

The Magazine for ACS Student Affiliates
September/October 2007

in *Chemistry*

Graduate School: Opportunities and Options



**Celebrating 20 Years of
National Chemistry Week**

in Chemistry



COURTESY OF CLEMSON UNIVERSITY



COURTESY OF BOYS & GIRLS CLUBS



JENNIFER HOLT

Cover: JupiterImages, Chemistry and ACS stock art. Inset photo courtesy of Victoria Finkenstadt.

in Chemistry is available free to Student Affiliates of the American Chemical Society and the faculty advisors to Student Affiliates chapters. Student Affiliates dues: \$38; for an application, call the Undergraduate Programs Office at 800-227-5558, ext. 4480. The American Chemical Society assumes no responsibility for the statements and opinions advanced by contributors. Registered names and trademarks, etc., used in this publication, even without specific indication thereof, are not to be considered unprotected by law.

- EDITORIAL**
If This is Your Path... Begin the Journey! **2**
By William F. Polik and Cynthia K. Larive
- SAACS CHAPTER SPOTLIGHT** **3**
Compiled by Alicia J. Chambers
- CHAPTERS**
From Outstanding Debt to Outstanding Chapter **5**
By Miles V. Selvidge, Stephanie M. Taylor, E. Kate Walker, and Marie Ramirez
- Not Sure What You Can Do with a Degree In Chemistry? Host a "Careers in Chemistry Day" and Find Out! **7**
By Anne E. Blackwell and Michelle M. Watt
- FEATURES**
Considering Graduate School? Start by Asking the Right Questions **9**
By Robert B. Rawson
- Science + Professional Skills = Formula for Success **12**
By Carol B. Lynch and Eleanor L. Babco
- Setting the Syllabus after Graduation **14**
By Allison Byrum Proffitt
- Join the National Chemistry Week 20th Anniversary Celebration **17**
By Judith Jankowski
- MEETINGS**
Undergraduate Call for Papers 235th ACS National Meeting **19**
Being in the Heart of it All – The Undergraduate Program in Chicago **20**
By Kate L. Ziegelgruber
- 2007 Fall ACS Regional Meetings **22**



COURTESY OF HOPE COLLEGE



COURTESY OF CYNTHIA LARIVE

If This is Your Path... Begin the Journey!

BY WILLIAM F. POLIK AND CYNTHIA K. LARIVE

According to the American Chemical Society 2005 Starting Salaries Survey, 52% of bachelor's chemistry graduates plan to continue with full- or part-time graduate study, with 24% heading to chemistry graduate programs. To help with this exciting journey, the ACS Committee on Professional Training (CPT) has launched an online resource, *Planning for Graduate Work in Chemistry*, at www.chemistry.org/education/cpt/graduatework. This resource will help you select a graduate program that best meets your needs and career aspirations. It provides advice on how to prepare for graduate school, how and when to apply, and what you might expect as a new graduate student.

Before you commit yourself to graduate study, you should assess your goals and talents and consider them in relationship to those required for success in graduate work. The "Personal Assessment" section in *Planning for Graduate Work in Chemistry* will help you explore whether graduate school is the best career choice for you. Which skills do you have ... and which would you like to develop further? What kind of career would you like? Should you pursue a Ph.D. or a Master's degree?

If you think graduate school is for you, consult the section, "A Well Rounded Scientist," for valuable tips on personal development during your undergraduate education. The timeline and checklist will help you track your progress and stay organized. You may be surprised to find

out that the checklist starts in the fall of your junior year!

Next, you need to tackle the questions of where to apply, which program you should choose, and to which institution you should accept admission. Should you go to a large school or a small one? One with a long tradition or one that's relatively new? No two graduate departments are alike, and there is no universal advice on what is the "right graduate program." While a large, diverse department may work best for some, a smaller and more personal department may be better for others. Each program has its own unique group of professors, teaching styles, strengths, and weaknesses. Consider institutions that meet your educational and professional goals, while providing adequate facilities and resources to allow for your research. The section on "Choosing a Program" can help you find the graduate program that provides the best possible educational environment for you.

Once you have been admitted, most departments will invite you to visit at their expense. Before visiting, you should do your homework and "virtually meet" all faculty members. You can do this easily by using the *ACS Directory of Graduate Research*, the most comprehensive source of information on graduate faculty and their research programs in chemistry, chemical engineering, biochemistry, and related sciences in U.S. and Canada. This content is also published as DGRweb, a searchable online database available free at www.chemistry.org/education/DGRweb. The search feature for faculty includes contact information, specific research areas, publications, academic rank, and

gender. Institutional searches provide departmental contact information, along with data on the number of students and faculty in the department involved in graduate research.

The next step on your journey is to visit the departments you are considering. Equipped with knowledge about the department and individual faculty you will be visiting, you can ask more educated questions, spend more time talking with current students "off the record" to learn about the practical side of earning a degree, and get a better picture of the department's working/learning environment. In addition, you should be especially attentive to the financial details of the

offers extended to you in making your final decision.

The *Planning for Graduate Work in Chemistry* website will guide you through these steps so that you may achieve an advanced degree in chemical sciences and enter the workforce prepared for your chosen career.

CPT asks for your help in preparing the next edition of *Planning for Graduate Work in Chemistry*. Are there any other questions or topics that you would like the guide to explore? Please send your comments related to this resource to cpt@acs.org.

*William F. Polik
Cynthia Larive*

WILLIAM F. POLIK is chair of CPT and Hofma Professor of Chemistry at Hope College. CYNTHIA K. LARIVE is vice-chair of CPT and professor of chemistry at University of California-Riverside.

Always wanted to know what other chapters are doing... but never had the opportunity to ask? SAACS Chapter Spotlight includes questions and answers designed to inform and inspire chapters, as well as their faculty advisors. We encourage you to contact the chapters and advisors below to find out more!

If your chapter and advisor would like to be featured in the SAACS Chapter Spotlight, please contact Alicia J. Chambers at 800-227-5558, ext. 6176 or e-mail a_chambers@acs.org.

Stern College for Women, Yeshiva University
New York, NY

Chapter president: Grace Charles
Number of chapter members: 75
Number of ACS Student Affiliates: 10
Institution environment/
composition: Small, private, urban, 4-year institution for Jewish women

Q What is your most interesting recruiting event/method?

A At the beginning of the school year, the student council held a club fair open to all students. At the fair, we had a booth with pictures of our planned activities. As club president, I went around to different chemistry classes and introduced myself, the club, and our activities. We also held a great event, a trip to the world-famous "Bodies... The Exhibition." It was open to all students in order to get them interested in (and possibly join) the chemistry club.

Q What is your most successful chapter activity?

A In November, our chemistry club put on a chemistry 'magic show' for high school and university students. After the 'magician' put on her trick, she would usually



COURTESY OF STERN COLLEGE FOR WOMEN

allow several audience members to try their own hands at it, such as making slime or painting with acids and bases, and would also explain the chemistry at work behind her demonstration. We also had a very successful event in January, in which career women involved in chemistry came to talk about their work. Their talks were interesting and informative, and the students found the event very useful, as well as entertaining.

Q Has your chapter presented research findings and/or chapter activities at a poster session?

A The college holds a poster competition contest, at which students present their undergraduate

research to faculty judges. The winning poster is hung in the science wing at Stern College. Students also present their research in PowerPoint presentations at monthly meetings. Dinner is served, and faculty and students alike are encouraged to come and learn.

Q What methods of communication are used to inform chapter members of chapter activities?

A We usually send out e-mails to our chemistry club members to let them know about news in chemistry and upcoming club events. We also have a large bulletin board prominently displayed in the main school building that we use to communicate with the students. For many of our events, we print flyers and posters to hand out and to hang around the school and dormitory buildings.

Q From where does your chapter receive its operating funds?

A Our funds are obtained primarily from the Stern College for Women Student Council and from an ACS Innovative Activities

Grant, which we received to help us meet our goal of informing the student body about "Careers in Chemistry."

Faculty Advisor
Chaya Rapp, 7 years

Q Why/how did you become a faculty advisor?

A The previous advisor asked me to take over as advisor, and it sounded like a fun opportunity to enjoy chemistry with my students.

Q What is your role as a faculty advisor?

A I contribute ideas and help with implementation, but the students are the ones who really run the show.

Q What challenges have you faced in your position?

A Motivating students to become involved.

Q What has been the most rewarding aspect of your service as a faculty advisor?

A Watching students learn and have fun at the same time!

Q What advice can you offer those new to the advisor position?

A Let the students take charge and pursue what interests them.

QUESTIONS ABOUT THE STUDENT AFFILIATES PROGRAM?

Call 1-800-227-5558 and ask to be connected to:

- Robin Y. Lindsey (x4480) for general information and chapter activation
- Alicia J. Chambers (x6176) for information on chapter grants, retention, and recruitment
- Lori Betsock (x6188) for information on internships, study abroad, careers, and graduate school

Clemson University
Clemson, SC

Chapter president: Chris Pollock
Number of chapter members: 13
Number of ACS Student Affiliates: 11

Institution environment/ composition: Large, public, suburban, 4-year institution

Q What is your most successful recruiting event/method?

A The most effective way in which we recruit members is our annual Welcome Back cookout, held early in the fall semester. We invite all chemistry majors and faculty to a barbeque to welcome the freshmen and give everyone a chance to meet one another.

Q What is your most popular chapter activity?

A Our most popular chapter activities are our trips to a local restaurant for Trivia Night competitions. It's a great chance for all of our members to meet in an informal environment outside of school and have fun. To make it even better, our chapter pays a portion of everyone's bill.

Q Does your chapter participate in NCW? What types of activities do you sponsor?

A Our chapter participates in NCW by sponsoring events such as drawing chalk molecules all over the sidewalks on campus and by performing demonstrations at local stores and schools. This way everyone benefits from NCW; the community gets to learn about chemistry around them, and we get practice performing demos.

Q Has your chapter presented research findings and/or chapter activities at a poster session?

A Our SAACS chapter has only recently attained a level of involvement that allows us to present at an ACS meeting. This past spring, we took our first-ever trip to a national meeting to present research, as well as to present a poster on our chapter's recent activities, including our planning of the 59th ACS Southeast Regional Meeting (SERMACS).

Q What methods of communication are used to inform chapter members of chapter activities?

A SAACS officers at Clemson routinely send e-mails to members letting them know about events being planned. We also make extensive use of our website and other online communications (even Facebook!) to keep everyone informed of what's going on. Offline, we make sure to keep the halls of our chemistry building full of posters and flyers advertising our events.

John Kaup, 6 years

Q Why/how did you become a faculty advisor?

A I became a faculty advisor in 2001 to help reactivate the SAACS group here at Clemson and make SAACS an integral part of our students' professional development.

Q What is your role as a faculty advisor?

A I look upon my role as having three distinct components: cheerleader, motivator, and assessor.

