Results: Initiatives and Action Plans

Keeping in mind their goals and core obstacles, working groups discussed potential initiatives and lobbied their fellow participants to consider their strongest proposals for maximizing the contributions of women in science. Then, by voting for the initiatives they considered most promising, members from each working group selected two initiatives to focus on for the remainder of their time together. Their task: to produce draft action plans for the selected pair of initiatives, each containing the aim, evaluation criteria, and the method of implementation, including specific action steps for societies to take to achieve the initiative's aim.

The seven working groups developed and documented action plans for 14 initiatives geared toward advancing the careers of women scientists. Representatives from the working groups then presented these top initiatives and their action plans to the general audience and a panel of recognized experts and authorities in various scientific disciplines. Panel members, as well as participants, raised questions and offered advice on how societies might proceed with each initiative.

For the purposes of this report, the 14 initiatives were reviewed for common themes and organized into four distinct, yet highly interrelated, categories. The four categories and their component initiatives are listed on page 35. Table 3 shows which initiatives, by category, were developed to address each of the five issues considered by the working groups. Note that, because there were two groups addressing issues one and two, there are twice as many initiatives (four) for these two issues than there are for the other issues, which have only two initiatives each. Interestingly, there is broad support, among groups addressing different issues, for initiatives in each of the four categories. For example,

■ each of the two groups working on Issue 1 (Mentoring and Networking), developed one initiative about mentoring and networking and a second initiative related to leadership, visibility, and recognition;

■ the two groups addressing Issue 2 (Career Development) generated initiatives in all four categories of leadership, mentoring, best practices, and oversight; and

Table 3 Initiatives Linked to Identified Issues and Categories

Issue and Initiative Category	Leadership, Visibility, and Recognition	Mentoring and Networking	Best Practices	Oversight, Tracking, and Accountability
1 Mentoring and Networking	Formalize mechanisms for opportunities, awareness, and development for women in science Provide training and facilitate understanding regarding rules of the game	Establish a national mentorship system for women Create a networking website for scientists		
2 Career Development	Develop forums to highlight successes of women scientists	Establish mentoring as a core activity of professional societies	Design best practices for the advancement of women	Establish a report card on the status of women in science and engineering
3 Representation in Societies	Increase the number of women in society leadership roles Find and implement new strategies for leadership development programs within societies			
4 Sharing Model Systems		Develop effective mentoring programs	Establish a best practices clearinghouse	
5 Outreach and Collaboration				Create an umbrella organization of professional societies to facilitate networking and exchange of information and ideas Develop a database of women scientists

■ the group considering Issue 4 (Sharing Model Systems) developed initiatives related to mentoring, networking, and best practices.

Summary of Initiatives Societies Can Undertake to Address the Career Issues of Women in Science

Initiative ■ Leadership, Visibility, and Recognition

1   Develop forums to highlight successes of women scientists

2   Formalize mechanisms for opportunities, awareness, and development for women in science

3   Increase the number of women in society leadership roles

4   Find and implement new strategies for leadership development programs within societies

5   Provide training and facilitate understanding regarding the "rules of the game" as they pertain to networking, promotion, tenure, etc.

■ Mentoring and Networking

6   Establish a national mentorship system for women

7   Establish mentoring as a core activity of professional societies

8   Develop effective mentoring programs

9   Create a networking website for scientists

■ Best Practices

10   Design best practices for the advancement of women

11   Establish a best practices clearinghouse

■ Oversight, Tracking, and Accountability

12   Create an umbrella organization of professional societies to facilitate networking and exchange of information and ideas

13   Develop a database of women scientists

14   Establish a report card on the status of women in science and engineering

Definitions for each theme follow, along with the detailed action plans for each initiative. Information on the action plans developed and presented by working groups is taken directly from workshop proceedings. Subsequent comments from the panel and audience are paraphrased.

Category 1
Leadership, Visibility, and Recognition

The five initiatives in this category involve shining the light on both the criteria and process of advancing in science, and the achievements of women in scientific careers. They focus on raising awareness within the general public and the scientific community about opportunities for women scientists. Strategies include extensive media campaigns, professional networks, periodic meetings to promote collaboration and share experiences, workshops and training in subjects such as mentoring and career advancement, and the tracking and use of awards. Several initiatives emphasize the need to examine and publicize models of success, disseminate criteria for promotion, and formalize oral traditions. Desired results will be measured in terms of equity — the number of women who are nominated for awards, selected as keynote speakers and session organizers, and promoted to leadership positions. Each initiative is listed below.

