

**Report and Recommendations
Developed During
the Inaugural Summit on**

**“The Advancement of
Senior Women Scientists at
Liberal Arts Colleges”**



**Held June 2-4, 2010
Washington, DC**

ADVANCE



FOR THE ADVANCEMENT OF WOMEN IN ACADEMIC SCIENCE AND ENGINEERING CAREERS

Report and Recommendations Developed During the Inaugural Summit on

“The Advancement of Senior Women Scientists at Liberal Arts Colleges”

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This meeting was organized by the co-principal investigators of a project funded by the National Science Foundation ADVANCE Partnerships for Adaptation, Implementation, and Dissemination (PAID) program. Leading the project are four full professors of chemistry: Professor Kerry Karukstis, Harvey Mudd College; Professor Laura Wright, Furman University; Professor Miriam Rossi, Vassar College; and Professor Bridget Gourley, DePauw University. The project created four “alliances” to study the effectiveness of horizontal mentoring to enhance the professional development of senior women chemistry and physics faculty members at liberal arts institutions. Three of the five-member alliances focus on full professors in chemistry, the fourth involves full professors in physics.

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Executive Summary

Recent funding from the National Science Foundation ADVANCE Partnerships for Adaptation, Implementation, and Dissemination (PAID) program (NSF-HRD-0618940, 0619027, 0619052, and 0619150) supported a comprehensive initiative to investigate the efficacy of using a “horizontal mentoring” strategy to address the professional development needs of senior women science faculty at liberal arts colleges. This project involved the formation of five-member alliances of senior women faculty members in chemistry or physics at different institutions to examine professional development issues. As a culminating event of the project, fifty-one senior women professors in chemistry and physics from forty-six liberal arts colleges gathered in Washington, D.C. to tackle that challenge of identifying the elements that make for a satisfying academic career. The two-day working meeting considered the practices, infrastructure, and campus climate needed to support and enhance the professional careers, visibility, and leadership of senior women science faculty on liberal arts campuses. This first ever summit meeting focused on the Advancement of Senior Women Scientists at Liberal Arts Colleges generated a set of recommendations for individuals, departments, institutions, professional societies, and funding agencies to promote the professional development of women STEM faculty at liberal arts colleges. A summary of these recommendations follows.

The invite explained the purpose of our summit meeting was to gather senior women faculty in physics and chemistry who taught at liberal arts colleges. Great, I thought, all ten or twenty of us. I was honestly shocked to see the number of names on the participant list and floored when I arrived at the first gathering in Washington. The room was filled with women like me. What an experience to be able to talk about research and teaching and life challenges with others who just got it. How refreshing after a lifetime of being the first and either the only or one of the only women in the room.

*Patricia B. O'Hara,
Professor of Chemistry,
Amherst College*

Honestly, I went to the meeting not knowing what to expect. It was an uncommon experience to be at a meeting with so many senior women scientists. There was no lack of creative ideas, shared experiences and collective thought. I discovered the power of horizontal mentoring alliances at this stage of one's professional career. In a strange way, I felt special while discovering that I was not alone!

*Nalini Easwar,
Professor of Physics,
Smith College*

It was energizing to be in the same room with so many women with similar experiences to mine. I felt like my voice was not only heard but also understood.

*Julie Millard,
Professor of Chemistry,
Colby College*

Personal Recommendations for Women Science Faculty

1. Do your part: Embrace your abilities and model the behavior you desire
2. Encourage others to optimally profile their strengths
3. Don't assume everyone will automatically know or understand the quality of your work

Departmental Recommendations

1. Foster open communication among faculty and staff in the department
2. Have transparency in decision making and well documented institutional policies
3. Maintain an equitable workload
4. Value all contributions