Q What has been the most rewarding aspect of your service as a faculty advisor?

A The most rewarding aspect has been interacting year after year with a great group of officers and members and seeing them develop a host of professional skills (especially leadership and organization) through their SAACS work. Attending the 58th SERMACS in November was a great experience for our members (especially talking with ACS President Katie Hunt) and there was great excitement about our planned trip to the national meeting in Chicago. Getting the chapter to this critical point of regular regional and national meeting attendance has been very rewarding for me as an advisor, and I greatly look forward to future meetings with my students.



COURTESY OF CLEMSON UNIVERSITY

Q What is your most successful fundraiser to date?

A Our most successful fundraisers are our biannual sales of ACS study guides. We coordinate with professors of general and organic chemistry courses to have convenient selling times for students to buy guides or, to increase effectiveness (and revenues!), we even bring the guides to classes to sell.

The cheerleading involves fully supporting students' activities, as well as telling everyone who will listen about the great things happening in our chapter. The motivator hat slips on occasionally when students need some help in getting an activity off the ground or when members are not pulling their weight on a specific activity on which they agreed to work. In the assessor role, I work in conjunction with the officers to improve activities, fundraising, and meeting attendance by reflecting with the students on what worked, what did not, and how to improve for next year.

Q What advice can you offer those new to the advisor position?

A Be sure you have adequate time to devote to this endeavor. My work with our SAACS chapter has been a huge time commitment for nearly five years, but now I believe we are finally seeing the fruits of our work. Be sure your service is recognized at the departmental level as not only a large time commitment, but also a necessary component of your students' professional development.

DID YOU KNOW?

The SAACS Chapters at Clemson and Furman Universities have a grant to plan undergraduate programming at the 59th Southeast Regional Meeting (see page 23).

Faculty Advisor

THANKS...

to all the SAACS chapters that submitted 2006-07 reports! The award winning chapters will be announced in the November/December issue of *inChemistry*.

from outstanding debt

to
*Outstanding
Chapter!*

BY MILES V. SELVIDGE, STEPHANIE M. TAYLOR, E. KATE WALKER, AND MARIE RAMIREZ

THE UNIVERSITY OF TEXAS at Dallas (UTD) chapter recently received an Outstanding Student Affiliates chapter award at the 233rd ACS National Meeting in Chicago. Thrilled to receive this honor for the first time, we look back at our history to recognize both the bad and the good which led us to being one of the top SAACS chapters. We hope our story may help and inspire those chapters working toward this great honor.

The death of a chapter: Fall 2002

Over time, our Student Affiliates chapter, known as the Chemistry Student Association or CSA, had lost focus and membership, ending up with little formal organization, no planned activities, and no energy. It reached a low point in 2002 when it was discovered that the CSA president had abruptly left the university, leaving the group with a \$300 debt to the chemistry department and an empty bank account that could be accessed by at least six students. With no president, no funds, and no credibility, an attempt was made to revive the chapter in the spring semester of 2003. Due to a lack of members and mission, and little support in terms of funds, the newly-elected president resigned after only one semester in office. Our chapter had fallen into oblivion.

The rebirth: Two roommates and a professor with a plan

During the summer of 2003, the new president, Miles Selvidge, his roommate Doug Martin, and a new faculty advisor, John Sibert, met to discuss what could be done. Professor Sibert made fundraising the sole initial activity of the membership which, at the time, consisted of just Miles and Doug! No plans were made at that point to recruit members or plan activities since, without money, the chapter would be challenged to get anything started. Also, there was that \$300 existing debt to the department that needed to be paid.

In the fall of 2003, we held a fundraiser, consisting of selling safety glasses and goggles to fellow UTD students. With favorable pricing from a state contract vendor, Professor Sibert personally purchased the initial inventory. The new president, his roommate, and our faulty advisor quickly got to work, advertising and selling goggles during the first two weeks of classes. The three-man team raised enough money for the chapter to pay back Professor Sibert, purchase additional inventory, retire the outstanding department debt, and have significant funds to begin the semester.

After organizing a kick-off barbecue, Miles, Doug, and our faculty advisor began to grow the membership, adopt-

ing community outreach as a primary mission. With funds and a mission, new members were enthusiastic about the chapter and its future events. Importantly, by involving everyone in the planning and implementation of community-based activities, the membership became committed to the organization.

By the end of the fall, the two roommates who started it all had built a framework from which a number of social and service traditions grew. Also, they had unknowingly recruited two freshman roommates, Stephanie Taylor and Katie Walker, the next two chapter presidents, who had the energy, vision, and organizational skills to build on this framework.

The event: Kids & Chemistry Day

The new membership embarked on a huge undertaking with their first annual Kids & Chemistry Day in January 2004. New and energized, all the members spent extra time over the winter break to brainstorm and prepare. The day was a huge success and sparked a newfound confidence in everyone involved.

This page-turning event has become an annual one in which we choose one or two elementary schools and invite all of their fifth graders to spend a day performing hands-on experiments in actual laboratories at UTD, watching demonstrations, and eating a pizza lunch (at no



Fifth graders perform hands-on experiments at Kids & Chemistry Day.

cost to participating schools). This event has been featured on ABC, CBS, NBC, and Fox TV, in newspaper articles and photo spreads in the *Dallas Morning News* and other local papers.

In short, the kids have a terrific time with the science while spending a day "in college." Their natural curiosities are engaged by the entertaining and educational experiments. It is truly rewarding to see the impact our day has on these young scientists and on the college student and faculty volunteers at UTD.

The growth: New officers, new goals

With its increasing momentum, the organization plunged itself into the spring semester with new officer elections and new goals for the organization. The new officers decided that the three continuing goals of the organization were: (1) to promote and foster interest in the sciences among students of all ages, (2) to act as a liaison between students and faculty, providing interactions outside of the classroom, and (3) to provide social events for students with common interests in the sciences. These three goals have continued to manifest themselves in new and more numerous events each year.

The leaders: Increasing the tradition of excellence

As the presidency was transferred from Miles to Stephanie and from Stephanie to Katie, the other officer positions also changed hands, and incoming officers learned from and added to the foundation built by their predecessors.

Old social traditions such as barbecues and broomball games featuring undergraduate students vs. faculty/graduate students continued, and we also created new service venues for chemistry demonstrations. Typically, eight to twenty chapter members equipped with liquid nitrogen, slime-making supplies, and other items travel to various places to perform demonstrations and supervise hands-on experiments. Math and Science Camp, Sounds of Class (a children's carnival), the Plano libraries, the EDS Jason Project family day, and Texas Instruments' family day all welcomed our chapter. For the last event, our chapter developed a multimedia, fully interactive forensic science case study that continues to be enthusiastically received. We have forged strong ties to the Dallas Museum of Nature and Science and have worked with visitors to the museum throughout the year. In fact, the museum has made us a part of their science presence during the state fair each fall.

We sponsor an annual seminar program that has brought to campus Chad Mirkin, director of the Nanotechnology Institute at Northwestern University, Glenn Fox, director of forensic sciences at Lawrence Livermore National Laboratories, and former ACS President Ann Nalley. We also cosponsor the Chemistry/Biology Symposium, an annual event that celebrates the research efforts of UTD undergraduate and graduate students through poster sessions and student talks.

The results: An award-winning chapter

After four years of hard work and dedication, our chapter has raised funds to attend two ACS national meetings to receive an Honorable Mention Chapter Award and, more recently, an Outstanding Chapter Award. Continuity of the organization is ensured by holding officer elections in January, allowing for new officers to learn from their predecessors prior to their graduation. Where once only a few officers were needed, now a solid team of nine officers keeps the organization running smoothly.

Our chapter continues to attract the "cream of the crop" of the university students, regardless of their major.

Participation improves their knowledge of their professors, their classes, and their research, keeping the students interested, informed, and motivated. Our meetings and social events also continue to attract new people, and we make sure that someone is there to welcome first-time visitors. It is this atmosphere that keeps members coming back.

Today, we are one of the most well-



2007 ACS President Catherine T. Hunt presents an Outstanding Chapter award to UTD Chapter representatives.

funded and active student organizations on campus. As membership has grown, increased opportunities in both number and scale have evolved. We have seized these opportunities to continue to challenge and engage our membership. Upon reflection, we are proud of our brief history, but more importantly, excited about what lies ahead.



MILES V. SELVIDGE is a graduate electrical engineering and business administration major at UTD, and held the offices of chapter vice president (2003) and president (2003-2004). **STEPHANIE M. TAYLOR** is a graduate biochemistry major at the University of Texas at Austin, and held the offices of chapter service chair (2004) and president (2005). **E. KATE WALKER** is a graduate analytical chemistry major at the University of Texas at Austin, and held the offices of chapter secretary (2004-2005) and president (2006). **MARIE RAMIREZ** (not pictured) is a graduate psychology major at the University of Texas at Arlington.

Not Sure What You Can Do with a Degree in Chemistry?

Host a "Careers in Chemistry Day" and Find Out!

BY ANNE E. BLACKWELL AND
MICHELLE M. WATT

CAREERS IN CHEMISTRY DAY took place on Saturday, November 18, 2006 on the campus of St. Louis University (SLU), co-organized by the SLU Chemistry Club and the St. Louis Section of the American Chemical Society (ACS). The event was open to all undergraduate and graduate students in the St. Louis area, including the University of Missouri-St. Louis (UMSL); Washington University in St. Louis; Southern Illinois University-Edwardsville; as well as smaller schools such as Fontbonne University, Maryville University, and the Meramec Campus of St. Louis Community College. The event served a total of about 35 students.

ACS Past-President Ann Nalley started off the event with a presentation on careers in chemistry. Attendees enjoyed hearing and meeting with Nalley. Holly Pope, president of the UMSL Student Affiliates chapter, recalls, "She gave a great presentation, and talking with her afterwards, I could tell that she really enjoys teaching and truly cares about spreading the joys of chemistry to students everywhere."

The event also featured a question-and-answer panel. Before taking ques-

tions, the panelists described their backgrounds, how they arrived at their current jobs, their responsibilities, and a "typical" work day.

Following the panel discussion, attendees had the opportunity to network over lunch and share their résumés with panel representatives, who provided advice and interview tips.

Planning the event

The SLU Chemistry Club did a large amount of the planning and coordinating for the event at the request of the St. Louis Section of ACS. Since we used university facilities, and because Nalley had travel funds to use at her discretion, providing lunch at the event was our only real cost. Lisa Balbes, a member of the St. Louis Section, helped us to defray the luncheon expense by obtaining Monsanto Company as a sponsor.

Our club was also responsible for advertising, contacting, and recruiting all of the scientists on the panel, contacting staffing agencies for students to talk with, as well as organizing facilities and other details for the event. We ordered a catered lunch from a local Italian restaurant, and requested that students RSVP to obtain an accurate count.



