

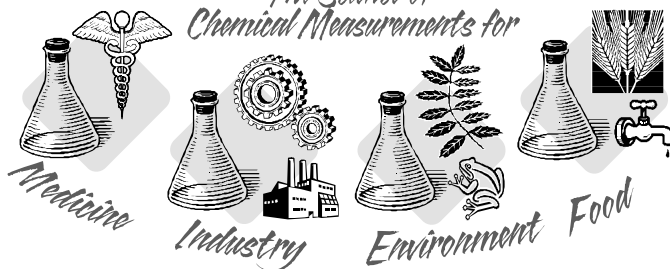


AMERICAN CHEMICAL SOCIETY  
DIVISION OF ANALYTICAL CHEMISTRY

NEWSLETTER

*Analytical Chemistry  
Serves Humanity*

*The Science of  
Chemical Measurements for*



Fall 2005 Meeting  
Aug. 28 - Sept. 1  
Washington, DC

FALL 2005 EDITION

*web version*

**A Note from the Division Chair**

The Analytical Division places a great deal of importance on giving Division members value for their dues. First and foremost, we need to know from you, the members, how you feel about our efforts and whether there are additional services you think the Division should provide. Please contact us at anytime with your suggestions and concerns. The easiest way to find out about Division activities and where to contact Division officers/committee members is to visit the Division Web site at [www.acs-analytical.duq.edu](http://www.acs-analytical.duq.edu).



*John H. Callahan, DAC Chair*

and in serving on committees. If you know of people who should be nominated, or simply want serve in some capacity, please contact a Division officer.

**Scientific Programs:** The principal function of the Division still remains programming at national meetings. Later in this newsletter there is a summary of the exciting program we have planned for the Washington, D.C. meeting. We will have a major emphasis on sensors and instrumentation for counterterrorism, but there will be a diverse and extensive program with five parallel sessions. Planning is underway for the Spring (Atlanta) and Fall (San Francisco) 2006 meetings, for which Chris Enke ([enke@unm.edu](mailto:enke@unm.edu)) will be program chair. Please contact Chris with suggestions for those programs. Finally, the Division supports programming at other meetings as well, including the Gordon Conference and special meetings such as PacificChem. I would also like to remind you that the Division helps support symposia at regional ACS meetings and has a special fund set aside for this purpose. Please contact Tom Wenzel of Bates College ([twenzel@bates.edu](mailto:twenzel@bates.edu)) if you have a symposium at a regional ACS meeting that you think would be of interest.

**Education and Outreach:** I would like to call your attention to the many

**IN THIS ISSUE:**

*The Division Technical Program  
for the Fall ACS Meeting: – p. 2*

*The 2005 Division Awards and  
Election Results – p. 5-7*

*Teaching versus Research:  
an Academic's Paradox – p. 9-12*

I would also like to take this opportunity to highlight a few important Division activities that are of importance to Division members:

**Elections:** In an effort to make it easier for members to have a say in the election of Division officers, we have instituted electronic voting this year. I think that anyone who has used the electronic voting system has found it a great deal easier to cast a vote this way. It is our hope that this will increase the number of people participating in choosing Division leadership. Be sure to provide us feedback and suggestions on ways to improve on it. Thanks to Steve Petrovic (Division Secretary) and Al Ribes (Division Treasurer) for coordinating the implementation of this system. I should also note that we are always looking for people interested in standing for election

*(continued on page 3)*



# Division Program Summary for Washington, D.C.

John H. Callahan, Program Chair

## EXECUTIVE COMMITTEE

### CHAIR

John H. Callahan (2004-2005)  
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Food and Drug Administration.  
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### CHAIR-ELECT

Chris Enke (2004-2005)  
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### TREASURER

Al Ribes (2005-2006)  
The Dow Chemical Company  
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Freeport, Texas 77541  
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aribes@dow.com

### COUNCILORS

Michelle Buchanan, Alanah Fitch,  
Roland F. Hirsch, and Catherine Fenselau

### ALTERNATE COUNCILORS

Henry N. Blount, Charles L. Wilkins,  
Karen B. Sentell, and Sally Stafford

### PAST CHAIRS

M. Bonner Denton  
J. David Pinkston

### STANDING COMMITTEES

ACS Regional meeting liason  
Thomas Wenzel  
Awards Canvassing - Fred M. Hawkrigde  
Eastern Analytical Symposium Delegates  
Donald D. Bly & Barbara B. Kezbekus  
Education - Cindy Larive  
FACSS Delegates - John Olesik, David  
Tuschel, and Diane Parry  
FECS ANYL Delegate  
Malgorzata Ciszowska  
Financial & Long Range Planning  
M. Bonner Denton  
Graduate Fellowship  
Richard F. Dallinger  
Membership  
Jeff Seeley  
Newsletter Editor  
Victor Ryzhov  
Pfizer Graduate Travel Award  
Paul Edmiston  
Publicity  
Charlene A. Crawley  
Undergraduate Awards  
Howard D. Dewald  
World Wide Web Editor  
Roland F. Hirsch

### SUBDIVISION OF CHROMATOGRAPHY AND SEPARATIONS SCIENCE

Chair  
Victoria L. McGuffin  
Secretary  
Robert L. Stevenson

### ANYL HOMEPAGE

[www.acs-analytical.duq.edu](http://www.acs-analytical.duq.edu)

The Analytical Division Technical Program for the 230<sup>th</sup> ACS Meeting in Washington, DC will consist of five parallel oral sessions and a poster session on Sunday evening. For the first time in several years, the Division will include several general oral sessions based on contributed papers. The highlight of the program will be the Analytical Division Awards Symposium (Sun.-Tues.), which will honor the recipients of Division Awards. There will also be several multi-day symposia covering a wide range of topics. Of note is a full-week symposium entitled "Sensors and Instrumentation for Counterterrorism", which will focus on detection of chemical agents, biological agents, explosives and nuclear/radiation threats. Professor Nancy Xu of Old Dominion University has organized a four day symposium entitled "New Frontiers in Ultrasensitive Analysis", which will address nanobiotechnology, single molecule detection and single cell analysis.

Another area of interest will be spectroscopy, with symposia on non-linear optics, terahertz and neutron scattering. Chromatography will be featured in symposia on supercritical fluid chromatography and multi-dimensional gas and liquid phase separations. The program will be rounded out with symposia on quantification of measurement uncertainty, innovative approaches for teaching analytical chemistry, and the role of analytical chemistry in the development of state and federal regulations.

The Division is actively planning its technical programs for the 231<sup>st</sup> National Meeting in Atlanta (March 26-30, 2006) and the 232<sup>nd</sup> National Meeting in San Francisco (September 10-14, 2005). Professor Chris Enke of the University of New Mexico will be Analytical Division Program Chair for those meetings. The Division welcomes input in the development of its technical program; suggestions and recommendations should be forwarded to Professor Enke at [enke@unm.edu](mailto:enke@unm.edu).

## Analytical Division Executive Committee Meeting

The next DAC Executive Committee meeting will be held on Saturday, August 27, 2005 from 1-5 pm in room 153 of the Washington, D.C. Convention Center. Division members are welcome to attend. Members are encouraged to suggest topics for the agenda by sending them to Steve Petrovic, the Division Secretary ([PetroviS@sou.edu](mailto:PetroviS@sou.edu)).

## Call for Contributions

Contributions are solicited for the next Division of Analytical Chemistry news-letter (Spring 2006, electronic edition). Please, send your contributions or suggestions to Victor Ryzhov, the DAC newsletter editor at [ryzhov@niu.edu](mailto:ryzhov@niu.edu).

Analytical Division Symposia	Sun	Mon	Tue	Wed	Thu
<a href="#">New Frontiers in Ultrasensitive Analysis: Nanobiotech, Single Molecule Detection, and Single Cell Analysis**</a> (BIOL and PHYS)	D	D	D	D	
<a href="#">Division of Analytical Chemistry Awards Symposium</a>	D	D	D		
<a href="#">General Papers</a>	D		P	D	D
<a href="#">Analytical and Biological Applications of Non-linear Optics**</a> (PHYS)	P	D			
<a href="#">Sensors and Instrumentation for Counterterrorism</a>	P				
<a href="#">General Papers</a>	E				
<a href="#">Supercritical Fluid Chromatography</a>		A			
<a href="#">Sensors and Instrumentation for Counterterrorism</a>		D			
<a href="#">Multidimensional Liquid-Phase Separations</a>		P			
<a href="#">Sci-Mix</a>		E			
<a href="#">Multidimensional Gas-Phase Separations</a>			A		
<a href="#">Analytical Applications of Terahertz Spectroscopy**</a> (PHYS)			D		
<a href="#">Sensors and Instrumentation for Counterterrorism: Explosives Detection</a>			D		
<a href="#">Sensors and Instrumentation for Counterterrorism: Detection of NUC/RAD Materials**</a> (NUCL)				A	
<a href="#">Preparing for the Bright Future of Neutron Scattering in the U.S.: State of the Art in Neutron-Based Analysis**</a> (NUCL)				D	D
<a href="#">Sensors and Instrumentation for Counterterrorism: Biological Agent Detection</a>				P	D
<a href="#">Innovative Approaches for Teaching Analytical Chemistry**</a> (CHED)				P	
<a href="#">The Role of Analytical Chemistry in State and Federal Regulation</a>					A
<a href="#">Quantification of Measurement Uncertainty</a>					D
<a href="#">Undergraduate Research Poster Session: Analytical Chemistry*</a> (CHED)		P			

Legend: A = AM; P = PM; D = AM/PM; E = EVE; \*, \*\* = Cosponsored symposia

(continued from page 1)

education-based programs that the Division supports, with generous help from corporate sponsors. These include the Kolthoff undergraduate student travel award, the Pfizer graduate student travel award and the Analytical Division graduate fellowships. Each of these programs plays an important role in supporting the education and development of future members of the analytical chemistry community, and I strongly urge everyone to support these programs and make students aware of them. Details are available on the Division web site. There are many other ways that the Division supports education and outreach, but again, if you have ideas for new programs, we need to hear from you.