Institutional Recommendations

1. Ensure gender equity
2. Evaluate and report to the institution at large on gender bias using benchmarks in a variety of areas
3. Include women as members of visiting external review committees for departments
4. Establish opportunities for women to meet and form networks and connections
5. Provide faculty development programs designed to meet the needs of senior faculty
6. Investigate the feasibility of having an alternative professional development funding strategy that allows for a small amount of discretionary funds for each faculty member
7. Provide adequate support so that faculty leaves do not leave departments understaffed
8. Provide appropriate training and support for faculty moving into new leadership roles
9. Develop an institutional culture of appreciation

Academy Recommendations

1. Develop and disseminate coherent explanations of gender equity and of the economic advantages of retaining senior faculty
2. Coordinate lists of women from predominantly undergraduate institutions to serve as external reviewers

3. Increase the number of women on speaker's lists
4. Solicit nominations of women from all levels of the academy for consideration for existing national and regional awards
5. Facilitate the formation of horizontal mentoring alliances between women scientists working in isolation at liberal arts colleges

Organizational Recommendations

Scientific organizations should provide support for programs targeted at women at primarily undergraduate institutions

1. Solicit programming that targets the specific needs of women in undergraduate institutions at both national and regional meetings
2. Design leadership and professional development programs for senior level personnel
3. Solicit nominations of more women from all institutional categories for consideration for existing national and regional awards

One of the major issues facing senior women faculty is the need for both reward structures and mechanisms to achieve visibility and recognition on their campuses. While faculty members are personally motivated to be professionally successful, most would benefit from feeling valued by their institutions. There is a continued need for time and resources for professional development for senior women faculty. The norm at many institutions has been to focus on the needs of junior faculty. While this is important, administrators need to not overlook the needs of senior faculty. The changing professional and personal responsibilities throughout one's career constitute a continuing necessity for developing appropriate work/life balance strategies.

*Laura L. Wright,
Professor of Chemistry,
Furman University*

Process Overview

Webster's Dictionary defines "summit" as the highest point, and there is no doubt in my mind that this gathering will forever remain a high point in my career. When I received [the invitation] to be a part of this conference, I knew immediately, based on the point I was at in my personal and professional life, that this was a "must do." For me, this meeting was both an affirmation that the work we are all doing is significant, and a confirmation that all of the recommendations that will be in the report are necessary and crucial for the advancement of science. For me, this summit was uplifting and productive like none other I have attended.

*Cindy Samet,
Professor of Chemistry,
Dickinson College*

During the summer of 2010 fifty-one senior women professors in chemistry and physics from forty-six liberal arts colleges gathered in Washington, D.C. to participate in the first ever summit meeting focused on the Advancement of Senior Women Scientists at Liberal Arts Colleges. While studies have been done to evaluate the needs of women scientists at research universities the needs of women at primarily undergraduate institutions have been overlooked. This two-day working meeting focused on the distinctive environments of undergraduate liberal arts institutions and the challenges faced by senior women science faculty on these campuses to attain leadership roles and professional recognition. Senior women scientists at liberal arts colleges have often worked in isolation. In most cases they were the first women faculty hired in departments with few, if any, female role models at their institution as they progressed through tenure and promotion to full professor. Summit participants considered the practices, infrastructure, and campus climate needed to support and enhance the professional careers, visibility, and leadership of women science faculty on liberal arts campuses.

Upon entering the meeting room participants immediately sensed this would be a new professional experience. Rather than being a member of an underrepresented group they were surrounded by others who had experienced similar academic climates and dealt with similar challenges of balancing their teaching, research, and service with family responsibilities. The isolation experienced by each of these women professors was not unique. Understanding their common experience set the stage for an open discussion of those issues that had the greatest impact on their own career satisfaction.

The importance of professional development at all career stages was a central theme. Raising awareness of the underrepresentation of senior women faculty in almost all science fields at liberal arts colleges was also emphasized. Given the importance of faculty governance at liberal arts colleges, it is essential for women at the senior rank to participate in leadership roles. The varied career experiences and achievements of this incredible cohort of women faculty provided a rich resource to generate recommendations that will enhance the careers of other women faculty.

