

The Chemical Bulletin

<http://chicagoacs.org>

JUNE • 2011

CHICAGO SECTION AMERICAN CHEMICAL SOCIETY MEETING MONTHLY MEETING THURSDAY, JUNE 23, 2011

The Country Squire
19133 E. Belvidere Rd.(IL Route 120)
Grayslake, IL 60030
847-223-0121

DIRECTIONS TO THE MEETING

From the Chicago area, take Route 41 or I-94 north to Route 120 (Belvidere Rd.). Go west on Route 120 to about a block past Route 45. The Country Squire is on the south side of the road.

PARKING: Free

JOB CLUB 5:00 - 6:00 P.M.

PRE-DINNER TALK 5:30 – 6:15 P.M.

“The History of the Chicago Chemists Club. How does it relate to today’s chemists, the ACS, and where are we headed?” -- Rudy Bernath

SOCIAL HOUR (Cash Bar) 5:30 - 6:30 P.M.

DINNER 6:30 P.M.

GENERAL MEETING 7:30 P.M.

Presentation of the 50 and 60-YEAR AWARDS

The Chicago Section honors our fifty and sixty-year members (see page 5).

Presentation of the 2011 DISTINGUISHED SERVICE AWARD to Dave Crumrine (see page 4)

AFTER-DINNER SPEAKER



Dr. Adrian Whitty, Associate Professor, Department of Chemistry, Boston University, Boston, MA

IN THIS ISSUE

2	Dinner Menu	7	College of Pharmacy
2	Fulbright Scholarships	7	ACS Courses
3	ChemShorts for Kids	8	The Un-Comfort Zone
3	Women in Chemistry	8	Chemical Landmark
4	DSA Awardee	9	Chemistry History
4	IYC 2011–Chicago	10	Sponsors Needed
5	50 & 60-Yr Members	11	Dreyfus Prize
6	Chemistry Olympiad	11	Ad Index
6	State Fair Chemistry Tent	12	Job Club
6	Gibbs Medal Centennial	12	Calendar

(continued on page 2)

(continued from page 1)

Topic: " Drugging the Undruggable: Discovering Small Molecule Inhibitors of Constitutive Protein-Protein Interactions"

Abstract: Inhibiting protein-protein interactions (PPI) with small molecules represents a major challenge for contemporary drug discovery and chemical biology. Disrupting constitutive, high affinity protein oligomers in some ways represent an extreme form of this challenge. We describe two synthetic inhibitors of different trimeric TNF family cytokines - TNF α and CD40 Ligand - that were discovered independently using conventional binding or inhibition assays, but were subsequently found to function by disrupting the trimeric structure of these high affinity, constitutive oligomers. The X-ray co-crystal structure of each compound with its target revealed important similarities and striking differences in the mode of recognition. Detailed biochemical and biophysical characterization suggests that the inhibited complexes represent different stages of a common inhibition mechanism involving a conserved core of aromatic residues. Overall, our results suggest that constitutive PPI interfaces can in some cases be easier to inhibit with a small molecule than are weaker, transient PPI targets.

Biography: Dr. Whitty is Associate Professor in the Department of Chemistry, Boston University, where he joined the faculty in 2008. He spent the previous 14 years at Biogen Idec, most recently as Director of Physical Biochemistry leading a group responsible for the structural, biophysical and mechanistic study of drug targets and of protein and small molecule drug candidates.

He obtained a B.Sc. in Chemistry at King's College, University of London and a Ph.D. in Organic Chemistry at the University of Illinois at Chicago, after which he held a Postdoctoral Fellowship at Brandeis University with Professor William P. Jencks. He left Brandeis to join Biogen (now Biogen Idec) in 1993.

His research has included elucidation of enzyme mechanisms and enzyme-inhibitor interactions, as well as mechanistic investigations of integrins, immune cell co-stimulatory molecules, and a number of cytokine and growth factor receptors. The unifying theme of his work has been to understand how binding energy is generated through protein-protein or protein-small molecule interactions, and how it is used to achieve biological function and specificity. A major current focus of his research is the development of small molecule inhibitors that block protein-protein interactions.

Instant Vacuum Capacity

The VACUU-LAN[®] Mini-Network



- One pump serves 3-6 users
- Cross-talk protection
- No construction/installation
- Upgradeable to electronic vacuum control at each port

Simple filtration to demanding evaporations

Details at www.vacuu-lan.com



info@vacuubrand.net

Five Decades of Vacuum Innovation

www.vacuubrand.com

888-882-6730

Menu: Fresh Fruit Cocktail; Spinach salad; Entrée Selections: Roast Prime Rib, Broiled Lake Superior White Fish, or Pasta with Vegetables; Baked Potato, Stuffed Tomato with Broccoli au Gratin; rolls and butter; Cheesecake with Strawberry Topping; beverage.

Dinner reservations are required and should be received in the Section Office via phone (847-391-9091), email (chicagoacs@ameritech.net), or online (<http://www.chicagoacs.net/new.html>) by noon on Tuesday, June 21.

The dinner cost is \$30 to Section members who have paid their local section dues, members' families, and visiting ACS members. The cost to members who haven't paid their local section dues and to non-Section members and is \$32. The cost to students and unemployed members is \$20. Seating will be available for those who wish to attend the meeting without dinner.

PLEASE HONOR YOUR RESERVATIONS. The Section must pay for all dinner orders. No-shows will be billed.

FIND OUT MORE ABOUT THE GLOBAL CELEBRATION OF IYC-2011

Visit the global IYC website www.chemistry2011.org, the primary source of information on the IYC, created and maintained by the International Union of Pure and Applied Chemistry (IUPAC) with the guidance and sponsorship of the United Nations Education, Scientific and Cultural Organization (UNESCO).

FULBRIGHT SCHOLARSHIPS

The Core Fulbright Scholar competition for 2011-2012 is now open. Over 800 grants are available for teaching, conducting research, or combining both in more than 125 countries around the globe. The deadline is August 2.

For information on Fulbright Scholar Awards, consult the website: www.iie.org/cies. If you are interested in requesting information, please write to scholars@iie.org.

REGISTER ONLINE for Chicago Section monthly meetings
www.ChicagoACS.org

NOTICE TO ILLINOIS TEACHERS

The Chicago Section ACS is an ISBE provider for professional development units for Illinois teachers. Teachers who register for this month's meeting will have the opportunity to earn CPDU's.

