

TO BE
LEADERS IN
ATTRACTING,
DEVELOPING,
& PROMOTING
WOMEN
IN THE
CHEMICAL
SCIENCES
AND
RELATED
DISCIPLINES



FALL 2002

American Chemical Society
Women Chemists Committee
1155 Sixteenth St., N.W.
Washington, DC 20036
<http://membership.acs.org/W/WCC>

WOMEN CHEMISTS

The WCC Diamond Jubilee Was Splendid!

I proudly report that WCC's 75th anniversary celebration in 2002 was highly successful in continuing to promote and recognize women's contributions to the chemical sciences. At the ACS national meetings in Orlando and Boston, WCC hosted or cosponsored a record-setting 31 symposia! The highlights were the special presidential events: "Diversity in the 21st Century: Advancing Women in Science" and "Diversity in the 21st Century: Factors for Success" (see pages 2-3). A second presidential symposium in Boston, "Women at the Forefront of Chemistry," featured 12 scientists who have been recognized for their cutting-edge research and profiled in *Chemical & Engineering News* (see page 3). A reception followed this special event to honor these women.

At the WCC luncheon in Orlando, the 2002 Garvan-Olin Medalist, Marion Thurnauer from Argonne National Laboratory, presented the talk, "My Mother, Her Sister, and Me: 75 Years of Science and Social Change." In Boston, Elsa Reichmanis, ACS president-elect and director of materials research at Bell Laboratories, Lucent Technologies, discussed "Chemistry & Technology: Enabling the Future," and Cynthia Ignaszewski received the WCC Overcoming Challenges Award.

Other 2002 WCC achievements included ACS governance approval for a status change to become a Joint Board-Council Other Com-



Photo by Janet Bryant

Left to right: Elsa Reichmanis, ACS President-elect, Boston WCC Luncheon speaker; Marion Thurnauer, 2002 Garvan-Olin Medalist, Orlando WCC Luncheon speaker; Valerie Barrett, WCC Chair.

mittee and the adoption of four recommendations from the Presidential-Board Task Force on Issues Related to Women in the Chemical Sciences. These recommendations included sending a formal welcome letter to all new ACS members; sponsoring high-level speakers at national meetings; monitoring

the follow-up of the Committee on the Advancement of Women and Minorities in Science, Engineering, and Technology (CAWM-SET) Report; and supporting the creation of a database of ACS women members with information on their areas of expertise and research to be used as a resource tool for the Society. At the recommendation of this task force and with ACS Board approval, an inter-society communication network of groups interested in issues on women in science was established. Quarterly meetings are planned to exchange views and share information. WCC continues to support the PROGRESS (Partnerships, Reflection, Openness, Grants, Resources, Education, Site Visits, Successes) project initiatives with four WCC members serving on the recently appointed PROGRESS Steering Committee.

In 1999, the Committee on Grants and Awards challenged WCC to focus on increasing nominations of women for all ACS national awards. After contacting thousands of chemists in government, academe, and industrial institutions, between 1999 and 2003 the

The WCC Diamond Jubilee Was Splendid!—Continued from page 1

nominations of women increased 182% for ACS awards other than the Garvan-Olin Medal. More good news is the 7% increase in the number of women appointed as editors and the 16% increase in women associate editors for journals published by ACS. While we are pleased with this progress, we are dedicated to continuing the momentum in these areas until parity for women is achieved.

The WCC Regional Award for Contributions to Diversity, recognizing individuals who have significantly fostered diversity in the chemical enterprises, attracted many excellent nominations. This pilot program was created in honor of the 75th WCC anniversary, and an individual was recognized at each 2002 ACS regional meeting (see page

5). In addition, as part of the celebration, WCC initiated a National Historic Chemical Landmark dedication to a woman, the first to be recognized through this program. The dedication of Alice Hamilton was a collaborative effort of WCC, the Chicago Local Section, and the Division of Chemical Health & Safety (CHAS) (see page 5).

WCC gratefully acknowledges each of the ACS divisions, committees, local sections, and regional meetings for their support and participation in our many splendid anniversary celebration events. It has been my privilege and honor to serve as WCC chair during this special 75th anniversary year. I will always cherish my memories of the commemorative events. I invite you to visit the WCC website at <http://membership.acs.org/w/wcc> for presentations, articles, and photos from the 75th anniversary events and information on upcoming WCC activities.

2002 Presidential Events

Diversity in the 21st Century: Factors for Success

Fall ACS National Meeting in Boston

ACS President Eli Pierce and ACS Past-President Helen Free opened this symposium. Rita Colwell, director of the National Science Foundation (NSF), spoke about creating better bonds in chemistry through diversity and the need to readdress rules pervading academia that prevent women from success. She discussed the characterization of academe as “pale, male, and stale” and described how the “reflecting pool phenomenon” can drive people to hire and promote those who look like themselves. A diverse faculty has been shown to attract a young and diverse pool of scientists. Colwell referenced the COACH (Committee on the Advancement of Women Chemists) program and the new ADVANCE program at NSF that focus on leadership and encourage individuals and institutions to foster change and diversity in academe.