Initiative 1:   Develop forums to highlight successes of women scientists

Initiative 2:   Formalize mechanisms for opportunities, awareness, and development for women in science

Initiative 3:   Increase the number of women in society leadership roles

Initiative 4:   Find and implement new strategies for leadership development programs within societies

Initiative 5:   Provide training and facilitate understanding regarding the "rules of the game" as they pertain to networking, promotion, tenure, etc.

Initiative 1: Develop forums to highlight successes of women scientists

Aim   To make women more visible and to advance their careers by increasing the recognition of their scientific accomplishments

Evaluation (indicators of success)

- Women are equally represented
    - as nominees for awards
    - as journal editors
    - as major session organizers and speakers (by 50 percent)
    - as department chairs, professors, and deans (double percentage to 25 percent)
    - in NAS and IOM elections (by 50 percent)
    - in government and industry leadership posts.
- Women are recognized for their scientific contributions.

Method

Description of Initiative: This initiative will increase the visibility of women's accomplishments through communication and public relations.

Action Steps:

- Produce newsletter or feature column on "Success Stories" — demystifying how process works
- Establish designated lecture with money
- Create member spotlight and develop web page highlighting accomplishments of women members, with reciprocal links to other useful sites
- Write success story column on attaining personal and professional balance
- Develop trans-society networks for women — AXXS for the millennium
- Produce lists, databases, and directories featuring women and their expertise
- Publish calendar and process for prestigious awards

- Develop topical listservs and group lists

- Distribute press releases about women

- Develop strategies to get women onto committees and editorial board lists, pairing two women to run for one position

- Identify best practices — facilitate exchange of success stories to increase visibility of women

- Use network to study progress of AXXS '99

- Notify recipients' institutions and congressional representative of honors and awards

- Encourage endowments for women's award lecture

Presenter   Karla Saunders
Legislative Associate, American Chemical Society

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Alfred Johnson, Ph.D., Panel Member
In trying to promote visibility, especially at national meetings, did you think about how to get sessions dedicated to women?

Karla Saunders, Presenter
We thought that having a list would help, as well as getting involved with staffs at societies, especially women's committees, to push the issue forth.

Participant
Lists are not getting to people who need them. Some of the major conferences are notoriously bad for not using women. I don't know if they are not using the lists or not seeing them.

Participant
Is having a list enough? How can we get people to want to use it? How can we get it to people who need it? And how can we get people who have it to use it? Just sending the list doesn't mean people will use it.

Alfred Johnson, Ph.D., Panel Member
Is it possible for societies to provide lists of people whom they think will make good chairs and presenters to all societies that have national meetings? Is it feasible to go directly to societies' program planning committees?

Participant
This could be successful if you went to presidents of societies.

Carlyle Storm, Ph.D., Panel Member
Make sure you provide lists to conference planners.

At the Committee on the Advancement of Chemists, we've adopted exactly the tactics you describe and are working on awards, editorships, symposia, and so forth. It's about getting individuals to do the work.
Janet Osteryoung
Participant

Women in Cell Biology have a list of women speakers and a resource bureau where women are not necessarily putting themselves forward as speakers, but recommending others, especially at the mid level. Everyone knows the stars. We want to bring up women who are not yet recognized.
Participant

Initiative 2: Formalize mechanisms for opportunities, awareness, and development of women in science

Aim   To create formal mechanisms and processes to support the development of women scientists, to engender networking and mentoring opportunities, and to increase public awareness of opportunities for women in science

Evaluation (indicators of success)

Progress toward aim is demonstrated through

- regular reports from Advisory Council
- the issuance of an Executive Order
- publication of proceedings of society meetings
- the distribution of related workshop and training curricula
- annual tracking of media campaign and awards
- annual tracking of school programs.

Method

Action Steps:

- Organize an Advisory Council, coordinated by the Office of Research on Women's Health, to develop activities between federal agencies, societies and professional organizations, and universities [by 2000]

- Promote public awareness and education through Presidential Initiative/Order, media campaign with recognition and awards, and women scientists reaching out to K to 12 schools — perhaps senior scientist paired with a junior scientist to teach students about women in science [by 2001]

- Establish national mentoring and networking programs through periodic meetings of women in science to promote leadership and collaboration; mentoring training workshops; and workshops on careers in science for undergraduates, so they can get the most out of mentoring [by 2000–2001]

When we talked about our ultimate goal, we saw men mentoring women and women mentoring men — both as common occurrences.

