

Program Report

[PROF 1 Assessing leadership through interviews: Part I](#)

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Science and leadership are life-long learning processes. They both rely on individuals with passion and innovative ideas to move things forward. Graduate students have ample opportunities to learn the tools necessary to become a great scientist, but often there are few avenues for them to learn the skills necessary to become a great leader. The passion for science needs to be brought to the general public and the best way to do this is to start training scientists to be great leaders. Since leadership is a learning process, this needs to start as early as possible in the training of scientists, graduate school at the latest. In this talk, I will discuss the founding of the Calcium chapter of Iota Sigma Pi, which aims to provide an environment for its members to learn how to be an effective leader and also to spread the passion for science to younger generations.

[PROF 2 Assessing leadership through interviews: Part II](#)

James D. Burke, Rohm and Haas (retired), 2422 Rosemore Avenue, Glenside, PA 19038-3514, jdb2422r@aol.com

Leadership is an essential trait for organizations seeking to thrive and grow. However, leadership is a general term requiring further differentiation to be properly understood. There are various kinds of leadership. Each is better appreciated when described in terms of the circumstances demanding it and the outcomes required. Thus, one can refer to idea leadership, project leadership, managerial leadership, and executive leadership. Each type of leadership requires different skill sets for success. Some, but not all, individuals may be highly skilled in several dimensions of leadership.

This presentation will describe the elements of each type of leadership noted above and typical behaviors associated with them. Thus, properly designed and managed interviews can serve as reliable instruments for assessing leadership potential. Questions often used to probe for leadership qualities will be presented, along with suggestions for designing resumes to highlight individual leadership capabilities.

[PROF 3 Leading from a company of one](#)

Lisa M. Balbes, Balbes Consultants, Kirkwood, MO 63122, lisa@balbes.com

Without good leadership, very little gets accomplished. However, leadership is difficult to define. Most people know good leaders when they see the results, but not everyone can tell how good a leader they themselves are, and some people don't even know when they are being followed. This presentation will discuss various aspects of leadership, and how they affect your career - whether you know it or not. We will discuss specific things you can do to develop your own leadership skills, and why leadership skills are essential for success in today's professional environment. Even working as a sole proprietor (company of one), leadership skills are required. Specific examples from the career of the presenter, an independent consultant since 1992 and volunteer in a number of roles, will be used to illustrate various leadership qualities and characteristics.

[PROF 4 Leading professional and institutional change through subversion, revolution, and meteorology](#)

Debra R. Rolison, Surface Chemistry Branch, Naval Research Laboratory, Code 6170, 4555 Overlook Avenue SW, Washington, DC 20375, Fax: 202-767-3321

The inability of research universities to diversify their faculty is a national disgrace in that these

universities recruit for students that reflect the face of America, but have not yet incorporated that pool of talent onto their faculty. Similar difficulties are apparent among the scientific staff of national/federal laboratories. The U.S. must escape our still-too white male universe to stay at the forefront of science--a leader would not stand still for less. But how can one person change the world of science? Subvert the standard operating procedure. Create a microclimate that shows--over time--how new patterns of operation and inclusiveness yield productive, innovative science. Use the scientific capital and street credentials so accrued, thanks to the humane microclimate and research productivity of one's team, to challenge the status quo with reasoned and bold arguments for change. Remember the importance of uppity behavior and applying "tipping point" mechanisms to move beyond initial reactions of dismissal (such as greeted my audacious suggestion in 2000 to withhold federal funds from non-diversified chemistry departments through application of Title IX) to--over time--accepted inevitability.

PROF 5 You can never not lead: Styles, skills and responsibilities in a large organization

William F. Carroll, ACS, ACS 2005 President, 1155-16th St. NW, Washington, DC 20036, Fax: 2028726338, bill_carroll@oxy.com

Even though leadership can be demonstrated at all levels and in organizations of any size, perhaps the highest stakes are for those who are leaders in large organizations. These leaders can be very visible, both inside and outside the organization. In many cases the leadership job is effectively 24-7 and someone is always watching.

This presentation contains my thoughts on some of the risks, benefits, styles and techniques of leadership in large organizations. The basic principle is: You Can Never Not Lead. People will interpret both the things you say and do and those that you do not say or do. The stakes may seem high, but the good news is that it provides you with a central organizing principle that helps to put the rest of the job in context.