**Recognition:** The Division has an important role in highlighting the accomplishments of its members. This not only brings well-deserved recognition to these individuals, but also gives us the opportunity to present the important scientific achievements for which these individuals are honored. Each year at the Spring ACS meeting, the Division hosts symposia for ACS national award winners in analytical chemistry related areas (chromatography, analytical chemistry, mass spectrometry). At the fall meeting, the Division gives its own awards, and holds symposia honoring the recipients, in the areas of chemical instrumentation, spectrochemical analysis, electrochemistry, achievements by a young investigator, service to the analytical community, and excellence in analytical education. The Division awards are funded mainly through generous corporate support and we are always looking for additional sponsors. If you have a role in the way in which your corporation supports analytical chemistry, please consider supporting the Division awards.

This has just been a brief summary of what we are doing in the Analytical Division. In order to provide the best value to our membership, we need to know what you want. We are a volunteer-based organization, so we always need input, and people interested in participating. If you have the time and the interest, please let us know.

## Program announced for EAS Symposium and Exposition

By *Barbara Kebbekus*



A varied and exciting program is planned at The Eastern Analytical Symposium, November 14 – 17 in Somerset, NJ. The schedule includes about 50 invited technical sessions designed to be of particular interest to those in the pharmaceutical, art and heritage conservation, biotechnology, forensic science, and educational fields. Contributed sessions emphasize particular analytical chemistry techniques, such as applications of various separation methods, spectroscopy, microscopy, and nanotechnology. The Exposition will feature displays from over 200 vendors.

There are 13 new short course offerings this year, as well as some returning “favorites”, and a wide variety of exhibitor sponsored workshops. Four student seminars are being offered, dealing with careers in analytical chemistry, art conservation, development of pharmaceuticals, and forensic science.

Special sessions honoring this year's award winners will be held. Bruce Chase of DuPont will receive the EAS Award for Outstanding Achievement in the Fields of Analytical Chemistry. Donald Dahm of Rowan University will be presented the EAS Award for Achievement in Near IR Spectroscopy, and Frantisek Svec of University of California, Berkeley, that for Achievements in Separation Science. David Haaland of Sandia National Laboratories is the winner of the EAS Award for Chemometrics, and Ann

McDermott of Columbia University receives the award for work in Magnetic Resonance. Mary Wirth of the University of Arizona will be awarded the NY SAS Gold Medal, and Frank Bright of Suny Buffalo receives the American Microchemical Society Benedetti-Pichler Award. Brad Amos of the MRC Laboratory of Molecular Biology in Cambridge, England has been selected for the NY Microscopical Society's Ernst Abbe award.

Registration is now open at the EAS web site ([www.eas.org](http://www.eas.org)). Reduced price registration is available until October 15. The preliminary program as well as helpful information on housing and travel is also available on the web site. The volunteer committee members who organize EAS each year are all looking forward to seeing you at another successful symposium and exposition in November.

## Analytical Division – Support of Symposia at Regional ACS Meetings

The Analytical Division has a speaker's fund to help support programming at the regional American Chemical Society meetings. Awards will generally be made to support a thematic symposium. Funds can be used to support travel expenses of an expert in the field who would not normally attend that particular regional meeting. It is expected that local speakers will then be included to fill out the symposium. Alternatively, funds can be requested to provide more modest levels of support to several speakers from the region. The Division will help regional planners identify possible speakers for symposia topics, if necessary. Applications for support are considered on a rolling basis until the yearly allocation of funds has been expended. There is no formal application process. Anyone interested in applying for an award should contact Tom Wenzel ([twenzel@bates.edu](mailto:twenzel@bates.edu)) by email to discuss the nature of the symposium and the funds that are needed to help support the program.

### **Analytical Chemistry to feature Analytical Division news**

Starting August 2005, DAC will get space in the A-pages of Analytical Chemistry four times a year to keep the Division members up-to-date on the major news and developments. If you have some important announcements, items of general interest for the Division members, or suggestions, please, send them to Victor Ryzhov, the DAC newsletter editor at [ryzhov@niu.edu](mailto:ryzhov@niu.edu).

# Recipients of the Division of Analytical Chemistry Awards 2005

## Award for Distinguished Service in the Advancement of Analytical Chemistry Sponsored by the Waters Corporation:

### *Frank A. Guthrie,* Rose-Hulman Institute of Chemistry

Frank A. Guthrie is Professor Emeritus of Chemistry at the Rose-Hulman Institute of Chemistry in Terre Haute, Indiana, where he was on the faculty for 42 years. He was Chair of the Chemistry Department for three years, Chief Health Professions advisor for 20 years and served twice as the Visiting



**Frank A. Guthrie**

Professor of Chemistry at the United States Military Academy at West Point, New York. He was the first Kettering visiting lecturer at the University of Illinois (1961-62). He received the B.A. degree from Indiana's Hanover College (1950), the M.S. degree in chemistry at Purdue University (1952) and the Ph.D. in analytical chemistry from Indiana University (1962) under Professor Ward B. Schaap. His thesis research involved the polarographic determination of cadmium ion complexes with pyridine and related compounds. He was engaged in kinetics research with Professor Edward L. King at the University of Colorado for two summers. He is a 50 year member of the American Chemical Society and the Indiana Academy of Science.

He served the Academy as Treasurer, President (1970), and has been Chair of the Academy Foundation Trustees since 1986. Frank was on the steering committee for two joint ACS regional meetings, was chair of the Wabash Valley Section and has been its Councilor for 26 years, serving 22 years on Council committees. He became active in the Division in 1963, as Membership Chair, Directory Editor (7 editions), Secretary (2 terms), Chair-Elect and Chair (1980). He was President of the Hanover College Alumni Association (1974) and received the Alumni Achievement Award (1977). He was the prime mover in reactivating the Iota Chapter of Alpha Chi Sigma after nearly 5 decades of inactivity.

## Award for Young Investigators in Separation Science Sponsored by Agilent Technologies:

### *Michael T. Bowser,* University of Minnesota

Michael Bowser received the B.Sc. degree with Honors in Chemistry from Dalhousie University in 1994. He completed his Ph.D. in 1998 while working with Professor



**Michael T. Bowser**

David Chen at the University of British Columbia. His graduate research focused on understanding the influence of complexation equilibria on analyte migration time in capillary electro-phoresis. He joined Professor Robert Kennedy's group at the University of Florida as a NSERC postdoctoral fellow in 1998. His research included development of high resolution/high sensitivity microdialysis-capillary electrophoresis assays that could be used to measure neurotransmitter dynamics in vivo in nearly real time. He joined the faculty in the Chemi-

stry Department at the University of Minnesota in 2000 as an Assistant Professor. His current research interests include the development of improved SELEX selection techniques for the isolation of high affinity/selectivity aptamers, novel high temporal and spatial resolution assays for measuring neurotransmitter dynamics, and microfluidics. He has co-authored over 30 publications in peer-reviewed journals and has given over 40 invited presentations at scientific meetings, universities and technology companies.

## Award in Spectrochemical Analysis Sponsored by the Division of Analytical Chemistry:

### *Raoul Kopelman,* University of Michigan

Raoul Kopelman is the Kasimir Fajans Collegiate Professor of Chemistry, Physics, and Applied Physics and a member of the Biophysics Program and the Center for Biological Nanotechnology at the University of Michigan, Ann Arbor. He received B.S. and Dipl. Eng. degrees in Chemical Engine-



**Raoul Kopelman**

ering and an M.S. degree in Physical Chemistry from the Technion, Israel Institute of Technology. After receiving a Ph.D. in Chemistry at Columbia University, he spent two years at Harvard University, two years as an instructor at the Technion, and two years at the California Institute of Technology before joining the Chemistry Department at the University of Michigan. His current research interests are in non-classical reaction kinetics and ultra-small opto-chemical sensors and actuators, including intra-vascular nanoplatfoms for cancer diagnosis and therapy. His research contributions include the discovery of pseudolocalized photons, the measurement of exciton

exchange and superexchange energies in molecular crystals, the demonstration of quantum percolation via excitation trapping and annihilation, the concept and practice of active subwavelength light sources and their application to near-field scanning optical microscopy, and the construction and use of optical nanosensors and nanoprobes for chemical and biomedical applications. He is the author of more than 500 scientific papers. He is a fellow of the American Physical Society and the American Association for the Advancement of Science, and received the Edward Morley Award from the American Chemical Society.