"CHEM SHORTS" For Kids

The Elementary Education Committee of the Chicago Section ACS presents this column. They hope that it will reach young children and help increase their interest in science. Please print it out and pass it on to your children, grandchildren, or elementary school teachers. Teachers are encouraged to incorporate the projects in this column into their lesson plans.

MicroMeteorites

Kids, you can test for little bits of outer space in your own backyards. Every day, 500 tons of dust and rock from space collide with Earth. Much of this burns up in the atmosphere as 'shooting stars.' However, particles smaller than a millimeter wide sometime slip through the air without burning. These are micrometeorites. They can float through the sky as dust and fall to the ground in rain. With a powerful magnet and some luck you just might be able to find one of them on your own.

You'll need a paper cup with two holes poked through the paper at the top near the lip of the cup, across from each other. Through these holes tie a loop of string about one foot long so that you have a basket. Into the cup place a very strong U-shaped or bar magnet. This is your micrometeorite collector. Bring it outside on a dry day and gently tap it over areas of ground that are dry (but that do get wet after rain) and not disturbed by people or vehicles. Good places to try might be near downspouts, areas of lawn not often used, or areas next to hiking trails.

When black specks become stuck to the bottom of the cup, take the cup inside and place it on clean white paper. Remove the magnet and tap the cup to shake off the specks. Use a magnifying glass and tweezers to pick out the roundest particles less than half a millimeter wide. These have the greatest chance of being micrometeorites made of iron or nickel, which are magnetic metals. Particles that aren't round are flecks of iron from other sources.

If you have a microscope, put the best particles on a glass slide for examination. Micrometeorites often are smooth because their surface melts in the heat created by entering the atmosphere.

What is a meteorite? It is a space rock fragment formed from a broken asteroid. Meteorites made of iron come from the cores of asteroids.

Trivia: The dust on cars after a rain comes from high in the sky, too, and may contain desert sand and volcanic ash in addition to micrometeorites.

TIP: Don't touch your dust with the magnet or it will stick and be very difficult to remove. This is why the paper cup is used as a shield.

References: "Rock and Fossil Hunter", a Smithsonian series book by Ben Morgan; DK Publishing, Inc. NY; 2005; page 36, "Rocks from space"

Submitted by DR. KATHLEEN CARRADO GREGAR

To view all past "ChemShorts for Kids," go to:
<http://www.chicagoacs.net/ChmShort/kidindex.html>

ACS LAUNCHES INTERNATIONAL YEAR OF CHEMISTRY VIRTUAL JOURNAL

Each month, the IYC Virtual Journal (<http://iyc2011.acs.org/2011/01/01/virtual-journal/>) will highlight the many ways in which chemistry improves everyday life for people around the world in alignment with four themes — health, energy, environment, and materials. Free access to the full text of the journal content will be available to all visitors throughout 2011.

**Put your business card here
Reach prospective clients by
advertising in
*The Chemical Bulletin***

.....
**For more information, call
the Section office
(847) 391-9091
or email at
chicagoacs@ameritech.net**

June, 2011 Vol. 98, No. 6. Published by the Chicago Section of The American Chemical Society, Editorial Staff: Cheryl Bradley, Editor; Fran Kravitz, Associate Editor; Richard Treptow, Proofreader; Frank Jarzembowski, Publications Business Manager. Address: 1400 Renaissance Dr., Suite 312, Park Ridge, Illinois 60068; 847/391-9091. Subscription rates: \$15 per year. Frequency: monthly-September through June.

Toxicology Consulting

**Medical Devices
Pharmaceuticals
Biologicals
Risk Assessments**

**Product Development
FDA Registration
Quality Assurance
Regulatory Compliance**

Northup RTS

Sharon J. Northup, PhD, DABT
783 Ridge Road
Highland Park, IL 60035

Ph: 847-579-0049 Fax: 847-579-0052

Northuprts@aol.com
www.toxconsultants.com

CELEBRATING WOMEN IN CHEMISTRY

ACS has added a new commemorative web feature highlighting women scientists in American history. The site, www.acs.org/womenscientists, profiles ten inspiring women who overcame gender discrimination to reach the heights of scientific investigation and discovery. Among the women featured are: Ellen Swallow, pioneer of sanitary engineering; Gerty Cori, whose landmark research gave us an understanding of sugar metabolism; and Rosalyn Sussman Yalow, the Nobelist behind the groundbreaking radioimmunoassay technique.

DAVID CRUMRINE RECEIVES THE DISTINGUISHED SERVICE AWARD



The 2011 Distinguished Service Award will be presented to **David Crumrine** at the Chicago Section meeting on June 23.

The Distinguished Service Award (DSA) was established in 1974 at the suggestion of Louis L. Lerner, who was consulting editor of The Chemical Bulletin at that time. The award was established to recognize members of the Chicago Section ACS who have provided exceptional service to the Section, separate from any other achievements of the recipient, either in the profession or by the National ACS.

Dave's interest in chemistry was primed early in his life by his parents who taught science, math and some other classes in several Ohio high schools. After a summer in an NSF high school chemistry program at Northern Illinois University, a summer NSF research opportunity at Ohio State with Albert Padwa, and a summer spent in Nitro, West Virginia working for Monsanto with John Damico, his course was set. A PhD in organic photochemistry with H. E. Zimmerman from U of Wisconsin-Madison was followed by post-doctoral work with Herb House at MIT and Georgia Tech.

Dave's initial ACS membership was part of a Senior award received from Ashland College. Participation in the Chicago ACS Section was encouraged by two Loyola colleagues, Carl Moore and Bruno Jaselskis. He worked on the Special Topics committee arranging predinner talks, the High School Education committee, and, since 1997, the Chemistry Day committee, sometimes as co-chair with Tom Kucera. With the help of Loyola colleagues, he has administered both the Local and National Chemistry Olympiad exams at Loyola since 2002.

David served as Chair of the Chicago Section in 2008. He served on the 21st ACS Great Lakes Regional Meeting (GLRM) committee, which met at Loyola University Chicago in 1987, as Program co-chair of the 30th GLRM in 1997, as Program Chair for the 35th GLRM, and Program co-chair for the 38th GLRM held in Lincolnshire in 2009. He has been an ACS Chicago councilor since 2001. In that position, he has served on

the ACS Publications committee (2002 – 2004) and subsequently on the Committee on Chemical Safety where he has chaired the Resources Subcommittee for several years.