Richard Gross, corporate vice president of R&D at Dow Chemical, spoke about how diversity drives innovation. Successful leadership at the top means active engagement, not delegation. Inclusion is a mentoring opportunity for both the mentor and the mentee. Gross emphasized that by actively making the invisible visible, leaders can remove the insidious barriers that prevent people from achieving their potential.

Ellen Kullman, group vice president of DuPont Safety Resources, spoke about reinventing yourself in changing organizations. The personal desire to learn, change, and evolve is what drives people to acquire new skills, such as leadership and multidisciplinary knowledge. DuPont has established fertile ground for diversity to flourish by

effectively using grassroots networks. “Leadership is about being the connector.”

Leonard Small, section head at Proc-

ter & Gamble (P&G), discussed accelerating employees’ personal development and that celebrating differences is a critical factor for success. P&G has found that personal development is key to productivity of their new employees; and that inclusion is an important issue for minorities in general. Small says that P&G has significantly decreased the time needed for new hires to acclimate and become productive, which in turn has led to new programs in hiring and development for employees.

Lura Powell, director of Pacific Northwest National Laboratory (PNNL), spoke to “Diversity: It’s About Advocacy.” She discussed specific management goals to achieve a diverse workforce and the effective use of succession planning as a tool to ensure that diverse candidate slates are reviewed for job openings and personal development. Advocacy has five distinct components—recruiting, retention, engagement, self-assessments, and rewards. Each component plays a role in ensuring a successful diversity effort—one that is long-lived, institutionalized, and delivers measurable results.

—Shannon Davis



Left to right: Lura Powell, Ellen Kullman, Helen Free, Rick Gross, and Leonard Small. Not pictured: Rita Colwell.

Diversity in the 21st Century: Advancing Women in Science

Spring ACS National Meeting, Orlando



Left to right: Valerie Barrett, Kathleen Bader, Shirley Ann Jackson, Marye Anne Fox, Stephen Di Biase, Helen Free, and Fran Keeth.

ACS President Eli Pierce articulated an important theme: "If we want this new century to be as successful as the last, we [ACS] too must embrace diversity." ACS Past-President Helen Free moderated and introduced the symposium as a broad-based look at the factors needed to ensure the continuing success of women in the sciences.

Kathleen Bader, business president and corporate vice president, Dow Chemical Co., discussed retention and advancement as the critical measures of success in diversity. While overt discrimination is mostly a thing of the past, a key barrier that still exists is the issue of inclusion. To be successful, diversity initiatives must be driven from the top. Mentoring and networking opportunities are key to Dow's success in retaining and advancing women and minority scientists. However, an opportunity for improvement is to better coordinate compensation and recognition packages between the technical and management ladders to attract more diversity in the technical fields.

Marye Anne Fox, chancellor of North Carolina State University, asked, "Who will do science in the 21st century?" She stated that the critical issue is to continually challenge and ask, "Why not?" She discussed Valerie Kuck's data on parity in education and some prevalent barriers still remaining in academe. She spoke about a study undertaken by the Association of Women in Science that highlights what departments should consider when searching for new faculty; retention is an impor-

tant measure. She encouraged women to pursue management jobs in academia, because being the "person in power" lets you ask the questions and get the answers.

Stephen DiBiase, vice president of Emulsified Products for the Lubrizol Corp., said that people are the main source of competitive advantage. He stated that diversity was a requirement rather than an option for the survival of today's companies. Success must be driven from the top and requires multilevel support to become part of the corporate culture. Numbers are the common methodology for measuring success; however, success in diversity is about increasing success in your business.

Shirley Ann Jackson, president of the Rensselaer Polytechnic Institute, focused on the "underrepresented and underserved majorities—women, minorities, and those with disabilities." She described the ongoing efforts of BEST (Building Engineering and Scientific Talent) to continue the work of several congressional initiatives. To succeed, Jackson advocated building national will to accommodate the need for people trained in science and engineering. One methodology is to use team-based approaches (i.e., partnerships among parents, students, and faculty) at the junior and high school levels for introductory courses, undergraduate research, and mentoring.

Fran Keeth, president and CEO of Shell Chemicals LP, pointed out that the chemical industry is no longer the most attractive workplace for the best and brightest science and engineering talent. Although industry has made strides, the corporate hierarchy is inhibiting, and often minorities are still not heard. The need for creative and innovative problem-solving and the globalization of the chemical industry make diversity a true business imperative. Shell is measuring several different components in its diversity efforts and has set a goal of having 20% women in management by 2008.