A set of recommendations for individuals, departments, institutions, professional societies, and funding agencies were crafted to promote the professional development of women science faculty at liberal arts colleges. While the recommendations were drafted with the enhancement of careers of women in mind, many of the specific recommendations will serve the career development needs of all faculty including senior men. These recommendations drafted during the summit are presented on the pages that follow. Additionally, quotes from some participants about the impact of this event are included. Summaries of the white papers provided to participants to set the stage for the work are provided.

Overall Goals of the Suggested Recommendations

- To enhance the career satisfaction, recognition and visibility of senior women science faculty at liberal arts colleges
- To improve the climate for senior women science faculty and to facilitate their advancement to the highest ranks of academic leadership
- To establish opportunities for women to meet and form networks and connections, particularly horizontal networks extending beyond home institutions

Personal Recommendations for Women Science Faculty

1. Do your part: Embrace your abilities and model the behavior you desire
 - a. Track your professional activities and contributions to your institution and discipline annually
 - b. Seek out opportunities for self recognition – develop a portfolio demonstrating positions of increasing responsibility, accomplishments, and leadership
2. Encourage others to optimally profile their strengths
 - a. Share successful examples of review portfolios, promotion files, successful grant proposals
 - b. Look for opportunities to improve policies on your own campus pertaining to award criteria, search criteria, and other areas that directly impact your career
3. Don't assume everyone will automatically know or understand the quality of your work
 - a. Be prepared with an "elevator" talk on exciting breakthroughs in teaching, research and service
 - b. Be ready to give more details when asked

I am grateful that, as part of this project, I was able to be part of a peer-mentoring group with four other women chemists over the last three years. That group provided tremendous support for goal setting and problem solving, and this summit has provided an inspirational capstone to that experience.

*Joanne Stewart,
Professor of
Chemistry,
Hope College*

Senior women scientists at PUI's have faced, and continue to face, challenges encountered by all faculty, as well as those specific to being women in science. This summit represented a unique and invaluable opportunity to productively address both types of challenges simultaneously.

*Anne Glenn,
Professor of
Chemistry,
Guilford College*

Although it was an exhilarating experience being in a room full of women that were at my level of experience in academics, what I found even more impressive was the concerns and the recommendations for the concerns that we came up with. It was interesting to hear what colleagues at institutions at a completely different level than mine found as concerns, and that they were not that much different than my own. I also was amused in the list of recommendations we came up with; they were not for senior women - they were for senior academics! Most of the recommendations would apply equally to many of my senior colleagues, especially here where we came in at a time when the college did not have a large research agenda and we all slid along on our merits as teachers. We have all had different approaches to the change in the culture at our school, from jumping on the bandwagon and trying to do more research to completely checking out and not doing anything at all to many other in-between solutions, some successful and others looked down upon.

*Melissa Strait,
Professor of Chemistry,
Alma College*

Departmental Recommendations

1. Foster open communication among faculty and staff in the department
2. Have transparency in decision making and well documented institutional policies
3. Maintain an equitable workload
4. Value all contributions
 - a. Teaching in all its forms - courses, labs, as well as work with students in research settings
 - b. Research
 - c. Service to the department, to the College and to professional organizations

The difference in the experience of men and women in terms of access to resources, promotion prospects, and a supportive work environment suggests several directions for changes in workplace environment and institutional culture. Clearly, an adequate and equitable allocation of resources such as research support must be achieved. Transparency in the distribution of resources - research support, clerical support, teaching assignments, technology, office and lab space, endowed professorships, etc. - is essential. Ensuring that female faculty members perceive that they are valued, recognized by their peers and by their institution, and encouraged to have input and influence in governance and decision making is essential. Communication mechanisms, reward structures, election policies, committee assignments and committee chair appointments are all areas where deficiencies in departmental climate and departmental influence can be addressed.

from **Faculty Engagement and Career Satisfaction at Liberal Arts Colleges**, Kerry K. Karukstis, White Paper for the Inaugural Summit on "The Advancement of Senior Women Scientists at Liberal Arts Colleges", June 2010, Washington, D.C., available at www.hmc.edu/nsfadvice