In 1994, he organized, with David Boykin, an international symposium on Group VI NMR at the Washington ACS meeting, and in 2007 organized, with Laren Tolbert and Steve Fleming, an international symposium honoring H. E. Zimmerman's work at the Boston ACS meeting.

Dave started his career at Loyola University work-ing on N-nitrosamine photochemistry and reaction mechanisms. He taught six different classes in 1.5 years before he repeated one. A year's leave to learn more about NMR spectroscopy, working first with Hiizu Iwamura of the Institute of Molecular Science in Ozkazaki, Japan and then with Gordon Lowe of The Dyson-Perrins Laboratory at Oxford University in 1980-81, was a big plus for the whole family and a break into oxygen and sulfur NMR. The fall semester 2007 spent with Manuel Diaz of the Cancer Center at Loyola University Medical Center helped him learn more about research and techniques related to cancer biology. He has published 37 refereed research papers and two review articles working with outstanding graduate students, undergraduate students, and colleagues.

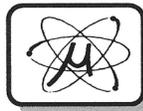
Dave was named a Master Teacher of the College of Arts and Sciences at Loyola University in 2004 and was nominated again in 2009. He was asked to join the Office of Research Services in 1997 where he was in charge of handling grant applications and awards and responsible for committees such as IRB, IACUC, and Radiation Safety. He became Assistant VP for Research before returning full time to chemistry to be department chair from 2002 to 2006. This position afforded him the opportunity to interact with the chemistry department chairs of other Jesuit universities from around the world.

In the fall of 2010, he was asked to be the Acting Director of CUERP (The Center for Urban Environmental Research and Policy), which produces biodiesel fuel and is involved with sustainability issues. He currently serves on a number of university committees.

A large number of colleagues and friends, research leaves to Japan, England, and Europe, trips with Jesuit chairs to Belgium and Spain, regional and national ACS meetings, various chemistry conferences, and a recent graduate reunion in Ireland were all very pleasing consequences of Dave's career.

Dave and his wife Sheila enjoy their combined families and share Dave's 94 year old mother, their 4 sons, two daughters-in-law, a granddaughter, and a wonderful life together.

Please join us on June 23 as we honor Dave with the 2011 Distinguished Service Award for his outstanding service to the Chicago Section.



Micron Analytical Services

COMPLETE MATERIALS CHARACTERIZATION

MORPHOLOGY CHEMISTRY STRUCTURE

SEM/EDXA, TEM/SAED, EPA/WDXA, XRD,
XRF, ESCA, AUGER, FTIR, DSC/TGA
3815 Lancaster Pike Wilmington DE. 19805
Voice 302-998-1184, Fax 302-998-1836
E-Mail micronanalytical@compuserve.com
Web Page: www.micronanalytical.com

IYC 2011 – CHICAGO IS ON FACEBOOK

Go to this link to get some Chicago-flavor IYC ideas and activities --

<http://www.facebook.com/pages/International-Year-of-Chemistry-2011-Chicago/177433692295986>.

Also go to http://www.joshkurutz.com/Site/Welcome_1.html to find out what IYC-related activities the Chicago section is doing.

Do Away with Vacuum Pump Oil Mist with MV Oil Mist Eliminators

*High-Capacity Oil Mist Eliminator
for Vacuum Pumps.*



*MV VISI-MIST Oil Mist
Eliminator for Smaller Pumps*

- Removes oil mist from vacuum pump exhaust
- Protects clean rooms from pump vapors
- Coalescing filters drain oil into a reservoir for easy recovery
- Keeps oil residue from sticking to furniture, walls and floors

Vacuum pump oil mist contaminates the surrounding air, settles on surfaces and you breathe it. Eliminate this problem by installing MV oil mist eliminators on your vacuum pumps. It will save you time and money.

The high-capacity oil mist eliminator is made of stainless steel and is designed for large vacuum pumps. It measures only 10" dia. x 13.5" high. The coalescing filter elements remove oil mist at 0.1 micron with an efficiency of 99.999%.

The MV Visi-Mist eliminates oil mist and is designed for smaller vacuum pumps. Contact MV Products for the oil mist eliminators best suited for your requirements. They install in minutes and require little maintenance.

A Division of Mass-Vac, Inc.

247 Rangeway Road • PO Box 359 • North Billerica, MA 01862-0359
TEL 978-667-2393 FAX 978-671-0014 E-MAIL sales@massvac.com WEB www.massvac.com

CONGRATULATIONS TO OUR 50 AND 60-YEAR ACS MEMBERS!

As part of our June 23 meeting program, we will honor an elite group of our section members who have been ACS members for 50 or 60 years! A membership card entitling them to free attendance at all ACS meetings is sent to each of them from the ACS National office in grateful appreciation of their many years of service to the Society. At our meeting, each of them will be presented a handsome membership certificate to mark the occasion.

50-yr Members for 2011

Cavit Akin
James W. Amick
Ludwig Nicholas Asfeld
Wilbert Bruce Bartelt
David L. Booth
George A. Boulet
John L. Brislin
Thomas J. Daly
Joseph F. Demendi
Joseph DiSalvo
Mary Jane Firszt
M. Thomas Krauss
Milt Levenberg
Kenneth Lewis
Peter Lykos
L.G. Marianowski
Donald Anthony Martinez
Thomas L. Miller
Wayne Donald Miller
S.F. Pavkovic
Warren V. Sherman
Hiroshi Shimotake
Leonard Stach
Thomas Mark Sutliff
Gary Wentworth

60-yr Members for 2011

John B. Braunwarth
Martin E. Ginn
Daniel W. Havens
Richard Holtzman
James A. Ibers
Thomas Keyahian
Jack E. Klingbeil
Aletha Kowitz
Leonard Leibowitz
Richard A. Mikulec
William C. Purdy
Ralph M. Robinson
Morey E. Slodki
James T. Traxler
Daniel Wearing
Rubin Weiner

**The mission of the Chicago
Section of the ACS is to encourage
the advancement of chemical
sciences and their practitioners.**

US NATIONAL CHEMISTRY OLYMPIAD 2011

Congratulations to **Nolan Maloney** of the Illinois Math and Science Academy who will represent the Chicago section at the Chemistry Olympiad Study Camp at the US Air Force Academy in Colorado May 31- June 15, 2011. Nolan is one of twenty-one Chicago area students who took the National exam and is one of the twenty finalists attending the "Boot Camp" in Colorado. The students, representing seventeen ACS local sections and ten states, will compete for one of four spots on the USA team that will participate in the upcoming 43rd International Chemistry Olympiad in Ankara, Turkey, July 9-18, 2011.