# Recipients of the Division of Analytical Chemistry Awards 2005

## Award in Chemical Instrumentation Sponsored by the Dow Chemical Foundation:

**Lloyd M. Smith,  
University of Wisconsin-Madison**

Lloyd M. Smith received an A.B. degree in Biochemistry from the University of California at Berkeley (1977) and a Ph.D. in Biophysics from Stanford University (1981). In 1982 he moved to the California Institute of Technology, where he developed the first fluorescence-based automated DNA sequencing instrument. He is



**Lloyd M. Smith**

Professor of Chemistry and Director of the Genome Center at the University of Wisconsin-Madison, where he has been since 1988. His primary area of research is in the development of new technologies for the analysis and manipulation of biomolecules. His interests include biological mass spectrometry, proteomics, surface chemistry, surface detection methods (fluorescence, surface plasmon resonance), and the analysis of genetic variations. He has been named one of Science Digest's Top 100 Innovators and has received the Presidential Young Investigator Award, Eli Lilly Analytical Chemistry Award, Association of Biomolecular

Resource Facilities Award for the development of automated DNA sequencing, and is John D. MacArthur Professor of Chemistry. He has served on the NIH National Human Genome Research Institute Advisory Council and the NIH Human Genome Study Section. He has authored over 165 scientific papers and is inventor on 20 issued U.S. patents. He is a cofounder of the biotechnology company Third Wave Technologies and serves on the Board of Directors of Third Wave Technologies, Inc, GWC Technologies, Inc. and GenTel Biosurfaces, Inc. He is chair of the Scientific Advisory Board for GenTel Biosurfaces, Inc.

## J. Calvin Giddings Award for Excellence in Education Sponsored by the Dekker Foundation:

**Frank Settle,  
Washington & Lee University**

Frank Settle received a B.S. degree in chemistry from Emory and Henry College in 1960 and a Ph.D. degree from the University of Tennessee, Knoxville in 1964. He joined the faculty at the Virginia Military Institute in 1964 and remained there until his retirement in 1992. He is currently a visiting professor of chemistry at Washington & Lee University. His research has centered on the development of computer interfaces for analytical instrumentation and software for process control, information



**Frank Settle**

systems and laboratory automation. Working in undergraduate education, he and his students advanced computer applications in physical and analytical chemistry. He has held summer and visiting appointments at several institutions to collaborate with research groups speci-

alizing in computer applications. These include Virginia Tech (1971-72), the Tennessee Eastman Company in 1977 (where he was also an undergraduate researcher in 1960), Bendix Corporation (1979) and the National Institute of Science and Technology (1987). During his tenure at VMI, he received three faculty awards for teaching and research. In 1992, he was selected one of ten outstanding Virginia faculty by the Virginia Council of Higher Education and received the Pioneer in Laboratory Robotics Award from Zymark, a laboratory robotics company. Following his retirement, he served as a consultant to the Department of Energy and Zymark on automated chemical analysis. From 1995-98 he was a program director in the Division of Undergraduate Education at the National Science Foundation. He has been co-author of the

best-selling text *Instrumental Methods of Analysis* since its 6<sup>th</sup> edition, which was published in 1981. He served as the editor of the chemical instrumentation feature of the *Journal of Chemical Education* from 1983 to 1990 and was editor of the *Handbook of Instrumental Techniques for Analytical Chemistry* (Prentice Hall, 1998). He has also served as a consulting editor in analytical chemistry for John Wiley and Sons, the *Encyclopedia Britannica*, and *American Laboratory*. He is currently on the advisory board of the Analytical Sciences Digital Library and is a member of the board of governors for the National Conferences on Undergraduate Research. He has served as mentor to more than fifty undergraduate students who have gone on to receive advanced degrees in chemistry.

# Recipients of the Division of Analytical Chemistry Awards 2005

**Award in  
Electrochemistry  
Sponsored by Cole-  
Palmer Instrument Co.:**

**Ernö Pretsch,  
Swiss Federal Institute  
of Technology**

Ernö Pretsch studied chemistry at the Technical University Budapest (1960-63) and the ETH Zurich (1963-65), where he also received his Ph.D. degree in 1968. At the ETH, he has worked as a research asso-



**Ernö Pretsch**

ciate and, since 1991, as a Titularprofessor. He was visiting professor at the Technical University Budapest (1978) and the Shanghai University of Technology (1982). Since 1988, he also holds a degree in Analytical Psychology from the C.G. Jung Institute, Zurich. One of his current research interests focuses on the thorough understanding of the working mechanism of potentiometric sensors in order to optimize their performance in terms of lower detection limits, improved selectivity behavior, miniaturization,

and rugged construction. He is also interested in the computer-aided interpretation of molecular spectra including NMR spectra prediction. He was elected an external member of the Hungarian Academy of Sciences, he is Contributing Editor of Trends in Analytical Chemistry and a member of the Editorial Board of 6 other journals in the field of analytical chemistry or chemometrics. He is co-author of more than 250 scientific papers, which have been cited over 7500 times, and of 9 books.

**ACS Division of  
Analytical Chemistry  
Arthur F. Findeis Award  
for Achievements by a  
Young Analytical  
Scientist Sponsored by  
Philip Morris USA:**

**Jason B. Shear,  
University of Texas**

Jason B. Shear received a B.S. degree in Chemistry with Highest Honors from the University of Texas at Austin (1989) and a Ph.D. degree in



**Jason B. Shear**

Chemistry from Stanford University (January 1995) under the auspices of Professors Richard Zare and Richard Scheller. He was a postdoctoral fellow at Cornell University (1994 – 1996) working with Professor Watt W. Webb. Afterward, he joined the faculty in the Department of Chemistry and Biochemistry at the University of Texas at Austin where he currently holds the rank of Associate Professor. His research is focused on characterizing and controlling dynamic biochemical and cellular systems through projects involving multiphoton fabrication of bio-

molecular microstructures, high-speed separations, electrophoretic analysis of cellular environments, and sensor-array development. He is the recipient of an Office of Naval Research Young Investigator Award (1997), a Beckman Foundation Young Investigator Award (1997), a Searle Scholars Award (1998), and an Alfred P. Sloan Research Fellowship (1999). He received a Top 100 Young Innovator citation from MIT Technology Review in 1999 and was noted for a "Chemical Development of the Year" by *Chemical & Engineering News* in 2003.

## Congratulations to the Division Awardees!

### Results of the 2005 Division of Analytical Chemistry Elections

<b>Chair-Elect:</b>	Dr. Laurie E. Locascio, <i>National Institute of Standards and Technology</i>
<b>Secretary:</b>	Dr. Steven C. Petrovic, <i>Southern Oregon University</i>
<b>Councilor:</b>	Dr. Michelle V. Buchanan, <i>Oak Ridge National Laboratory</i>
<b>Alternate Councilor:</b>	Dr. William R. Heineman, <i>University of Cincinnati</i>
<b>Alternate Councilor:</b>	Dr. Henry N. Blount, <i>National Science Foundation</i>

On behalf of Division of Analytical Chemistry - ACS, Campus-Vote.com conducted an election for the positions of Chair-Elect, Secretary, and Councilor/Alternate Councilor from May 27, 2005 to 5 PM, July 10, 2005. Of the 1345 total voters participating, 1327 made a selection for one or more candidates while 18 abstained.

## I. M. Kolthoff Enrichment Awards for Undergraduate Students



Today's analytical chemistry students are the future leaders of our field. To encourage talented undergraduate students to pursue further studies in analytical chemistry, the Division of Analytical Chemistry of the American Chemical Society established the I. M. Kolthoff Enrichment Award. The Award honors the late Professor of Analytical Chemistry at the University of Minnesota who was one of the leaders of the profession in the 20th century, author of numerous influential textbooks and a major researcher in electroanalytical chemistry. Kolthoff awards provide recognition and funding for undergraduate students to travel to a spring ACS National Meeting where they present the results of their research at the Division of Analytical Chemistry Poster Session. Travel awards up to \$750 will be made on the basis of both scientific merit and financial need. If you have talented undergraduate students working in your research lab, please encourage them to apply for a Kolthoff award.