Communication takes many forms. Chairs need to be open about how decisions are made and what resources exist. Other aspects of communication include making sure departmental policies are well documented. It speaks volumes about what the department values and provides a fall back when information is not well received. Assuming that everyone knows or remembers what was decided in the past doesn't take into account individuals who arrived in the department after a decision was made, were on sabbatical when the issue was discussed or simply forgot because the issue didn't affect them at the time of the decision.

from **Leadership Support for Women Faculty Members in Science, Technology, Engineering and Mathematics (STEM) Disciplines at Liberal Arts Colleges (LAC)**, Bridget L. Gourley, White Paper for the Inaugural Summit on "The Advancement of Senior Women Scientists at Liberal Arts Colleges", June 2010, Washington, D.C., available at www.hmc.edu/nsfadvance

Institutional Recommendations

When the administration does not promote values that reward unity and equity, the workplace can result in a competitive atmosphere complete with feelings of dread and uneasiness; it fosters the formation of exclusive groups and general division. In an academic environment, not "being in the know" can lead to lack of confidence.

from **Improving Professional Development and Morale for Senior Women Faculty**, Miriam Rossi, White Paper for the Inaugural Summit on "The Advancement of Senior Women Scientists at Liberal Arts Colleges", June 2010, Washington, D.C., available at www.hmc.edu/nsfadvance

1. Ensure Gender Equity
 - a. Determine if your science departments are in step with campus and wider academy norms
 - b. Determine if female scientists hold the same types of positions of leadership as male scientists

I had a wonderful time being surrounded by fellow female physical scientists of my own age group and experience level. This was a first. The conference provided an excellent opportunity to network with new colleagues, share experiences, strategize about ways to improve the work environment for senior women scientists at small educational institutions and hopefully to start building our own peer-mentoring groups.

*Leslie F. Brown,
Professor of Physics,
Connecticut College*

It was inspiring to get a chance to meet, work with and talk to so many women who are in situations similar to mine. As a woman in science at a liberal arts institution, this is not a frequent occurrence.

*Kristin Fox, Associate
Professor of Chemistry,
Union College*

It was amazing to meet women who had similar experiences. It was like years of isolation had been washed away. Importantly, there was ample time and emphasis on sharing strategies for handling a variety of issues. I feel as though I have new tools I can use for myself and my junior colleagues to help us be successful in the academy.

Mary Hatcher-Skeers, Professor of Chemistry, Joint Science Department of the Claremont Colleges

I have never been in such a large group of senior women in science from undergraduate institutions. It was rewarding and reinvigorating to share our common experiences.

Nancy Mills, Professor of Chemistry, Trinity University

- c. Determine if female scientists are awarded endowed chairs at similar rates as male scientists
2. Evaluate and report to the institution at large on gender bias using benchmarks in the following areas:
 - a. Salary, separating out science, technology, engineering and mathematics disciplines
 - b. Time to promotion
 - c. Leadership roles
 - d. Campus awards
 - e. Endowed chairs
 - f. Committee assignments/institutional policy
 - g. Teaching evaluations
 - h. Research funding
 - i. Teaching assignments
3. Include women as members of visiting external review committees for departments
4. Establish opportunities for women to meet and form networks and connections, particularly horizontal networks extending beyond home institutions, via existing regional consortia
5. Be attentive to the needs of senior faculty by providing faculty development programs designed to meet their needs
 - a. Design opportunities for senior faculty to retool their teaching strategies and their research programs.
 - b. Provide formal opportunities for senior faculty to meet (modeled after junior faculty programs) with a clear agenda, focus or a particular topic such as improving work/life balance or strategies to balance increased institutional service
 - c. Actively work to remove the perception that senior faculty who avail themselves of these opportunities are "needing remedial help"
6. Investigate the feasibility of having an alternative professional development funding strategy that allows for a small amount of discretionary funds for each faculty member to fund travel, research

supplies, or items which would make it easier for an individual to maintain a better work/life balance at all career stages, whether child rearing or eldercare.