<div align="right">

Lauren Fasig, Ph.D., J.D.
Presenter

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What you propose is something we'd be interested in.

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Vivian W. Pinn, M.D.
Director, Office of Research on Women's Health

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Presenter   Lauren Fasig, Ph.D., J.D.
Director, Society for Research in Child Development
Office for Policy and Communication

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Alfred Johnson, Ph.D., Panel Member
Your media campaign will probably require funding.
What were your thoughts about that?

Lauren Fasig, Ph.D., J.D., Presenter
We thought the Advisory Council would determine
strategies and conduct fundraising activities as part
of its overall planning.

Participant
A Yale survey of junior faculty showed that men were also
dissatisfied with mentoring. We need to develop something
that works for men and women.

Participant
Communication has to be addressed; entities involved in
similar activities must be willing to share information and
move forward together.

Participant
We need to teach people how to be mentees, who can then
teach mentors how to be good mentors.

Participant
Most mentees will be website friendly; we could provide access through the Internet to mentors, for scientists at all levels.

At CAWMSET (Commission on the Advancement of Women, Minorities, and Persons with Disabilities in Science, Engineering, and Technology Development), we're also grappling with what has not worked in the past and what might work in the future, including a public relations campaign like nothing that has ever been done before. And there's an incredible number of activities here that are similar to what the commission is talking about. With NIH and NSF as partners to CAWMSET, I think it's important that we maintain linkages about these ideas and efforts, especially in the spring, when things can come together.

Donna Dean, Ph.D.
Panel Member

What about getting a postage stamp? People could pay a couple of cents toward women in science. Or maybe we can give people a place to check off on their tax returns to set money aside for the mentorship of women, minorities, and disabled persons in science.

Participant

Initiative 3: Increase the number of women in leadership roles

Aim To have societies implement a 5-year plan to ensure that leadership reflects each society's demographics

Evaluation (indicators of success)

Short term

- A plan is established and implemented within a year.

- At least five society-run pilot projects are begun during the first year.

Long term

- At 15 years, society leadership more accurately reflects the demographics, e.g., in its percentage of officers, board members, committee chairs, editorial boards, program chairs, session moderators, and lectureships.

Method

Action Steps:

- Identify society leaders who are willing to pilot the ideas

- Develop an information campaign with collected data (Internet, newspapers, professional journals, etc.)

- Campaign to promote results of pilot projects, i.e., success stories (what organizations have increased the number of women on their executive boards, etc.)

- Organize an event to share pilot experiences, in the second year (could take place on Internet)

We want to find five society presidents or executive boards that are interested in getting this initiative started. The results of the survey could be published on the Internet. One incentive for societies to participate is that women with limited resources for joining professional societies would choose societies that were most friendly to them, the societies that gave them the most opportunities for advancement.

Elaine Spector, Ph.D.
Presenter

Presenter   Elaine Spector, Ph.D.
Associate Professor, Pediatrics, University of Colorado
School of Medicine (Professional Women in Genetics,
American Society of Human Genetics)

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Madeleine Jacobs, Panel Member
You talk about getting representation that reflects the demo-
graphics of societies. The problem for some societies, such as
the American Chemical Society (ACS), is that the demographics
of the society do not reflect the demographics of women chem-
ists that are out there. ACS has 159,000 members, 27 percent
of whom are women. Yet 50 percent of bachelors' degrees
in chemistry go to women, and 35 percent of the doctoral
degrees in chemistry are awarded to women. You need to
look at each society.

Participant
Our membership is 48 percent women, and we expect a
majority of women by 2003. We've been actively increasing
our women members for 15 years, including bringing in two
women from each state and teaching them about leadership.
They're now in leadership positions.

Madeleine Jacobs, Panel Member
It's important that you tap into campus organizations.

*Businesses describe getting more women and minorities in leadership positions
as 'mission critical.' They talk about the business case for diversity. You don't
hear that in academia. You don't hear that from societies.*

Participant

Initiative 4: Find and implement new strategies for leadership development programs within societies

Aim   To have more women in leadership roles in societies and to have societies understand that diversity is critical to their mission

Evaluation (indicators of success)

- Data supports progress toward aim in
    – events
    – awards
    – women's participation at meetings.

- There is a higher percentage of women participating to explore and refine specific historical data of career development.