The deadline for applications for the Spring 2006 ACS National Meeting in Atlanta is October 15, 2005. Application and submission information can be obtained on the Division of Analytical Chemistry website:

<http://www.acs-analytical.duq.edu/kolthoffaward.html>

Please direct any questions to Dr. Cynthia Larive by E-mail at [clarive@ucr.edu](mailto:clarive@ucr.edu)

## Pfizer Travel Grant Awards

The following graduate students were selected to receive the Pfizer Travel Grant Awards (to be Presented at the Fall 2005 ACS Meeting in Washington, D.C.):

- **Elisabeth Mansfield**, University of Arizona  
"Creation of biofunctional micro-sized chemical patterns for microfluidic applications"
- **John Carr**, Northern Illinois University  
"Liquid Chromatography - inductively coupled plasma mass spectrometry for the detection of nonmetals in pharmaceutical compounds"

### The Division thanks Pfizer for continuing support of the award!

The Pfizer Travel Grant Awards will be available for graduate students presenting at the Spring 2006 ACS Meeting in Atlanta, GA.

Application deadline: October 21, 2005. See DAC website for details [http://www.acs-analytical.duq.edu/PfizerAward\\_Description.html](http://www.acs-analytical.duq.edu/PfizerAward_Description.html) or contact Paul Edmiston at [pedmiston@wooster.edu](mailto:pedmiston@wooster.edu).

## Division Graduate Fellowships

*Richard F. Dallinger, Wabash College*

The DAC Graduate Fellowship Committee is pleased to report that the following graduate students have been awarded Division of Analytical Chemistry graduate fellowships (nine-month and summer) for 2005-2006. We are extremely grateful to the sponsors listed below for their financial support of the Graduate Fellowship Program and for supporting the attendance of their committee representatives at PittCon 2005 in Orlando.

Fellow	Institution	Advisor	Sponsor
<b>Nine-month Fellowship Recipients:</b>			
George Chan	Indiana	Gary Hieftje	GlaxoSmithKline
Chris Easley	Virginia	James Landers	Eli Lilly & Co.
<b>Summer Fellowship Recipients:</b>			
Anne Fischer	Michigan State	Greg Swaim	Eastman Chemical
Kaveh Jorabchi	George Washington	Akbar Montaser	SACP
Qiguang Li	Cal-Irvine	Reginald Penner	J&J-PRD
Chris Szakal	Penn State	Nicholas Winograd	SACP
Orla Wilson	Texas A&M	Richard Crooks	DuPont
Chaoyong Yang	Florida	Weihong Tan	Merck
Bo Zhang	Utah	Henry White	SACP
Zhenming Zhong	Iowa	Lei Geng	SACP

(SACP = Society for Analytical Chemists of Pittsburgh, J&J-PRD = Johnson & Johnson Pharmaceutical Research and Development)

### Honorable Mention:

Applicant	Institution	Thesis Advisor
Chanda Yonzon	Northwestern	Richard Van Duyne

An article announcing and congratulating these graduate fellowship recipients and honorable mention students is scheduled to appear in the August 1, 2005, edition of *Analytical Chemistry*.

Graduate Fellowship Alumni Notes: **Lei Geng**, thesis advisor to 2005 Summer Fellow Zhenming Zhong, was himself a nine-month DAC Graduate Fellow in 1992-93. **Christy Haynes**, a 2001-02 nine-month DAC Graduate Fellow, received the prestigious ACS Nobel Signature Award in 2005 for her outstanding Ph.D. thesis with Richard Van Duyne at Northwestern University.

The Graduate Fellowship Symposium at the Fall 2004 ACS Meeting in Philadelphia was a great success. The half-day session featured talks by 2003-2004 Fellows **Amanda Haes** (Northwestern, Richard Van Duyne), **Li Han** (SUNY-Binghamton, C.J. Zhong), **Laura Lucas** (Kansas, Cindy Larive), **Brent Mantooth** (Penn State, Paul Weiss), **Jeff Stuart** (Illinois, Jonathan Sweedler) and **Jeni Thomas** (Cincinnati, William Heineman).

The members of the Graduate Fellowship Committee who generously giving many hours of effort in evaluating applications and selecting the 2005-2006 recipients were:

**David Burinsky** – GlaxoSmithKline (sponsor); **Curt Cleven** – Eastman Chemical (sponsor); **Paul Edmiston** – College of Wooster; **Rong Feng** – Johnson & Johnson Pharmaceutical Research and Development (sponsor); **Gregg Gould** – Society for Analytical Chemists of Pittsburgh (sponsor); **Angela Harmon** – Merck (sponsor); **Mary Kaiser** – DuPont (sponsor); **Carolyn Koester** – Lawrence Livermore National Laboratory; **Jeanette Rice** – Georgia Southern University; **Heather Weimer** – Lilly (sponsor)

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

## Teaching vs. research: An academic's paradox



**Professor Christie G. Enke, DAC Chair-Elect**  
*University of New Mexico, Albuquerque*  
*Recipient of the 2003 J. Calvin Giddings Award for*  
*Excellence in Education sponsored by the Dekker Foundation*

### What do we mean by “Teaching vs. Research?”

One thing is certain; the phrase TvR has become part of our vocabulary. I Googled it and got 411,000 hits. I only looked at the first 10 pages or so and many were repetitive or not relevant. Nevertheless, the sheer number and variety of sources attests to the ubiquity of the phrase.

In its most benign form, the phrase simply reflects the tension we may feel between the tasks associated with supporting and maintaining a research group and the demands of lecturing, grading, and office hours that are part of formal classroom instruction. But this definition understates the dictionary meaning of the term *versus*. The Oxford dictionary defines it as “against” as in a legal action taken by one party against another. In this sense, teaching and research are protagonists and only one can win. It also implies that teaching and research represent polar opposite points of view or activity and that one can only be performed at the expense of the other. Unfortunately, this combative and exclusive meaning of “versus” is the more commonly perceived usage in the phrase TvR. Because of this, I believe the tacit acceptance of TvR has unfortunate consequences in our lives as academics, in the way others perceive our work, and in the formation of policies that affect our professional lives.

### Where did this idea come from?

I believe TvR began to appear as external funding became necessary to effectively mentor graduate students in the sciences. The acquisition of and maintenance of this funding began to consume truly significant amounts of time that did not directly produce teaching, research, or scholarly publication. As funding turned from desirability to necessity for more and more academics, the competition for this limited resource demanded a greater number of more extensive proposals.

*This was the crucial moment.* University administrators recognizing the magnitude of the effort required to both fund and mentor an active research group, had to decide between the advantages of outside funding and the disadvantage of giving professors lighter formal course loads. Whether by choice or necessity, they went for the outside funding. In fact, virtually all universities saw this as a way to get federal money into their budget and many new chemistry graduate programs were started at this time just to get the grant overhead money. By this time, the ability to attract outside funding became a crucial aspect of tenure, promotion, and salary decisions and these funds have now become the means by which virtually all the university's graduate programs in the sciences are supported.

Thus, I believe it was the university's inability to refuse the apple that made graduate training the very high maintenance job that it is. But we are now out of the Garden of Eden and there is no going back. We can't decide not to be funded or even to be funded less well and still have graduate programs. But we can work to integrate the teaching and research aspects of our jobs rather than foster the sense of conflict between them. And we can avoid repeating the phrase TvR and believing and promoting all that it implies.

### What are the consequences accepting TvR as real?

One of the worst, but at the same time most correctable implications of the phrase is that mentoring graduate students is some-how not teaching, that the hours we spend in group and one-on-one meetings and discussions with them are not education, that our efforts to help them learn how to write and speak is not instruction, and that their guided research experience did not make them more effective professional people. Of all the reports I read, only Emma Daugherty's “Break away from teaching versus research” acknowledges that teaching research is teaching. Other departments and units of the university have been more effective in getting these mentoring activities recognized as part of the formal degree program. We could do the same.

#### *The consequence of public perception*

A consequence of our failure to identify, quantify, and credit the graduate mentoring aspect of our work is the public perception that somehow we are not doing the job the public is paying through taxes and tuition for us to do. A number of “awfulizers” have grabbed this perception and are raising alarms at a level that ought to concern us. Tom Pocklington and Alan Tupper, political science professors at the University of Alberta, have written a book, “No Place to Learn: Why Universities aren't Working”. They complain that government funding is going into research, rather than teaching as it ought to. The concept that university research is a frivolous, expensive and unnecessary endeavor is argued without regard to its essential place in graduate and post-graduate education. In this report and in the 1997 Brigham-Young Teacher-Scholar Report, the assumption that teaching is exclusively a classroom activity is never challenged.

A *60 Minutes* program in 1965 complained that “at the University of Arizona freshmen are taught by grad. students or part-timers 87 percent of the time,” that tenure was based on numbers of research proposals and that the only thing you didn't have to do well was teach. I would have phrased it differently as “the only thing you can't do not well is research.” A report on the

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60 Minutes program in the Mason City Globe-Gazette called for the abolishment of tenure as a means for curing this problem.