7. Provide adequate support so that faculty leaves do not leave departments understaffed
8. Provide appropriate training and support for faculty as they move into new leadership roles such as that of department chair
9. Develop an institutional culture of appreciation
10. Don't wait for retirement to acknowledge the achievements of faculty
11. Provide a forum for public appreciation and acknowledgement of the milestones and achievements of members of the faculty, not just in terms of length of service
12. Use alumni magazines to note a broad array of faculty accomplishments
13. Highlight senior faculty achievements publicly on official web sites
14. Reward major achievements with time to spend on other professional activities through course reductions
15. Provide small tokens of appreciation through personalized notes of thanks for exceptional service or more tangible tokens such as small restaurant gift cards or a bottle of wine

Attracting greater numbers of women STEM faculty is a necessary but insufficient step to advance women in the professoriate; fostering a satisfying work environment that enables women to prosper is also required. Understanding the elements that make for a satisfying academic career for senior STEM women at liberal arts colleges will help guide our institutions to create the welcoming, supportive climates that enable women faculty members to thrive.

from **Faculty Engagement and Career Satisfaction at Liberal Arts Colleges**, Kerry K. Karukstis, White Paper for the Inaugural Summit on "The Advancement of Senior Women Scientists at Liberal Arts Colleges", June 2010, Washington, D.C., available at www.hmc.edu/nsfadvance

Meeting and working with 50 impressive women in science from liberal arts colleges was an inspiring experience. The departmental and institutional changes that we discussed will benefit all faculty members, men and women.

I was the first woman in my department to receive tenure. It would have been career-changing and life-changing to have participated in a horizontal mentoring group with other women, such as the groups that were sponsored by this grant funding. It's important that these mentoring efforts continue and expand to include academic women in the sciences at all levels.

*Virginia B. Pett,
Professor of Chemistry,
The College of Wooster*

Barriers to the advancement of women in science fields persist, and more must be done to provide the necessary academic and personal support needed to train scientists of the highest caliber. This summit will provide concrete suggestions that institutions and funding agencies can take to foster the retention and advancement of women in science.

*Mary K. Boyd,
Dean of the College
of Arts and Sciences,
and Professor of
Chemistry, University
of San Diego*

Academy Recommendations

1. Develop and disseminate coherent explanations of gender equity and of the economic advantages of retaining senior faculty
2. Coordinate lists of women from predominantly undergraduate institutions to serve as external reviewers
3. Increase the number of women on speaker's lists
4. Solicit nominations of women from all levels of the academy for consideration for existing national and regional awards
5. Facilitate the formation of horizontal mentoring alliances between women scientists working in isolation at liberal arts colleges

It goes without saying that having numerous mentoring relationships constitutes a web of support. A horizontal mentoring relationship, even one between just a couple of people, is important. It not only is useful in its own right, but it acts as a basic building block for a larger network – creating additional “nodes” for expansion. Networks provide the varied and sustainable system of support that a single mentor-mentee relationship cannot duplicate. So it is clear that we must build and maintain professional networks, and help our colleagues do the same.

from **Why Does Mentoring End?** Cindy Blaha, Amy Bug, Anne Cox, Linda Fritz, Barbara Whitten, White Paper for the Inaugural Summit on “The Advancement of Senior Women Scientists at Liberal Arts Colleges”, June 2010, Washington, D.C., available at www.hmc.edu/nsfadvance

Organizational Recommendations

Scientific organizations should provide support for programs targeted at women at primarily undergraduate institutions

1. Solicit programming that targets the specific needs of women in undergraduate institutions at both national and regional meetings
2. Design leadership and professional development programs for senior level personnel
3. Solicit nominations of more women from all institutional categories for consideration for existing national and regional awards