DAVE CRUMRINE

JOIN US AT THE FAIR!

The Chicago Section, jointly with the other ACS Illinois Sections, again plans to have an exhibitor's tent at the Illinois State Fair **August 12-21** in Springfield, IL. Our cooperative tent activities provide information to the public on chemistry with demos, hands-on activities, computer quizzes, posters, literature, and give-aways. They give us a chance to show the positive aspects of chemistry to many Illinois citizens and governmental leaders. **Last year, over 11,400 people visited our tent.**

We particularly need volunteers to help during the fair. Student members and other student volunteers are welcomed! If you are interested in helping us for a few hours in this fun and worthwhile outreach activity (you do get free admission to the Fair and free parking if you sign up to volunteer in time!) -- call the Section office at (847) 391-9091 and go to our website at <http://chicagoacs.net/statefair/index.html> for information and to sign-in using our online volunteer scheduler.

GIBBS MEDAL CENTENNIAL SYMPOSIUM AT FALL ACS NATIONAL MEETING

The Chicago Section is cosponsoring a symposium with the Division of the History of Chemistry (HIST) at the Denver National Meeting in August 2011. The title of the symposium is "Gibbs Medal Centennial." Of the 28 living recipients of the Willard Gibbs Medal, ten of them have expressed interest in presenting at this symposium: John Roberts (1983); Rudolph Marcus (1988); Harry Gray (1992); Peter Dervan (1993); Sir John Meurig Thomas (1995); Nicholas Turro (2000); John Brauman (2003); Ronald Breslow (2004); Jacqueline Barton (2006); and Robert Bergman (2011).

ACS OFFERS SPECIAL BENEFITS FOR UNEMPLOYED MEMBERS

During these tough economic times it's more important than ever to belong to the American Chemical Society. Unemployment members can tap into a host of valuable benefits and services that help them get back in the workforce. And, members in good standing may qualify for an unemployed member dues waiver, allowing them to renew their memberships and keep their member benefits at no cost. Contact ACS at service@acs.org, 800-333-9511 or 614-447-3671 for complete details.

LECTURER POSITION IN CHEMISTRY

The Chemistry Division at Illinois Institute of Technology (IIT) seeks candidates for a full-time lecturer position starting August 2011. Applicants must have a Ph.D. in Chemistry. Experience with instrument maintenance and organic chemistry lab teaching is highly desirable. Primary responsibilities include oversight and maintenance of chemistry teaching laboratory facilities and instruments, design and operation of undergraduate organic chemistry laboratory courses, supervision and training of graduate teaching assistants for organic laboratory courses and instruments. Additional responsibility is to teach undergraduate level chemistry courses, including General Chemistry. Applicants should send a cover letter, a curriculum vitae, a statement of teaching philosophy, and have three letters of reference sent to chemistry_search@iit.edu or as a hard copy to Professor Adam Hock, Department of Biological, Chemical and Physical Sciences, Illinois Institute of Technology, Chicago, IL 60616. Review of applications will start immediately and continue until the position is filled. IIT is an equal opportunity/affirmative action employer. Women and Minorities are strongly encouraged to apply.

HIGH SCHOOL TEACHERS CAMPS

A teacher's camp for high school general science, chemistry, physics, math and technology teachers and middle school science teachers will be conducted during the summer. The camp is sponsored by the Materials Information Society (ASM) and is a one-week workshop to show how to use low-cost or no-cost, simple labs and experiments using everyday materials that can be integrated into existing lesson plans. Camps are scheduled throughout the summer at various locations in the United States and Canada. View the schedule at www.asmfoundation.org.

The program is free and includes lunch and supplies. Housing is provided for non-local participants at residential camps only. Schedule is 8 am to 5 pm for five days. Late afternoon or evening field trips may be scheduled.

Primary faculty conducting the camps are two experienced high school Master Teachers who have taught materials science courses for many years and helped develop this innovative approach to hands-on learning of applied science principles.

Apply online at <http://www.zoomerang.com/Survey/WEB22BHQFA6KXB/>.

CONTACT THE CHAIR

Do you have any questions, suggestions, ideas, gripes, or complaints relating to the Chicago Section? Do you want to volunteer, help out, or lend a hand with Section programs or activities? Then contact your Chair. Simply log onto the Section's Web Page at <http://chicagoacs.org>, find the green button "Contact the Chair," and send me an e-mail. If I can answer your query I will respond personally. If I can't, I will forward your e-mail to someone who can, or try to provide you with a contact -- all in a timely manner. The Section belongs to you and the other 4,546 ACS members who reside in the Chicago area (northeast Illinois and northwest Indiana). Only you can make it work for you by being involved. But you can also make it fail by not being involved. I look forward to hearing from you.

KEITH KOSTECKA
CHICAGO SECTION CHAIR

COLLEGE OF PHARMACY AT ROOSEVELT UNIVERSITY

Roosevelt University's College of Pharmacy (RUCOP), located at the university's Schaumburg campus is among the four pharmacy schools in the Chicago area and the only college to offer a three-year pharmacy program in the Midwest. The accelerated graduate program allows enrolled students to seek employment one year earlier than their peers in a four year program.

The college is being led by its founding Dean George MacKinnon III. Dr. MacKinnon has been involved in a leadership capacity in the establishment and subsequent accreditation of new schools of pharmacy in Chicago and Phoenix, and has been engaged in clinical practice, research, education and academic administration. The curriculum focuses on didactic courses in biopharmaceutical, clinical and administrative sciences, and practice experiences. The Department of Biopharmaceutical Sciences is chaired by Dr. Moji Christianah Adeyeye who has been engaged in pharmacy education and pharmaceutical research for over 27 years. The Department of Clinical and Administrative Sciences is chaired by Dr. Sam Rasty who has been actively involved in pharmacy education and practice.

The program has been developed using an innovative, student-centered approach. Classrooms have been designed as interactive learning centers promoting student participation and active learning. Each student will be assigned to a certain pod/group and will be provided with a laptop used for instruction and assessment. RUCOP prides itself at having the smallest class size for a pharmacy program in the Illinois area. Small class sizes, student teamwork and the optimal use of technology are anticipated to increase student interaction with faculty and peers, and foster critical thinking and analysis.

