, Quantico, Virginia, his Bureau career included assignments in Jackson and Greenville, Mississippi, Los Angeles, San Francisco and Washington, D.C. Ray's duties while in Washington, D.C. included a three-year special assignment to the U.S. State Department as the Director of Counterintelligence in the Bureau of Diplomatic Security and one year at the National Security Council, Office of Intelligence Policy as the Director of Counterintelligence Programs.

DEL-CHEM

MARCH 2009

Volume 66/3

Bulletin



Career Seminar

Co-Sponsored by the University of Delaware Career Services Center

Monday, March 16, 2009

Perkins Student Center
University of Delaware



For information on section activities visit our web site at:
<http://membership.acs.org/d/del/>

Dr. Cynthia H. Stahl

Biography: Dr. Stahl received her Ph.D. in environmental policy analysis from the Center for Energy and Environmental Policy at the University of Delaware, her M.S. in toxicology from the University of Texas, School of Public Health, and her B.A. in biology from the University of Pennsylvania. Ms. Stahl is currently an environmental scientist at the U.S. Environmental Protection Agency, specializing in environmental policy analysis. Her expertise includes air quality programs, integrated health and ecological analyses, and addressing uncertainty in decision making.



CHEMVETS



Topic: *Ocean Science in the 21st Century.*

Speaker: Professor Nancy Targett (Univ. of Delaware)

Date: Tuesday, Nov. 17, 2009

Place: DuPont, Chestnut Run

Time: 12:00 Lunch (Admin. Bldg.)
1:00 Lecture (Bldg. 713 auditorium)

Information: George Parshall (658-2066; parshallgw@aol.com)

Biography:

Nancy Targett is Dean of the College of Earth, Ocean, and Environment at the University of Delaware. She is also Director of the Delaware Sea Grant College Program. She has served on the Ocean Studies Board of the National Academy of Science, been a trustee for the Consortium of Ocean Leadership, and held multiple leadership positions in the International Society for Chemical Ecology, the National Sea Grant Association, and the Mid-Atlantic Fisheries Management Council. She has also served on several expert panels for the National Research Council. Dr. Targett earned a B.S. in Chemistry and Biology from the University of Pittsburgh, a M.S. in Marine Science from the University of Miami, and a Ph.D. in Oceanography from the University of Maine. Her specialty is marine chemical ecology. As Dean she facilitates cross-disciplinary interactions to address complex environmental issues and emphasizes the importance of making clear linkages between science and society.

CHEMVETS

Topic: **Recent Developments in the Conversion of Biomass to Renewable Fuels and Chemicals**

Speaker: Leo E. Manzer (Catalytic Insights, LLC)

Date: **Tuesday, October 27, 2009**

Place: DuPont, Chestnut Run

Time: 12:00 Lunch (Admin. Bldg.)
1:00 Lecture (Bldg. 713 auditorium)

Information: George Parshall (658-2066; parshallgw@aol.com)



Biography:

Dr. Manzer is President and CEO of Catalytic Insights LLC, a company that he founded following a 32-year career at DuPont, where he rose to the level of DuPont Fellow. He is an active consultant in the field of biomass to renewable fuels and chemicals. He works extensively with venture capital firms looking for new opportunities and serves on the Scientific Advisory Boards of many small to large companies. He has over 120 issued US patents, with over 50 more in the patent office. He has been honored by numerous awards including three ACS Awards, the Catalysis Club of Philadelphia Award, and the Eugene Houdry Award for Applied Catalysis.

Dr. Manzer earned a B. Sc. in chemistry from the University of Waterloo, and a Ph.D. in chemistry from the University of Western Ontario before joining DuPont. During his career at DuPont, he founded and directed the Corporate Catalysis Center, and played key roles in the development of replacements for CFCs, Conoco's GTL (gas to liquids) program, and the thermochemical conversion of biomass into fuels and chemicals.