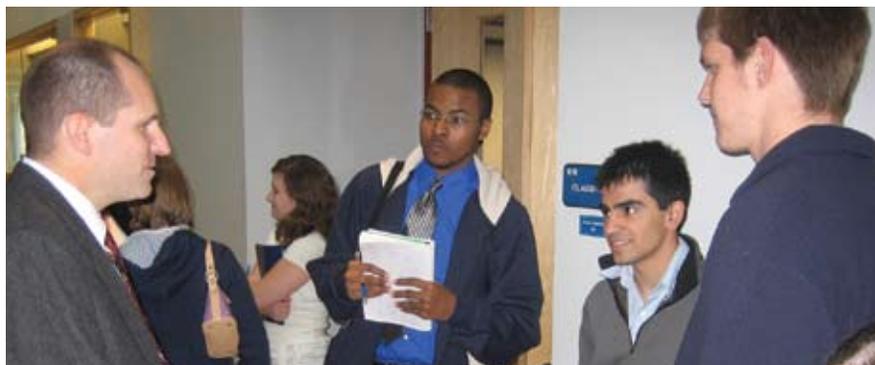
Students talk with Keith Tope from On Assignment Lab Support.

COURTESY OF ST. LOUIS UNIVERSITY

We began planning and contacting people over the summer for the event. Much of the work was done either very early or during the last couple of weeks. The most difficult part was trying to get sufficient numbers of people to come. Students do not want to give up a Saturday, which we tried to offset by offering lunch. We also suspect that among the significant numbers of chemistry students at our university who are pre-med, many have their futures planned and are not looking into other options.

Fostering connections

One unexpected bonus that came out of hosting the careers event was that we were able to meet Holly Pope and others from the UMSL Student Affiliates chapter. We had contacted UMSL about the event, and it was a good chance to actually meet in person and exchange advice and ideas. From Pope's perspective, "The career day was a great opportunity for students from other universities



Students speak with Walter Gavlick, a Ph.D.-level chemist from Monsanto Company.

to come and see what other chem clubs were doing, meet people, and make connections. After talking with staff from Aerotek and On Assignment, I had them come to UMSL to give a presentation about what they do.”

If your chapter is interested in planning and hosting a “Careers in Chemistry Day,” we recommend partnering with the ACS

local section, as their experience and contacts were very useful to us. In the past, the event has been sponsored by Sigma-Aldrich as well.

We also suggest that you try to have the widest variety and number of companies represented with whom students can interact, ask questions, and possibly look for a job! A few of our seniors were even offered

interviews with local companies.

We also recommend inviting a wide variety of companies, because unexpected problems can arise. We had planned on having a representative from a third company. She was unable to come at the last minute, but we were covered because we still had two other companies represented.

Gaining insights

Careers in Chemistry Day was a very worthwhile Chem Club project. It helped students gain a better understanding of the variety of career options available to chemists, and gave them the opportunity to ask questions. It also gave students a better idea of what kind

of training and preparation would be necessary for each type of job.

According to Greg Lehn, a biochemistry major at SLU, “The event helped me gain overall knowledge. As an undergrad, I was not really sure how everything in the chemistry field worked. I learned about a lot of things, from the normal ‘day in the life’ of chemists in academia and industry, to what schooling was important, at what stage in our education we should be doing certain things, what looked really good on résumés, and much more. It definitely helped me decide to go on to grad school. Each member on the panel said what they did and what degree they had, and the ones with higher education matched what I want to do with my life. It helped me realize what steps I needed to take



Michelle Watt, Shana Beg, and Anne Blackwell with ACS Past President Ann Nalley.

to stay on track with my education, and I have since started doing undergraduate research and making connections that will help me later.”

Attendees also learned about the different professions into which chemists have gone. In addition to showing students that there are many options for their future careers, it also strengthened our chapter’s connections with our ACS local section, a neighboring Student Affiliates chapter, and employers. **IC**

ANNE W. BLACKWELL (above, far right) recently graduated from St. Louis University with a B.S. in chemistry and will be pursuing a Ph.D. at the University of Arizona in fall 2007. **MICHELLE M. WATT** (above, far left) recently graduated from St. Louis University with a B.S. in biochemistry and will be pursuing a masters in chemistry at St. Louis University beginning in fall 2007.

Careers in Chemistry Day Saturday, November 18, 2006 St. Louis University

10:00 am Welcome/Introduction

Keynote Speaker: E. Ann Nalley,
ACS Past President

10:30 am Question-and-Answer Panel

- **Lisa Balbes**, Freelance Technical Writer and Consultant, Balbes Consultants
- **Walter Gavlick**, Senior Chemist, Monsanto Company
- **Maryam Hojjat**, Chemist, USDA Food and Safety Inspection Services, Midwest Laboratory
- **Patty Lemley**, Human Resources, Monsanto Company
- **E. Ann Nalley**, ACS Past President
- **Greg Papadakos**, Graduate Student, University of Missouri-St. Louis
- **Janet Wilking**, Professor, University of Missouri-St. Louis

11:30 am CATERED LUNCH and Social Networking Hour Sponsored by Monsanto Company

12:30 pm Exhibitors – Résumé Review, Interview Tips

- **Aerotek Scientific**
- **Monsanto Company**
- **On Assignment Lab Support**

Editor's Note: Students have many questions about whether to pursue a graduate degree and how best to do so. At each ACS national meeting, the Undergraduate Program includes "Graduate School Reality Check," a session designed to explore these very questions. This article is based on a presentation given at the 233rd ACS national meeting.

WHERE DO YOU START? MANY OF THE FOLLOWING questions and suggestions will be familiar, or perhaps even obvious. Nonetheless, it may still help to see them all presented in one place.

Before you begin, ask yourself, "Why do I want to go to graduate school?" Pursuing an advanced degree in chemistry is a demanding investment; if it is the right choice for you, it can be among the most rewarding experiences of your life.

How do I prepare?

Once you've decided to pursue an advanced education in chemistry, you'll find that the transition from undergraduate to graduate student takes some preparation. The earlier you begin planning, the better. Although it seems obvious, *focus on your academics*. This will make getting into the program of your choice more likely, and will also make mastering your coursework easier once you get there.

Use your undergraduate coursework to decide what really interests you, and which topics you'd like to study as a graduate student. Take courses appropriate to your major and interests. Since many courses build upon earlier ones, take them *in sequence* if possible.

Attend your department's seminars, even ones that might seem 'over your head.' Seminars offer an excellent way to learn more about what's new and interesting, and give you a chance to meet scientists from other institutions.

Most of all, *don't be shy*. Get into an information-gathering mode. Talk to your professors, seminar speakers, and colleagues. Most scientists love to talk about their work and will be pleased by your (genuine) interest. Talk to your undergraduate advisor,

to graduate students (either those currently in your department or people who have recently completed graduate school), and with your peers. Gather and share information with other students in your department – your ACS Student Affiliates chapter is a great resource.

Should I do undergraduate research?

Doing research as an undergraduate is the single most important action you can take. It can improve your odds of getting into a program in which you are interested, expose you to new skills not used in your laboratory courses, and provide solid evidence of your interest in and commitment to a scientific career.

While you are still an undergraduate is also the best time to find out if you really enjoy the laboratory environment. Working in a lab is a very different experience from undergraduate coursework. If you discover early on that really *doing* science excites you, that can provide the motivation to help you excel in your undergraduate coursework. If you discover otherwise, that's okay too; it's better to find this out before you commit to earning a research degree.

If you can arrange a research opportunity on your own campus, great! If not, look into the various undergraduate research programs offered at many universities (including non-undergraduate institutions). Your school may have a formal internship program with industry. If so, take advantage of it.

Making the discovery is only half of science; you also need to tell the rest of the scientific community what you have discovered. Plan to attend a local, regional, or national ACS meeting and present a poster.

Where should I apply?

If your school has graduate school fairs, attend and speak with the folks representing their graduate programs. Use the Web to find more information. Many graduate programs have brochures you can ask for. Read the current literature to learn where work that interests you is being done.

Other resources to use in searching for a graduate program include the *ACS Directory of Graduate Research* (2006), *Peterson's Guide to Graduate Programs*, and the Commission on Professionals in Science and Technology (CPST) Clearinghouse for Master's Education in the Sciences.

Once you know which programs interest you, consider some other aspects of graduate training. What is the size of the department? Big programs typically offer more opportunities and resources for research, while many smaller departments have excellent depth within a narrower aspect of chemistry. Do the programs that interest you offer excellent training? Do they attract good students? Have their graduates gone on to successful careers in chemistry?

How do the programs that you're interested in support graduate students? Will you be expected to do a teaching or research assistantship? Consider which of these fits best with your longer-term career goals.

Is the atmosphere right for you? Some thrive in a high-pressure, competitive environment, while others prefer a more laid-back atmosphere. Think about the type of environment in which you're most likely to be productive and enjoy spending the next several years. Search for a fit between your research interests and your personal style.

Are the institutions located in places you can see yourself living for several years? The more comfortable you are with your surroundings, the easier it will be to focus on your research.

Lastly, ask yourself, "Do I want to go there?" If you have a genuine interest in a program, go ahead and apply. Be realistic, but not pessimistic. For each program you consider, also ask yourself, "Am I willing to go there?" Don't waste your time or that of others applying to programs which you wouldn't seriously consider attending.

What do I need to do to apply?

Set a series of deadlines for your application process. Typically, you'll want to have your final list of places to apply by the first of November. You should submit all your applications material by mid-December. (See "Gathering the Key Components of Graduate School Applications.") Block out the time to do this and avoid conflicts with any end-of-term work and final exams.

Respect deadlines, and get all your application materials in on time. This saves effort and reduces stress. On the other hand, if for some legitimate reason you miss a deadline for a program in which

Search for a fit between your research interests and your personal style.

you are seriously interested, don't give up. Contact someone in the department, and find out with whom you should speak. Admissions committees, after all, are composed of human beings.

If the schools to which you apply offer interviews, you can expect to hear from them starting in early January, with decisions coming any time thereafter. Typically, you'll have heard back from every school by late March. Most programs require that you make a decision on their offer by April 15th.

What should I consider when making a final decision?

If you have the opportunity, visit the programs in which you are seriously interested. Pay attention to the environment, the faculty and students with whom you speak, and the facilities. Make sure that you understand the program's requirements and expectations. Weigh financial factors realistically. Do they offer

Gathering the Key Components

Letters of recommendation

Among the crucial components of graduate school applications are the letters of recommendation. Transcripts, test scores, and activities are quite useful in evaluating applicants, but they don't tell the admissions committee everything.

A strong letter from someone who really knows you and your achievements is much more helpful than an ordinary letter from a 'famous name' who doesn't. You should know what kind of

letter you can expect. It's neither presumptuous nor rude to ask a prospective referrer, "Can you write me a strong recommendation?"