NSF-ADVANCE Summit Attendees - Doubletree Crystal City June 2-4, 2010

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|--------------------------------------|-------------------------------|----|--|
| Cindy Blaha | Carleton College | MN | Professor of Physics and Astronomy |
| Mary Boyd | University of San Diego | CA | Dean of the College of Arts and Sciences and Professor of Chemistry |
| Leslie Brown | Connecticut College | CT | Associate Professor of Physics, Astronomy and Geophysics; Director of the Olin Observatory |
| Sheila Browne | Mount Holyoke College | MA | Bertha Phillips Rodger Professor of Chemistry |
| Colleen Byron | Ripon College | WI | Professor of Chemistry |
| Amy Bug | Swarthmore College | PA | Professor of Physics |
| Anne Cox | Eckerd College | FL | Professor of Physics |
| Phoebe Dea | Occidental College | CA | Fletcher Jones Professor of Chemistry and Associate Dean of the College |
| Nalini Easwar | Smith College | MA | Professor of Physics |
| Kristin Fox | Union College | NY | Associate Professor of Chemistry, Director of Undergraduate Research, and Director of Biochemistry |
| Linda Fritz | Franklin and Marshall College | PA | Professor and Chair of Physics |
| Margret Geselbracht | Reed College | OR | Professor of Chemistry |
| Esther Gibbs | Goucher College | MD | Professor and Chair of Chemistry |
| Anne Glenn | Guilford College | NC | Professor of Chemistry |
| Emma Goldman | University of Richmond | VA | Associate Professor of Chemistry |

| | | | |
|--------------------------------------|---------------------------|----|--|
| Bridget Gourley | DePauw University | IN | Professor and Chair of Chemistry and Biochemistry and John Price Durbin John Distinguished Professor |
| Liz Gron | Hendrix College | AR | Professor of Chemistry |
| Neena Grover | Colorado College | CO | Associate Professor of Biochemistry and Chair of Chemistry and Biochemistry |
| Lilia Harvey | Agnes Scott College | GA | Professor of Chemistry |
| Yue Hu | Wellesley College | MA | Associate Professor of Physics |
| Mary Hatcher-Skeers | Scripps College | CA | Professor of Chemistry |
| Anne-Barrie Hunter | Univ. of Colorado-Boulder | CO | Co-director of and Senior Professional Researcher in Ethnography and Evaluation Research, External Project Evaluator |
| Kerry Karukstis | Harvey Mudd College | CA | Professor of Chemistry and Joseph B. Platt Chair in Effective Teaching |
| Mary Kertzman | DePauw University | IN | Professor of Physics and Astronomy and Co-director of the McKim Observatory |
| Lynn Koplitz | Loyola University | LA | Professor of Chemistry and Vicknair Chair Distinguished Professor of Chemistry |
| Helen Leung | Amherst College | MA | George H. Corey 1888 Professor of Chemistry |
| Lisa Lewis | Albion College | MI | Professor of Chemistry and Associate Provost |
| Janis Lochner | Lewis and Clark College | OR | Dr. Robert B. Pamplin, Jr., Professor of Science and Professor Biochemistry |
| Leslie Lyons | Grinnell College | IA | Professor of Chemistry |

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|-------------------------------------|---------------------|----|---|
| Kathy Matera | Elon University | NC | Associate Professor of Chemistry and A.L. Hook Emerging Scholar Professors in Science and Mathematics |
| Carol Ann Miderski | Catawba College | NC | Professor of Chemistry |
| Julie Millard | Colby College | ME | Dorros Professor of Life Sciences and Professor of Chemistry |
| Nancy Mills | Trinity University | TX | Professor of Chemistry |
| Madeleine Msall | Bowdoin College | ME | Associate Professor of Physics |
| Jennifer Muzyka | Centre College | KY | Professor of Chemistry |
| Pat O’Hara | Amherst College | MA | Amanda and Lisa Cross Professor of Chemistry and Dean of New Students |
| Lee Park | Williams College | MA | Professor of Chemistry |
| Virginia Pett | College of Wooster | OH | Emeritus Professor of Chemistry |
| Megan Pickett | Lawrence University | WI | Associate Professor of Physics and Chair of the Gender Studies Program |
| Walda Powell | Meredith College | NC | Professor of Chemistry & Head of the Department of Chemistry, Physics and Geoscience |
| Miriam Rossi | Vassar College | NY | Professor of Chemistry on the Mary Landon Sague Chair |
| Cindy Samet | Dickinson College | PA | Professor of Chemistry |
| Cindy Schwarz | Vassar College | NY | Professor of Physics |
| Cynthia Selassie | Pomona College | CA | Associate Dean of the College and Professor of Chemistry |
| Mariana Sendova | New College | FL | Professor of Physics |
| Patti Sparks | Harvey Mudd College | CA | Professor of Physics |