Women at the Forefront of Chemistry

Fall ACS National Meeting in Boston

One young woman chemist is being profiled each month in *Chemical & Engineering News* this year as part of WCC's 75th anniversary celebration. These 12 women were selected because they are important leaders in areas of research that are expected to have a significant impact on chemistry and the chemical enterprise during this century.

These scientists discussed their research highlighting most of today's important chemical fields, indicated by the number of ACS divisions that cosponsored this symposium: Computers in Chemistry, Organic

Chemistry, Polymeric Materials: Science and Engineering, and Polymer Chemistry.

Speakers included Zhenan Bao, Lucent Technologies, Bell Laboratories; Angela M. Belcher, University of Texas, Austin; Allison A. Campbell, Pacific Northwest National Laboratory; Julia Y. Chan, Louisiana State University; Wendy Cornell, Novartis Pharmaceuticals; Kathleen O. Havelka, Lubrizol Corp.; Cherie R. Kagan, IBM T. J. Watson Research Center; Alanna Schepartz, Yale University; Valerie V. Sheares, Iowa State University; and Ann E. Weber, Merck Research Laboratories. The two women unable to participate were Carolyn Bertozzi from the University of California, Berkeley, and Lynda Johnson from DuPont Central Research & Development.

Successful Women in Chemistry

In recent years, Catherine Woytowicz has taken the road less traveled: from chemistry to politics. As an ACS Science Policy Fellow from 1999 through 2001, she worked in the Office of Legislative and Government Affairs (OLGA) at ACS headquarters in Washington, DC. OLGA comprises many political scientists and ex-staffers from Capitol Hill, and Woytowicz said that part of her job was “interpreting science for others so that they could make informed decisions.” In this capacity, one of her innovations was creating “take-home” packets for policy makers that cover such fascinating topics as biological terrorism, infectious diseases, and innovations in crime-fighting technology.

Woytowicz started an American Association for the Advancement of Science Fellowship at the State Department in Science, Engineering, and Diplomacy this fall. She teaches organic chemistry and conducts chemistry education research at George Washington University, consults, and reviews and writes textbooks.

Before her penchant for politics took precedence, Woytowicz followed the paths of forensic science, pharmaceuticals, and technical writing. She earned a B.S. in chemistry with a physics minor from the Honors Program at Loyola University of Chicago and a Ph.D. in synthetic organic chemistry from the University of California at Riverside. Woytowicz is a renaissance woman; she teaches swing dancing and public speaking, writes fiction and nonfiction, and occasionally performs as a stand-up comic. “I’ve been a member of a bad rock band and a good string quartet. I don’t have a favorite pastime, but I try to avoid boredom. Seriously, I just ran my first marathon with no training—I never had the time. I did it from the desire to challenge myself. That’s how I do everything.”

Woytowicz’s interest in chemistry began with her curiosity about how functional groups on a molecule affect biological activity, which led to an undergraduate research project and graduate work in organic synthesis. Her interest in scientific policy developed when graduate school friends became involved in the Gulf War. At that time, the Chemical Weapons Convention was being written, and she became interested in the treaty process.

Flexibility and tenacity on her part and a lot of support from friends, family, and teachers are the key factors that Woytowicz cites in helping her get to where she is today. However, she says you should never overlook the luck factor. She says that she gained valuable experience by becoming active on the public affairs and public relations



Catherine Woytowicz

Photo by Janet Bryant

committee of the ACS Chicago Local Section and writing to elected officials.

“Involvement in local sections is so important; the people are the network,” she explains. Working with Jim Shoffner (now an ACS board member) at the local level gave her the opportunity for the ACS Science Policy Fellowship. When asked about sacrifices she’s made, Woytowicz says, “I probably sacrificed everything—relationships, jobs, free time, money, location—at one time or another.” She advises people to be realistic about the career

choices they make and emphasizes that a decision based on one or two factors will likely mean sacrificing in other areas. Woytowicz says she has definitely changed throughout her career. She isn’t sure whether her Jesuit education or working almost exclusively with men has influenced her style the most, but she freely admits that she has adopted a “male” style of communicating: “Here’s my idea. What’s yours? What’s best? Some find it aggressive or perhaps even offensive, but I do not apologize for sharing ideas, exploring boundaries, or asking why.”

Her definition of success: being able to choose the problem you want to work on, in a time frame that suits you, and being taken seriously for your intellectual contribution to solving the problem. She believes that success requires planning and flexibility. Mentors and networking were also very important to her career. She recognizes the opportunities that were opened to her through networking and now tries to contribute likewise to those around her.