Make appointments with potential referrers with the explicit objective of discussing your career plans with them. It is helpful to them in preparing your letters, and you may learn something too. Do this as early as you can; your professors are busy, and the more time they have, the better it will be for them.

Prepare for the meeting by making copies of helpful documents, such as your curriculum vitae, transcripts, and your essay/personal statement. Bring a sheet with addresses and deadlines for easy reference. Also bring signed waivers, evaluation forms, and an addressed, stamped envelope for each program to which you are applying.

Well before the deadline for the letters to be sent, follow up with a polite inquiry to be sure everything is on track for your application to be in by the deadline.



an adequate stipend/assistantship relative to the cost of living?

If you are pursuing a research degree, factor in which programs have the most research groups that you would like to join. Remember, students don't always get into their first choice of labs; space and resources are often more limited than the supply of interested students, especially for popular, high-profile labs.

Consider, too, your overall impression of the program. Do you feel good about the prospect of working there? How much do students typically publish as a result of their graduate training? Were the students you met positive about their program? Why or why not? What have its graduates gone on to accomplish? Consider potential personal conflicts arising from going to graduate school. Can they be resolved? If not, is the training you'll get worth dealing with these conflicts?

Graduate training is a crucial step in your professional career. Considering the time and effort needed to get a graduate degree, it makes sense to do what it takes to get into the best program for you.

Good luck!



Components of Graduate

Essay/personal statement

The essay or personal statement is your opportunity to tell the committee about your interest and motivation for graduate school. Discuss your career goals and how your past accomplishments have shaped and contributed to those goals. You want to convey your serious dedication and your passion for chemistry (of course, if you are not dedicated and passionate, you may want to reconsider graduate school). Be succinct; committees review many applications and long statements may not be read completely.

If a separate research statement is required, tell what you have done and what you'd like to do. Identify any specific areas within chemistry that especially interest you. Mention people at the school whose work interests you and with whom you'd like to work. Briefly list your publications and presentations. Describe awards and honors you have received, including details that convey the awards' significance. (While 'The Smith Prize' may not mean

much to someone at another institution, they will understand, "The Smith Prize — our department's award for the most outstanding senior undergraduate research thesis.")

Start working on these items as early as possible. You'll be busy when it comes time to send in your applications. Make the time to write the best essay that you can — one that is clear, succinct, and honest.

Standardized testing

Most programs require applicants to submit their scores for the Graduate Record Exam (GRE) General Test. Some require the chemistry subject test as well, which may be used in awarding first-year fellowships. Most applicants take the GRE General Test early in their senior year. Some people prefer to take both the general and subject tests on the same day, while others like to split it up. Either way, take both exams early enough that your scores will be available when committees begin



ROBERT B. RAWSON is assistant dean for the Division of Basic Science at the University of Texas Southwestern Graduate School of Biomedical Sciences in Dallas. He can be reached at Rob.Rawson@UTSouthwestern.edu.

Science + Professional Skills

A Look at the Professional Science Master's Degree

BY CAROL B. LYNCH AND ELEANOR L. BABCO

WHAT DO YOU PLAN TO DO WITH YOUR DEGREE? Do you want to work in the industrial, academic, government, or non-profit sector? Will you pursue an advanced degree before, or perhaps while, doing so?

As you face these important career decisions, it's essential that you consider the type of science you want to do and the professional skills you will need to be successful in the workplace (see "Taking the Next Step").

Science students follow a variety of pathways on their way to employment. For some, the journey is short, consisting of a job search. For others, years are spent pursuing an advanced degree.

If you are thinking about graduate school, you need to choose a field and a degree that complement your professional aspirations. A wide range of programs exist. Students interested in research careers tend to pursue Ph.D.s, while those interested in business attend M.B.A. programs. But what do you do if you want a challenging professional career in science — yet don't want to earn a Ph.D. or M.B.A.?

Consider a PSM

The Professional Science Master's (PSM) degree is a relatively new type of graduate degree. Core curricula cover a variety of interdisciplinary science and mathematics fields, as well as classes and training in the professional skills that employers say they desire in employees. The degree is designed to allow you to pursue advanced training in science without having to get a Ph.D., while simultaneously developing critical and relevant business skills. After only two years in a PSM program, you will be able to launch your career in science.

This powerful combination of science and professional skills is highly valued by employers, and helps PSM graduates find careers in business, government, and non-profit organizations. Graduates do well in the job market in their chosen fields and are prepared to progress rapidly toward leadership roles.

Pursue science

The PSM is a rigorous science degree, preparing students for work in emerging and existing technical fields outside the university. Most PSM degrees provide interdisciplinary training, which graduates find is an advantage in the job market.

A chemistry background is excellent preparation for PSM programs such as chemical entrepreneurship, computational chemistry, materials and chemical synthesis, and forensic science. Many of the interdisciplinary PSM programs accept students who major in any natural science, including chemistry.

Develop professional skills

The professional skills components of PSM programs, generally not part of a traditional research-oriented M.S. or Ph.D. program, are often called the "plus" courses. They may include business basics, project management, teamwork, non-technical communication, research/business ethics, and regulatory issues.

Taking the Next Step

As you're planning the next phase in your scientific career, be sure to consider...

... the wide range of scientific options

By the time you graduate with a science degree, you will have been exposed to several different disciplines — and learned about at least one in depth. Determine which of these areas interest you most, how much more you would like to learn in an academic setting, and how you envision using your knowledge. Will you pursue fundamental research, develop new ways to apply it, or support scientific advancement in other ways?

...and the importance of professional skills

Organizational and communication skills are critical for any career. The abilities to work in teams, manage projects, and communicate with the public are also beneficial. Positions in industry require familiarity with business strategies and regulatory issues. Determine which career paths will best use your skills, and which areas you need to develop further. What formal or extracurricular opportunities will you have to practice and demonstrate your skills?

= Formula for Success



Connect with employers

PSM programs also have close relationships with businesses. PSM students network with potential employers through either an internship or a “real-world” capstone project, instead of preparing a research thesis. Also, each PSM program has an advisory board of employers who make sure that the program responds to changing job market demands and gives students the skills and knowledge needed to succeed in a science career.

For example, Case Western Reserve University, in Cleveland, encourages chemistry students to get a PSM through their Science and Technology Entrepreneurship Program (STEP), which offers a focus in chemistry for entrepreneurship. The program provides studies in technology innovation and state-of-the-art chemistry, practical business instruction, and real-world entrepreneurial experience. Marc Umeno, founder of NeoMed Technologies and a Case Western PSM graduate observes: “STEP gave me access to leading minds in both science and business through a mix of class work, projects directly related to my start-up company, and guest speakers with real-world experience. I also had access to world-class medical researchers at University Hospitals of Cleveland and the Cleveland Clinic.”

PSM graduates work in a wide range of organizations, from major pharmaceutical companies to the federal government and start-up biotechnology companies – to name just a few. Graduates of the University of Connecticut’s PSM programs in applied genomics and microbial systems analysis are employed at small, innovative companies (including Genaissance Pharmaceuticals, Neurogen Corporation, and Cereon) and at pharmaceutical research divisions (Amgen). Graduates of Penn State’s PSM program in biotechnology work for the U.S. Patent and Trademark Office, handling the intellectual property aspects of innovation, or at large pharmaceutical companies like GlaxoSmithKline.

Alan Willenbrock is a chemical engineer who works for Morgan Stanley, a company that employs PSM graduates. Willenbrock also serves on the PSM Advisory Board at the University of Arizona, and observes, “I have chosen to support the PSM program for several years for one very

Quick facts about PSMs!

- ⊙ The PSM degree is an innovative graduate degree designed to prepare students for science careers in business, government, or non-profit organizations.
- ⊙ Because of their ongoing relationships with employers, PSM degree programs are unusually nimble in adjusting to changing workforce demands and technologies.
- ⊙ Since the first PSM program began in 1997, nearly 1,500 have graduated nationally. In academic year 2004-05 alone, there were more than 530 new graduates. Preliminary data from 2005-06 indicate rising numbers of both enrolled students and graduates.
- ⊙ Surveys of recent PSM graduates show that they are working primarily in business and industry, with median starting salaries of \$55,000 – \$62,000. PSM graduates employed in government and non-profit organizations report salaries between \$45,000 and \$55,000.
- ⊙ Funding for the creation and expansion of PSM degree programs is proposed in the U.S. Senate competitiveness legislation (S. 761, the “America COMPETES Act”).

Search for PSM programs and learn more about the PSM degree at www.sciencemasters.com.

simple reason: the program works. The PSM program produces students who are uniquely qualified to enter the workforce and make a real difference.”

Invest in your future

Job market projections indicate that most new jobs will not be in the university classroom or laboratory. Instead, the majority of new jobs will be created in business and industry. While employers still want workers with advanced science education, they also want workers with more than just technical competency in science and mathematics. They want workers who can write, communicate, manage, and lead.

Be sure to position yourself for a successful career. Earning a PSM degree is an increasingly popular way to develop a strong science background enhanced by valuable professional development skills – and thus remain competitive in the job market far into the future.



CAROL B. LYNCH (right), senior scholar in residence, and ELEANOR L. BABCO (left), senior consultant, are co-directors of the Professional Science Master's initiative at the Council of Graduate Schools in Washington, DC.

Setting the Syllabus after Graduation

BY ALLISON BYRUM PROFFITT

AFTER FOUR YEARS OF COLLEGE, THE SYLLABUS for the semester after graduation might look terrifyingly blank. Not a class in sight. No labs, no discussion sections, not even a regularly scheduled seminar.

For many science students, the solution is to fill it up by registering quickly for graduate school. But that's really not your only option, even if graduate school is the end goal. Consider enrolling in a semester at large — set free, exploring — even if it lasts a bit longer than a semester. Choose “classes” that get you out in the world, to work, play, serve, and refocus as part of your continuing education.

Economics 506: Life in the fast lane

For Victoria Finkenstadt, school was getting a little boring. “I was tired of school. I had a general chemistry degree, but no idea what I wanted to do,” she says. “I had no exposure to what a chemist does in the lab except my intern experience in pharma.” She considered graduate school, but dismissed it. “Grad school would have been a random thing,” she says.

With a strong internship under her belt, Finkenstadt took a job doing quality control at a pharmaceutical company, and then transitioned into working as a technician in R&D for a biomedical firm. She excelled at her job, and her supervisors recognized her ambition and put her in contact with the Ph.D. scientists at work. She was, as she calls it, living the “yuppie lifestyle” — making good money, doing rewarding work.

But after a year of working closely with a Ph.D. scientist, she noticed something. “I realized I wanted to be the scientist — planning projects and initiating research.” After two-and-a-half years working in a lab, Finkenstadt quit her full-time job and enrolled in a Ph.D. program in chemistry.



Victoria Finkenstadt, a research chemist, examines a bio-based plastic ribbon at the United States Department of Agriculture.