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|-----------------------------------|------------------------------------|----|---|
| Joanne Stewart | Hope College | MI | Professor of Chemistry |
| Melissa Strait | Alma College | MI | Professor and Chair of Chemistry |
| Laura Stultz | Birmingham-Southern College | AL | Associate Professor of Chemistry & Chair of Department of Chemistry and Physics |
| Laura Van Wormer | Hiram College | OH | Professor and Chair of Physics |
| Barbara Whitten | Colorado College | CO | Professor of Physics |
| Kristin Wobbe | Worcester Polytechnic Institute | NY | Associate Professor and Department Head of Chemistry and Biochemistry and John C. Metzger Professor of Chemistry |
| Laura Wright | Furman University | SC | Professor of Chemistry |

Special Guests

| | | |
|---|--|---|
| Nancy Hensel, Ph.D. | Executive Officer | Council on Undergraduate Research |
| Janet Bandows Koster, M.B.A. | Executive Director | Association for Women in Science |
| Jodi Wesemann, Ph.D. | Treasurer | Association for Women in Science |
| Cindy Simpson, M. Ed. | Director of Programs and External Relations | Association for Women in Science |
| Katherine Hoffman | ACS Staff Liaison | American Chemical Society Women Chemists Committee |

Summary of Sessions at the NSF-ADVANCE Summit Meeting for Senior Women Faculty in Chemistry and Physics at Liberal Arts Colleges - June 2-4, 2010

Wednesday, June 2

Opening address and discussion:

Outlining the Challenges Facing Senior Women STEM Faculty at Liberal Arts Colleges
Kerry K. Karukstis

Thursday, June 3

Session 1: *Mentoring - Identifying a Personal Career Support Network*

Session Chair: Laura Wright

Presenters: Anne Cox, Barbara Whitten, Amy Bug, Linda Fritz, and Cindy Blaha

Breakout and Group Discussion

Session 2: *Integrating Work into One's Life - Examining Aspects of Time and Stress Management for Senior Women Faculty*

Session Chair: Kerry Karukstis

Presenters: Julie Millard, Nancy Mills, Joanne Stewart, Janis Lochner, and Melissa Strait

Breakouts and Group Discussion

Session 3: *Identifying the Institutional Policies and Infrastructure that Might Support Women STEM Faculty at Liberal Arts Colleges*

Session Chair: Miriam Rossi

Presenters: Carol Ann Miderski, Darlene Loprete, Leslie Lyons, and Bridget Gourley

Breakouts and Group Discussion

Friday, June 4

Session 4: *Recommendations for Individuals, Departments, Institutions, Professional Societies, and Funding Agencies to Support the Professional Development of Women STEM Faculty at Liberal Arts Colleges*

Session Chair: Bridget Gourley

Presenters: Kerry Karukstis, Laura Wright, Miriam Rossi, and Bridget Gourley

Group Discussion

White Papers Summary

A set of white papers was sent to summit participants in advance of the meeting to help participants prepare for the discussions planned. Copies of these white papers are available on the web at www.hmc.edu/nsfadvance. A few of these white papers, as noted below, were revised and published in *Mentoring Strategies to Facilitate the Advancement of Women Faculty* edited by Kerry K. Karukstis, Bridget L. Gourley, Miriam Rossi and Laura L. Wright.¹