As far as general advice for other women, Woytowicz recommends reading everything you can, in and out of your areas of expertise. She also passed on these words of wisdom: “Wherever you are, start a network. Be the nucleus. If you need it, find out who does it and offer what you do in return. Thank people for their efforts. Grow. If someone points you to another person for the answer, keep both of them in the loop. Pass on the opportunities that you don’t use. Finally, spin those plates! If you haven’t heard from someone in a while, make it your business to get in touch.”

Woytowicz’s parting words: “If you don’t know it’s impossible, you may just do it. Allow yourself to fail. All geniuses are allowed a few mistakes on the way to greatness. Also, I cannot thank my parents enough. They were instrumental in my finishing a doctorate because they valued education.” WCC would like to sincerely thank Dr. Catherine Woytowicz for sharing her success story with us.

—Elizabeth A. Picos and Amber Hinkle

The Jane Addams-Hull House as a National Chemical Historic Landmark

In celebration of WCC's 75th anniversary, the Jane Addams-Hull House was designated on September 21, 2002, as a National Chemical Historic Landmark in recognition of the work of Alice Hamilton. Founded in 1889, the Hull House was a social settlement that offered programs under the leadership of Jane Addams to address the needs of impoverished immigrants in Chicago's Near West Side. Alice Hamilton (1869–1970), a medical doctor who came to the Hull House in 1897, was honored for her work in the fundamentals of industrial toxicology and workplace safety. She has been widely recognized for her lead studies and other studies in the “dangerous trades.” Sponsoring the first woman to be designated as a National Chemical Historic Landmark were WCC, the ACS Division of Chemical Health and Safety, the Chicago Local Section, the University of Illinois at Chicago, the Jane Addams-Hull House Museum, and the School of Public Health.

—Frankie Wood-Black

WCC Presents Diversity Awards

In commemoration of its 75th anniversary, WCC presented a Regional Award for Contributions to Diversity at each of the 10 ACS regional meetings in 2002. The recipients who significantly stimulated and fostered diversity in the chemical enterprises were recognized over the course of the year. Each recipient received \$250, a plaque, and up to \$750 for travel expenses to the regional meeting at which the award was presented.

Recipients were as follows: Jeannette E. Brown, New Jersey Institute of Technology, Middle Atlantic Region; John R. Laing, Xerox Corp., Northeast Region; Catherine Hurt Middlecamp, University of Wisconsin–Madison, Great Lakes Region; Geraldine L. Richmond, University of Oregon, Northwest Region; Susan Yochum, Seton Hill College, Central Region; Kristin Bowman-James, University of Kansas, Lawrence, Midwest Region; Frances M. DuPont, Western Regional Research Center, Western Region; Liz Foltyn, Los Alamos National Laboratory, Rocky Mt. Region; Nancy Magnussen, Texas A&M University, Southwest Region; and Zaida C. Morales-Martinez, Florida International University, Southeast Region.

Overcoming Challenges Award Recipient

Chynthia Ignaszewski, a recent graduate in chemistry from Cameron University in Lawton, OK, received the 2002 Overcoming Challenges Award at the ACS national meeting in Boston. A single mom with three children, she has overcome many setbacks to stay focused on her education in chemistry. She plans to pursue a master's degree in chemistry at the University of North Carolina–Wilmington this fall and hopes to eventually earn a Ph.D.

Established by WCC in 2000, the award acknowledges women undergraduates who have overcome economic, personal, or academic hardships to pursue an education in the chemical sciences. Consisting of a plaque, a \$250 honorarium, and up to \$1000 for travel expenses to the ACS fall national meeting, the award is presented at the WCC lun-



Valerie Barrett presents award to Chynthia Ignaszewski.

Photo by Janet Bryant

cheon held on Tuesday afternoon at the meeting.

Candidates must be women matriculating as an undergraduate chemical science major or minor in a two-year program or at a four-year school not granting a doctoral degree in chemistry-related disciplines. Applications are due by May 1 and must include a letter of request describing the challenges faced by the nominee, one letter of recommendation, and current school transcripts. Candidates must demonstrate triumph over hardships while pursuing their education. They are evaluated on the basis of improvement, initiative, successes, and grades from the most recent two semesters. Send applications to the Women Chemists Committee, American Chemical Society, 1155 16th St., NW, Washington, DC 20036. For additional information, contact WCC at wcc@acs.org or visit <http://membership.acs.org/W/> WCC.

Women Influencing Chemical Education: Textbook Authors

WCC cosponsored this symposium at the 17th Biennial Conference on Chemical Education at Western Washington University in Bellingham, WA, in July. Successful authors spoke about the textbook writing process and their experiences.



Front: left, Paula Yurkanis Bruice; right, Karen Timberlake; back, left to right, Loretta Jones, Cathy Middlecamp, Lucy Pryde Eubanks.