COURTESY OF VICTORIA FINKENSTADT

“It’s always a difficult transition,” she says of returning to a student’s lifestyle (and income) after being in the working world. But she thinks it was well worth it. “I don’t think I would have been successful in grad school right out of college. Working allowed me to develop my career goals so that I could target grad school, programs, and professors,” she says.

Geography 501: The scenic route

“In college, I did not have the opportunity to study abroad,” says Elizabeth Young. So when she graduated from college, Young deferred her graduate school acceptance in physical chemistry and jumped at the chance to travel.

“I took one year off between undergraduate and graduate school to participate in a federally-funded exchange program between the United States and Germany,” she says. After a two-month language school, students study and intern at universities across Germany. “When I was a student at the University of Heidelberg,” says Young, “the first semester I sat in on classes. During the second semester, I worked in a biophysical chemistry laboratory.”

Although she did learn chemistry and biology during her internship, Young values most the experiences she had living abroad. “I am extremely glad I took time off,” she says. “The perspective gained by being immersed in another culture is priceless. For me, the time between undergraduate and graduate school was the best time to have my abroad experience.” Young believes her time abroad has helped her in graduate school as well. “In some ways,” she says, “the lows of graduate school have been mitigated by the lessons I learned while away.”



Elizabeth Young takes a break from courses work and lab work to explore Germany.

COURTESY OF ELIZABETH YOUNG

Civics 520: The culture of volunteerism

Diane Nutbrown knew when she was a junior in college that she wanted to devote a year to community service before pursuing her goal of earning a Ph.D. in chemistry. "I was heavily involved in community service efforts during college," she says. "When I learned about AmeriCorps, I thought it was the perfect opportunity for me to make a significant positive contribution to the world. This was a chance to make a difference in other people's lives beyond what I'd been able to do as a part-time volunteer."

As a participant in Volunteers in Service to America (VISTA), Nutbrown served as the technology coordinator for the Boys & Girls Clubs of Spartanburg, South Carolina. She set up and maintained computer labs at two elementary and junior high school sites. She also developed an after-school computer literacy program featuring multimedia electives including digital photography, animation, and video production. Not wanting to lose momentum, she stayed in the community a second year.

After delaying her graduate school acceptance, Nutbrown



Diane Nutbrown taught computer skills to 2nd graders at the Boys & Girls Club of Metro Spartanburg, South Carolina.

found the transition back into school challenging. "I had basically spent two years not thinking about chemistry, and suddenly chemistry became my entire life," she says. But she knows she did the right thing, commenting, "I have absolutely no regrets."

Besides the opportunity to give back through AmeriCorps, Diane's experience prepared her for a successful graduate school career. "I encountered challenges that were different from what I'd seen in school, and I think my success during my 'time off' gave me the self-confidence necessary to persevere in grad school." She adds, "I felt much more mature, responsible, and centered as a graduate student compared to others in my cohort."

Philosophy 504: Evolution of self

When Greg Scott signed up for Teach for America, he planned on attending graduate school in chemistry when his two-year commitment was over. But he didn't plan on being so affected by the students whom he taught.

Scott taught in Texas' Rio Grande Valley, where he hoped to make a difference in low-income students' lives.



Greg Scott demonstrates the catalytic decomposition of hydrogen peroxide for his integrated physics and chemistry class in Rio Grande Valley, Texas.

Taking a Detour to Graduate School

According to the National Science Foundation (NSF) report, "Time to Degree of U.S. Research Doctorate Recipients," postponing graduate school appears to be becoming more common. "Over the course of the 20th century, there was a gradual increase in the time it took students to earn their doctorates," the NSF report says. "The fact that the [total time from bachelor's to doctorate degree] rose more sharply... in recent decades means that Ph.D.s were spending more time out of school before completing their doctorates." Chemistry students were reported to spend an average of almost a year in activities other than doctorate-related classes.

Regardless of when you apply, your acceptance to graduate school will be based on your full application: GRE scores, GPA, letters

of recommendation, research experience, and research interest statement. If you are taking a detour, there are a few things that can help strengthen your application in the eyes of admission committees.

Explain your timing

"Why are they seeking to come to graduate school now?" asks James Batteas, coordinator of graduate student recruiting at Texas A&M University.

Explain your reasons

"I would much rather see students take a year off to really get themselves together and make a better informed decision than those who go straight into graduate school and find out a year later that this isn't what they really want to do," says George Garcia, coordinator of recruitment and admissions for the Department of Medicinal Chemistry at the University of Michigan.

Stay connected to science

There is a concern that students who spend much more than a year doing something other than science risk falling behind. "Significant time off could disadvantage

students, particularly in the first year of graduate studies where they will be in fast-paced advanced courses," says Batteas. "The students who chose to conduct research or to teach are those who have been particularly successful," notes Mary Beth Williams, chair of the Graduate Student Admissions Committee for the Department of Chemistry at Penn State.

Highlight research experience

"Ability to succeed in research is a good indicator of long-term ability to succeed in graduate school," says Batteas.

All three admissions officers stress how important it is for students to carefully consider their decision to pursue graduate school. "Graduate school is a long haul with lots of ups and downs, so coming with internal motivation and drive are keys to success," Williams says. "If a student gains that clarity of purpose by taking time away from school, and applies with renewed interest, focus, and scientific maturity, it will always be a good thing."

"I was able to use my knowledge of science to directly impact my students," he recalls, adding that he was impacted by his students as well. As a result, Scott added a specialization in chemical education to his Ph.D. work.

Scott also found his teaching experience handy as he transitioned back into the role of student from teacher. "While study-

ing for my entrance exams, I was pleasantly surprised at how quickly and most of the concepts came back to me," he says. "In addition, I was much better organized and already knew how to teach effectively when it came time to be a teaching assistant."

There is nothing Scott regrets about his choice. "There is little likelihood that I would be pursuing an education-focused career path (particularly with the same passion) had I gone straight to graduate school," he says.



COURTESY OF MALA RADHAKRISHNAN

Teach for America alumna Mala Radhakrishnan taught integrated science and chemistry to high school students in California.

Other Teach for America alumni say the same thing. Mala Radhakrishnan taught chemistry and science in California between undergraduate and graduate school. "I wanted to make sure I wasn't choosing graduate school just because it was 'the next thing to do,'" she says. "I also wanted to challenge myself in new ways."

Radhakrishnan wasn't sold on graduate school in science when she began her Teach for America experience. "I considered and investigated all sorts of other options — law school, education school, and public policy." When she did choose a chemistry graduate program, she had more direction than before. "I learned that I love teaching, and whatever I ultimately did would need to involve teaching in some major capacity. My Teach for America experience gave me focus," Radhakrishnan observes.

Take-home lessons

The common theme in these stories is that none of the students regrets his or her decision to delay entry into graduate school. Whether they were sure of their path or exploring their options, each of them found that doing something between undergraduate and graduate school was crucial to shaping their futures.

These students realized that the classroom isn't the only place to learn important lessons. Whether you are working, exploring, serving, or learning more about yourself, educational opportunities outside of the lab can be just as valuable as what you'll learn in graduate school.



ALLISON BYRUM PROFFITT is a freelance writer and editor based in Cambridge, Massachusetts.

Pursuing Service Opportunities

Although the programs described below aren't the only options for using the time between undergraduate and graduate school, they do offer strong opportunities for community service and leadership before graduate school.

Teach for America (www.teachforamerica.org) placed members in 25 regions across the U.S. in 2006. From 18,000

TEACHFORAMERICA applicants, the program accepted

2,500 teachers, of whom 98% had majors outside of education — including 16% who were math, science, or engineering majors.

Teach for America is a two-year commitment. Formal relationships with various graduate programs allow admitted students to defer graduate school for two years while teaching, including chemistry and biochemistry graduate programs at Cornell University, Johns Hopkins University, MIT, Yale University, Washington University, University of California-Berkeley, and University of Wisconsin-Madison.

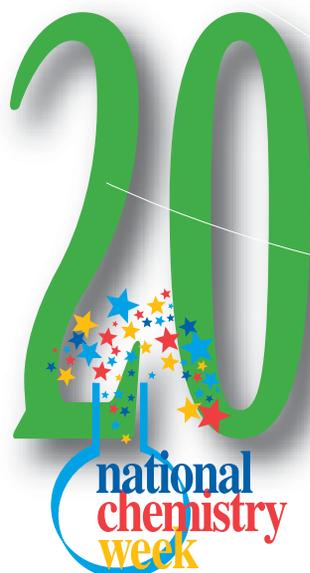
AmeriCorps (www.americorps.org) has two national programs for graduates to consider. Both offer eligible corps members the Segal AmeriCorps Education Award after successfully completing a term of service. Currently 70 colleges and universities match the Segal Award for their students.

- AmeriCorps*National Civilian Community Corps (NCCC) is a 10-month, full-time residential program for men and women between the ages of 18 and 24. NCCC combines the best practices of civilian service with the best aspects of military service, including leadership and team building. Corps members and team leaders live and work on one of three regional campuses — in Perry Point, Maryland; Denver, Colorado; and Sacramento, California — for the duration of their training.



- AmeriCorps*Volunteers in Service to America (VISTA) is dedicated to eliminating poverty by helping individuals and low-income neighborhoods make positive changes for themselves. Through the VISTA program, ordinary people provide extraordinary service in more than 1,200 projects nationwide.

Join the National



Anniversary Celebration!

By JUDITH JANKOWSKI

FOR THE PAST 20 YEARS NATIONAL CHEMISTRY Week (NCW) has reached millions of people through extensive outreach efforts by ACS Student Affiliates, local section volunteers, and teachers. This impressive outreach program is designed to inform the public, particularly elementary and

secondary schoolchildren about the positive contributions of chemistry in every day life.

Are you one of the thousands of volunteers who coordinates or participates in NCW celebrations in your community or school?

During the fourth week of every October, NCW enthusiasts can be found organizing hands-on activities and demonstrations at such venues as malls, museums, schools, and stores, to name a few. Their passion has captured the attention of thousands of children, who anxiously wait to participate in the exciting and fun hands-on activities relating to NCW's theme.

An inclusive theme

Promoting the theme, "The Many Faces of Chemistry," NCW 2007 will be celebrated from October 21–27. This special theme highlights the many different types of chemistry careers (and the types of people who pursue them), ranging from laboratory chemists and science teachers to chemical industry executives. Volunteer activities can provide general information about careers in chemistry, or focus on those careers found within a specific local community. What a way to celebrate the many people who have made major contributions to the chemical profession!



An award-winning start

National Chemistry Week actually began as National Chemistry Day, as a vision of then-ACS President George C. Pimentel. In 1986, Pimentel described the event as "a bold and exciting undertaking for us. Its success will be measured, in the



short term, by the number of people reached by our efforts. Over the long term, we will measure our success by the continued use of chemistry to solve societal problems and to improve the quality of life for us all."



