

# AMERICAN CHEMICAL SOCIETY DIVISION OF ANALYTICAL CHEMISTRY NEWSLETTER









SUMMER 2002 ISSUE

# Homeland Security and Analytical Chemistry



By Catherine Fenselau,
Department of Chemistry and
Biochemistry
U. Maryland and
current DAC chair.

In a workshop at the National Science Foundation in January, Randy Murch, Ph.D. and Deputy Assistant Director of the FBI, brought a message to the chemistry community: "We need help and we need it now."

Following the events of the fall, analytical chemistry finds itself at center stage. We have unprecedented responsibilities and opportunities to contribute to issues of national importance. In a number of meetings throughout the winter and spring, our political and scientific leaders have called on the chemical community to provide rapid, sensitive, novel technologies for stand-off and point detection and sensing. One of these public forums was the symposium organized by the ACS Committee on Science for the national meeting last April, in which both science policy leaders and analytical chemists spoke. Chemical and biological agents, as well as explosives, are targets of concern. In addition, chemists are being called on to contribute to personal protection gear and to

develop substances for neutralization and detoxification.

The U.S. Department of Defense has supported development of analytical instrumentation to monitor battle spaces and warfighters for some years. However, the requirements for continuous automated monitoring of subways, buildings and public spaces are new. The goals are to develop real-time, robust, automated sensors cabable of detecting agents well below incapacitating levels. Analytical technologies are also needed to protect animal and crop health, and for rapid diagnoses of humans to confirm infection or chemical exposure. Active technologies include immunochemistry, all kinds of spectroscopy (including PCR readout), ion mobility spectrometry and mass spectrometry. There are important contributions to be made by computational chemists and computer scientists. Progress in portable fuel cells and batteries is sorely needed, and important opportunities exist to deploy new materials in analytical systems.

Henry Blount urged, and the Program Committee and the Executive Committee agreed, to support a series of symposia through several upcoming national ACS meetings, which will highlight analytical chemistry's central role in homeland security and national defense. In Boston this August we will have an overview of critical technologies across all specialty areas. In New Orleans (March, 2003) a symposium will review progress and challenges in miniaturization of instruments. For the national meeting in New York City, September 7-11, 2003, our Division is planning a full day symposium on analytical support for first responders. The New York symposium will focus on systems that are available now. The major objectives of these symposia are to encourage the chemical community to focus its creativity on new analytical paradigms for counterterrorism, to encourage students to make careers in analytical chemistry, and to inform the public about our science and our contributions to homeland security.

Summer Meeting

Angust, 18-22, 2002



#### YOU'RE INVITED TO OUR NEXT MEETING

The executive committee will meet in Boston, time and location to be announced.

You may suggest items to be discussed by sending them by electronic mail to Prof. John N. Richardson or by fax to (717) 477-4048.

#### The Division

1) Provides a forum for discussions of advances in Analytical Chemistry. 2) Increases awareness of the field on other scientists and the general public. 3) Encourages students to select Analytical Chemistry as their field of study. 4) Advises the ACS on matters related to Analytical Chemistry and 5) Offers analytical chemists opportunities for professional contacts.

#### Mission of the DAC

The promotion of analytical chemistry in all of its aspects; the presentation of programs of papers on analytical chemistry and related fields at national meetings of the Society; cooperation with local sections and regional groups; the organization and sponsorship of symposia on topics of interest to analytical chemists; the development of activities which will promote the growth of analytical chemistry; and the establishment of means for increasing the professional status of and the contacts between analytical chemists.



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DIVISION'S WEB SITE: www.acs-analytical.duq.edu/ analytical.html

## **Boston Program**

Sheraton Boston	s	М	Т	w	Т
Bioanalyses in the Micro to Nano-flow Regime* (BIOT)	D				
Noninvasive and Minimally Invasive Glucose Sensing Technologies for Diabetes	D				
Bioinformatics, Genomics, and Proteomics* (BIOT)	D				
Challenges in the Characterization of Flavor Compounds* (AGFD)	D	D	D		
Novel Applications of Atomic Force Microscopy* (COLL)	D	DE			
Celebrating Women in Analytical Chemistry** (YCC, WCC)	DE				
Environmental Analytical Chemistry in the Laboratory* (CHED)	Р	Α			
Posters	E				
Advances in Affinity-Based Techniques for Drug Characterization and Analysis		Α			
Divisional Awards in Analytical Chemistry		D			
Biotechnology and Bioanalytical Methods: The Next Generation* (AGRO)		Р			
Sci-Mix (Conv. Center)		Е			
Electrodriven Separation Methods			А		
Advances in Chromatography Scale-up* (BIOT)			Α		
Analytical Chemistry for Homeland Defense and National Security			D		
HPLC Method Development Strategies* (AGRO)			Р		
Analysis of Trace metals and Contaminants in Fertilizers, Soils and Plants* (AGRO)				Α	
Factors for Success - Collaborations in Research** (YCC, WCC)				D	
Chemical Science w/ Synchrotron Radiation** (POLY, BIOL, CHED, GEOC, INOR, ENVR)				D	
Principals of Environmental Sampling and Analysis – Two Decades Later* (ENVR)				D	D
Analysis of Trace Metals and Contaminants in Fertilizers, Soils and Plants* (AGRO)				Р	
Chemometrics and Chemoinformatics* (COMP)				Р	D
Microchemical Reactors: The Analytical Challenge					Α
Surface Plasmon Resonance					Р

Legend A = pm; P = pm; D = am/pm; E = eve; DE = day/eve; PE = pm/eve;

# The Division Dinner at the Boston Meeting



### **Legal Sea Foods**

Park Square Location 26 Park Plaza, Boston.