WCC Events in Orlando and Boston

After 12 successful years, WCC invited more than 300 past Eli Lilly/WCC Travel Award winners to celebrate its 75th anniversary at a WCC/Industrial and Engineering Chemistry poster session during Sci-Mix. Eleven Travel Award alums discussed aspects of their current chemistry-related work, including research, ACS committee and divisional involvement, and outreach activities. Six new

winner presented research for the first time at a second poster session before the WCC luncheon on Tuesday, April 9.

Award winners for 2002 were as follows: Laurie Cardoza, University of Kansas; Tricia Coleman, University of Southern Mississippi; Jennifer Craft, University of Wisconsin; Kersten Forsthoefel, University of Pennsylvania; Rachel Herzig-Marx, Smith College; Ellen Higgins, Saint Mary's College; Anna Hutchings, Kennesaw State University; Jennifer Look, University of Wisconsin; Jennifer McReynolds, University of Illinois-Chicago; Ravinder Raju, Queen's College-CUNY;



Past and present Eli Lilly/WCC travel award winners celebrate in Orlando.

Photo by Janet Bryant

Heather Voegtle, University of South Carolina; Jennifer White, University of North Carolina; Catherine Higgins, Tulane University; Maisie Joralemon, Washington University; Nancy Lape, University of Minnesota; Melodie McCain, American University; Mary Newton, UNC-Chapel Hill; Ilana Pollack, University of Pennsylvania; Amy Pollock, Duquesne

University; Jamie Pool, Cornell University; Jo Roe, Rochester Institute of Technology; Amy Rosen, Indiana University; and Leilani Welbes, University of Kansas.

To apply for an Eli Lilly/WCC Travel Award, check the WCC website (<http://membership.acs.org/W/WCC>) or contact wcc@acs.org for criteria and an application form. Applications are due February 15, 2003, for travel to scientific meetings between July 1 and December 31, 2003; and September 15, 2003, for meetings between January 1 and June 30, 2004.

—Dawn A. Brooks, Ph.D.

Collaborations for All: The Role of Professional Societies

WCC, under the leadership of its Partnering Subcommittee, held this symposium at the spring ACS national meeting in Orlando. This continued series of programming aims to understand the efforts of professional societies to promote career development and advancement of women in science, engineering, and technology. The symposium's organizer, Nancy M. Tooney, described the ACS-led initiative to share information with other groups by forming an Intersociety Communications Network. Ella Davis, president of the National Organization for the Professional Advancement of Black Chemists & Chemical Engineers (NOBCChE), described the organization's efforts to encourage and support African-Americans in chemistry and chemical engineering, including pre-college programs. Bunny Clark reviewed the role of the Committee on the Status of Women in Physics of the American Physical Society in improving the status of women in

physics, particularly the use of visiting teams to survey the climate and practices of physics departments. Achieving Excellence in Science (AXXS) is an initiative led by the National Institutes of Health (NIH). Sue Shaffer, a member of the AXXS steering committee, described the initiative's goals to link and advance women in the disciplines (including chemistry) that NIH supports. Jong-On Hahn, head of the National Research Council Committee on Women in Science and Engineering, discussed the committee's various initiatives and its concern about women chemists' progress in academe.



Ella Davis, President, NOBCChE

—Nancy Tooney

Women Scientists of the Manhattan Project Era



Photo by Janet Bryant

Speakers, left to right: Steve Stow, Oak Ridge Site Historian; Michelle Gerber, Hanford Site Historian; Carol Herzenberg, Argonne National Lab; Darleane Hoffman, Lawrence Berkeley National Lab, Priestley Medalist 2000, National Medal of Science 1997; Isabella Karle, Naval Research Lab, National Medal of Science 1995.

“To remember all that is in our past, and so in our present, is to achieve unity of self.” H. Richard Niebuhr, 20th-century American theologian, understood that “to remember all” strengthens our awareness of life’s meaning beyond the present. We must understand the people, events, and institutions that have contributed consequentially to our gains and losses, as individuals and as a society. Such was the driver for this symposium sponsored by WCC, the Division of Nuclear Chemistry and Technology, and the Division of the History of Chemistry, and organized by Janet Bryant.

The five speakers discussed the complexity and magnitude of the scientific and engineering accomplishments of the Manhattan Project, its significance, and the roles played by its many participants, especially those of women.

Though it has long been believed that few women scientists worked on the Manhattan Project, the speakers provided much data to the contrary. Especially enlightening was Caroline Herzenberg, whose book *Their Day in the Sun: Women of the Manhattan Project* (coauthored with Ruth H. Howes and Ellen C. Weaver) chronicles the contributions of more than 300 scientific women. (Visit www.geocities.com/cherzenberg/Manhattan_Project for additional reading.) Isabella Karle, 1995 National Medal of Science recipient, regaled us with “her-story” as a “pig-tailed technician” on the project in Chicago in 1945. She highlighted a list of accomplishments of some of her former team members—the names read like a who’s who in science and engineering.