PROF 6 Overview of CEPA

H. N. Cheng, Hercules Incorporated Research Center, 500 Hercules Road, Wilmington, DE 19808-1599, Fax: 302-995-4565, hcheng@herc.com

We live in a time of change—demographic changes in the workforce, the nature of employers and jobs, and increasing multidisciplinary and globalization of the chemistry enterprise. There are also technological changes in the ways that we communicate and conduct business. For example, last year nearly 1/3 of those hired in the US used the Internet as part of their job search strategy. The Council Committee on Economic and Professional Affairs (CEPA) and the staff of the Department of Career Management and Development (CMD) are working together to revamp and re-invent career services at ACS. We aim to use the state-of-the-art technology and provide greater focus on career management. New offerings will be phased in over time; however, we shall continue to provide current service while effecting these changes. In this talk, an overview of CEPA's activities will be given, including ongoing programs and new initiatives, with the goal of helping our members in career and professional issues in this time of change.

PROF 7 A look at the changing chemistry enterprise:1985-2005

Marinda Li Wu, Immediate Past Chair of the Committee on Economic and Professional Affairs, 8 Valley Court, Orinda, CA 94563, Fax: 925-254-6841, marindawu@aol.com

An overview and look at the changing chemistry enterprise over the past twenty years will be presented through ChemCensus data collected from special Comprehensive Salary and Employment Status Surveys of ACS workforce members. The background, history, and use of the ACS census surveys on employment and salaries will be covered. Current trends in the chemical profession along with changing member and workforce demographics will be reviewed. ChemCensus 2005 surveyed for the first time

the impact of outsourcing of jobs overseas. Also learn about the latest employment and salary trends for chemical professionals in this global 21st century!

PROF 8 Can chemists learn anything from social scientists?

Yun K. Kim, Assistant Vice President of Research and Evaluation, Columbia College Chicago, 600 S. Michigan Ave., Suite 523, Chicago, IL 60605, Fax: 312-344-8022

The ACS has been very successful in their salary and employment surveys over the years. A lot of information has been obtained that is most useful to the Chemistry enterprise. A notable feature of ACS surveys is the high response rate. However, in many other national surveys, the response rate has been declining. This talk will focus on many lessons (and continuing struggles) the social science field has learned over the last few decades on survey non-response rate, and share several practical methods that the organizers of the ChemCensus have ascertained to reduce the non-response rate. Included in the talk are the definitions of non-response rate, the relationship of non-response rate to total survey error, and effective non-response rate reduction methods. The relevance of these methods to ACS and to chemistry enterprise will be illustrated.

PROF 9 The working world is constantly changing!

Frankie Wood-Black, Downstream Technology, ConocoPhillips, 3 RWA, 1000 S. Pine, PO Box 1267, Ponca City, OK 74604, Fax: 580-767-3995, Frankie.K.Wood-Black@conocophillips.com

The beauty of the ChemCensus survey every five years is that the membership of the ACS gets a chance to see how the world is changing. This presentation will focus on the ever changing working environment in the industrial sector. Just what are the new trends? How does it affect the workplace and the decisions that are made by the industrial chemist?

PROF 10 Shortage of chemists? Does the emperor have clothes?

A. E. Pavlath, 409 Tampico, Walnut Creek, CA 94958, apavlath@pw.usda.gov

What is the future of the chemical profession? More and more often we hear that young people are reluctant to select careers as chemists. Do we have a problem? What is the matter, do they really dislike chemistry? If true, then we have a shortage of chemists. On the other hand, in the Employment Clearing House (ECH) at the ACS Atlanta meeting the job seekers outnumbered the number of jobs offered by 2-3 times. Unfortunately, this was the continuation of the trend experienced during the past 20-30 years, while the "Shortage of Chemists" alarm was kept ringing. There appears to be a contradiction. There is no shortage of chemists, the shortage is in the number of our youngsters who want to be chemists. They rightfully wonder whether they should invest time and money in learning a profession that will not need them in their mid-career. The lecture will suggest solution.

PROF 11 The significance of ChemCensus for the ACS

James D. Burke, Rohm and Haas (retired), 2422 Rosemore Avenue, Glenside, PA 19038-3514, jdb2422r@aol.com

The poll of all non-retired ACS members, known as ChemCensus, has been done every five years since 1985. This longitudinal record of the work of our members continues to be of great value to the Society. It shows the changing demographics of our profession; the beginning, so far small, of globalization; the increase in part-time employment for both men and women chemists; and the increasing multi-disciplinarity of our members. The ACS is following these trends carefully and has formed task forces to measure the effects of these changes on our membership. The work of these task forces will be addressed.

PROF 12 Top ten reasons why everyone should be involved in ACS public outreach

Helen M. Free, Diabetes Care Division, Bayer HealthCare, 1884 Miles Ave., Elkhart, IN 46514,

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These reasons vary from "help fill the American chemist pipeline" to "it's fun to work with little kids" and from "it's my duty as a professional chemist" to "just because !" Volunteers in public outreach really do make a difference in the arena of scientific literacy. And hopefully this presentation will identify one reason or another to make volunteering in public outreach a mandate for every member of the American Chemical Society.