Phone: (617) 426-4444

It's a 4-5 block walk from the Convention Center or a ~\$4 cab ride.

\*\*\*\*\*Bob Appetit Magazine: September 2000 Favorite Restaurants Award

#### Monday 8/19/02 Social Hour (Cash Bar) 6-7 p.m. Dinner 7 p.m.

Choice of Baked Scrod (Boston favorite), Nutty Salmon (everyone's favorite), Chicken Marsala or Vegetarian entrees.

\$49 per person (Please order tickets when you pre-register)

<sup>\*</sup> Cosponsored symposium, primary organizer(s) shown in parentheses.

<sup>\*\*</sup> Primary organizer, cosponsored symposium.

## Boston Analytical Division Program

by D. Pinkeston, P&G

The Analytical Division's program for the 224<sup>th</sup> National ACS Meeting will encompass both cutting-edge science and discussions of social issues relevant to today's analytical workforce:

In recognition of ACS's "Year of the Woman", and the 75<sup>th</sup> Anniversary of the Women's Chemist Committee, Analytical Division will kick off it's program with a fullday symposium celebrating the contributions of women in analytical chemistry on Sunday, 8/18/02. This symposium will extend into the evening with a reception and invited poster presentations. The importance of collaboration between the sexes will be reinforced by a full-day symposium on Wednesday, 8/ 21, titled "Factors for Success - Collaborations in Research". These symposia are co-sponsored by the WCC and the Younger Chemist's Committee (YCC).

Dealing with another topic of paramount importance in today's world, "Analytical

Chemistry for Homeland Defense and National Security", scheduled for Tuesday, 8/20, will bring together experts to address these topics from a variety of viewpoints.

On Monday, 4/22, the Division will present its annual awards (see information elsewhere). Wednesday will feature a full-day pedagogical symposium on the nature and uses of Synchrotron Radiation. The views of the authors will be both within and beyond analytical chemistry, thus the title "Chemical Science Using Synchrotron Radiation", as

Noninvasive and minimally invasive glucose sensing will be featured in a full-day symposium on Sunday, 8/18.

well as a long list of co-spon-

soring divisions.

Other symposia will cover advances in affinity-based drug characterization, electrodriven separation methods, microchemical reactors, and analytical surface plasmon resonance spectroscopy.

### **DAC Graduate Fellowships**

(continued from column 3)

who have completed or soon will complete their terms – Dr. Grover Owens from Procter & Gamble (Grover was a 1977 academic year fellowship recipient), Dr. Candace Sass from Eastman Chemical, Dr. Eugene Rickard from Eli Lilly, Mr. Al Sharkins from the Society for Analytical Chemists of Pittsburgh, and Professor; Margaret Merritt from Wellesley College (30-year Committee member and

Committee Chair from 1983-1987). They have our gratitude and thanks for the wonderful work they have done for the Committee.

Further information about the DAC Graduate Fellowship Program can be found on the Program web site (http://www.wabash.edu/acsgraduatefellowship/home.htm).

## **DAC Graduate Fellowships**

by R.Dallinger, Wabash College

The DAC Graduate Fellowship Committee is pleased to report that the following graduate students have accepted Division of Analytical Chemistry fellowships for 2002-2003. We are grateful to the corporate sponsors for their financial support of the graduate program.

#### Academic Year Fellowship Recipients (\$18,000 stipend):

Recipient	Institution	Advisor	Sponsor
Carrie Donley	Arizona	Neal Armstrong	P&G
Joel Kimmel	Stanford	Richard Zare	Merck
Shane Peper	Auburn	Eric Bakker	Lilly
Kimberly Roy	Alberta	Charles Lucy	DuPont

#### **Summer Fellowship Recipients (\$6,000 stipend):**

Recipient	Institution	Thesis Advisor	Sponsor
Zoraida Aguilar	Arkansas	Ingrid Fritsch	J&J-PRD
Frederick Cox	Delaware	Murray Johnston	SACP
Amanda Haes	Northw.	R.Van Duyne	Eastman C.
Fanyu Meng	Illinois	Neil Kelleher	Dow Found.
Allison Null	Virginia Cm	David Muddiman	SACP
Michael Roper	Florida	Robert Kennedy	SACP
Rachel Smith	Penn State	Paul Weiss	SACP

(SACP = Society for Analytical Chemists of Pittsburgh)

(J&J-PRD = Johnson & Johnson Pharmaceutical R&D)

#### **Honorable Mention:**

Applicant	Institution	Thesis Advisor
Christine Hughey	Florida State	Alan Marshall
Christopher Orendorff	Arizona	Jeanne Pemberton
Andrew Pris	Iowa State	Marc Porter

An article congratulating these students will appear in the September 1, 2002, edition of Analytical Chemistry.