Method

Action Steps:

- Designate a board position dedicated to diversifying the membership of the board and positions of leadership

- Get external funding to support leadership programs

- Examine models of "tenure success" and formalize oral traditions

- Propose to societies that they prominently display a women's section on websites with appropriate maintenance (staff and salary)

- Establish a "Shadowing Program" during society meetings, with travel money for young professionals, which pairs a junior and senior scientist for 5 days — a small commitment

In our group, we talked about how we're trying to stick people into a model of doing things that doesn't fit any more with the way people want to work — neither women nor men.

> Jong-on Hahm, Ph.D.
> Presenter

Presenter   Jong-on Hahm, Ph.D.
Director, Committee on Women in Science and Engineering
National Research Council

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Participant
We're in a capitalistic society where economics are important. Why not partner with Bill Gates? Talk about web access! He's even reaching out to minorities. And what about Donald Trump? Let's get these men involved in a quest for mentorship; take our ideas to people with big bucks.

The Computing Research Association got women together who had been hired as Assistant Professors and told them what to do, and what not to do, to get tenure.

Jong-on Hahm, Ph.D.
Presenter

Initiative 5: Provide training and facilitate understanding regarding the "rules of the game" as they pertain to networking, promotion, tenure, etc.

Aim   To create an informed scientific community that understands influence, resources, and career advancement

Evaluation

Indicators of success include

- equitable representation of women

- an informed scientific community with regard to career advancement.

Method

Description of Initiative: This initiative will clarify and actively publicize and disseminate written competency-based criteria for scientific promotion; provide training in communication styles and gender differences; disseminate "unwritten rules;" and increase access to role models.

Action Steps:

Promotion criteria

- Develop a model for institutional clarification of and adherence to criteria

- Find funding sources and professional societies to endorse (and possibly enforce)

Training to raise consciousness

- Provide training at annual meetings (and universities) under supervision of societies (similar to ethics training at universities)

- Include in website information

Unwritten rules

- Categorize information (what is important)

- Include in website (moderated, anonymous) and link to other sites

Role models

- Help societies maximize events where informal communi-
  nication can take place

- Obtain and provide training grants to fund travel to
  mentoring events, including non-scientific venues

- Develop a database of biographies and descriptions of career
  paths and current situations of successful women in science

*We need to be careful not to schedule women's career sessions at the same
time as a major speaker.*

Tamara Doering, Ph.D.
Presenter

Presenter   Tamara Doering, Ph.D.
Assistant Professor of Molecular Microbiology
Washington University School of Medicine
and Society of Glycobiology

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Participant
I have some concern about promotion criteria that are supposed
to be written, but have not been seen. It's important to be sure
that people understand this.

Participant
A good example of how this can work is the "Systers" website,
which started with 20 subscribers and now has 2,500 members.
In a way, it has suffered from its own success. When it was
smaller, it was more effective in dealing with unwritten rules;
junior members would have questions of protocol that senior
members could answer. Anybody can start one.

Participant
Check out WISENET (Women in Science and Engineering Network).[9] There are lots of questions and answers about how to do "X" — from how to get tenure to how to find comfortable shoes. Also, with regard to promotion criteria, it can vary from institution to institution. For physician scientists, we found that certain things helped with promotion, so we posted what to do and how to do it on our website. This year, for the first time, two women are further along in the nomination process than ever before.

In surveying people about their career paths, ask what the barriers were and how they overcame them, to come up with the unwritten rules of the game. A lot of the answers will tie into gender differences.

Madeleine Jacobs
Panel Member

It's amazing what faculty don't know. We've tried to level the playing field and open up the unwritten rules. But you can't do it in formal guidelines. We put them on a website and drafted a guidebook on planning for tenure that contains "tips." You can get away with unwritten rules in a "tips" document. Also, some organizations have linked career development with other training. The women's group at the American Society of Nephrology organized a session for junior nephrologists and offered scholarships for faculty to attend.

Page Morahan, Ph.D.
Participant

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[9] See Appendix C for information on WISENET.

Category 2
Mentoring and Networking

The four initiatives in this category entail developing a formal, organized mentoring system to encourage, support, and help advance the careers of women scientists. Action steps involve (1) conducting a survey of societies to identify what is already being done and to assess the interest in and need for mentoring programs; (2) forming a steering committee or working group to determine alternative models or templates for mentoring; (3) developing a training course on mentoring; (4) creating program evaluation tools; and (5) establishing a website with a mentoring database, chat room, and resource area. Incentives for participation in the mentorship system combine "carrots" (such as awards) and "sticks" (such as funding linked to mandatory requirements). The success of these initiatives will be measured by the number of participating institutions, societies, mentors, and mentees, as well as by an increase in equity between male and female scientists. Each initiative is listed below.