PROF 13 Chemists communicating chemistry to the public in the 21st century

John K. Borchardt, Southaven Communication, 8010 Vista del Sol Drive, Houston, TX 77083-5039, Fax: 281-495-0146, jkborchardt@aol.com

Chemists constantly complain about inaccurate and biased reporting of chemistry to the public. This reporting helps shape public attitudes towards our profession and indirectly to research funding and entry of young people into our profession. It is time chemists take more responsibility for communicating chemistry to the public. Technological developments in the communications industry can facilitate this movement.

The author will summarize his own experiences as a science writer since 1987 to illustrate how to begin writing about science while continuing a research career and achieving success in this profession. He will explain how Dr. Helen Free had a significant effect on both his chemical research and science writing careers. The author will advocate parallel careers that will provide chemists with more career options. Today the author is a full-time science and technology writer.

The author will also describe the technological changes that have affected his science writing career and evolving trends that will affect how science is communicated to the public in the future.

PROF 14 Goodbye gatekeeper

Tom Abate, San Francisco Chronicle, 901 Mission Street, San Francisco, CA 94103

Professional news media used to be the funnel through which all news passed. While the pros still have great influence and can amplify a story, they are no longer the only way to get out the word. Is this a good, bad or mixed development for science?

PROF 15 Is science education broken? Can better communications fix it?

Thomas Holme, Department of Chemistry and Biochemistry, University of Wisconsin - Milwaukee, Milwaukee, WI 53211, Fax: 414-229-5530, tholme@uwm.edu

Time magazine asked about the grade of America in science in February of 2006, reaching the conclusion that we are beginning to lag behind other countries. If we wish to analyze this apparent failing grade we need to first define the manner in which we make our measurements. In chemistry, the American Chemical Society and its Division of Chemical Education through the Examinations Institute has been carrying out nationally normed testing for over 70 years. This talk will consider the trends in the tests and norms on the test as a starting point for deciding the current state of America vis-a-vis science. This talk will, therefore, investigate (1) the role of communication in science education, (2) how that role might be measured, and (3) prospects for using technology to enhance communication and science learning.

PROF 16 Chemistry in the news is good news: How, when, where and why

Nancy Blount, American Chemical Society, 1155 16th Street NW, Washington, DC 20036, n_blount@acs.org

News about advances in chemistry appears in the mass media everyday. Impact on the reader, viewer or listener can be hard to measure but for the chemist whose work is featured, the consequences are very often tangible and positive. The ACS News Service began promoting chemistry and its contributions to society in 1919 and the effort continues today through the ACS Office of Communications, with more than 7,000 newspaper, magazine, and broadcast stories generated annually—many about research presented at ACS meetings or published in ACS journals. This presentation will look at what kind of stories are covered, where they appear, and how individual chemists can contribute to better news coverage for the science and the profession and in turn, improve public awareness for chemistry.

PROF 17 National Chemistry Week: Communication between ACS members and communication with the public

Theresa Thewes, Department of Chemistry, Edinboro University of Pennsylvania, Edinboro, PA 16444, thewes@edinboro.edu

The National Chemistry Week (NCW) program provides a unique opportunity for ACS members of diverse groups to come together for a shared goal - reaching the public with positive messages about chemistry in our daily lives. This program has very effectively helped to mobilize the membership and has served as an effective means to identify new leaders. Through the NCW program, chemists have shared their passion for chemistry with the public through ever-expanding, innovative outreach activities.

PROF 18 Blogs and podcasts: Redefining community outreach

Paula G. Fox, 184 Union Street, Peterborough, NH 03458, pgfoxoh@hotmail.com, and Jeffrey B. Trent, Biological and Physical Sciences Department, Columbus State Community College

National Chemistry Week (NCW) and Chemists Celebrate Earth Day offer the general public an opportunity to learn more about the positive contributions of chemistry to everyday life. While the goal is to reach as many people as possible within each community across the U.S., success is dependent on having an ACS presence in each location. With the increasing use of technology in schools, museums, libraries, cafes, and other public venues, the Committee on Community Activities (CCA) has been redefining how it delivers its programs. The 2005 NCW Extreme Tour presented an opportunity for the CCA and other entities of ACS to use technology to expand their reach. This talk will highlight 2005's successes and describe future technology-related outreach initiatives.

PROF 19 Special challenges in communicating science in a busy world: What can a chemist do?

William F. Carroll, ACS, ACS 2005 President, 1155-16th St. NW, Washington, DC 20036, Fax: 2028726338, bill_carroll@oxy.com

Each day we are bombarded by information...or at least noise. How can chemists communicate with the public in this new world of instant communication, internet, podcasting, blackberries, and short sound-bites? Communication is becoming more complex as the internet-enabled world “shrinks” and as communication requirements become more international. The public now has enormous choices for how to receive information and entertainment; it is essential that the public understand at some of the basics about the complex issues of our day such as energy and climate. This talk will explore how chemists can impact communications and public knowledge about our science in a more international...and noisier world.