It is interesting to note that three of the **thesis advisors** for the 2002-03 graduate fellowship recipients and honorable mention applicants were themselves DAC graduate fellows: Neil Kelleher (1996 academic year), Robert Kennedy (1987 summer) and Jeanne Pemberton (1980 summer).

The members of the Graduate Fellowship Committee who generously gave many hours of effort were: Curt Cleven – Eastman Chemical (sponsor); Paul Edmiston – College of Wooster; Patrick Epperson – Lawrence Livermore National Laboratory; Susan Forest – Procter & Gamble (sponsor); Nile Frawley – Dow (sponsor); Angela Harmon – Merck (sponsor); Mary Kaiser – DuPont (sponsor); Margaret Merritt – Wellsley College; Eugene Rickard – Eli Lilly (sponsor); Allen Sharkins – Society for Analytical Chemists of Pittsburgh (sponsor); and James Weber – R.W. Johnson Pharmaceutical RI(sponsor).

The Committee would like to recognize the following members (Continued on page 3 column 1 bottom)

# Special Tribute to Professor Margaret V. Merritt

The Graduate **Fellowship** Committee wishes to pay special tribute to Professor Margaret V. Merritt of Wellesley College, who is leaving the Committee after 30 years of exceptional service, including four as Chair (1983-1987). Peggy has been an enthusiastic supporter of the mission of the DAC Graduate Fellowship Program and has brought incredible wisdom and energy to the selection of the Graduate Fellows for the past three decades. During that time, Peggy has read almost 1500 fellowship applications and has participated in the selection of over 300 Graduate Fellows. Peggy Merritt has had a significant impact on the discipline of analytical

chemistry through her work on the Committee, as well as through her teaching and research. Peggy noted in her final message to the Committee Chair that, "I am grateful being



able, through this process, to know many of the current leaders in analytical chemistry at an early stage of their careers. Seeing the many fine applicants for these awards gives one great hope for the future of our discipline; it will be in very capable hands."

Peggy graduated from the College of Wooster in 1964 and earned her Ph.D. in 1968 from Cornell University. Following postdoctoral appointments at the University of California Riverside and Carnegie Mellon, Peggy taught at Franklin and Marshall College from 1970-1972. Peggy held the position of Research Chemist and Head of Physical and Analytical Research at Upjohn from 1972-1982; it was during this time that she became a member of the Graduate Fellowship

Committee. In 1982, Peggy joined the Chemistry faculty at Wellesley College, where she is currently Professor of Chemistry.

Thanks, Peggy! Your efforts on behalf of the Graduate Fellowship Committee have been truly above and beyond the call of duty. You will be greatly missed

R. Dallinger Wabash College Graduate Fellowship Committee Chair

## Pfizer Graduate Travel Awards

The Division of Analytical Chemistry of the American Chemical Society has established the Pfizer Graduate Travel Awards in Analytical Chemistry. The award provides funding for graduate students to travel to an ACS National Meeting and to present the results of their research in the form of a poster at the Poster Session of the Division of Analytical Chemistry. Funds from the Pfizer Award may be applied toward registration, travel, and accommodations. Only U.S. citizens and permanent residents are eligible. Preference will be given to those applicants who have not made a previous presentation at

a National scientific meeting. Five Awards up to \$1000 will be made on the basis of both scientific merit and financial need.

The recipients of the 2002 Award are:

Jesse Buch, U. Maryland. Michael Hurray, U. N.C. Bryan Ray, U. Wyoming Jeffrey Stuart, U.Illinois Jennifer Thomas, U.Cincin.

The next deadline for applications will be announced at the DAC web site in late 2002.

## Symposia at the New Orleans ACS Meeting March 23-27, 2003

The Division is organizing the following symposia for the Spring 2003 meeting

- \*Present and Future Technologies in Chemical Instrumentation.
- \*From Sensor to Functional Instruments.
- \*Microelectrochemical Systems and Arrays.
- \*Capitalizing on Data Diversity: Interfacing Advances in Informatics and Measurements.
- \*Compatibility and Stability Issues in Materials for Chemical Sensing and Analysis on a Chip.

- \*Process Analysis.
- \*Function Based Approaches to Analysis.
- \*Analytical Chem. Workforce of the 21<sup>st</sup> Century.
- \*Fieldable Instrumentation for Homeland Defense.
- \*That Technique Won't Work because.....
- \*Surpassing the Limitations of Analytical Instrumentation.
- \*Award Symposia.

# Subdivision of Chromatography and Separations Science

## Officers' Elections

The Sub-Division will be holding an election for the office of Chair-Elect, Secretary and for three members of the Executive Committee. Chair-Elect serves for two years then automatically succeeds to the-Office of Chair. In conjunction with other members of the Executive Committee, one of the primary responsibilities of the Chair-Elect is to organize scientific programs at national ACS meetings. Prof. John Dorsey of Florida State University's Department of Chemistry, Tallahassee, FL is this year's candidate for Chair-Elect. For Secretary, Bob Stevenson of the Abacus Group and Douglas Raynie, Chemistry and Biochemistry Department, South Dakota State University are the Candidates.