A clinical skills laboratory complements the interactive curriculum to provide training on the use of diagnostic devices, administration of immunizations and patient counseling. A pharmaceuticals teaching laboratory serves as an environment for hands-on compounding of medications. Introductory pharmacy practice experiences (IPPEs) and advanced pharmacy practice experiences (APPEs) are offered throughout the curriculum. IPPEs begin as early as the second term of the first year allowing for integration of core knowledge elements with their clinical application in patient care. A 12-week long interval has been scheduled at the end of the first year to promote additional professional experiences for students. On campus research facilities and the proximity to major health systems and pharmaceutical companies provide abundant opportunities for overall professional growth.

Research at RUCOP focuses on fragment-based screening approaches and structure-based design for antiretroviral drug discovery, novel drug formulations and clinical evaluation. Research is conducted in collaboration with the Department of Biological, Chemical and Physical Sciences (DBCPS) on the Schaumburg campus. New research facilities will include medicinal chemistry, pharmaceuticals, translational and clinical pharmacology laboratories. Opportunities for research are available to interested undergraduate and high school students.

Roosevelt University is one of the most diverse institutions of higher education in the state of Illinois. RUCOP aims to address the significant scarcity of pharmacists in underserved populations and rural communities of Illinois and beyond. Curricular innovation and competent, committed and compassionate pharmacy graduates will distinguish RUCOP from other institutions.

SONALI KURUP
Assistant Professor of Medicinal Chemistry
College of Pharmacy
Roosevelt University

HNC Products Company
283 Cromwell Drive
Clinton, IL 61737
217/935-6845

Contract research and custom manufacturing
of topical dermatology products:
Rx, OTC and treatment cosmetics

ACS CONTINUING EDUCATION COURSES

In addition to the courses offered at each national ACS meeting, continuing education courses at various locations throughout the country are organized and administered by the ACS Professional Education department. Below are the courses scheduled for Chicago in October:

Ecological Impact of Chemicals (10/5)

From Kitchen to Plant: Industrial Production of Processed Food Products (10/5-6)

Introduction to Modern Mass Spectrometry (10/5-6)

Effective Supervision of Scientists and the Technical Staff (10/5-6)

Human Health & Toxic Impact of Chemicals (10/6)

Critical cGMP and ICH regulations for Pharmaceutical Laboratories (10/6)

Practical HPLC in Pharmaceutical Analysis (10/7)

Polymeric Coatings (10/7-8)

Dispersions in Liquids: Suspensions, Emulsions, and Foams (10/7-8)

Formulation Development and Drug Delivery Systems for Therapeutic Proteins (10/7-9)

Drug-like Properties: Optimizing Pharmacokinetics and Safety in Drug Discovery (10/8-9)

For more information, contact:
Bryan D. Tweedy
Program Manager
American Chemical Society
Office of Professional Education
202-872-4544; b_tweedy@acs.org
www.proed.acs.org

FREE SAMPLE ISSUES OF ACS JOURNALS

Visit <http://pubs.acs.org/page/pr/sample-issues.html> for free access to the first issue of 2011 for any of our peer-reviewed journal titles. Discover firsthand what makes ACS Publications the most read publisher in the chemical and related sciences.

THE UN-COMFORT ZONE

with Robert Wilson

What's Keeping You Awake?

The other day on the radio I heard these lyrics from the Shinedown song, *If You Only Knew* -- "It's 4:03 and I can't sleep... I toss and turn like the sea." I thought, "Yeah, why is it always 4AM that I wake up when I'm worried about something?" The singer of this top 10 pop rock song was troubled by a woman. What's keeping you awake?

Most of us, at one time or another, have spent sleepless hours in bed worrying about something. Then making it worse, you're tired the whole next day.

Over the years, I've ruminated over all sorts of things. Big issues I have little or no control over like politics, the environment, terrorism, and the economy. Personal issues that I need to affect such as my business, my family, and my relationships. I have even worried over my volunteer work. Churning the same thoughts over and over again.

Some of us worry about the past -- what could've been if only we had done something differently. Others worry about some future problem that hasn't even occurred yet.

Worry feels like motivation because it is rooted in the desire to fix a situation, but it is actually a de-motivator. It robs us of valuable energy we need to live a productive life. I love this modern update to an old proverb: "Worry is a brisk ride on a rocking horse; you burn a lot of energy, but you don't get anywhere." It is an amusing proverb that creates an accurate metaphor, but it does not offer us an answer on how to deal with worry.

For a simple solution on countering worry, I've always enjoyed the lyrics of this Irving Berlin song from the movie *White Christmas*: "When I'm worried and I can't sleep, I count my blessings instead of sheep; and I fall asleep, counting my blessings." Although, I must admit that I didn't really hear these sage words or make use of them for years.

When I finally did; I found that it really works. Sometimes we have to start with the basics, and remind ourselves of all that we do have and all that is going smoothly in our lives in order to put the troubling matter into perspective: "I have a roof over my head, I have my health, I have food in the house, I have a car, I have friends, etc."

I recently revisited Dale Carnegie's book, *How to Stop Worrying and Start Living*. It was written during the Great Depression and World War II -- a period of time when most people had plenty to stress over. The advice still holds up today.

The trick is to divert your pensive energy into practical projects. Carnegie suggests that we focus on doing our best one day at a time and the future will take care of itself. In other words, keep busy! Get so caught up in your work that you have no time to ponder all the "What ifs" that have been running like a broken record in your mind.

He also suggests that you ask yourself, "What is the worst that could happen?" Then he says to either accept that or seek out the answers you need to fix it. If you choose the later, you must collect all the facts, analyze them, make a decision, then act on it.

I think his best suggestion is to spend your time helping others. When you focus on what you can do for others, you cannot at the same time focus on yourself. Or in the words of one unknown author, "When you dig another out of their troubles, you find a place to bury your own."

Eventually you can utter the immortal words of Alfred E. Neuman, "What, me worry?"

--
Robert Evans Wilson, Jr. is a motivational speaker and humorist. He works with companies that want to be more competitive and with people who want to think like innovators. For more information on Robert's programs please visit www.jumpstartyourmeeting.com.

CULTIVATING CHEMISTRY AT THE CROSSROADS OF AMERICA

The **42nd Central Regional Meeting of the American Chemical Society** will be **June 8-10, 2011** at the Indianapolis University-Purdue University Indianapolis (IUPUI) University Place Conference Center, Indianapolis, Indiana.