Reporting on the Pocklington and Tupper book, Robert Fulford in the *Toronto National Post* says, "The conflict between the public's belief in teaching and the academic belief in research makes the central problem of the university unique; there's no other great social institution afflicted by such a radical division between public expectations and professional goals." The problem as I see it is that the academics, us, are being blamed for the dilemma. It is our professional ambition that is at fault, not our efforts to single-handedly support the university's graduate program. The professor's interest in research has always been there and previously was no problem. The problem is that the research must now be competitively supported from the outside and both the universities and the graduate professors are locked into the need for these funds.

### *The consequences in University policy*

In the TvR syndrome, teaching is defined as that which occurs in the classroom during scheduled class hours, so acceptance of the phrase locks society into this one, traditional form of teaching. We know that the lecture is not the only teaching method, nor is it the best in many circumstances, but the cry of TvR is so often accompanied by the cry to get the professors back in the classroom, the number of classroom hours has become the measure of one's degree of commitment to the teaching process. Acceptance of this standard will soon hamper our efforts to move forward to new methods to support learning and life-long education.

Now that the public perception is so well established and so politically irresistible, the universities' response is to publicly reflect the cry from their constituents and the state legislators. Yes, they say, we will develop policy to make sure that research does not occur at the expense of teaching. The university administrators, who are in the best position to correct the wrong premise on which this argument is based, are not defending forefront research as the keystone to the effectiveness of a graduate institution. What would they say if their medical school's residency program were similarly under attack? I sometimes think they do not understand the problem themselves.

Meanwhile, the universities' dependence on outside funding is such that they cannot change their policies regarding the need for professors to find the money to support their graduate group (and as it turns out, much more than that). The message that the faculty get is decidedly schizophrenic. On the one hand we are called to help with the public image and put more effort into undergraduate course work and, on the other hand, we are still largely evaluated on the size of our grants. Alarming, this trend is now spreading from the sciences to the humanities as well.

University administration policies are not the only problem. As we accept the concept that teaching (read *course* teaching) can only be accomplished at the expense of research, we may work to get the lightest classroom load so that we can accomplish more research and better compete for the next round of funding. This leads to the public perception that increased involvement in research is rewarded by lighter teaching loads. It also leads to a professor's ability to excuse a lack of research progress on an unusually heavy classroom load.

Unquestioning acceptance of the incompatibility theory has led to the formulation of public policies like the NIH Career De-

velopment awards which essentially buy out the classroom obligations of promising assistant professors so that they can better advance their careers. And all this time, I thought our career was teaching.

However, based on sheer necessity as well as peer review and internal evaluations, *the most critical task of a scientific academician at a university with a graduate program is getting funded and staying funded*. It is what we worry most about and it is where a huge fraction of our time goes. I believe it is this effort and anxiety, not the research, which most conflicts with both graduate mentoring and classroom teaching.

Graduate students in the sciences who have a true love of teaching look at the effort required these days to keep a graduate group stocked and funded and often decide to get a job where outside funding is less critical and where their teaching efforts and ability are more highly valued. Unfortunately, I'm afraid such places are as easy to find as Shangri La or Brigadoon since the need for outside funding has trickled down and down the academic hierarchy. Instead, new faculty members at so-called "teaching institutions" are often asked to work just as hard at outside funding with a lot less support. Consequently, many promising teachers are discouraged from pursuing an academic career at all.

On the other hand, we have interviewed a few assistant professor candidates at UNM who have exciting research ideas, but little or no interest in teaching and have poorly developed concepts on what mentoring graduate students involves. They just want to get graduate students and do research and they think that universities are the best places to do it. On that last point, I would disagree. I think that the university environment is not the most efficient or effective place to do research. It is an exciting and rewarding place to work because mature professionals are graduating and inexperienced hopefuls are entering. From the standpoint of research productivity, it is inefficient for the same reason.

### *The divisiveness of the concept*

Whenever polar opposites are posed, there will be individuals who identify with one position or the other. Thus the pitting of research vs. teaching activities creates a division between those who consider themselves teachers and those for whom research is a necessary part of their job description. This division is not new. At Michigan State, there used to be a unit called University College which taught the core courses to satisfy the distribution requirements of liberal arts majors. The chemistry faculty in this college did not have graduate students or active research programs. Because they were not part of the research chemistry department, they distinguished themselves as being the *real* teachers.

I believe the natural tension between graduate and undergraduate faculty has been made much worse through the propagation of TvR.

This same struggle is carried out within states between the universities and colleges. Colleges, in defining their mission as teaching, are boxed into the classroom and if the college's distinct mission is teaching, it is implied that the university's mission is research and that a good education is not to be had there. This polarization stifles what might be a more cooperative attitude with exchange of faculty and methods, and it sets up a fierce competition for state resources with the colleges having what looks like the moral high ground.

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### ***The loss of community within departments***

We academicians do many other things besides classroom teaching and graduate student mentoring. All of these things require time we could be spending on classroom teaching or research. Why, then is it not teaching versus committees or teaching versus peer review tasks? The fact is, it is research versus all of the above activities in that none of these other activities significantly affect our ultimate professional survival in the way that staying funded does. In subtle ways, over time, the criteria involved in departmental evaluations have become very similar to the ones used by our colleagues in the peer review process. They are visibility in the scientific community, creativity in research accomplishments, productivity in publications, and service to the broader scientific community as editors, reviewers, organization officers, etc. In the process of adopting these same criteria for internal review, our departments have essentially lost the ability to motivate us to be good citizens at home. This has led to a huge erosion in the involvement of graduate faculty in the time-consuming tasks of curriculum reform, major committee assignments, and the like.

It's not as though current chairmen have any choice in giving high ratings to faculty with substantial outside funding. They are a very valuable commodity and are generally quite sought after. In fact, many chairs require professors with special requests to first prove that they could get that same consideration from a competing institution. It is no mystery then, why we tend to respond to the global market rather than the local needs. Following the above arguments, we can see that the university's acceptance, then requirement of outside funding for graduate education has been very akin to the selling of our souls. Loyalty, altruistic service, valuing of all kinds of contributions to the common goals, and community-building efforts have been largely sacrificed to the obeisance to the whimsical and capricious gods of funding. Chairs complain about how few people they can go to when they need something special done. It is almost always the same few who are still willing to put effort into the local environment despite its meager impact on their personal bottom line.

In 1959, C.P. Snow published his lectures called the *Two Cultures* which referred to the problems he foresaw as the gulf between people trained in the sciences and technology and people trained in the humanities widened. It was seen as a challenge to the educational system to bridge this gap by helping each side of this polarization to better understand the important and unique contributions of the other. After a lot of discussion and soul searching, this call was largely ignored. There are several similarities between the nature of the TvR polarization and the science vs. humanities one, but I believe that ignoring our current one will bring about changes in the educational system that will be to the detriment of scientific development, the educational system, and the viability of our chosen profession.

### **Great teacher/scholars I have known**

I believe that all teachers should also be scholars in some area, especially in the university setting. However, in "Faculty Work and Public Trust" James Fairweather says that the concept of the teacher/scholar is a myth and is so because doing scholarship does not necessarily make one a good teacher. Well, neither does standing in a classroom. If you care about teaching and the

people you are teaching, you will be a good teacher. Similarly, if you care about your subject, you will be a good scholar. If you care about both, you will be a teacher/scholar. I would like to tell you about a few great teacher/scholars I have known.

My college professors got me involved in research by the time I was in the second term of my freshman year. I was deeply steeped in electrochemical research by my junior year and this involvement had more than a little impact on my choice of career and graduate mentor. This was not accomplished at the expense of my course work, but rather it enhanced it and enlivened my experience of chemistry as an exciting profession. Both my college professors had huge teaching loads by today's standards, but they kept a keen involvement in and curiosity about their chosen areas.

Because of my interest in electrochemistry, I was set up by Ernest Lyons, Jr. to be recruited by Herb Laitinen. I had applied to a number of graduate departments, but Herb was a quietly persuasive person and soon I found myself accepting Illinois' offer before the other universities had even responded to my application. Herb taught classes and managed a steady research group of 6 people. I never heard of any conflict between these tasks. He was highly respected in both areas and went on to write his graduate text, "Chemical Analysis" which is still the only one of its type, and then, for many years, he edited the ACS journal "Analytical Chemistry".

In my second year, Howard Malmstadt wanted to start a laboratory course in the electronics of chemical instrumentation, an area which was coming on very fast, and in which he was a prime mover. Here is an excellent example of a development moving very quickly from the forefront of research into the scientific curriculum and it was the result of Howard's energy and his strong devotion to both teaching and research that made it happen. Howard, as much as any one I know, epitomized the integration of teaching and research. He required his graduate students to teach in the instrumental methods course whether they were on TA that term or not. His integration of teaching and research was not just dovetailed, it was seamless.

Can we develop our careers and balance our activities now the way Howard did it then? Probably not, but we can still use his model as a refutation to the concept that teaching and research are necessarily at odds. I'm sure you could add to this list of teacher/scholar models of the past and present. I think of Clark Bricker, N. Howell Furman, Charlie Reilley, Ralph Adams, Buck Rogers, Etc. Etc. Etc.