**Executive Committee members** serve for two years. Both officers and committee members are expected to participate in yearly Subdivision meetings, provide inputs to the program committee on sponsored symposia at local section, regional and national meetings, and generally work to increase the professional status and contact between scientists interested in chromatography and separations chemistry. This year there are five candidates for three positions. They are:

Matt Przybyciel of ES Industries, Berlin, NJ; Prof. John Nikelly, Chemistry Department, University of the Sciences in Philadelphia. PA; Linda McGown, Chemistry Department, Duke University, Vincent Remcho, Chemistry Department, Oregon State University, and Janusz Pawliszyn, University of Waterloo, Canada.

Ballots will be in the mail to all Sub-Division members shortly.

### Young Investigators Award in Separation Sciences Proposed

Subdivision member inputs on the establishment of a Young Investigators Award in Separation Sciences will be solicited on the upcoming election ballot. The Award would be based on the contributions of separations' chemists who have been working in the separations field for less than ten years since obtaining their Ph.D. or advanced degree. The Award would consist of a plaque, a cash prize, and a special technical Award session at a national meeting. The Subdivision officers would establish the criteria for the Award and an Award subcommittee consisting of appointed Subdivision members would evaluate nominees for the Award. Any company or institution that would like to be considered for Sponsorship of this Award should contact Chair-Elect, Vicki McGuffin, e-mail: jgshabus@aol.com.

> FACSS: The 29th Annual Meeting. Providence, RI October 13 - 17, 2002 Rhode Island Convention Center

> > info @ WWW.FACSS.ORG

# Meeting at Pittcon

Since many members of chromatography munity attend the Pittsburgh Conference, the Annual Meeting of the Subdivision traditionally takes place at Pittcon after the Dal Nogare Symposium, always held on Monday morning. This year's event took place on March 18, where new officers of the Subdivision were introduced: Vicki McGuffin, Michigan State University, Chair-Elect and Executive Committee members, Bob Stevenson, Abacus Group, Susan Olesik, Ohio State University, and Brian Bidlingmeyer, Agilent Technologies. Recent changes in Bylaws dictated that offices will be held for two years and to bring election process into synchronization, it was decided to conduct another election this Summer for officers and **Executive Committee members** whose terms on expiring this Fall.

One of the main activities of the Subdivision is to sponsor sessions at ACS National Meetings. For the Sping meeting in Orlando, the Subdivision was a sponsor of a Symposium on Polymer Separations organized by Prof. Susan Olesik and chaired by Prof. Catherine Fenselau, University of Maryland. For the upcoming Fall meeting in Boston, the Subdivision is a cosponsor of three Symposia:

HPLC Method Development, organized by K.J. Norris, Pfizer, Inc. Advances in Affinity-Based Techniques for Drug Characterization, organized by D. Hage, University of Nebraska.

Electrodriven Separation Methods, organized by I.Krull, Northeastern Unversity and L. Colon, The State University of New York-Buffalo.

Ideas for future Symposia were discussed including the possibility of annual symposia in ion chromatography, field flow fractionation and size exclusion chromatography. Interested organizers should contact, Victoria McGuffin, email: jgshabus@aol.com. Ways to promote the Annual meeting prior and during Pittcon, when and how to begin a Subdivision website within the DAC website, and on the establishment of a Young Investigators Award in Separation Science were other topics covered.

Ron Majors, Sub-Division Secretary

### Pacifichem 2005 Hawaii, December 15-20,2005



Call for papers starting September 1st, 2002

Details can be found at: www.pacifichem.org

Analytical contact: Mike Ramsey at ramseyim@ornl.gov

# DAC dinner at the Orlando meeting



Graham Cooks (I), Henry Bohn Hass Professor @ Purdue U., Michael Gross, Washington U., and Allan Marshall (r), Director Nat. High Magnetic Field Lab.



Nizamov Negmat, attendee from Samarkand U., Uzbekistan, receives a copy of the ACS meeting abstracts from our DAC chair Catherine Fenselau.



Kolthoff awardee Helen Fleisher (l) with Cynthia Larive (r), DAC Education Committee.



J.D. Tate, DAC Awards Committee with Allan Newman, Managing Editor of the Analytical Chemistry Journal.



Linda Bly with Don Bly (l) Frank A. Guthrie, former DAC Chairs. Don is the 2002 DAC awardee for distinguished service.



John Richardson, DAC Secretary with Royce Murray, Editor of the Analytical Chemistry Journal and Jenny Richardson.



DAC Councilor and Web Editor Roland Hirsch, Councilor Sally Stafford, and Don Jones.



John Richardson, hands out a recognition plaque to Bruce Chase, former DAC chair.



Anna and Ed Yeung with Catherine Fenselau.

#### DAC KOLTHOFF Student Awardees at the Orlando Meeting



Kristin Smith



Jennifer Gasser



**Aubrey Dyer** 



Helen Fleisher

# Recipients of the 2002 Division of Analytical Chemistry Awards

Division of Analytical Chemistry AWARD IN CHEMICAL INSTRUMENTATION

2002 AWARDEE

JONATHAN V. SWEEDLER

Jonathan V. Sweedler William H. and Janet Lycan Professor of Chemistry University of Illinois, Urbana

Professor Sweedler received his B.S. degree in Chemistry from the University California at Davis in 1983 and his Ph.D. from the University of Arizona in 1989. Thereafter, he was a NSF Postdoctoral Fellow with Dr. Richard Zare and Dr. Richard Scheller at Stanford University, and joined the faculty at the University of Illinois, Urbana in 1991. He is associated with the Beckman Institute. Biotechnology Center, Neuroscience Program and Bioengineering Program. He is currently a professor in the Analytical Area of the Department of Chemistry, the Neuronal Pattern Analysis and Biological Sensor Groups at the Beckman Institute, and of Bioengineering with major research interests in developing new analytical instrumentation for determining the chemical composition of complex microenvironments. Much of his group's work involves scaling spectroscopic methods to the nanoliter to attoliter volume regimes to allow the identification and quantitation of neuroactive compounds from cellular microenvironments.