Darleane Hoffman, 2000 ACS Priestley Medalist (<http://pubs.acs.org/hotartcl/cenear/032700/7813address.html>) and 1997 National Medal of Science recipient, spoke lovingly of her career in nuclear chemistry, many of the changes she has seen over time, and her hopes for the future of nuclear chemistry and science.

Steve Stow and Michele Gerber, the two site historians of the group, reminded attendees to learn from the lessons of the era but to be cautious about judging actions of that time by applying today’s perspective.

—Janet Bryant

Leveraging Your Opportunities for Leadership

Cosponsored by the Committee on Minority Affairs and WCC

Sandra McGuire, Committee on Minority Affairs (CMA) chair, kicked off this luncheon cosponsored by WCC and CMA by introducing the panel: Larry Hampton, Ingrid Montes, Ken Carter, and Marvin LeMieux. Hampton and Montes discussed their local sections’ activities, and Carter and LeMieux highlighted their division involvement. Moderator York Rhodes asked participants to review how they got involved in ACS and how it has affected them. They addressed why they would encourage women and minorities to become more active in the society. Carter discussed the importance of developing technical contacts through ACS participation. Montes is very proud of her efforts to translate National Chemistry Week materials into Spanish through her work with the Puerto Rico Local Section and Society Committee on Education members. She noted that ACS activities have brought opportunities to expand her career, interdisciplinary collaborations, visibility, and community appreciation.

—Dawn Brooks

Women-Friendly Workplaces: Factors of Success

This symposium, organized by Mary Funke of JobSpectrum, brought together leaders in diversity practices as recognized by *Forbes*, *Working Women* magazine, *Working Mother* magazine, and others. The speakers represented BP, a world leader in petroleum/petrochemicals; Abbott Laboratories, a pharmaceutical firm; Lucent Technologies, a telecommunications company and world-renowned research lab; and Procter and Gamble, a consumer products company. The symposium offered a collection of best practices, including a number of family-oriented programs and benefits such

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Women-Friendly Workplaces: Factors of Success—Continued from page 7

as flextime, on-site day care, and concierge services (take-out meals, dry cleaning, and car washing were most often mentioned). The effective use of networks for multiple groups, which were pointed out to be far more inclusive than divisive, and the need for mentoring were often mentioned as key factors for success. The “3 Rs of diversity”—recruit, recognize, and retain—were all cornerstones of the companies’ successes. Keeping flexibility as a mindset, providing

training and education that is dynamic, and adapting to the changing needs of employees and management groups are also essential for success.

Successful integration of diversity into the fabric of a company means providing public recognition for the accomplishments of women and minorities and an environment in which people are encouraged to openly express their differing thoughts and opinions. Leadership from the top, combined with advocacy and insistence on the business imperative of diversity, further drives the culture change in a company.

Breaking Glass Ceilings: Tools for Overcoming Hurdles, Barriers, and Narrow Thinking

WCC and the Industrial & Engineering Chemistry Division cosponsored this symposium organized by Frankie Wood-Black. Dynamic women packed 10 provocative talks into a single afternoon (for summaries of the talks, visit <http://membership.acs.org/w/wcc>). Women are a large and vocal consumer group, impacting product design and development and the bottom line of many companies. Women scientists are thus in a position to make a great leap forward. Topics included how to take advantage of this power, learn the business, move out of your comfort zone,

and volunteer for assignments that will make you visible to the decision makers. Women are encouraged to attend receptions—they are opportunities to meet informally with the people in power. Select mentors who understand how the system works. Business schools now teach courses in network theory in recognition of the importance of networking. Remember that glass is resistant to compression—but it can be shattered. If you meet a glass ceiling, break it!

—Eleanor Brown

Collaborations in Research

WCC, the Division of Analytical Chemistry, and the Younger Chemists Committee cosponsored “Factors for Success: Collaborations in Research,” a technical symposium. The Innovative Programming Fund of the Divisional Activities Committee provided financial support.

The symposium featured five pairs of speakers from industrial, academic, and government institutions. Each pair consisted of two independent researchers, usually with different academic backgrounds, who actively collaborate to solve complex problems.

Pairing speakers in this way brought out the different skills that collaborators contribute to their teams. Analytical chemists, environmental chemists, physical chemists, and

microbiologists detailed how they approach problems differently. Some speakers reviewed the factors that lead to successful collaborations. Collaborative efforts are most appropriate for solving complex problems and when complementary strengths are needed. Communication is considered to be a key element for success. Diverse viewpoints due to different backgrounds, cultures, ages, gender, or home institutions also enhance a project.