Faculty Engagement and Career Satisfaction at Liberal Arts Colleges, Kerry K. Karukstis

Discusses the differences between engagement and satisfaction. Highlights differences by gender in responses to faculty job satisfaction surveys that demonstrate professional development that will enhance careers of senior women faculty and contribute to greater job satisfaction. Concludes that attracting greater numbers of women STEM faculty is a necessary but insufficient step to advance women in the professoriate. Fostering a satisfying work environment that enables women to prosper is also required.

Why Does Mentoring End? Cindy Blaha, Amy Bug, Anne Cox, Linda Fritz, and Barbara Whitten (Also published in ACS Symposium Series 1057)

Discusses the importance of mentoring and how it is typically employed at early career stages such as graduate school and the start of a faculty career. Outlines faculty career stages and provides examples for the utility of mentoring during each stage. Defines horizontal mentoring and outlines the climate for physics and chemistry women faculty at private liberal arts colleges. Provides nuts and bolts description of how alliances supported by this work function.

Improving Communication Skills: Being Heard on a Regular Basis, Laura L. Wright

Discusses the challenges some members of academic communities, typically women, face trying to be heard during professional discussions. Highlights the negative consequences of disenfranchising those colleagues, including consequences both to the individual and to the academic unit. Provides strategies to address the situation and improve communication and engagement of all members of the community.

¹ **Mentoring Strategies to Facilitate the Advancement of Women Faculty;** Karukstis, K.K., Gourley, B.L., Rossi, M., and Wright, L.L., Eds.; ACS Symposium Series 1057; American Chemical Society: Washington DC, 2010.

Integrating Work and a Personal Life: Aspects of Time and Stress Management for Senior Women Science Faculty, Julie T. Millard and Nancy S. Mills (Also published in ACS Symposium Series 1057)

Outlines the challenges faced by faculty in creating an appropriate work-life balance with particular emphasis on particular pressures faced by senior women science faculty. Defines the stress that results from the continual pressure of too many demands on one's time. Defines 'bias avoidance' and highlights the impact of nonproductive bias avoidance behaviors that women academics have developed as strategies to avoid negative career consequences. Concludes with recommendations on effective ways to restore balance between work and personal lives.

Improving Professional Development and Morale for Senior Women Faculty, Miriam Rossi

Discusses the evidence that explains why many senior women faculty in STEM disciplines at PUIs aren't perceived as valued and respected members of their institutions. Addresses concerns about salary and promotion equity, institutional and cultural influences, and undue college level service responsibilities. Concludes with reference to existing faculty development resources and suggestions for institutions and individuals on effective strategies for improving morale for all mid to late career faculty.

Support from Academe - Identifying Departmental and Institutional Resources, Policies, and Infrastructure to Support Senior Women STEM Faculty, Ruth Beeston, Jill Granger, Leslie Lyons, Darlene Loprete, and Carol Ann Miderski (Also published in ACS Symposium Series 1057)

Discusses mechanisms that lead to the success of women in liberal arts chemistry departments via the typical career path of hiring, tenure, and post tenure professional development. A recurrent theme of all of the resources, policies, and infrastructure mechanisms suggested is flexibility - recognizing that women's needs don't always fit into the historic rubric. The authors conclude by discussing the value of the shared contract for dual career academics.

Leadership Support for Women Faculty Members in Science, Technology, Engineering and Mathematics Disciplines at Liberal Arts Colleges: Perspectives on Practices, Policies and Infrastructure Related to the Position of Department Chair, Bridget L. Gourley

Begins by discussing the institutional and individual benefits of appointing women STEM chairs. Highlights key ways institutions can provide support for chairs to enhance their ability to be effective and enable them to balance that role with their other responsibilities. Concludes by describing ways chairs enhance the positive experience for faculty, staff and students in their academic unit.