Consult <http://www.cerm.regional.sites.acs.org/> for the most up-to-date information.

IYC 2011 AND NSF FUNDING

Attention Faculty! IYC 2011 is an opportunity to celebrate the creative future of chemistry. In recognition of this opportunity, NSF has announced the availability of "supplements to existing awards for creative ideas to enhance broader impacts via 'out-of-the-box' approaches to research dissemination." Go to http://portal.acs.org/portal/PublicWebSite/global/iyc2011/CNBP_025643 for further information.

DID YOU KNOW?

There is a National Historic Chemical Landmark plaque within the Chicago ACS section. It originally came from Cleveland, OH, where the work to invent and develop the technology that earned the Landmark status was originally done. The Landmark is for the Sohio Acrylonitrile Process. The technology is based on a reaction called ammoxidation, a single-step hetero-geneous catalytic reaction that produces acrylonitrile from propylene, ammonia and oxygen. Nearly all the world's acrylonitrile is produced by this process. Acrylonitrile is a building block for many kinds of textiles, fibers, engineering thermoplastics, and rubber compounds that are used every day. The technology now resides in INEOS, whose research laboratories and engineering facilities are located in Naperville, IL. So does the plaque from the ACS to commemorate the Landmark. You can read about the Sohio Process on the ACS web site www.acs.org/iyc2011; scroll to Day 86 of their excellent series 365: Chemistry For Life.

MARK CESA

International Year of Chemistry 2011
"Chemistry, Our life, Our future"
<http://www.chemistry2011.org/>

Other National Historic Chemical Landmarks within the Chicago section will be reported in an upcoming issue.

2011 CHICAGO SECTION DINNER MEETINGS

Friday, September 23
Loyola University
Dept. of Chemistry
Flanner Hall
6525 N. Sheridan Rd.
Chicago, IL

Friday, October 14
Northwestern University
Scott Hall
Room 165-The Guild Lounge
601 University Place
Evanston, IL 60208

Thursday, November 17
The Parthenon Restaurant
314 South Halsted St.
Chicago, IL

Friday, December 9
Holiday Inn Willowbrook
7800 Kingery Highway (Route 83)
Willowbrook, IL

JUNE HISTORICAL EVENTS IN CHEMISTRY

- June 3, 1960** Robert Burns Woodward synthesized chlorophyll, the catalyst for photosynthesis in plants.
- June 3, 1873** Otto Loewi, who shared the Nobel Prize in Physiology or Medicine with Henry H. Dale for their discoveries relating to chemical transmission of nerve impulses, was born.
- June 4, 1886** Henri Moissan isolated fluorine by electrolysis of solution of KHF_2 in anhydrous HF.
- June 5, 1995** The first Bose-Einstein condensate, a new state of matter far more dense than solids, was made.
- June 7, 1811** James Y. Simpson, an obstetrician, was the first to use chloroform as an anesthetic and introduce the use of ether in Great Britain, was born.
- June 11, 1842** Carl von Linde, who constructed equipment by which air could be liquefied on commercial scale and developed a methyl ether refrigerator and an ammonia refrigerator, was born.
- June 13, 1827** Charles Goessmann, who did research in the chemistry of sorghum and sugar beets, was born.
- June 15, 1754** Juan José D'Elhuyar, the discoverer of tungsten from wolframite ore, was born.
- June 17, 1832** William Crookes, who discovered thallium, was born. He separated uranium into two parts and named the new element uranium-X.
- June 18, 1932** Dudley R. Herschbach, who shared the Nobel Prize in Chemistry with Yuan T. Lee and John C. Polanyi for their contributions concerning the dynamics of chemical elementary processes, was born. He developed molecular beams to study products of collisions that occur.
- June 24, 1835** Johannes Wislicenus, who proposed geometric isomers and synthesized acetoacetic esters, was born.
- June 25, 1911** William H. Stein, a researcher in enzyme chemistry, was born. He shared the Nobel Prize in Chemistry in 1972 with Stanford Moore for their contribution to the understanding of the connection between chemical structure and catalytic activity of the active centre of the ribonuclease molecule and with Christian B. Anfinsen for their work on ribonuclease, especially concerning the connection between the amino acid sequence and the biologically active conformation.
- June 27, 1854** Abraham Gesner patented a process for obtaining kerosene by distillation.

LEOPOLD MAY
 Professor Emeritus of Chemistry
 The Catholic University of America
 Washington, DC

Additional historical events can be found at Dr. May's website, <http://faculty.cua.edu/may/Chemistrycalendar.htm> or This Week in Chemical History on the ACS website, <http://www.acs.org/whatischemistry>.

ASSISTANT PROFESSOR OF CHEMISTRY

North Park University, a Christian liberal arts school of over 3,000 students located in Chicago invites applicants for a tenure-track position in **Analytical** or **Bioanalytical** chemistry, beginning August 2011. Ph.D. required. Visit www.northpark.edu/facultyjobs for application details and instructions. An equal opportunity employer.

FREE T-SHIRTS

The Hospitality Committee raffles one T-shirt at each monthly dinner meeting. The shirt has CHICAgO spelled out using the periodic table. So come to a monthly meeting and maybe you'll win one!

WHEN YOU CHANGE YOUR EMAIL ADDRESS

Please let the section office know what your new email address is so that you will not miss any notes concerning issues of *The Chemical Bulletin* or other section information. Contact the office at 847-391-9091 or at chicagoacs@ameritech.net

SPONSORS NEEDED-- STATE FAIR CHEMISTRY TENT PROJECT

The Chicago Section, along with the other Illinois Sections of the ACS, is again planning to have an exhibitor's tent at the Illinois State Fair August 12-21. **Last year, over 11,400 people visited our tent.** The tent provides outreach to the public on chemistry through demos, hands-on activities, literature, and give-aways. **We are looking for individuals and companies to help sponsor our tent.** In return for financial contributions, we will display your company's name at the front of the tent as a sponsor and on CDs with information given to over 350 teachers throughout the state of Illinois. **This is a great way to get your company recognized in the public and to promote chemistry.** If you are interested in making a donation to help keep this worthwhile public outreach project going strong, please call the Section office at (847) 391-9091. Thank You!