Abstract:

The rapid growth in consumption of petroleum for transportation fuels, chemicals and energy is not sustainable. Furthermore, the majority of oil reserves are in relatively unstable and unfriendly regions of the world. Therefore, development of technology that uses agricultural, animal, forestry and municipal solid waste as renewable feedstocks is critical to the U.S. economy and national security. Therefore it presents a significant opportunity for new catalysis, chemistry and process research. This presentation will give an overview of some emerging technologies for fuel and chemical applications.



Tough Times

Al Denio, Section Councilor

The Economy

As I write this a few days before Christmas, our economy seems to be heading into a black hole. The Chrysler plant in Newark has just closed forever, duPont and Hercules are downsizing and most other employers in Delaware seem headed in the same direction. At this point I do not know how many of our ACS members are out of work but the situation sounds damn scary.

If you are a victim of the present economy, I am reminded of that old advice to take that lemon and make lemonade. Maybe now is the time to start your own business, write a book, go after a new degree (M.D.'s are still in demand), train for the next Olympics or run for a political office. Then there is the military option – the Army is hiring.

DEL-CHEM BULLETIN – FEBRUARY 2009



I Survived Salt Lake City

Al Denio, Section Councilor

Are You Going Green? – Wisconsin mandated curbside recycling many years ago so Val and I were shocked upon moving to Delaware ten years ago and learning that recycling was voluntary. Thus I began periodic trips to the recycling dumpster on the U.D. campus. In winter, this was often dangerous when the dumpsters were surrounded by ice. In summer I was often attacked by hornets who seemed to like to hang out with plastic bottles. Finally, we resorted to curbside pickup from the Delaware Solid Waste Authority at a hefty fee of \$6 per month. This summer the City of Newark will begin a weekly “free” pickup service (“free” means paid for by my taxes).

If you do not presently recycle, I hope that you will soon join the effort to save our planet. First of all, by recycling you will send much less to a landfill so it will last longer. Secondly, we are able to reprocess paper, cardboard, glass, plastics and metals into useful products through creative chemistry. Cellulose fibers can be reclaimed and converted into newspapers and toilet paper (sometimes I know it is hard to tell the difference!)

Aluminum cans are a prime example of the importance of recycling. The element is obtained from bauxite ore, mined in foreign countries. The metal is obtained from the ore in a very expensive electrolytic process at very high temperatures. Eventually, most of this aluminum is made into beverage cans. After use, the metal in the can is easy to melt and recycle, needing only about 5% of the energy needed to produce aluminum from the ore. Throwing this metal into the trash is a major sin!

Recycling is an easy way to reduce energy consumption so please join in the fun – “we gotta do it!”

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DEL-CHEM BULLETIN – MAY 2009



Change Is Upon Us!

Al Denio, Section Councilor

2008 was indeed a year of change, some positive and some not. Local, state and federal elections dominated much of the news. Regardless of who won, it is a relief to have it over. Hercules and Rohm and Haas have been purchased – we hope that most of those jobs will remain here. Our economy has gone way South and taken investments plus home values to Never-Never Land. You too were passed over by the Nobel Committee and must hope to still be alive next October. My beloved Red Sox lost to the Rays but the Phillies won it all. And for more good news, a wind farm will be built off the Delaware coast.

Our Delaware Section had another great year and please remember to thank Sujata and the other Excom members for their efforts. Our National Chemistry Week event on November 8 was very successful and thanks to Narmada who was in charge.

The Delaware Academy of Chemical Sciences joined the NCW program and thanks to Cofounder Solito Sumulong for arranging the participation of students from the Rodney Street Tennis and Tutoring Association. They demonstrated the impact of chemistry on the transformation of tennis racquets from wood plus catgut to today's space age materials. Thanks also to Steve Printz of Speedo-USA who displayed their LZR Racer swim suit that you saw in the Beijing Olympics. We also handed out impressive Periodic Tables-Conversion Tables-Chemical Solution guides provided by VWR Chemicals to Martha Holomon. The Grand Finale was the Chemical Demonstration Show by Mike Steniski.