PROF 20 The future of graduate education

Charles P. Casey, Department of Chemistry, University of Wisconsin - Madison, 1101 University Avenue, Madison, WI 53706, Fax: 608-265-4534, casey@chem.wisc.edu

The future of graduate education in chemistry will be discussed in terms of the evolving nature of chemistry and the ways in which the Chemistry Departments involved in the Carnegie Initiative on the

Doctorate are modifying their programs. The challenge is to develop creative chemists who will successfully work at the uncomfortable interfaces with other sciences.

PROF 21 Research in the commercial sector: Investment for future economic health

Elsa Reichmanis, Bell Laboratories, Lucent Technologies, 600 Mountain Avenue, Murray Hill, NJ 07974

From electronics to photonics, to pharmaceuticals, bio- and nanotechnology, technology focused research is a requirement. The nature of that research is increasingly cross-disciplinary, team oriented and international in scope. Two key points that underscore successful technology development are the need for i) a healthy research infrastructure that spans all sectors of our economy, and ii) a fully integrated team that seamlessly works together. This presentation will explore these concepts through brief examination of three research programs within the electronics and photonics sector; the development of photoresist technology, the exploration and development of printed organic semiconductor technologies and current investigations into the origins and performance biological photonic and mechanical structures.

PROF 22 Systems biology and medicine: Measurement and computational challenges of the 21st century

Leroy Hood, Institute for Systems Biology, 4225 Roosevelt Way NE, Suite 200, Seattle, WA 98105, Fax: 206-732-1254, lhood@systemsbiology.org

I will outline the nature of and the paradigm changes arising from the advent of systems biology and medicine in the 21st century. These changes will be almost completely driven by changes in technology and computation. I will discuss the measurement changes emerging from integrated microfluidic/nanotechnology platforms in vitro and molecular imaging in vivo. I will also present some of the computational/mathematical challenges in handling enormous amounts of data and converting it to coherent hypotheses about health and disease. These new technologies will present fascinating challenges in many aspects of chemistry over the next 20 years.

PROF 23 Good news, bad news: The strides made by women chemists

Valerie Kuck, North Jersey Section, 45 Warfield St., Montclair, NJ 07043, vkuck@comcast.net

Women's representation in chemistry and related fields has increased over the last four decades, yet parity has not arrived and gender differentials still can be found. Analysis of the findings from ChemCensus shed light on gender issues related to the chemistry employment. This presentation will compare selected variables relating to workforce issues. Topics to be discussed include gender differences in part-time versus full-time employment, choice of work/education, sub-discipline selection, and marriage and family-life matters.

PROF 24 Chemists and chemistry in 2015

William F. Carroll, ACS, ACS 2005 President, 1155-16th St. NW, Washington, DC 20036, Fax: 2028726338, bill_carroll@oxy.com

During 2005, one of the main Presidential projects involved envisioning the state of the Chemistry Enterprise in 2015. Based upon dozens of interviews, discussions, readings and seminars, conclusions were drawn about where chemistry might go and how chemists would fit in. This presentation reviews some of the major conclusions, and discusses their impact on the chemistry workforce and the changing nature of the workforce on the enterprise itself.

PROF 25 ChemCensus 2005 symposium: Summary

Rudy M. Baum, Editor-in-Chief, Chemical & Engineering News, American Chemical Society, 1155 Sixteenth Street NW, Washington, DC 20036, r_baum@acs.org

ChemCensus provides ACS with a revealing snapshot of employment throughout the disciplines where we work. The future for the chemical enterprise, employment, and society are not predetermined yet hints of our employment future may be found in ChemCensus 2005. Based on the presentations of other panelists and conversations with some individuals who have studied the data, I will try to make a few predictions about the future of our enterprise and what ChemCensus 2010 will look like.

PROF 26 Leadership skills for the independent consultant

Geoffrey E. Dolbear, G.E. Dolbear & Associates, Inc, 23050 Aspen Knoll Drive, Diamond Bar, CA 91765, Fax: 909-861-5983, geoff@gedolbear.com

Success in consulting requires a variety of personal and technical skills, not the least being leadership skills. Leadership is necessary in several kinds of ways:

- + leading and growing your own business, making and carrying out judgments on strategy as well as day-to-day tactics;
- + working with clients, to show them the way to go on their projects, without causing friction or antagonism, and
- + working with groups of clients on projects.

Leadership skills required include having a clear vision of where you want to go and what resources are needed to get there, and how to marshal those resources effectively.