Prof. Sweedler's group has developed several unique detection systems for capillary electrophoresis that enable low concentration assays of several classes of signaling molecules from microenvironments. As one example, they created a unique post-column radionuclide detection system for capillary electrophoresis that obtains nearly a thousandfold increase in sensitivity compared to previous methods, and allows the detection of <sup>3</sup>H-labeled compounds for the first time. He and his collaborators have developed nanoliter volume NMR spectroscopy. Before this work, there were

published examples of high resolution NMR spectroscopy for nanoliter-volume liquid phase Over samples. the last six years, they have developed microcoil rf probes that significantly improve the

mass sensitivity of high resolution NMR. been implemented. Their initial success in this area has been demonstrated by a number of firsts including: the first demonstration of NMR detection for capillary electrophoresis; the first detection for microbore LC, the first detection sensitivity for static measurements in the low picomole range for a one minute acquisition (described in a report in Science), and even the creation of a small company based on this technology.

His research group has also developed new matrix-assisted laser desorption/ionization time-of-flight mass spectrometry protocols to profile the peptides in individual neurons and cellular processes. They have

obtained high quality mass spectra from samples ranging from single cells, nerves, single processes, as well as nanoliter volume desalting methods, and used these to discover multiple new neuropeptides. A technical tour-de-force, his group has developed mass spectrometric sampling protocols that allow them to assay individual attoliter-volume peptide-containing vesicles; using this technique, they detect new peptides and unexpected peptide processing in single vesicles, and are now studying how products from

> multiple genes are packaged within individual vesicles.

A subset of Sweedler's research is designed to understand the molecular (chemical) nature of learn-

ing and memory. By advancing the instrumental capabilities in separation science and in spectroscopy, significant gains have been made in understanding the distribution and release of neurotransmitters from individual cells in several invertebrate model systems. One of the underlying goals of scientific research over the past century has been to understand the nature of thought. The involvement of the chemical sciences in this problem is growing as attention turns to dynamic measurements. Specifically, the new instrumental methods Sweedler and his group have developed allow trace-levels of the chemical signaling molecules present in and released from neurons to be identified and quantified. The Sweedler

interdisciplinary group's research bridges the worlds of analytical instrumentation and cellular neurobiology. Using the methods he has developed, he and his collaborators have: discovered and characterized new neuroactive peptides such as Aplysia insulin, the enterins and cerebrin; measured NO production and NO interactions with classical transmitters and studied neurotransmitter cotransmission, all at single cell levels.

For this research, he has received numerous awards including: the National Science Foundation Young Investigator Award, a Packard Fellowship, Dreyfus New Faculty and Teacher Scholar Awards, a Searle Scholar's Award, a Sloan Fellowship, the ACS Analytical Division Arthur Findeis Award, the Benedetti-Pichler Award in Microanalysis, the Gill Prize in Instrumentation and Measurement Science, a fellow of the American Association the Advancement of Science, a special creativity extension from the NSF, the 2002 Merck Prize, 2002 Instrumentation Award from the Analytical Division of the ACS, and has recently been named as a Lycon Professor of Chemistry at the University of Illinois. He has been or is currently on the editorial boards of the Journal of the American Chemical Society, Analytical Chemistry A-page advisory board, Analytical and Bioanalytical Electrophoresis, Chemistry, Analytica Chimica Fresenius Journal of Analytical Chemistry, The Journal of Microcolumn Separations, and The Journal of Separation

# Recipients of the 2002 Division of Analytical Chemistry Awards

Division of Analytical Chemistry GIDDINGS AWARD FOR EXCELLENCE IN EDUCATION

2002 AWARDEE

JAMES WELCH TAYLOR

John Bascom Professor of Chemistry, Emeritus Principal Investigator, Synchrotron Radiation Center(SRC) Associate Director, Center for nanotechnology(CNTech), formerly CXrL

Professor Taylor received a B.A. (1956) in chemistry and mathematics from Vanderbilt University, and M.S. (1958) and Ph.D (1964) degrees in chemistry from the Georgia Institute of Technology and the University of Illinois, Urbana, respectively. He received a NIH Predoctoral Fellowship from 1962 - 1964, later joined the University of Wisconsin-Madison as Assistant Professor of Chemistry, and was promoted to Professor in 1973. Although primarily an analytical chemist, Prof. Taylor served as chair of the Materials Science Program at Wisconsin (1986-1990) as well as chair of the Analytical Sciences Division in the Chemistry Department (1991-1995). He is currently an Emeritus Professor of Chemistry who retired in 2001 as the John Bascom Professor of Chemistry, the Executive Director of the Synchrotron Radiation Center (SRC), Associate Director of the Center for NanoTechnology (CNTech), and a Founding Fellow of the UW-Madison Teaching Academy. Despite his retirement, he has returned to UW-Madison with an appointment as Principal Investigator of the National Science Foundation funded SRC and Associate Director of CNTech.