This visionary statement led the ACS Board of Directors to establish National Chemistry Day (NCD), which was first celebrated on November 6, 1987. A parade spanning two blocks in Washington, DC, helped to kick off the

event, which was also celebrated by 173 out of 182 ACS local sections.

NCD was so well-received by the general public that in 1988 it received the Public Relations Society of America's Silver Anvil award, the highest honor accorded for excellence in public relations.

An impressive trajectory

chemistry.org/education/inchemistry.html • SEPTEMBER/OCTOBER 2007



DAVID HARRWELL

Ways to

Want to be a part of the 20th anniversary fun?

Here are some ways that you can participate:

1. Contact the ACS local section coordinator in your area. If their celebrations are already planned, volunteer to help with events. To find the local coordinator, visit chemistryweek.org.
2. Partner with a neighboring Students Affiliates chapter or an ACS High School Chem Club to plan an event, and ask your local section or an area chemical company for support.
3. Call neighborhood schools, libraries, or museums and work with them to conduct NCW theme-related hands-on activities (ideas can be found in *Celebrating Chemistry* or chemistry.org/kids).
4. Connect with a local Boys & Girls Club or an afterschool program to plan an outreach event.
5. Set up a table in a visible area to let people know that it's NCW! Distribute chemistry paraphernalia, like the "nano-mole" (visit chemistry.org/store for more product ideas), decorate your table with NCW 20th anniversary balloons (available for free in limited quantities; e-mail ncw@acs.org), or pass out *Celebrating Chemistry* (publications are geared for elementary-aged students).
6. Construct a giant periodic table made from balloons, cupcakes, cookies, or anything that will make a creative display in a prominent location on campus.
7. Participate in an existing community event. Perhaps the local community is hosting a street fair or farmers market during the week of NCW. Ask organizers if you could have table or booth space where you can pass out information about NCW or conduct hands-on activities. Inquire about getting space for free or at a reduced cost.
8. Host a career fair (this year's NCW Community Event). Invite area employers who recruit chemistry or chemistry-related majors to participate.
9. Invite a speaker to talk about a topic related to the NCW theme, and encourage Student Affiliates and chemistry-related majors to attend.
10. Participate in the "Chemvention" Competition for active Student Affiliates chapters. This year's challenge is to develop a hands-on activity dealing with next year's NCW theme, "The Chemistry of Sports." The winning Student Affiliates chapter and four finalists will receive \$2,500 and \$1,000, respectively, to go toward travel to a 2008 national meeting. More information can be found on the NCW website, at chemistry.org/ncw.

The original intent of celebrating NCD on a biannual basis was quickly broadened. Because of the overwhelming enthusiasm and support shown in its debut year, NCD was expanded to a week-long celebration and renamed "National Chemistry Week" in 1989. In 1993, NCW officially became an annual event, although many ACS local sections had been celebrating it annually already.

Celebrations now occur across the country. Each year, teachers, high school students, Student Affiliates chapters, and college professors participate in local section events, creating new and imaginative ways to celebrate and maximize NCW's impact. Ingrid Montes, 2007 chair of the ACS Committee on Community Activities (which oversees NCW) states, "Although National Chemistry Week is a program dealing with informal education, it also provides educators with an opportunity to involve students in community service."

A tremendous opportunity

Without a doubt, ACS Student Affiliates play a vital role in making NCW a huge success. As one of the largest groups of the program's supporters, they carry out a wide array of outreach activities.

The impact of Student Affiliates' participation is felt, not only by the public, but by the students themselves. Montes notes how Student Affiliates benefit when they plan and implement the activities. "Students who initiate a project, acquire funding, and solicit assistance from chapter members, develop leadership skills.

Through NCW community service, students also have the opportunity to consciously explore and practice professional ethics. As they respond to various societal issues, they experience the role that scientists play in society, and also see how science shapes society and vice versa. Finally, NCW activities can promote cross-cultural awareness and an ability to work effectively within diverse cultures and groups — skills that are critical to successful professionals."

Don't miss out on the chance to be part of NCW's 20th anniversary celebration! Visit chemistry.org/ncw to find out about free resources, ideas, and additional information. You may also contact the Office of Community Activities at 800-227-5558, ext. 6097 or e-mail ncw@acs.org.



Used with permission of the copyright holder.

JUDITH JANKOWSKI is the manager of the ACS Office of Community Activities.

Expose Yourself to Chemistry in New Orleans

Present Your Undergraduate Research or Chapter Poster

at the 235th ACS National Meeting
New Orleans, LA • April 6-7, 2008

Join more than 12,000 chemical
science and engineering professionals
at the American Chemical Society
for its 235th national meeting to:

- Present a research or chapter poster.
- Prepare yourself for a career in the chemical sciences.
- Network with other students and chemists.
- Have a great time!

*If you wish to be considered for a presentation, submit an abstract via the ACS website, chemistry.org, by **October 28, 2007.***



For more information
e-mail saprogram@acs.org or go to
www.chemistry.org/education/saprogram.html

Being in the Heart of it All – The Undergraduate Program in Chicago

BY KATE M. ZIEGELGRUBER



CHICAGO BUREAU OF TOURISM

Being able to attend national meetings is one of the greatest advantages of being part of the American Chemical Society (ACS) Student Affiliates Program. The 233rd ACS national meeting in Chicago was an opportunity to attend remarkable seminars, present research, learn about the latest scientific findings, and network with chemists from around the country. It was also a chance to meet other students with comparable interests in chemistry.

From March 25-29, 2007, ACS national meeting attendees enjoyed all these benefits – plus uncharacteristically warm spring weather on the coast of Lake Michigan and walks up and down the ‘Magnificent Mile’ between meeting events.

Student Affiliates also participated in the Undergraduate Program on Sunday and Monday, March 25-26. Designed especially for undergraduate chemistry students, the agenda was jam-packed with exciting speakers, informative workshops, poster sessions, grad-

uate school recruiting fairs, socials, and much more – all targeted at the younger generation of chemists.

Sunday March 25 – Day One

Kicking Things Off. The first day of activities began promptly at 8:00 a.m. with an orientation session titled, “Making the Most of Your First ACS Meeting.” Once students had breakfast and equipped themselves with information and strategies, they made plans for their remaining time in Chicago, and were off to attend events scheduled throughout the day.

Exploring Graduate Options. Students attending “Graduate School Reality Check” heard a presentation on the ins and outs of applying to graduate school by Robert Rawson, an assistant professor and assistant dean at the University of Texas Southwestern Graduate School of Biomedical Sciences. (See page 9.) A panel also addressed questions from students on issues ranging from GPAs

and research experience to financial aid. Some students started their graduate school search immediately afterward at the “Graduate School Recruiting Tea,” where they met representatives from over 40 graduate schools from around the country.

Sharing Ideas. After hearing tips from faculty advisors during “Writing the SAACS Chapter Report,” participants reviewed sample reports to gain insights into how to more effectively plan and report on chapter activities. Presenters also shared information about the new online report submission system.

Just before lunch was “Chem Demo Exchange Using Household Chemicals.” Safety was everyone’s first priority, of course, and the room was filled with safety-goggle-clad viewers wandering from booth to booth and observing experiments involving corn starch, ping-pong balls, and dish soap. Participants were also treated to displays honoring the 100th anniversary of the ACS Minnesota Section.

Student packed the room

for “ACS Community Outreach Programs – You Can Make a Difference.” The Committee on Community Activities shared information on Chemists Celebrate Earth Day and National Chemistry Week themes, activities, and tips for motivating volunteers.

The Kids & Chemistry



Caren Mah, Appalachian State University, demonstrates slime.

ACS STAFF

Workshop was just as popular. Participants heard about tips on planning and presenting science activities to elementary school children and safety and liability



Lisa Brown, Amine Hamideh, Becky Vidrine, and Jill Taylor, Louisiana State University, demonstrate non-popping balloons.

issues.

Getting Technical. The afternoon offered several different sessions from which to choose, including the first of a two-part Automotive Chemistry seminar, "More Than Just the Tail Pipe." Herman Phlegm from General Motors and Mike Hurley from Ford Motor Company shared industrial perspectives on the chemistry behind designing and constructing automobiles.

Diane Bunce from Catholic University engaged students and faculty in "Chemistry Survival Guide: Reducing the Frustration of Learning and Teaching Chemistry." This interactive workshop shared effective techniques.

Dressing for Success. At the "Dress for Success" workshop, young chemists got a fresh perspective on how to dress appropriately for events that one is likely to encounter in the chemistry community. Everyone took home a little piece of fashion in the form of a T-shirt.

Celebrating Accomplishments. Events for the evening included two highly-anticipated events: the Student Affiliates

Chapter Award Ceremony and the Undergraduate Social. ACS President Katie Hunt gave the keynote presentation to the approximately 180 Student Affiliates chapters that were honored for their 2005-06 activities.

Program officials presented awards for Outstanding, Commendable, Honorable Mention Student Affiliates chapters, and for accomplishments involving Green Chemistry. The Student Affiliates Chapters of Northwestern and DePaul Universities hosted the Undergraduate Social, at which students enjoyed a wonderful Chicago-style pizza dinner before dancing the night away.

Monday March 26 – Day Two Breakfasting with

Recruiters. After a late night of socializing and dancing, it was up early again for a second day of exciting programming. At the Graduate School Recruiter's Breakfast, students got breakfast and more time to talk with recruiters.

Considering Sustainability. Next up, it was the Presidential Event, "Sustainability and Chemistry: Tomorrow's Challenge for Today's Students." A dynamic speaker, Matthew Fisher from St. Vincent College, addressed some serious problems in

our world today. He also discussed the needs for green chemistry, alternate energy sources, and environmental protection.

More Insights into Auto Technology. Part two of the "More Than Just the Tail Pipe" seminar featured Latoska Price from Azko Nobel Coatings and Charlene Hayden from General Motors. Opportunities in coatings and advances in fuel cell technology were discussed.

Presenting Research. Over 1,100 students presented their research at the two undergraduate poster sessions, both of which were very well-attended. The undergraduates were clearly prepared for their presentations.

Being on the Cutting Edge. Another highly-anticipated event was the Eminent Scientist Lecture. This year's featured speaker was Omar Yaghi from University of California-Los Angeles, who spoke about the reticular synthesis of discrete polyhedra and extended frameworks and their applications in clean energy and gas storage.

Getting the Inside Scoop. The ACS Corporation Associates Reception, "Up

Close and Personal," was the optimal place to converse with representatives from industry. Students gained insights on careers in industry and how best to prepare for them.

The undergraduate events came to a close at Sci-Mix. Nearly 100 chapters shared their activities during the Successful Student Affiliates Chapter Poster Session.