Initiative 6: Establish a national mentorship system for women

Initiative 7: Establish mentoring as core activity of professional societies

Initiative 8: Develop effective mentoring programs

Initiative 9: Create a networking website for scientists

Initiative 6:   Establish a national mentorship system for women

Aim   To increase the quality and quantity of mentorship for women in the sciences

Evaluation

   Quantitative indicators of success

   ■ Large number of mentees, mentors, and former mentees now recognized as mentors

   ■ Statistics on short- and long-term results

   Qualitative indicators of success

   ■ Positive mentee evaluation of mentor

   ■ Positive mentor evaluation of mentorship system and institutional support

   ■ Positive institutional evaluation of mentoring impact

   ■ Positive evaluation of the overall initiative

Method

   Description of Initiative: This initiative will create a system to encourage, develop, and recognize mentorship for women.

   Action Steps:

   ■ Ascertain professional society interest

   ■ Establish a working group from interested public and private entities (disinterested parties come later)

   ■ Identify and assess resources available to encourage, develop, and recognize mentorship for women

   ■ Define incentives to achieve aim and initiative, such as

      – developing courses about mentoring and linking course completion with financial incentives for individuals, such as merit increases, funding ability, promotions, and the number of graduate students allowed to recruit

      – tying mentoring activities to financial incentives

      – establishing an institutional requirement for a mentorship development program

      – developing a mandatory mentoring module for men and women in collaboration with professional societies

      – establishing mentoring awards for individuals and institutions

Presenter Caroline M. Kane, Ph.D.
Adjunct Professor, University of California, Berkeley
Department of Molecular and Cell Biology
and Women in Cell Biology, ASCB/ASBMB

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Rona Hirschberg, Ph.D., Panel Member
Is anyone aware of a current institutionalized mentoring program that could serve as a model?

Participant
The Endocrine Society has a mentoring program in connection with Women in Endocrinology. Members select women for all positions and then all women vote for them. The society has had many women presidents and would be willing to share their template.

Participant
Scientists in industry need and could be mentors too. We need to include both public and private members.

Participant
We should coordinate letters to societies regarding different mentoring initiatives.

Participant
Let's think about targeting letters to societies. Our website has more than 600 active links to different societies and organizations. That's a lot of letters.

Schools with mentoring programs could recruit better students.

Carlyle Storm, Ph.D.
Panel Member

What we're proposing is a carrot and stick approach — tactical and strategic — mixing both voluntary and mandatory elements. We didn't think that providing information would be sufficient, so the stick is having 'mandatory' mentoring programs. Institutions not developing a mentoring program would lose graduate students.

Carolyn Kane, Ph.D.
Presenter

What about accrediting? Or bringing the issue of mentoring into the metric tally done by the US News and World Report. *If you could do that, there would be an entirely different ranking of institutions than we normally see.*

Jong-on Hahm, Ph.D.
Participant

Initiative 7: Establish mentoring as a core activity of professional societies

Aim   To increase the number of mid- and senior-level women scientists and the number of women in leadership positions

Evaluation (indicators of success)

Short-term success is revealed by the

- identification and sustainability of mentors

- establishment of mentoring relationships and goals between mentors and mentees

- satisfaction with and continuity of mentoring relationships until goals are achieved.

Method

Action Steps:

- Create a Steering Committee of AXXS '99 attendees from professional societies [by December 1999], which

  - forms oversight group that generates report on outcomes [periodically, beginning in April 2002]

  - manages web site for progress reports and exchange of ideas among mentoring groups at different professional societies [ongoing]

- Develop alternatives models for mentoring with evaluations tools geared toward leadership and achievement at highest levels of science [by April 2000]

- Devise a marketing plan for promoting mentoring program to professional societies [by June 2000]

  - Identify interested societies

- Recruit interested societies [by August 2000]

  - Conduct a specific needs assessment of participating society members [by December 2000]

  - Adapt model [by January 2001]

  - Implement model, reporting outcomes periodically to Steering Committee [by April 2001]

We took the tact in looking at career development of scientists at the mid and senior levels that mentoring was one of the most important factors that led to the success of both women and men in high-level positions.