Professor Taylor has received numerous teaching honors from UW-Madison including serv-

ing as Fellow and Chair of the Teaching A c a d e m y. In honor of his career efforts in this regard, the UW-Madison Chemistry Department teaching



Current support for Professor Taylor's research efforts totals nearly \$70 MM from various government and private agencies. There have been 48 Ph. D. graduates from Wisconsin who participated in the Taylor Group covering the areas of analytical chemistry and materials science, and there were, to date, 195 publications, patents, book chapters,

and book reviews. He considers his greatest accomplishment as contributing to the development of those scientists who participated in his group and those he taught in the instrumental analysis courses. His participation in the founding of the Teaching Academy and his involvement with its activities

both

and nationally with the peer review of teaching illustrate his concern for and interest in new and creative ways of learning and the sharing of

locally

these ideas across many disciplines. During his research involvement – which continues – Prof. Taylor and his students have developed pioneering techniques for stable kinetic isotope effects, photo-ionization mass spectrometry, photoelectron spectroscopy with angle-resolved measurements, and the creation of a variety of analytical approaches for photoresist materials than can be used for nano-devices and nano-circuits.

## Did you know?

The Division of Analytical Chemistry received in 2001 a Chemluminary Award from the ACS for service to the members of the Division



Division of Analytical Chemistry AWARD IN SPECTROCHEMICAL ANALYSIS

2002 AWARDEE

GERALDINE L. RICHMOND

Geraldine (Geri) L. Richmond Richard M. and Patricia H. Noyes Distinguished Professor of Chemistry University of Oregon

Professor Richmond received her B.S. degree in Chemistry from Kansas State University in 1975 and her Ph.D. in physical chemistry with Prof. George Pimentel from the University of California, Berkeley in 1980. She was Assistant Professor of Chemistry at Bryn Mawr College (1980) before joining the University of Oregon as an Associate Professor in 1985. She was promoted to Professor in 1991 and named Knight Professor of Liberal Arts and Sciences in 1998.

Prof. Richmond's research interests are focused toward the evaluation of the molecular structure and interactions of molecules at surfaces and interfaces. Four of the major areas targeted include the following: (a) probing the molecular properties of water surfaces and adsorbed species such as surfactants, oils, gaseous and environmentally important molecules; (b) understanding how molecules adsorb, react, and alter semiconductor, salt, mineral, and oxide surfaces; (c) understanding the role of water in the structure and transport of species at membrane and

# Recipients of the 2002 Division of Analytical Chemistry Awards

protein surfaces, and (d) developing novel optical devices and methods using nonlinear optics, lasers, and spectroscopy for the in situ analysis of surfaces and interfaces. She and her group have published over 120 refereed publications. Dr. Richmond gives 15-20 invited lectureships

and seminars annually at professional meetings, academic institutions, government laboratories industry. Her teaching interests include the development of courses in science literacy for nonscientist, introductory chemistry courses undergraduates and general

science courses and the recruitment and mentoring of women and minorities in science careers.

Her research efforts have earned her an extensive list of honors and awards, which include: the Oregon Outstanding Scientist Award from the Oregon Academy of Sciences (1991), two NSF Research Creativity Extension Awards (2000-01 and 1991-94), the Francis P. Garvan Medal (ACS-1996), the Coblentz Society Spectroscopy Award (1989), The Camille and Henry Dreyfus Teacher-Scholar Award (1986), a NSF Presidential Young Investigator Award (1985-90), and an Alfred P. Sloan Research Fellowship (1985-89). Richmond is also recognized for her sustained efforts in the recruitment and mentoring of women and minorities in science careers. She was awarded a Contributions to

Diversity Award from the Women Chemists Committee of the ACS (2002), an NSF ADVANCE Leadership Award (2002-02), a Presidential Award for Excellence in Science and Engineering Mentoring, White House (1997), and a Women Helping Women Award from

Soroptomist International (1998).

Dr. Richmond currently holds has held memberships in the National Academy Sciences, the Chemical and Engineering News Advisory Board. the Oregon State

Board of Higher Education (Governor appointed), Department of Energy (DOE) Council on Chemical Sciences, the US. National Advisory Committee of IUPAC, the Laser Science Topical Group Advisory Committee of the American Physical Society, and the NSF Chemistry Advisory Board. In addition, she has served as Chair of DOE's Basic Energy Sciences Advisory Committee, the Committee on the Advancement of Women Chemistry (COACh), the ACS Division of Physical Chemistry, and the National Academy of Sciences Frontiers in Science Symposium, to name a few.