### **The synergism of classroom and research activities**

Michael Prince, a chemical engineer at Bucknell wrote in Tomorrow's Professor Listserve from Stanford, "Simply put, there is no hard evidence to support the premise that research activity correlates with effective teaching". Leaving aside the argument that researchers are undoubtedly more effective at teaching *research* than those who don't do it, I think we would all agree that an active, experimental interest in the subject brings more life to a class room than a pedantic attitude does. I wonder if outcome assessments test for enthusiasm, or just for retention.

Jim Holler did his graduate work at Michigan State University working jointly with Stan Crouch and me. It was soon clear that Jim was a very talented researcher and a very enthusiastic and effective teacher. At the end of fall term, I think in his third year, he told me he had arranged to take a double-time TA winter term

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so he could have spring term to focus on his thesis research. I said that was fine, but I predicted that he would get about the same amount of research done both terms. Of course he protested, but at the end of spring term, he asked me how I knew it would turn out that way.

We can lose sight of how enlivening the classroom related work can be – the intellectual challenge of organizing an effective syllabus, or even a clear lecture, the stimulation of interaction with the students in class, help sessions and office hours. Then there is the organizational fact of having to maintain a strict classroom schedule. As we all know, class teaching and research program management are both tasks that will naturally expand to fill all the available time. When I have to accomplish both in the same term, I am more careful to organize my day, set clear priorities and time allotments, and work more efficiently.

The other thing about teaching in the research context is that it enables one to learn from one's students. My students have introduced me to a host of exciting areas including microbiology, statistical methods, mass spectrometry and electrospray ionization. It is safe to say that my career work would not look at all the way it does if my students had not been interested in these areas.

### **Am I wishing for the good old days?**

From all this, and from my age, you may get the impression that I am wishing for the “good-old-days” when all work was fun, all students were brilliant, and all colleagues could have won a congeniality contest. I am not. There is very much that is better about graduate education in chemistry today. Graduate students are being trained on the very cutting edge of their science. They are far more sophisticated than I was when my Ph.D. was still fresh. They have more practice in speaking and writing, they have personally met many of the leaders in their field, they have published many more papers, and they are prepared to make virtually immediate contributions on their first job. All this is due to the higher level of research that the funding has enabled. No one would want to give that up. Therefore, we need to live with the system that we've got, enjoy the benefits and work to improve the parts that are not working so well. I hope I have convinced you that the concept of TvR is one of those parts that needs correcting.

### **What we can and should do about it**

I said before that I had some ideas on what we can do about the problems I have described concerning the TvR paradox. I will end with these thoughts.

First, we should recognize that the whole concept of TvR is a pernicious, destructive, and divisive perception and we should take every opportunity to correct it when we hear it, and be careful not to be drawn into the lure of it under the pressure of too many things to do.

It might be helpful to not take too narrow a view of scholarship. That which leads to more effective teaching can be just as valuable and may even be a more enduring than several papers in a research journal. However, I believe that to be recognized as scholarship it should have value beyond the teacher's own classroom, i.e., be exportable and hopefully peer-reviewed. Scholarly works should be encouraged, even required of university faculty whether they have research groups or not, and then they should be rewarded appropriately.

The subject of chemistry is in bad need of curriculum reform. We should no longer start with the building blocks of the elements and basic physics. We should begin with the exciting areas in mass spectrometry, separations, material, and biological chemistry and build the interest and curiosity that will support the drier underpinnings of the subject. Our freshmen students should feel they are learning at the frontiers of the field, not digging through its encrustations. Who would be in the best position to lead such a reform if not the researchers themselves?

We could start by considering that the most important things we can impart to students is the way we think and how we approach novel problems, not the memorization of formulas that are forgotten two weeks after term end. A recent study (using outcomes assessment) found indistinguishable scores on retained knowledge comparing graduates who had taken the BA and BS tracks through both physics and chemistry. The extra we cram into the BS program is probably largely wasted. The BS students would have been far better off spending the equivalent amount of time on a research project. Here is another example of the synergy of classroom and research experience.

We could formalize our mentoring activities under course numbers so that we and our departments get credit for the hours we spend in this kind of instruction. Then when we are asked by our humanities colleagues how many classes we are teaching, we should remember these and say three or four instead of one or zero.

We could begin to work on how public policy supports graduate education in the sciences. We could try to evolve methods where the University would be selling the *education* in re-search, rather than the research itself. If even a small fraction of the federal fundamental research dollars were reserved for academic institutions applying for program grants in graduate education (perhaps with no overhead), departments would be able to optimize their whole program, many professors could be more productive, and oceans of time would be released to do the teaching, graduate and undergraduate, that we entered academics to do.

The older ones of us could help provide some perspective – the longer view – on how departments can meet lab teaching and research group size objectives in times of decreasing availability of graduate students and money. In my early teaching days, groups of only a few students were the norm for everyone. People hired technicians and undergraduates. More modern solutions might involve teaching postdoctoral positions, shared technical staff, cooperative programs with nearby colleges, and other approaches.

If the challenges of keeping an active group going while doing our part in the classroom and department are daunting for seasoned faculty, imagine what it is like for those in their first few years in a faculty position. This brings up the importance of mentoring our new young faculty. It is one of the ways we can increase their chance of success in these most difficult first years, and one of the ways we can make the nearly impossible hurdles they face seem more reachable. During this time, we can also help them learn how to practice integration rather than tension among the various tasks they need to do.

Finally, we can ourselves recognize, support, and practice the synergistic aspects of teaching creativity and creatively teaching.

# Treasurer's Report



By Al Ribes

## Division dues go up by \$2

The Executive Committee of the Division agreed to raise the membership dues \$2 across the board at its Spring meeting in San Diego.

The officers firmly believe that the current programs stewarded by the Division bring value to the membership, to the profession, and to Society. However, the Division is facing continued budgetary shortages into the foreseeable future. Taking into consideration the affordability of the membership dues even after the raise, the officers trust that you will continue to support your Division.

This decision was not taken lightly. The last time that the Division raised its membership dues was 1999. The Division currently raises around 40% of its income from the membership dues (the rest mostly from corporate sources). The dues are a key component in the Division's ability to provide services in support of students, recognize excellence in our profession, and support the scientific programming in the area of Analytical Chemistry at international, national, and regional forums.

## Budget deficits and liability

Last year the Division ended \$9,000 in the red, due to fewer members than expected, the undergraduate awards costing more than budgeted, and the lack of a sponsor for the Division's Spectrochemical Analysis Award. After considerable discussions, the 2005 budget carried a deficit of \$1,380 from the lack of sponsorship for the Spectrochemical Award.

The income levels for the first half of this year were also lower than expected. The Division budgeted for \$70,000 but only received \$67,000 from membership dues. Finally, next year the Division must be prepared to incur a \$25K liability if there is a problem with the number of people attending the 2005 Pacificchem meeting, although that is not anticipated.

## Cost of membership in other Divisions

While no meaningful comparison can be made without understanding what services other Divisions members derive for their dues, the revenue side of membership with other Divisions can be analyzed to provide a benchmark level of affordability. In 2003, basic membership dues for ACS members ranged from \$8 for the Agricultural Food Division to \$55 for the Rubber Division. The Analytical Division, at \$14, was shy of the average at \$17. The approved increase to \$16 for ACS members keeps the Analytical Division as one of the more affordable ones.

## New fee structure for the Division

Category	2006 Dues
Division member	\$16
Retired member	\$16
Division affiliate	\$20
National affiliate	\$20
Student	\$10
Emeritus status	\$0
Subdiv. of Chrom-phy	\$4

## Is raising the membership dues the only answer?

The Executive officers do not think so. The officers are working on developing programs where individuals can also donate to Division programs, and get recognized for it. The Division continues to seek one or more corporate sponsors for its Spectrochemical Analysis Awards, and is considering to encourage symposia organizers to secure funding when-ever possible to cover speaker registration costs which are a major source of expenses for the Division (\$64,000/year).

Other sources are important too, such as the allocations to the Division from the national ACS. Basically when members of a Division attend an ACS meeting, if they attend the exposition (and get their attendance documented by means of having their badges scanned at the gift booth and the daily gift draws), or if they attend the oral and poster sessions of the Division, the ACS provides some money to the technical divisions that bring in members to these events.

## OUR SPONSORS

### Division awards

#### Corporations

Waters Corporation  
Dow Chemical Foundation  
Dekker Foundation  
Phillip Morris Companies USA  
Cole-Parmer Company  
Agilent Technologies

#### Individuals

Charles Wilkins – U. Arkansas  
James Winefordner – U. Florida  
Bonner Denton – U. Arizona

### 2005-2006

#### Graduate Fellowship

Merck & Co, Inc.  
Eli Lilly and Company  
Eastman Chemical Co.  
Society of Analytical Chemists of Pittsburgh  
DuPont de Nemours & Co.  
Johnson & Johnson Pharmaceuticals.  
GlaxoSmithKline.