FRAN KRAVITZ
CHERLYN BRADLEY
Co-Chairs, Ad-Hoc Committee of the Illinois Sections of the ACS Cooperative State Fair Project

ILLINOIS INSTITUTE OF TECHNOLOGY

Master of Chemistry in:

- Analytical Chemistry
- Materials and Chemical Synthesis

- ◊ Pursue your graduate degree online
- ◊ Sharpen communication and management skills
- ◊ Increase your understanding of methods and techniques unique to your specialization
- ◊ Course based degree with no thesis required

Master of Biology and Master of Health Physics also available

For more information contact:
Elizabeth Friedman, Ph.D.
312.567.7973 | friedman@iit.edu

www.iit.edu/csl/bcps/psm

JOINT GREEN CHEMISTRY CONFERENCE IN 2011

To provide greater access to highly valuable exchanges of information, research, and commercialization processes in the green chemistry and engineering fields, two international conferences will unite in June. **The 15th Annual Green Chemistry & Engineering Conference will be held in concert with the 5th International Conference on Green and Sustainable Chemistry, June 21-23, 2011, in Washington, DC.**

Scientific researchers, government and industry leaders from all over the world will come together in Washington, DC to catalyze green chemistry as the solution to global challenges. One location, three days, over 20 technical sessions, plus the Green Expo, "Green Chemistry Live," and student workshop and outreach activities! Visit the conference website, <http://acswebcontent.acs.org/gcande/>, for more details.

**The Chicago Section's
e-mail address
is
chicagoacs@ameritech.net**

ARE YOU UNEMPLOYED?

Are you seeking a better job? Are you looking to improve your career? The place to start is with your resume. That is the single tool that will get you an interview, illustrate your professional strengths, and show how you can improve your importance to your employer.

You can get help improving your resume through the Career Consultants. These are volunteers trained by the ACS to assist its members with writing resumes, contacting prospective employers, and providing tips on interviews.

There are several Career Consultants in the Chicago Section who are willing to meet with you and help improve your resume. Simply call the Section office at 847-391-9091 and set up an appointment. Fifteen to thirty-minute sessions will be arranged at our monthly meetings. Should you require more time, arrangements can be made with your consultant to continue discussions by telephone, by e-mail or by additional face-to-face sessions. You also can attend the Section's Job Club where you can network with other people having similar concerns.

We are here to help. All you need to do is pick up the telephone and bring copies of your resume to the next monthly meeting.

THE CHEMICAL BULLETIN ADVERTISING RATE SCHEDULE

The Official newsletter of the Chicago Section American Chemical Society, *The Chemical Bulletin*, publishes news and information of interest to the Section's 4,600 members, who are professional chemists and others in related professions in industry, academia and government throughout greater Chicago.

SIZE	DIMENSIONS	RATE
Full Page	7.5" wide x 10" depth	\$700
2/3 Page (2 columns)	4.917" wide x 10" depth	\$530
1/2 Page	3.75" wide x 10" depth	\$500
1/3 Page (1 column)	2.333" wide x 10" depth	\$360
1/2 Column	2.333" wide x 5" depth	\$190
Business Card	3.5" wide x 2" depth	\$95

We accept ads sent in jpg, tif, Photo Shop, and Indesign files. For more information, contact chicagoacs@ameritech.net or call 847-391-9091.

NORTHWESTERN UNIVERSITY CHEMIST RECEIVES DREYFUS PRIZE IN THE CHEMICAL SCIENCES

The Camille and Henry Dreyfus Foundation announced in May that **Tobin J. Marks**, the Vladimir N. Ipatieff Professor of Catalytic Chemistry, and Professor of Materials Science and Engineering at Northwestern University, is the recipient of the 2011 Dreyfus Prize in the Chemical Sciences, conferred this year in the field of catalysis. Marks was cited for the development of major new industrial catalysts and the fundamental understanding of their chemical structures and mechanisms of action. The prize, given biennially by the Camille and Henry Dreyfus Foundation, recognizes exceptional and original research in a selected area of chemistry that has advanced the field in major ways. The prize consists of a monetary award of \$250,000 – one of the largest awards dedicated to the chemical sciences in the U.S. – a citation and a medal. The award ceremony will be held at Northwestern University in the fall and will include a lecture by Tobin Marks.

Catalysts accelerate the creation of molecules or materials without being consumed. This process, called catalysis, is widespread in chemistry and essential to all living organisms. Catalysis ranges in scope from the actions of enzymes in biology to enabling the synthesis of therapeutic drugs to the production of coatings, fertilizers, and plastics on a huge scale. Catalysis underlies many aspects of the energy industry and makes the creation of new materials practical.

Marks has been a world leader in the understanding and development of new catalysts that enable the production of recyclable, environmentally friendly, and sustainably produced plastics and elastomeric materials. His research has resulted in a far deeper understanding of the requirements to make and break specific chemical bonds, thus giving scientists the ability to design new catalytic processes. His work has directly led to multi-billion dollar industrial processes. Marks has also demonstrated how metals from unusual parts of the periodic table, such as the rare earth elements, can be used as efficient catalysts with minimal formation of undesired by-products. Enormous savings in energy and scarce resources have been directly attributed to the fundamental knowledge and processes that have resulted from Marks's catalysis research.

"I am delighted and humbled to receive this recognition from the Dreyfus Foundation, which honors the research that my students, colleagues, and I together have accomplished. Over the years, the Dreyfus Foundation has played a key role in promoting the chemical enterprise and in helping new university faculty launch their careers in research and education. Indeed, as a junior faculty member, I was thankful to receive a Dreyfus Teacher-Scholar award at a critical time," said Tobin Marks. "The coming decades will present mankind with technical challenges threatening our quality of life. I believe that chemistry offers defining concepts and tools, and hence limitless opportunities, to better human life in many ways."

Henry C. Walter, President of the Dreyfus Foundation, said, "I believe the Dreyfus brothers – chemists, inventors, and businessmen – would be very pleased that we honor Tobin Marks. He has generated much value to society with innovative chemistry research, which reflects the Dreyfus Foundation charter."

Marye Anne Fox, Chancellor of the University of California, San Diego, and Chair of the Dreyfus Scientific Affairs Committee, noted, "Tobin's accomplishments are extraordinarily diverse and profound. More efficient and greener science-based catalytic processes are essential to sustaining our environment."