From what I observed,



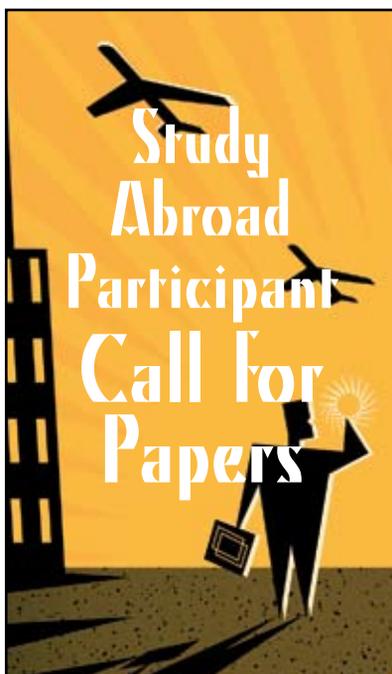
Ashley Field, Albion College, discusses her undergraduate research.

a good time was had by all who attended the Undergraduate Program in Chicago. ACS national meetings are indispensable opportunities for undergraduates to learn about the most recent chemistry findings and to network with other peers and professionals. I strongly suggest everyone attend at least one during his or her time as an undergraduate!

The national meeting in the spring will be held in New Orleans, April 6-10, 2008.



KATE L. ZIEGELGRUBER is majoring in chemistry and French at DePauw University and is the 2007 student liaison to the ACS Task Force on Undergraduate Programming.



Have you recently completed research based on a study-abroad or other international experience?

If so, the ACS International Activities Committee (IAC) encourages you to present your research at the spring ACS national meeting in New Orleans, Louisiana and become eligible to receive an award from the International Union of Pure and Applied Chemistry and IAC! Be sure to designate yourself as an international research participant when submitting your abstract.

To confirm your participation, e-mail Beth Rudd at b_rudd@acs.org.



2007 ACS Regional Meetings

42nd Western Regional Meeting

October 10-13, San Diego, CA
<http://www.wrmaacs.org/>

An undergraduate program will be hosted by the University of San Diego SAACS Chapter – see Western Regional Meeting Notice on page 23 for more details.

59th Southeast Regional Meeting

October 24-27, Greenville, SC
<http://www.sermaacs2007.org/>

An undergraduate program will be hosted by the Clemson University and Furman State University SAACS Chapters – see Southeast Regional Meeting notice on page 23 for more details.

63rd Southwest Regional Meeting

November 4-7, Lubbock, TX
<http://www.depts.ttu.edu/chemistry/SWRM07/>

42nd Midwest Regional Meeting

November 7-10, Kansas City, MO
<http://membership.acs.org/m/mwrm2007/>

Would your chapter like to host an undergraduate program at a fall 2008 Regional meeting?

Proposals are being accepted until November 7, 2007. Please contact Alicia J. Chambers at a_chambers@acs.org or 800-227-5558, ext. 6176 for proposal guidelines and more information.

Other meetings of interest

The Society for Advancement of Chicanos and Native American Students National Conference

October 11-14, 2007 (see notice on page 32)

The American Indian Science and Engineering Society 29th Annual National Conference

November 1-3, 2007 (see notice on page 31)

The American Institute of Chemical Engineers Annual Meeting

November 4-7, 2007 (see notice on page 30)

Frontiers in Chemistry, Biopharmaceuticals & Biotechnology 41st Western Regional Meeting (WRM) of the ACS October 9 – 13, 2007, San Diego CA

Preliminary Undergraduate Program Schedule of Events

Tuesday, October 9

6:00–7:00 PM Undergraduate Reception and Social

7:00–8:00 PM Kick-Off Lecture

Dr. K.C. Nicolaou of the Scripps Research Institute, “Chemistry, Biology and Medicine of Natural Products”

Wednesday, October 10

6:00–9:30 PM U.S.S. Midway Extravaganza and Lecture

Dr. Harry Gray of Caltech, “Powering the Planet with Solar Energy”

Saturday, October 13

8:30–10:00 AM What to Expect in Graduate School

10:15 AM–NOON Graduate and Professional School Forum, “What’s Next?”

1:30–3:00 PM SAACS Strategies for Fundraising and Outreach



Poster Sessions will be held Wednesday, October 10 through Friday, October 12

For more information visit: www.wrmacs.org

SERMACS 2007

GREENVILLE, SC

OCTOBER 24 - 27, 2007



Chemistry in Motion

<http://www.sermacs2007.org/>

59th Southeast Regional Meeting October 24–27, Greenville, SC Undergraduate Programming

Hosted by the Student Affiliates Chapters from
Clemson and Furman Universities

Friday, October 26

Kick-off Symposium
- Advances In Conservation Science

Plenary Lecture
- Nobel Laureate: Roald Hoffmann

Social Events
- Networking opportunities in
downtown Greenville

Saturday, October 27

Poster and Oral Symposia
- Undergraduate research presentations

Graduate School Fair
- Visit with Graduate Schools from across the
southeast

Awards Luncheon / “Oxygen” Production
- Prizes will be awarded for the best under-
graduate poster and oral presentations
- A staged reading of “Oxygen” followed by a
“talk back” with Nobel Laureate and
playwright Roald Hoffmann (Tickets \$10)

**Join us for an opportunity to network,
learn, and present your research.**



**DUQUESNE
UNIVERSITY**
THE BAYER SCHOOL OF NATURAL
AND ENVIRONMENTAL SCIENCES



**Chemistry & Biochemistry
Ph.D. Graduate Studies
in Downtown Pittsburgh!**

A Strong and Growing Departmental Tradition

- New state-of-the-art facilities and equipment
- Diverse and world-recognized faculty
- Excellent interdisciplinary and collaborative research groups
- Fully funded graduate fellowships
- Superb student placement record

Focused Interdisciplinary and Core Research

- Environmental Chemistry
- Advanced Instrumentation
- Theory and Supercomputing
- Pharmaceutical Drug Design
- Nanotechnology
- Organic Synthesis
- Energy and Fuels
- Metals in Biology

For more information call **412.396.4912** or check us out at <http://www.science.duq.edu/chemistry/index.html>



**Science
Plus**

With Oregon State University's Professional Science Master's Degree, you'll get a **graduate education in science** that culminates in a professional internship rather than a thesis. And with specially tailored coursework in **business, communications, ethics,** and Web and **computer applications,** you'll also learn to bridge the increasingly interconnected worlds of science and business.

OSU goes beyond most universities by offering professional programs in four science areas, including **Applied Biotechnology** and **Environmental Sciences.** And in those areas, you can specialize in **biogeochemistry, water resources** and **quantitative analysis,** among other options.

For more information, visit us online at:
professionalmasters.science.orst.edu

Oregon State
UNIVERSITY

What kind of
hybrid
are
you?

Become a bold new hybrid of science and business.

The Master of Bioscience (MBS) program at KGI offers the interdisciplinary curriculum, industry insight, and unparalleled connections you need to excel in the life sciences industry:

- Biomedical Devices and Diagnostics
- Bio/Pharmaceutical Discovery and Development
- Bioprocessing
- Business of Bioscience
- Clinical and Regulatory Affairs

Apply to the MBS program today and lead the next generation of bioscience innovation.

Visit **aboldnewhybrid.kgi.edu** for details on the MBS program, financial aid, admissions, important dates, and much more.



KECK GRADUATE INSTITUTE
of Applied Life Sciences

A member of the prestigious
Claremont Colleges Consortium

535 Watson Drive, Claremont, CA 91711
909.607.8590
aboldnewhybrid.kgi.edu



Interested in Structural Biology or Bioinformatics?

This international program between Birkbeck, University of London, and Rosalind Franklin University of Medicine and Science in North Chicago, IL, will provide intense training in X-ray crystallography or Bioinformatics. The unique international program provides a MRes from Birkbeck with all of the studies and research therein applied to the PhD studies and research at Rosalind Franklin University of Medicine and Science. The first year is spent in North Chicago, where core classes are taken in Molecular and Cell Biology. The second year of studies is at the School of Crystallography at Birkbeck, University of London, where the student takes intense training in either X-ray crystallography or Bioinformatics, with special consideration of the student's thesis project. The student fulfills all of the requirements for a MRes from Birkbeck. In the final years, the student returns to Rosalind Franklin University and completes the experimental portion of the PhD thesis, then writes and defends the thesis for completion of the PhD/MRes combined degree.

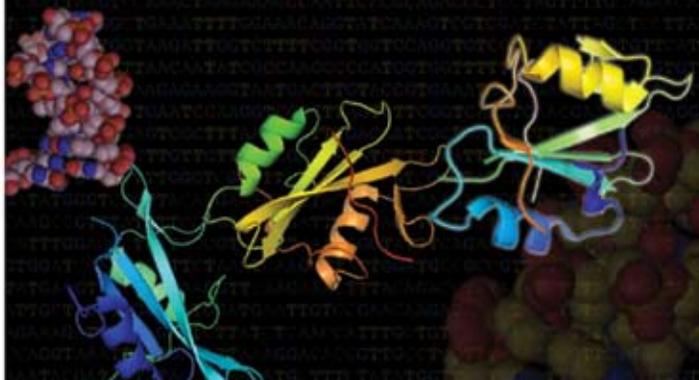
INTERNATIONAL PROGRAM

Get the best from two programs with concentrated research expertise in Structural Biology and Bioinformatics.

Studies in London and North Chicago.

Combined PhD/MRes Degree in Biochemistry and Structural Biology or Bioinformatics.

Go to: www.RosalindFranklin.edu/cms/biochem/Birkbeck.html



RICE UNIVERSITY'S **FAST** NEW CAREER TRACK

A Professional Science Masters Program offering cutting-edge science education, management skills, and work experience ...

... in less than 2 years ...



**Nanoscale Physics
 Subsurface Geoscience
 Environmental Analysis
 and Decision Making**

www.profms.rice.edu

Professional Science Master's Degree (offered online):

- Analytical Chemistry
- Materials and Chemical Synthesis

Ph.D. and MS degrees

- Interdisciplinary Research in Nano/bio-science
 Pharmaceutical chemistry
 Polymer and inorganic nanomaterials
- Chicago Campus near Lake Michigan
- Collaboration with Argonne National Laboratory

email: psm@iit.edu
bcps.iit.edu

Reactiviity

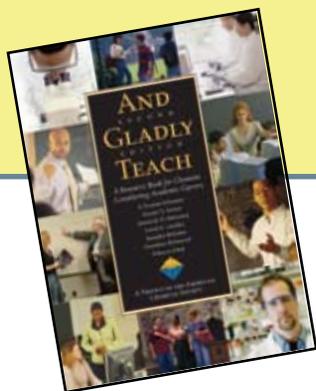
Graduate chemistry degrees
 that create a connection

iit.edu
 312.567.7974



ILLINOIS INSTITUTE
 OF TECHNOLOGY

THINKING ABOUT BECOMING A FACULTY MEMBER?



And Gladly Teach: A Resource Book for Chemists Considering Academic Careers!