#### Graduate Travel Awards

Pfizer Inc. – Research and Development.

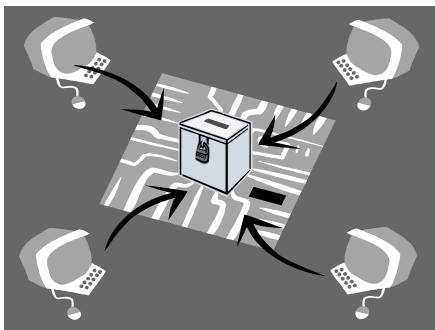
#### 2005 Technical Symposia

Varian  
IPG Photonics  
Isco  
Hanna Instruments  
BIA Separations  
Applied Biosystems  
Chroma Technology Corp.  
Nikon Instruments  
Pittsburgh conference.  
Dionex  
ThermoElectron Corp.

# Participation in the Division of Analytical Chemistry elections quadrupled.

Over 1,300 members vote in Division's elections. User-friendly electronic balloting credited with increased member participation.

By Al Ribes



The Division of Analytical Chemistry conducted its first elections for Division Officers using electronic ballots. The Election opened from May 27 and ended on July 10, 2005. Over thirteen hundred (1,349) members had cast their ballots. This level of participation almost quadrupled last year's (359) and is by itself the clearest indication that Division members liked the new process.

The new process also made the submission of comments easy. The Division received over 80 comments. The overwhelming majority were positive comments. It is not possible to reproduce them all, but what the members had to say can be summarized by a sample of the statements:

- "Electronic ballot is far preferable to old-style paper ballot!"
- "Thank-you for conducting the election via e-mail. It makes it very easy to participate"
- "This was great - simple, easy and quick!"
- "The on-line voting format is wonderful! Please continue to use it in future elections"
- "Worked well using Mac platform (OS9) and IE 5.1"

- "It was an easy process. I tend to put my paper ballots to the side, then they get buried on my desk, until it's too late."
- "Good Job. This was about the most efficient web site I have ever used."
- "Excellent voting process! Worked very smoothly!"
- "I must confess, that here from NIGERIA I can just exercise my voting right just by a click of the mouse".
- "I like this way of doing the selection. It was easy to use and gave me the information I wanted at the same time. It prevented me from losing the candidate biography information before I could use it. Good job".
- "Excellent tool for non US members!"
- "Thanks for making this happen. I am more likely to vote now".

#### Suggestions for improvement:

- "worked well but you set things up backwards - the e-mail and the site both prompt you to vote first and put the bio info at the bottom. You should put the url for the bios before the link to voting in the email and on the site put the bios up top above the button for voting."
- "It would be very helpful if information on the duties and expectations of the positions being voted for could be provided, together with the bio information".
- "Would like to see graduation dates and perhaps major professors."

#### Accolades for Steven Petrovic and the Canvassing Committee:

- "Voting was very easy and straight forward. The biographies were concise and standardized which made evaluating a candidate very easy. Thanks for the good work."

- "The online voting was great, but more exciting was an election where there was a choice, rather than pre-chosen officers!"
- "Good to see that there are women running for these posts".
- "Thanks to the organizers of the elections and candidates for their volunteer efforts."
- "Good slate of candidates. I would be happy with any of them."

#### How the new electronic balloting worked

Each member received a unique voter registration code and the URL of a web site, via email or postcard (1<sup>st</sup> class mail), which allowed them to load the ballot via their web browser and make their choices. Members without a computer were able to vote from their local libraries or Internet cafes. The members with e-mail received an initial email at the start of the election and two reminders (just to those who had not voted yet) through the election. Only those with valid codes were able to open the ballot, and each individual code worked for one ballot submission. It's was a simple but secure method and according to our members, it worked really well.

Thanks to those of you that took the time to vote and also heartfelt thanks to those who went the extra mile to provide feedback for the Division.

The electronic balloting taskforce,

Al Ribes  
Sally Stafford  
David Pinkston  
Steven Petrovic

## Subdivision of Chromatography and Separations Chemistry News

As a subdivision of the ACS Analytical Division, the SCSC is charged with the general objective of advancing the development of separation science. Two important activities are: 1. organizing symposia in separation science for the National ACS Meetings, and 2. managing the Award for Young Investigators in Separation Science.

The ACS provides detailed demographics of the SCSC. Some interesting data: The total membership as of April, 2005, is 2037 members. Of these, 1237 members are relatively new, having joined in 2001 – 2005. Only 267 members date back to 1981 – 1985. By degree, 666 members have a Ph.D., 296 have a M.S., and 797 have a B.S./B.A. as the terminal degree. By gender, 1344 members are male and 693 are female. By nationality, 1729 members are residents of the USA. By interest area, 976 members are analytical, 52 are biochemistry, 72 are biotechnology, 302 are medicine and pharmaceuticals, 88 are environmental, and 37 are polymers and plastics.

The SCSC welcomes both new and continuing members. You can become more active by attending and contributing your ideas at the annual meeting or by contacting the Officers and members of the Executive Committee by e-mail. Please see the web site [www.acs-analytical.duq.edu/subdivoff.html](http://www.acs-analytical.duq.edu/subdivoff.html) for contact information. Dr. Brian Bidlingmeyer, Agilent Technologies, will assume the duties of Chair on October 1, 2005 for a two-year term. Prof. Victoria McGuffin, Michigan State University, will assume the duties of Past-Chair. She deserves special thanks for serving as Chair for several years.

### Annual Meeting of the SCSC

The annual meeting of the SCSC is scheduled to be held at 12:00 p.m. on Monday, March 13, 2006, at the Pittsburgh Conference in Orlando, FL. The spring edition of the Analytical Division Newsletter will contain information on the location and agenda. The agenda will include nomination of

officers for 2006 – 2008, program planning for future National ACS meetings, and new business. Please plan to attend. The meeting is open to anyone with an interest in the broad area of chemical separations.

### Young Investigator Award

The ACS Division of Analytical Chemistry Award for Young Investigators in Separation Science is designed to recognize and encourage outstanding contributions to the field of separation science by a chemist or chemical engineer within ten years of their terminal degree. The award is sponsored by Agilent Technologies. It consists of a plaque, monetary prize, and an award symposium to be held at the Pittsburgh Conference.

The recipient of the 2005 award is Prof. Michael Bowser, University of Minnesota. Prof. Bowser's research interests focus on problems at the interface between chemistry and biology. Two areas of particular interest are the in vivo monitoring of neurotransmitters and the in vitro evolution of functional biomolecules. The award will be presented at the 2006 Pittsburgh Conference in Orlando, FL, and will include invited lectures by Prof. Edgar Arriaga (University of Minnesota), Prof. David Chen (University of British Columbia), Prof. Norm Dovichi (University of Washington), and Prof. Robert Kennedy (University of Michigan).

Nominations are now invited for the 2006 award. As it is important to consider all qualified nominees, the SCSC has initiated an outreach program. Dr. Ron Majors, Agilent Technologies, will be responsible for increasing nominations of scientists working in industrial and institutional settings. Prof. Susan Olesik, Ohio State University, is making similar efforts to increase the gender and ethnic diversity of the nominees. The nomination process, including deadlines and eligibility requirements, is described on the web site [www.acs-analytical.duq.edu/dac\\_awards.html](http://www.acs-analytical.duq.edu/dac_awards.html). Please consider nominating your most

worthy young colleagues for this prestigious award!

### National ACS Meetings

For many years, the programs within the Analytical Division at the National ACS Meetings have consisted wholly of organized symposia with invited papers. This approach has been used to maintain the timeliness and importance of the symposium topics as well as the high quality of the oral presentations. Posters were seen as an alternative for the contributed papers. However, some may perceive posters presentations to be less prestigious or less important than oral presentations. The Analytical Division and the SCSC are striving to achieve a balance and will be attempting, over the next few National ACS Meetings, to use high-quality contributed papers to round out the oral technical program. So please submit your abstracts to be considered for these oral sessions!

The 2005 Fall National ACS Meeting in Washington, DC, will contain several symposia arranged by the SCSC. A half-day symposium on Multidimensional Gas-Phase Separations has been organized by Prof. Richard Sacks, University of Michigan. This will be complemented by a half-day symposium on Multidimensional Liquid-Phase Separations, organized by Dr. Mark Schure, Rohm & Haas Co. Dr. Karen Phinney, National Institute of Standards and Technology, has organized a symposium on Advances in Supercritical Fluid Chromatography and Extraction. In addition, there will be oral and poster sessions of contributed papers that are of interest to separation scientists. Please see the web site [www.oasys.acs.org/acs/230nm/techprogram/anyl.htm](http://www.oasys.acs.org/acs/230nm/techprogram/anyl.htm) for further information.

Plans for the 2006 Spring National ACS Meeting in Atlanta, GA, are currently in preparation. Topics under consideration include analytical applications of micelles and food analysis. Please contact Dr. Brian Bidlingmeyer, SCSC Program Chair, if you have any suggestions for this meeting.