The Obama Administration-As I write this in late November, the President-elect is looking for talent to staff his new administration. You

can go online and fill out a seven page form with 62 questions if you wish to join his team.

If I was twenty years younger, I would be tempted to apply. However, if you survive the initial screening by Homeland Security, the F.B.I. will appear at your door to ask many personal questions. A few samples appear below.

- Did you smoke “weed” in college? Do you still? When was your last drug test?
- Did you drink ethyl alcohol in college? Do you still? Beer, wine or liquor? How many per day?
- Did you share your plumbing with others in college? Do you still?
- Are you married? How many times?
- Do you play with chemicals in your basement or garage? Then they get worse.

I decided to opt out due to age and its consequences – failing eyes, ears, joints and brain. Besides, as a Professor, I drank beer with some suspect colleagues. One of my running pals was a Marxist. My dentist turned out to be a member of the John Birch Society. And I knew some pretty shady coeds.

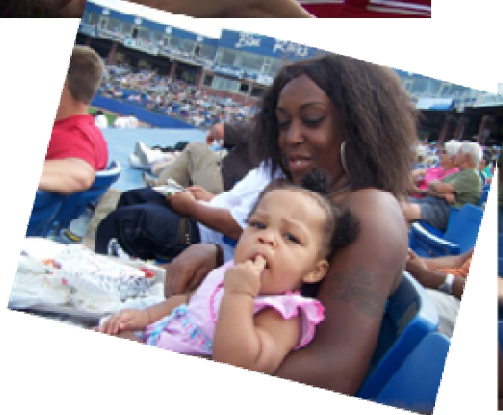
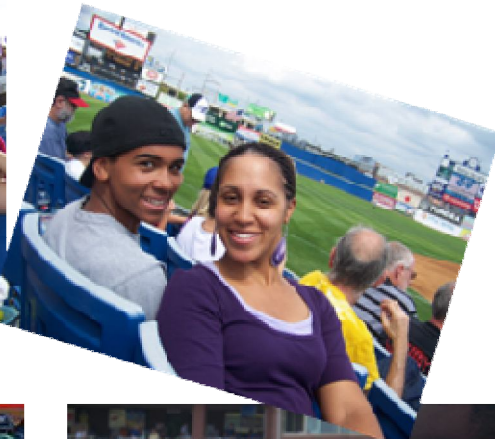
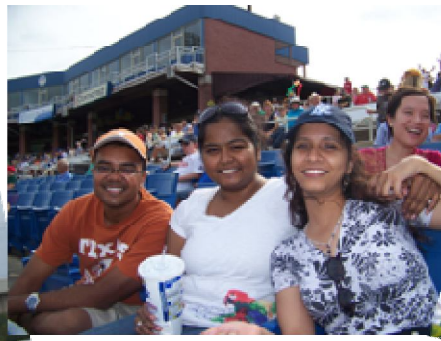
In my present state of decrepitude, perhaps I could serve in Obama's Cabinet as a hydro-chemist – I could fill the water glasses. Perhaps I could walk the dog or serve as a speed bump in the White House driveway. Better yet, I could use my vast chemical background and serve as Official Bartender.

Upon sober reflection, it is best if I remain in Delaware, attend Section meetings and ponder C&E News. Please join me at the January meeting!

DEL-CHEM BULLETIN – JANUARY 2009

13

YCC Blue Rock Baseball Outing



ACS Board Member, Director-At-Large, Dr. William F. Carroll, Jr. – Delaware Visit
March 12, 2009



Dr. Bill Carroll speaking in Delaware – pre-assemble at St. Mark's High School, Brandywine High School, Tower Hill School and Charter School of Wilmington.



Dr. Bill Carroll talking with Dr. Pam Rush, Science Teacher, Charter School of Wilmington, Delaware