Division of Analytical Chemistry AWARD FOR DISTINGUISHED SERVICE IN THE ADVANCEMENT OF ANALYTICAL CHEMISTRY

2002 AWARDEE

DONALD D. BLY

Dr. Donald D. Bly

Dr. Donald Bly received a B.A. from Kenyon College, Ohio, and a Ph.D. degree in Analytical Chemistry from Purdue University with Professor M. G. Mellon. He served as an Eli Lilly Post Doctoral Fellow at Purdue from 1962-63 before joining the Textile Fibers Department at Du Pont as a research chemist. He later transferred to Central

Research and Development and progressed to the position Manager Analytical Science. From 1963 to 1990 he progressed through the ranks as a staff chemist. supervisor, and

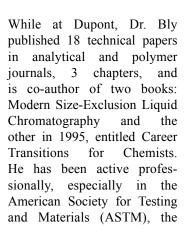
then manager of analytical sciences at the Central Research & Development Department of the Du Pont Company in Wilmington, DE. As a supervisor, he was responsible for a wide variety of analytical analysis techniques and developmental research. His group ranged in size from 10 - 20 scientists. He strategically set the directions of both research and service commitments, which included the direct analysis of many thousands of chemical research samples each year. As

Manager, 1978 - 1990, he continued with the oversight commitment to these supervisory functions, but had increased responsibility for major instrument installations, for manpower, operating and capital budgets, and for the creation of jobs and the running of various internal committees and symposia. Other responsibilities at Du Pont included managing the corporate recognition and rewards program, involvement with organizational effectiveness, and overseeing the writing of contracts and agreements.

During 1987-1990 he also held a part-time corporate position entitled "Liaison to the Corporate Committee on Special Compensation (CSC)", that provided oversight for the awards program in Du Pont.

During his tenure, he created a Corporate Departmental Coordinators group, Awards Council and new methods for implementing recognition programs. As a result, recognition programs

increased 8-fold in Du Pont with support from CSC.





# Recipients of the 2002 DAC Awards

(Don Bly biography continued)

Eastern Analytical Symposium EAS, and in the American Chemical Society (ACS). He has been Chairman of both the ACS Division of Analytical Chemistry and the Delaware Section in 1987, when the section contained 2700 members. Delaware won distinction. as the best large section in the ACS for the year that Dr. Bly was Chairman. He currently serves as a Councilor for the Delaware Section and as Liaison between ACS-DAC and EAS. He has contributed to the development and presentation of a variety of workshops for ACS on employment issues such as effective job searching, transitioning, finding jobs in small chemical companies, being a consultant and understanding critical steps to job success. He is also active in career counseling for the ACS.

After 28 years as an analytical chemist, supervisor and manager at DuPont, Dr. Bly chose an early retirement in 1991, and took up a consulting career. During the past 10 years, he has consulted for several law firms, the ACS, the Oak Ridge National Laboratories, and other chemistry related corporations in areas where he could utilize his knowledge and skills in analytical chemistry and polymer science, in corporate and institutional administration and in career planning and development. He is beginning to enter his third career: phasing down for retirement.

#### One-Stop-Shopping for Chemical Safety Information at ACS

Are you looking for chemical safety information for teachers, for students of all grades, or for your business, and you need it quickly? The ACS Committee on Chemical Safety website is the place to stop and "shop." Many of the publications are available free-of-charge in electronic format from the website. All publications contain ordering information. Visit the website at <a href="http://chemistry.org/committees/ccs">http://chemistry.org/committees/ccs</a> for additional information.

#### New ACS benefit

We are excited that we can offer you discounts on your next stay at any of the following hotels; Ameri-Host, Days Inn, Knights Inn, Ramada Inn, Travelodge, Villager and Wingate Hotels. Take a minute and call 1-877-670-7088 to make your reservation, or call the hotel directly, mention the Society's discount #62871 and receive up to 20 percent off your next visit at any of the previously mentioned hotels

#### Chemistry.org Offers Weekly E-mail Newsletter

One of the best ways to keep your finger on the pulse of ACS is by visiting chemistry.org, the Website of the American Chemical Society. But busy professionals don't always have the time to keep up with all the new content that's being published on chemistry.org each day. That's why we developed a weekly newsletter to bring the latest and greatest content direct to your e-mail address.

Each week, subscribers receive:

Quick summaries of our feature stories complete with color pictures and live links to full articles;

\*A short description of what's new on chemistry.org;

\*Links to free articles from Chemical & Engineering News, Modern Drug Discovery, and Today's Chemist at Work;

\*Links to the latest offerings from CAS.

The chemistry.org newsletter gives you an efficient summary of the information you want from ACS and lets you decide what to pursue.

Subscribing (and unsubscribing) is free and easy. Just tion to many specific factors

visit chemistry.org and register. Check the "Mailing List" option on the registration form and you'll begin receiving the newsletter the following Monday. If you've already registered on chemistry.org, you can subscribe to the newsletter by editing your profile and checking the "Mailing List" option.

# Need Salary Information?

The popular, new ACS Salary Comparator is posted on the ACS Department of Career Services website <a href="http://center.acs.org/applications/acscomparator/page01.cfm">http://center.acs.org/applications/acscomparator/page01.cfm</a> and is available for ACS members only. It can provide answers to your salary-related questions by providing current information applicable to specific employment situations.

This new tool reports the complete range of full-time base salaries being paid to ACS members in a variety of jobs. The comparator gives attention to many specific factors

#### ACS Fellowships: A Sabbatical or Career Changing Opportunity

Calling All Chemists—Senior Professionals and Graduate Students—to apply for one of the two American Chemical Society Congressional Fellowships and a Science Policy Fellowship.