Speakers represented Pfizer Research and Development, the Dow Chemical Co., Pacific Northwest National Laboratories, the National Institutes of Health, the University of Kansas, the University of Arizona, and the University of Maryland.

—Carolyn Ribes

Career Opportunities in Analytical Chemistry: Focus on the Environment

Myriad opportunities exist for those considering careers related to the environment. This symposium highlighted just a few of the ways that chemists can become involved. In the academic world, both educational and research roles in traditional or interdisciplinary fields offer exciting possibilities. Service in the government sector

(such as at the U.S. Environmental Protection Agency) allows practitioners to have a direct impact on human health and ecological issues. In the private sector, career possibilities range from positions in sales and marketing for analytical instrumentation to environmental work at small and large chemical companies.

WCC Women in Industry Breakfasts

WCC sponsored two breakfasts in 2002. The Orlando Women in Industry Breakfast explored “The Rules of the Game” and offered a great opportunity to network. Topics included invisible rules, bending the rules, using rules to suit your style, rules for communication style differences, rules for managing and leading people, and rules for global and cultural issues. Moderator Carolyn Ribes asked each table what significant rules they have learned, how they were learned, and how to help others learn them. Feedback included recognizing your own style and modifying it, without abandoning it, when the situation dictates. Bending the rules could be viewed as risk-taking to innovate and abiding by the phrase, “It’s better to ask forgiveness than permission.” However, you should always have the flexibility to bend the rules. In managing people, the most important rules are to treat all with honesty and dignity, lead by example, provide training/retreats, and make people feel valued through rewards and recognition. One group said that a direct style of stating the bottom line upfront often has more impact in presentations, and you should avoid a lengthy explanation about what you don’t know. Women should

strive to be articulate enough to produce change within their organization and to share their experiences to build confidence and help mentor others. The group agreed that it is difficult to define rules for dealing with other cultures, and they felt that success with global issues was largely experience- and observation-based.

In Boston, the Women in Industry Breakfast discussions included factors for success, collaborations, and a salute to the past and future. Diverse participants talked in small groups and shared key ideas with the audience. Technical competence, innovation, mentorship, and life balance were given as key factors for success in today’s workplace. The shared lessons on collaborations stressed putting aside personal differences, giving 60% credit to others, strong communications, and the importance of common goals for stakeholders. The salute to the past and future emphasized role models, their contagious passion for continuous improvement, and their encouragement for all of us to contribute to the chemical enterprise in a meaningful way.

—Teri Quinn Gray, Amber Hinkle, Arlene Garrison, and Dawn A. Brooks

2002 ChemLuminary Award Winners with Ideas To Increase Local Meeting Attendance

At the national meeting in Boston, WCC presented the second set of ChemLuminary Awards to local sections that promoted women in the chemical sciences. Congratulations!

- Best Overall Local Section WCC—Metro Women Chemists (New York/New Jersey)
- Best Single Event in a Local Section Promoting Women in the Chemical Sciences—a tie between the University of Missouri and the Indiana-Kentucky Border
- Most Innovative Recognition of Women in the Chemical Sciences—Columbus

The following are some ideas for local WCC affiliates to increase their meeting attendance. These activities are suggestions from winners and nominees of our ChemLuminary Local WCC Awards.

- Take on the leadership of Project SEED (chemistry.org).
- Sponsor the ACS Chemistry Olympiad for the local section (chemistry.org).



Photo by Arthur Lemmon

Left to right John Adams, University of Missouri; Jodie Harper, Columbus; Marie Hankins, Indiana-Kentucky Border; Valerie Barrett, WCC Chair; Maureen Chan, North Jersey; and Evelyn Sarnoff, New York.

- Start and maintain an Expanding Your Horizons program. For more information on this program, geared toward attracting middle school girls to science, contact Dr. Judith Iriarte-Gross at jiriarte@mtsu.edu. The Middle Tennessee Local Section cosponsors this program with the Association of Women in Science and other scientific women’s groups to make an impact on the science pipeline.

Please e-mail any other activity ideas you’d like to share to picos.ea@pg.com, for inclusion on the WCC website.

MentorNet: The E-Mentoring Network for Women

MentorNet, established in 1997, is a Presidential Award-winning e-mentoring network for women in engineering and science. This one-on-one mentoring program matches community college, undergraduate, and graduate women with engineers and scientists working in corporations, national laboratories, and government. Since its inception, MentorNet has paired more than 6,500 students with mentors all over the world. As an e-mentor, you can make a difference in a student's life with a relatively small time commitment. Go to www.MentorNet.net for more information, and become an online mentor today!