## 32<sup>nd</sup> FACSS / 51<sup>st</sup> ICASS Conference

### Federation of Analytical Chemistry and Spectroscopy Societies International Conference on Analytical Sciences and Spectroscopy

October 9 - 13, Québec City Convention Center, Québec City, Canada

The FACSS Conference is an annual meeting that covers the whole of analytical chemistry and has a proud tradition of bringing together the leading scientists across many disciplines for scientific exchange. The 2005 meeting in Quebec City, Canada is bolstered by a partnership with the Canadian Society for Analytical Sciences and Spectroscopy in hosting the 32<sup>nd</sup> FACSS / 51<sup>st</sup> ICASS meeting. Registration is open and additional information is available online via [www.facss.org](http://www.facss.org). Discounted hotel rates are available at venues adjacent to the Quebec City Convention Center. Importantly, substantially discounted airfares are being offered through Air Canada utilizing the convention number **CV054048** at **1-800-361-7585** or **515-393-9494** or through your own travel agent.

Highlights of this year's conference include plenary lectures by Richard Zare and R. Graham Cooks. Presentations and sessions for the prestigious Lippincott, ANACHEM, Charles Mann, Meggers and Strock Awards anchor each day's sessions. The FACSS Workshops include courses spanning basic principles to state-of-the-art techniques in analytical chemistry and spectroscopy. Course offerings are listed at [www.facss.org](http://www.facss.org) and two new courses, *Principles of Infrared Spectral Interpretation* and *Laser Ablation Sampling for ICP-MS* are being offered. There are substantial savings available to students both for the conference registration and workshops. Please join us this year for the 32<sup>nd</sup> FACSS / 51<sup>st</sup> ICASS Conference in beautiful Quebec City, Canada. We look forward to seeing you there!

## Analytical Sciences Digital Library Begins Peer-Reviewed Publishing

By Alexander Scheeline,  
University of Illinois at Urbana-Champaign

For most of its existence, the Analytical Sciences Digital Library (ASDL) has been a collection of peer-reviewed and annotated links to websites useful for teaching analytical chemistry and measurement science. Recently, ASDL has also started limited publishing of peer-reviewed materials. Because it is an ungated, Open Source site, all publication is under the Creative Commons license ([www.creativecommons.org](http://www.creativecommons.org)), in which the author retains copyright but the licensee has the right to distribute without limit and web users can read, download, and hotlink without limit. Copies can be made, as long as the original author is cited as the creator of the material, and the copies are distributed at cost. All economic benefit, if any, from the material remains with the author.

Because of the flexibility of the internet, publication can take many forms. ASDL is focusing on four areas:

- **eUndergraduate Research Highlights.** This is intended to be a forum for posting the results of undergraduate research. Mentors or students interested in submitting manuscripts should contact Ted Kuwana, [kuwana@sunflower.com](mailto:kuwana@sunflower.com)
- **eCourseWare.** Material to enhance lecture, seminar, case-study and recitation sections of courses. This might include innovative problems, data sets and scenarios.
- **eLabWare.** ASDL's first publication, Rob Thompson's instrumental analysis lab manual based

## At the Spring ACS Meeting in San Diego



The CSI-inspired symposium "Finding Criminals with Forensic Chemistry" that took place at the Spring National Meeting in San Diego drew standing-room-only crowds and was overwhelmingly successful. Discussing this exciting area of Analytical Chemistry are (left to right) Howard Peters (ACS Director-At-Large), Marge Cavanaugh (Committee on Minority Affairs), Henry Blount (ANYL), and Co-Organizers Luis Echegoyen (COMSCI) and Jose Almirall (ANYL). The symposium was jointly sponsored by COMSCI, ANYL, and CHAL.

on a forensic analysis theme, falls into this category.

- **eEducational Innovations and Practices.** Papers, software, and critical analysis of teaching methods focused on analytical pedagogy belong in this category.

Submissions in any of the last three areas can be made by contacting Alexander Scheeline, [scheelin@scs.uiuc.edu](mailto:scheelin@scs.uiuc.edu). Details of submission and review requirements are posted on the ASDL website, [www.asdlib.org](http://www.asdlib.org).



## Successful Women in Chemistry – Order Book Now!

### *Successful Women in Chemistry - Corporate America's Contribution to Science*

Edited by Amber S. Hinkle and Jody A. Kocsis

This symposium series book describes women in mid- to upper- level positions within the chemical industry who have been deemed successful, but are relatively unknown on a national level. Success comes in many forms, and it also comes in many positions. This book highlights women whose careers range from very technical and obvious to those that are not. Some of the key careers include technical directors, eminent scientists, business managers, patent attorneys, bench chemists, entrepreneurs, and journalists.

The goal of this book is to create a resource where women can find role models in their chosen fields. Based on a series of interviews, the book showcases more than twenty women chemists and their compelling success stories. In highly readable and honest accounts, these women tell of the challenges, positive influences, and personal aspirations that have helped shape their individual careers. The diverse professional choices they have made and the range of innovative strategies they have employed guarantee their stories will provide inspirational reading for anyone interested in achieving success in chemistry - or any technical field. Insightful opening remarks by ACS Executive Director Madeleine Jacobs underscore the book's timeliness for today's readers.

Profiling women with a wide diversity of experiences and career opportunities allows the reader to find a common connection. Finally, this series book highlights both the pleasant and unpleasant career experiences in the corporate arena.

Dr. Amber S. Hinkle is Director of the Quality Department for polycarbonate manufacturing at Bayer's Baytown, Texas, facility. She holds a B.S. degree in Chemistry from the University of Utah and a Ph.D. in Organometallic Chemistry from the University of Washington. She is a subcommittee Chair within the ACS WCC, is past Chair of the St. Joseph Valley ACS local section, and has served on the ACS Presidential Task Force on Women in the Chemical Profession.

Ms. Jody A. Kocsis has been a Technology Manager in the Engine Oil Product Development Group at the Lubrizol Corporation headquartered in Cleveland, Ohio, since 1989. She received a B.S. in Chemistry from the Notre Dame College of Ohio, and holds 5 U.S. patents and 10 foreign patents for inventing new motor oil additives. She is a co-founder of Women in Lubrizol Leadership and a nominated member of the [ACS WCC](#).

Please join us for a book signing by the Editors, Dr. Amber S. Hinkle and Ms. Jody A Kocsis, prior to the WCC Reception, Tuesday, August 30th at the Willard Inter-Continental Hotel (1401 Pennsylvania Ave NW, Washington D.C.) in the Ballroom. The signing will begin at 11:15am and will continue until 12pm.

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## ACS Online Store

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In our online store, you'll find everything from apparel, mugs, and jewelry, to professional development materials and National Chemistry Week items. We invite you to browse or search our store and [let us know](#) what additional products and services you'd like to see. The ACS online store can be found at: <http://store.acs.org>



# Mark Your Calendars for the Analytical Division Dinner at the Fall ACS Meeting

at the District Chophouse and Brewery

Always a great time!



## At the Division Dinner at the Spring 2005 ACS Meeting in San Diego



Left to right: Past Treasurer Carolyn Ribes, Past Chair J. David Pinkston, and Division Chair John Callahan



Left to right: Councilor Michelle Buchanan, Marvin Vestal, and Ken Standing

- ☺ You'll be sorry if you miss the Analytical Dinner Monday evening. The venue is The District Chophouse and Brewery, a highly-rated venue convenient to the convention center and hotels. We will have a whole room to ourselves for optimum mixing and celebration.
- 🕒 A reception (cash bar and free hors d'oeuvres) begins at 6 pm with dinner served at 7 pm. After appetizer and Caesar salad, you will have your choice of Roasted Prime Rib, Grilled Salmon, or Chicken Saltimbocca served at your table. You can check out this highly rated restaurant at their website: <http://www.districtchophouse.com/>.
- 👤 Besides the good food, this is a terrific opportunity to chat with your analytical friends and colleagues in a congenial atmosphere, talk with Division officers, and personally congratulate our awardees.
- 🔄 Those joining the Analytical dinners in the past tend to make it a regular event. If you haven't come before, this is the time to start!
- 💰 Tickets are available at registration (by mail or onsite) for \$60 (our cost) up to 10 am Monday morning. Advanced registration helps with the planning and is greatly appreciated.

👉 See you there!

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Located on 7th Street, NW, between streets E and F, just 1/2 block south of the MCI Center and Gallery Place Metro (on the Red, Yellow and Green Lines.)





*At the Division Dinner at the Spring 2005 ACS Meeting in San Diego*



Debra R. Rolison and Division Councilor Roland F. Hirsch



Mark Wightman and Past Treasurer Carolyn Ribes

**Division Chair John H. Callahan congratulates the winners of the I.M. Kolthoff Enrichment Award for Undergraduate Students**



Melissa Passarelli



Christopher Richards



Peter Brakke



Blithe Casterfine



Andrew Ault