Tobin Marks holds a B.S. degree in Chemistry from the University of Maryland and a Ph.D. in Inorganic Chemistry from MIT. He has been on the Northwestern faculty since 1970. His research accomplishments have been recognized worldwide. From the United States these include the nation's highest scientific honors, the U.S. National Medal of Science, and election into the National Academy of Sciences. From the American Chemical Society he has received the Arthur K. Doolittle Award in Polymeric Material Science and Engineering, the Award in Organometallic Chemistry, the Award in Inorganic Chemistry, the Award in the Chemistry of Materials, and the Arthur Cope Senior Scholar Award in Organic Chemistry. He is a Willard Gibbs Medalist of the ACS Chicago section. He has received many international awards, for example, from Portugal, the UK, Germany, Israel, Spain, and India.

The inaugural Dreyfus Prize in the Chemical Sciences, in the field of materials chemistry, was awarded to George Whitesides of Harvard University in 2009.

The Camille and Henry Dreyfus Foundation provides support for the chemical sciences. In broad terms, the Foundation programs advance young faculty of early accomplishment, develop leadership in environmental chemistry, and enhance chemistry education and public interest.

The Camille and Henry Dreyfus Foundation, based in New York, is a leading non-profit organization devoted to the advancement of the chemical sciences. It was established in 1946 by chemist, inventor, and businessman Camille Dreyfus, who directed that the Foundation's purpose be "to advance the science of chemistry, chemical engineering, and related sciences as a means of improving human relations and circumstances."

**WANT TO REACH
CHEMISTS AND
CHEMICAL
ENGINEERS? . . .**

**FOR SALES? . . . FOR
EMPLOYMENT? . . . FOR
ATTENTION? . . .**

Contact the Section office at 847-391-9091 or email at chicagoacs@ameritech.net about advertising your business.

ADVERTISING INDEX

Company	Page	Telephone	URL/E-Mail
Vacuubrand, Inc.	2	888-882-6730	www.vacuubrand.com
Northup RTS	3	847-579-0049	www.toxconsultants.com
Micron Inc.	4	302-998-1184	www.micronanalytical.com
Mass-Vac, Inc.	5	978-667-2393	www.massvac.com
IIT Lecturer	6		chemistry_search@iit.edu
HNC Products Co.	7	217-935-6845	
North Park University	9		www.northpark.edu/facultyjobs
IIT	10	312-567-7973	www.iit.edu/csl/bcps/psm

CALENDAR

June 2: American Water Works Association Illinois Section: Chemical Properties, Safety and Security; 8:30 am - 3 pm at Moline Water Treatment Plant, 30 18th St., Moline. \$40 for members; \$60 for nonmembers; \$70 for on-site registration. For more information, visit www.isawwa-portal.com/TrainingEvents/SeminarsWebinars.aspx.

June 5: Lederman Science Center's Ask-a-Scientist Guided Tour of Fermilab: Seeing Particles by Mike Albrow, Fermilab Scientist; 1 - 4 pm at Fermilab, Kirk Road and Pine St., Batavia. Free. http://eddata.fnal.gov/lasso/program_search/calendar_new.lasso

June 8-10: 42nd Central Regional ACS Meeting (CERM 2011), IUPUI, University Place Conference Center, Indianapolis, Indiana. For additional information, visit: <http://cern.regional.sites.acs.org/>.

June 16: Chicago Section ACS Board Meeting, 1400 Renaissance Dr., Suite 312, Park Ridge, IL 60068; 847-391-9091.

June 21-23: The ACS Green Chemistry Institute's joint event: 15th Annual Green Chemistry & Engineering Conference and 5th International Conference on Green and Sustainable Chemistry, Washington, D.C. Visit www.gcande.org to learn more about this premiere event.

June 23: Chicago Section ACS Distinguished Service Award Meeting; 50 & 60-year members honored. The after-dinner speaker is Adrian Whitty, Boston University. **See details in this issue.**

August 4: Chicago Section ACS Board Meeting, 1400 Renaissance Dr., Suite 312, Park Ridge, IL 60068; 847-391-9091.

August 12-21: ACS Illinois Sections' cooperative tent project at the Illinois State Fair in Springfield. For further information on this fun and worthwhile outreach activity, contact the section office at 847-391-9091. Also, visit website <http://chicagoacs.org/statefair/index.html>

August 28-September 1: ACS National Meeting in Denver, CO.

September 23: Chicago Section's Education Night, Loyola University Chicago.

October 5-9: ACS technical continuing educations courses to be held in the Chicagoland area. Contact the ACS Office of Professional Education (www.proed.acs.org; 202-872-4544) and see details in this issue for further information.

October 14: Chicago Section's joint meeting with Northwestern University, Evanston, IL.

October 19-22: Joint Midwest/Great Lakes Regional Meeting (MWRM/GLRM), St. Louis, MO. For further information, go to <http://mwrn2011.org/>

JOB CLUB

The next meeting of the Chicago Section ACS Job Club will be held on Thursday, June 23 at 5:00 p.m. at The Country Squire. The meeting will include a review and discussion of some of the tools that a chemist can use to conduct a job search.

The Job Club provides a continuing opportunity for unemployed members of the Section to meet with one another, share their experiences and develop a network that may help in identifying employment opportunities. Bring plenty of resumes and business cards to distribute to your colleagues. Be prepared to talk about the kind of job you are seeking.

Several participants have received outsource help with resume preparation and marketing strategies to present their best attributes to prospective employers. The group has critiqued some individual resumes and made suggestions for improvements in a positive way!

The Job Club is also for employers seeking chemists. Employers need to be prepared to describe the positions to be filled and requirements for these positions.

Should you wish to attend the Section's dinner meeting following the Job Club, the cost is \$20 and you can continue your networking activities. Please call the Section office for reservations and indicate that you are eligible for a discount.

Also, the Chicago Section's website has a link to the Job Club's yahoo job forum group. If you can't attend the Job Club, you can still find out about job openings and other information.

Whether you spend your summer traveling, going to school, working or playing...
Have a wonderful summer and see you the Fall with the September Issue!!!
---Editorial Staff

DEADLINES FOR CHEMICAL BULLETIN

Please submit all Chemical Bulletin copy to the editor before the deadlines listed below for each issue. Articles can be emailed to the editor, Cherlyn Bradley, cbrad1027@aol.com. Please submit your articles as a Word doc, docx, txt, or rft file. Any photos should be jpg, tif, pdf, Photo Shop, or InDesign files.

Since we like the Bulletin to be as timely as possible, we need the lead time indicated. You can help by early planning and submission of your information or articles.

2011 Issue	Deadline
September	July 15
October	September 2
November	September 30
December	October 21