2002 Unilever Award

Kristi L. Kiick received the 2002 Unilever Award for Outstanding Graduate Research at the ACS national meeting in Boston. The award, which consists of a \$2,000 prize, a plaque, and travel expenses, was established in 1991 to recognize and encourage outstanding graduate research in the design, synthesis, and physical chemistry of polymers. It is sponsored by Unilever, a global manufacturer of consumer products, foods, and specialty chemicals, and administered by the Polymer Education Committee of the Divisions of Polymer Chemistry and Polymeric Materials: Science and Engineering.

Kiick received her doctorate in May 2001 from the University of Massachusetts, Amherst, under the tutelage of David A. Tirrell (now at the California Institute of Technology, Chemistry and Chemical Engineering). She directed her research to the preparation of proteins using non-natural amino acids, with functional groups different from those of the natural amino acids. She manipulated the activity of a single enzyme in the bacterial host to prepare engineered proteins with novel chemical and physical properties. Her investigations focused on replacing the amino acid methionine with methionine analogues that carry chemical groups that are unusual in biology, such as alkenes, alkynes, and azides. Engineering *E. coli* to produce extra copies of methionyl-tRNA (MetRS) synthetase—the enzyme that controls the fidelity of methionine incorporation into proteins—allowed methionine to be replaced by six different methionine analogues normally rejected by the bacterial host. This simple modification to the bacterial host also increased the yields of protein obtained during protein expression. These investigations confirm the critical role of MetRS in controlling analogue incorporation and suggest new strategies for incorporating non-natural amino acids into proteins to create novel classes of protein-based materials.



WCC member Deb Carter participates in the 2002 ACS Congressional Visits Day. Left to right: Deb Carter, U.S. Representative Felix Grucci, Jr. (NY), Tim Onasch (ACS YCC), and Heather Hill (ACS staff).

New Online Mentors

WCC is excited to introduce three new mentors who are available for online mentoring through the WCC webpage at membership.acs.org/w/wcc. Mary Singleton is retired from Lawrence Livermore National Lab and currently is researching historical contributions of women. Jody Kocsis, a manager in the Engine Oil Product Development Group for Lubrizol Corp., has more than 13 years of industrial experience. Jacqueline Erickson is a senior analytical chemist with GlaxoSmith Kline and current chair of the North Jersey Younger Chemists Committee.

Dagmar Ringe Honored for Scientific Achievements

Dagmar Ringe, the Lucille P. Markey Professor for the departments of biochemistry and chemistry at Brandeis University, was honored at a symposium on structural enzymology in July. About 200 people from the



United States and Europe attended this scientific program, held at Brandeis University in Waltham, MA. Fifteen of Ringe's collaborators, friends, postdocs, and former students presented their research. The richness of Ringe's research career was highlighted by the breadth and diversity of the speakers' presentations, which included the structure of aldose reductase, an enzyme implicated in side-effects of diabetes, the structure and function of diphtheria toxin repressor, and the computational prediction of enzyme function. She received a framed collage of the ribbon diagrams of the numerous macromolecular structures she has solved and studied.

At the end of the symposium, former students, collaborators, and colleagues attended a dinner at which they offered their thoughts on Ringe's impact on their lives. Former students spoke of her brilliance as a research supervisor and the importance of her mentorship, support, and guidance in their scientific careers. Ringe's scientific contributions were almost too numerous to summarize, with 175 primary research articles and reviews credited to her name.

—Karen N. Allen and Dan Libby

Agnes Ann Green

Agnes Ann Green, a Sister of the Servants of the Immaculate Heart of Mary (IHM) and a member of the Immaculate Heart Community for 70 years, was born on August 15, 1912, in Alvin, IL, and died of lung cancer on September 26 at the IHM Kenmore residence in Los Angeles. In 1926, her family moved to San Bernardino, where she attended high school; she continued her education at Immaculate Heart College in Hollywood and went on to earn an M.S. from the University of Southern California and a Ph.D. in physical chemistry from Stanford University. She taught chemistry at Immaculate Heart College from 1942 to 1978 and was visiting professor of chemistry at Loyola Marymount University; Occidental College; California State Polytechnic University, Pomona; Whittier College; and Brown University. Along with her teaching career, Green was active in many professional organizations and received recognition and awards from her peers. The Southern California ACS local section established the Agnes Ann Green Distinguished Service Award in 1988; she received the first award for her outstanding record of major service to the Society, locally and nationally. She was a founding member of the California Association of Chemistry Teachers and served as president. Green was an untiring advocate for the advancement of women in the field of science, mentoring her own students and working at the local and national levels for equity in the profession. She directed national science projects, published numerous scientific articles, and contributed significantly to professional organizations. As a scholar, teacher, friend, and community member, Green will be remembered for her brilliant intellect, her love of teaching, and her advocacy of women in science. She is survived by her sisters, Eileen Smith and Teresa Winker, and her nieces and nephews.



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