Work in the Congress or ACS using your scientific and technical expertise.

Gain first-hand knowledge of the government and contribute to decision-making.

The application deadline is January 10, 2003. For a brochure contact: ACS Office of Society Services, 1155 16th Street, NW, Washington, DC 20036; Phone: 1-800-227-5558; E-mail: congfellow@acs.org Information on the Internet at: http://chemistry.org/government.

that influence pay, including experience, level of education, professional specialties, job functions, types of employers, and geographic location. Both academic and non-academic positions are covered. The second edition of the comparator has been completely updated with new data from ACS employment surveys conducted in 2001 in the US.

You will need to define an employment situation. The system will then generate the median (50<sup>th</sup> percentile) base salary for such positions, plus a series of additional percentiles (from 10<sup>th</sup> to 90<sup>th</sup>) that show the ranges of pay for these jobs. Salary figures will be automatically updated bi-monthly to allow for inflation since the last ACS salary survey was conducted. You can even test potential effects of such things as getting an advanced degree or changes in your duties.

(Continued on next page)

# The 2002 Eastern Analytical Symposium Returns Home



The Eastern Analytical Symposium returns on Nov. 18th to the Garden State Exposition Center in Somerset NJ. It will feature an extensive exhibit of analytical equipment, and a wide variety of technical papers and posters,

educational workshops and short courses. In vited techni-

Nov 18th, Somerset NJ

cal sessions planned include a celebration of the 50th anniversary of gas chromatography, forensic analysis, conservation of cultural materials, pharmaceutical analysis, spectroscopic imaging and many more. A complete listing is available on the EAS web site (www.eas.org). The Employment Center will also be running, to serve both job seekers and employers.

EAS is the second largest conference and exposition in the United States dedicated to the needs of analytical chemists and those in the allied sciences. In Somerset, EAS is conveniently located for thousands of scientists from industry, academia, and gov-

ernment. Now is the time to plan to attend.

In addition to the many events for scientists and technicans, several programs are offered for students. New this year is a day-long seminar for students interested in pursuing careers

> in the pharmaceutical industry. The long-running seminar on the

Professional Analytical

Chemist in Industry continues this year, as well as a two day symposium on Academic Careers in Chemistry for those nearing the completion of the Ph. D. Further information on these and other programs can be found on the EAS web site, or by email from <a href="mailto:easinfo@aol.com">easinfo@aol.com</a>. If you do not now receive the Retort, the EAS newsletter, an email to this address will put you on the mailing list.

On-line pre-registration with credit card payment will be available on the web site, as well as information on housing and travel. We hope to see you at EAS.

(Salary info continued)

The comparator can be run repeatedly to see how career changes influence the pay of chemists. For example, you can compare base salaries for

people in R&D who are doing basic research with those for people who have become R&D managers

# The New National Employment Clearing House

Registration for NECH, the onsite career center where attendees can search and participate in job interviews, begins June 17 for job seekers and employers planning to attend the ACS national meeting in Boston, August 18-21.

In an important departure from past practice, there will be no on-site NECH registration at the meeting. NECH registration will remain open until a few days before the Boston meeting. But once job seekers and employers arrive at the meeting, the focus will be on scheduling and holding interviews. It is vitally important to register beforehand so you don't miss the opportunity to attend NECH.

All registration by job seekers and employers will be completed online between June 17 and Aug. 14. Watch <a href="http://chemistry.org">http://chemistry.org</a> to obtain further information or to participate in NECH.

The new NECH database, debuting in Boston, will be fully computerized and Internet accessible. Changes in registration procedures are just a part of a major upgrade of NECH -- perhaps the most substantial overhaul in its 65-year history. The improvements are broadly intended to enhance the communication and interaction between job seekers and employers both before -- and during -- national meetings.

For both job seekers and employers, NECH's "new way of doing business" will allow for direct access to resumes and positions and permit attendees to schedule interviews and send messages via internal email almost two months before the meeting. This new feature will

allow job seekers and employers to set up their calendars more effectively, thus affording more time for their on-site interviews.

Because the database is accessible, via the Internet, from any computer anywhere, both parties will have more freedom to attend other events during the meeting. Another feature of the new database is that both parties will have individual electronic accounts which will record how many responses they have received to their resume or job posting. Job seekers and employers can set up "agents" that will send electronic alerts about jobs/candidates that fit their needs. And other opportunities for sharing information with a prospective employer/ employee, include attaching a research paper or linking to the company's website.

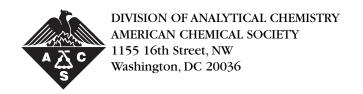
Among the benefits of the new system, job seekers will be able to:

- •Maintain a personal calendar
- •Search job postings
- •Request interviews
- •View interviews scheduled by employers
- •Get personal email reminders
- •Get information about jobs and employers before the meeting from any computer with Internet connection, located anywhere.

Employers can get online and:

- •Maintain a personal calendar
- Search resumes
- Setup interviews
- •Get personal email reminders
- Track interview activity
- •Collect statistics on postings and interviews

To help with your transition to this new system, visit <a href="http://chemistry.org/careers">http://chemistry.org/careers</a> over the next few months for updates and tutorials



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