This book describes academic positions in various types of institutions. You will receive advice on preparing for your career while in graduate school and finding a faculty position. Interspersed within each chapter are statements from 12 recent Ph.D.s, describing their trajectories toward academic careers.



For a complimentary copy of **And Gladly Teach**, contact the ACS Office of Graduate Education, GradEd@acs.org, or the ACS Office of Society Services by phone at (800) 227-5558 or (202) 872-4600, or by e-mail at help@acs.org.

Chemistry Graduate Program

Fast forward your career Research First

Scientific research is the emphasis of an excellent PhD program. Integrating cutting edge research with graduate classes and placing a high priority on the professional development of each student means putting **Research First** at the University of Nebraska-Lincoln.



UNIVERSITY OF
Nebraska
Lincoln

The University of Nebraska-Lincoln is an equal opportunity educator and employer with a comprehensive plan for diversity. © UNI, 2007

www.chem.unl.edu

chemic@unl.edu



PSM
PROFESSIONAL
SCIENCE MASTER'S

The Graduate Degree with Business Skills Built In

UNI's Professional Science Masters degree in Applied Chemistry and Biochemistry can be the path to your future in the chemical and pharmaceutical industry. The PSM prepares you to work at the interface of science and business, where employers need you most, by combining graduate coursework in chemistry with condensed business courses, culminating in an internship. With courses like Corporate Chemistry, Team Problem Solving for Science Professionals, Experiment Design, and Business Management for Science Professionals, you'll have the knowledge and skills you need to move ahead in industry. For more information about UNI and our PSM in Applied Chemistry and Biochemistry and our other graduate programs, see our website at www.uni.edu/chemistry or contact Dr. Shoshanna Coon at 319-273-2059 or shoshanna.coon@uni.edu.



THE UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER

announces the

Frank and Sara McKnight

**Prize in Undergraduate Chemistry
2007**

Senior Undergraduates are invited to compete for one of three prizes (1st place, \$2000; 2nd place, \$1000; and 3rd place, \$500) recognizing outstanding undergraduate research achievement in chemistry. Interested students should submit an abstract describing their research, GRE scores, undergraduate GPA, and a letter of support from their research mentor, to: Robert B. Rawson, PhD (Rob.Rawson@UTSouthwestern.Edu) *no later than October 15th, 2007*. Please include "CHEMISTRY PRIZE" in the subject line.

Up to twelve finalists will be invited to present their posters at the UT Southwestern Biochemistry Research Retreat to be held in New Braunfels, Texas, November 9-11, 2007. Winners will be chosen based on the significance of their work and excellence of presentation. Travel and accommodations for finalists will be provided by UT Southwestern.

Finalists for the McKnight Prize will also be eligible for Welch Foundation/UT Southwestern Graduate Fellowships in Chemistry, awarded to students pursuing graduate training in synthetic and/or natural products chemistry at UT Southwestern. This fellowship provides tuition, medical benefits, and a stipend of approximately \$32,000 per annum. For additional details, see:

<http://www.utsouthwestern.edu/chemistryprize>

Professional Science Master's

Drug Analysis

Forensic Chemistry

Chemical Informatics

Temple University, along with the Alfred P. Sloan Foundation, is excited to offer three new Professional Science Master's degrees in Chemistry. The programs offer students an interdisciplinary degree designed with quality experience and professionalism in mind. As they are collaborated with industry, the curricula empower students with the valuable skills sought after by the nation's top employers.



For more information on the PSM program at Temple University please contact us:

Mail: Temple University
Department of Chemistry
130 Beury Hall
1901 N. 13th St.
Philadelphia, PA 19122
Phone: (215) 204 - 7118
Fax: (215) 204 - 1532
Email: chemgrad@temple.edu

*Two Professional Programs of Excellence . . .
One Engaged University.*

PROFESSIONAL SCIENCE MASTER'S DEGREES IN

BIOTECHNOLOGY



www.csufresno.edu/biology/psm

DEPARTMENT OF BIOLOGY
559.278.2001

FORENSIC SCIENCE



www.csufresno.edu/foreniscscience

DEPARTMENT OF CHEMISTRY
559.278.2103

California State University, Fresno

College of Science and Mathematics

www.csufresno.edu/csm



**The American
Institute of Chemical
Engineers Annual
Meeting**

**November 4-9, 2007
Salt Lake City, Utah**

The 2007 **AIChE** Annual Meeting offers a unique learning experience for students and professionals alike. This meeting will address the emerging challenges and professional requirements for Chemical Engineers as well as provide a current understanding of the dynamic Chemical Engineering job market.

**FOR MORE
INFORMATION, VISIT
WWW.AICHE.ORG**

**FAST START TO SUCCESS IN A BIOTECHNOLOGY CAREER:
PROFESSIONAL SCIENCE MASTER'S (PSM) DEGREE**

Virginia Commonwealth University (VCU) offers a business oriented professional science masters degree, the Master of Bioinformatics, with the national PSM program.

VCU's Professional Science Master's degree is a unique professional degree grounded in bioscience, geared toward the biotechnology and pharmaceutical industries. The degree combines advanced coursework in genomics, proteomics, bioinformatics, statistics and computer programming, with an array of professional skill-development activities and "business of science" courses to produce graduates highly valued by employers and fully prepared to progress toward leadership roles.

VCU is a Carnegie Research Intensive University located in Richmond, Virginia, about 110 miles south of Washington DC. More than 30,000 students are enrolled in 187 degree programs. A public institution, VCU is one of the most comprehensive schools for health sciences in the US.

For more information, see www.vcu.edu/csbc/bioinformatics/PSM_main.htm or call 804-827-0026. Email: psmvcu@vcu.edu

PSM Professional
Science Master's

Center for the Study of
BIOLOGICAL
COMPLEXITY

VCU



**THE AMERICAN
INDIAN SCIENCE
AND
ENGINEERING
SOCIETY**

**29th Annual
National
Conference**
"Mission: Success"

**November 1-3, 2007
Phoenix, Arizona**

Each year the AISES National Conference attracts the nation's brightest American Indian students, as well as professionals in the fields of science, engineering and technology.

The 3-day event includes:

- A career fair
- Dynamic nationally-recognized speakers
- Panel discussions
- Workshops for students, teachers and professionals.

The career fair offers companies a unique forum for recruiting American Indian students and professionals. There are 2,000 participants and 200+ exhibit booths each year.

**FOR MORE
INFORMATION, VISIT
WWW.AISES.ORG**

Bioinformatics and Medical Informatics (BMI) PSM at San Diego State University



Ever wondered what it takes to discover a new drug, or to understand the underlying mechanism of a disease? It takes chemistry and biology, but it also takes computer science. The complexity of biological systems and vast amounts of data that new technologies produce require computer know-how.

Today there is an acute need for graduates with just such a multidisciplinary background, both in academia and in industry. In industry, this need expands beyond biotechnology, pharmaceutical and health care sectors, and is felt in such areas as homeland security and information technology.

The BMI program at SDSU offers a graduate level multidisciplinary education to students with a background in chemistry, biology, computer science, mathematics, physics or engineering. The first year of the program is spent on areas complementary to the student's background, while the second year is spent on the student's specialization. The program offers two paths, one for a traditional Master's of Science with a thesis, and the second for a professional Master's degree comprising an internship and courses in business to better prepare students for industry. For more information please visit:

<http://bioinformatics.sdsu.edu/education.html>

If your school would like to include an notice in an upcoming issue of *in Chemistry*, contact Lori Betsock, (800) 227-5558, ext. 6188 or e-mail betsock@acs.org.

Georgia State University Graduate Studies in Chemistry

MS and PhD programs offered in:

- Biological/Biochemical
 - Analytical
 - Biophysical
 - Organic/Medicinal
- Competitive stipends and fellowships; full tuition waivers; and assisted health insurance (current PhD's supported: 67)
 - ≈ 6 million dollars in external research funds (annually) to support 23 research faculty
 - Home to the editorial offices of 2 journals and 1 book series; award winning internationally recognized faculty
 - 6 high-field NMRs, 6 mass spectrometers-electrospray and MALDI, and high-resolution, two Biacores, a laser lab and a combinatorial facility, as well as routine instruments.



For more information:

phone (404) 413-5525
www.chemistry.gsu.edu



**Society for Advancement
of Chicanos and Native
American Students**

**Stretching the
Imagination to Support
Leadership and
Sustainability**

SACNAS provides unparalleled conference activities for students, educators, administrators and researchers in science. The **SACNAS** Conference offers a national forum for investigation of questions related to the theme and the development of a new generation of leaders who will be instrumental in shaping future directions and applications of scientific research.

**October 11-14, 2007
Kansas City, MO**

**Highlights of the
Conference Include:**

- Apply, Interview and Enroll: The Complete Program on How to Go to Graduate School
- Conversations with Scientists - Mentoring Program Session
- Undergraduate and Graduate Student Poster Presentations
- SACNAS Chapter Extravaganza
- Internships and Summer Research Programs for Undergraduates in the Life Sciences
- Career Development in the Biochemical Sciences: What can professional societies do for you?
- Science, Technology and Entrepreneurship

**FOR MORE INFORMATION,
VISIT
WWW.SACNAS.ORG**

Department of Chemistry Oklahoma State University



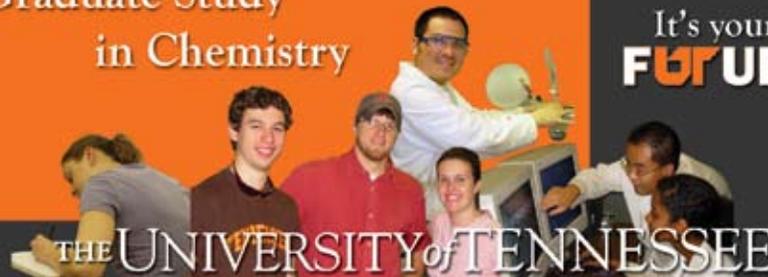
Write or submit a request on-line at <http://www.chem.okstate.edu> for a brochure describing our graduate program and research activities.

Our address is: Graduate Admissions Committee, Department of Chemistry, Oklahoma State University, Stillwater, Oklahoma 74078-0774
Phone: (405)744-5920
FAX: (405)744-6007
E-Mail: materer@okstate.edu

We invite you to learn more about us by visiting our web page at <http://www.chem.okstate.edu>

Graduate Study in Chemistry

It's your
FUTURE



The Graduate Program in Chemistry at the University of Tennessee provides research and studies in the traditional areas of inorganic, analytical, organic and physical chemistry as well as polymer and materials chemistry, neutron science, and many emerging interdisciplinary areas.

Close ties with Oak Ridge National Laboratory and the new Spallation Neutron Source (about 20 minutes from campus) allow unique access to state-of-the-art technologies and gives our students unmatched opportunities for research, fellowships, and post-graduate employment at federal facilities.

For more information:

studychemistry@utk.edu www.chem.utk.edu Phone: (865) 974-6976