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Rosalyn Scott, M.D., MSHA
Presenter

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Presenter   Rosalyn Scott, M.D., MSHA
Associate Professor, Charles R. Drew University
of Medicine and Science

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Donna Dean, Ph.D., Panel Member
There are many people out there who have it in their hearts
and minds to be good mentors, but who inadvertently do things
that are not quite right, some of which are subtle. They need
to learn how to mentor others effectively.

Zena Werb, Ph.D., Panel Member
You want interested societies? The first step is to generate some-
thing (among societies) that resembles interest. How will you
take the most reluctant groups — areas where women scientists
don't have power — and try to empower your approach?

Rosalyn Scott, M.D., MSHA, Presenter
One example I can give involves women thoracic surgeons, who
must be among the least empowered group, with only 98 women
certified in the 51-year history of the American Board of Thoracic
Surgery. We asked the Society of Thoracic Surgeons to hold a
special symposium recognizing the contributions of women to
thoracic surgery. It is happening in January. Our strategy was
not to have women talking about their accomplishments, but
rather to have highly recognized men as speakers. The only
woman on the panel will provide demographics. All the quali-
tative presentations will be done by men.

Did you give any thought to how you would have societies go to the people who need to be mentors — the faculty of departments in academia? You need an implementation plan to keep it going.

Ruth L. Kirschstein, M.D.
Panel Member

There has to be good training for mentors, especially for men who are in the right level positions for becoming mentors. They need to know things like: What is a good mentor? How can you fit mentoring into your schedule? What are the issues and strategies you can help younger professionals with?

Andrea Zardetto-Smith, Ph.D.
Participant

Initiative 8: Develop effective mentoring programs

Aim To implement effective mentoring, career development, and support mechanisms for scientists at all levels of career development and achievement

Evaluation (indicators of success)

- There is male-female equity in awards, jobs, salary, positions, etc. (per society basis).

- There is equity in male-female committee appointments, officers, board members, and editorships.

- Societies are successful in their recruitment and retention of female members.

Method

Description of Initiative: This initiative will develop effective mentorship programs within societies.

Action Steps:

- Complete a baseline survey of societies' current mentoring activities [by December 2000]
  - Conduct annual update
  - Follow up on this meeting
  - Obtain funding from the government

- Publish survey results, with annual updates, on the web (as part of the website from this workshop)

- Review, compare, and create templates for mentoring programs to determine what works and what doesn't
  - Use different content templates for different types of mentoring (with outcomes)

- Disseminate templates for effective mentoring to all societies

We believe that many societies already have mentoring programs.

Joy Ware, Ph.D.
Presenter

*We hope to get a broad base of societies involved and plan to send
an email note to this workshop's participants asking for your help
in identifying societies to include in the survey.*

Dianna Bourke, Ph.D.
Working Group Member

Presenter   Joy Ware, Ph.D.
Professor, Virginia Commonwealth University
Department of Pathology

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Madeleine Jacobs, Panel Member
When you do your survey, request information on all mentor-
ing programs, including minorities, and not just programs for
women. You will get a variety of ideas about what mentoring
systems work. What has made the American Chemical Society's
Scholars Program so successful in recruiting undergraduate
students is its mentoring component: having a person assigned
to each student throughout the undergraduate years. So, make
sure your survey is large enough.

Donna Dean, Ph.D., Panel Member
Do you have any sense of the percentage of societies that have
mentoring programs?

Joy Ware, Ph.D., Presenter
No. Our group had no consensus on how many, but we believe
that many societies do have mentoring activities, ranging from
formal one-to-one contact to informal mentoring lunches.

*I've referred the group with this initiative to the National Research Council,
which can assist them in sending surveys to selected societies. NIH and NSF
have been working with the Committee on Women in Science and Engineering.
It's a good locus and focus for many of these initiatives.*

Donna Dean, Ph.D.
Panel Member

Initiative 9: Create a networking website for scientists

Aim   To produce exemplary mentoring at every stage of career development, especially for women

Evaluation (indicators of success)

- Registered hits to website by category

- Assessed user satisfaction (were technical and career development questions answered?)

- Large number of mentoring contracts generated and fulfilled

- Large number of societies participating in website and training (health sciences, physical sciences, academia, and industry)

Method

Description of Initiative: This initiative will create a networking website for scientists, consisting of a mentoring database (who offers what), a chat room (for informal Questions and Answers), and a resource area (with links to other sites).

Action Steps:

- Develop website

  - Identify organization to oversee website [by March 2000]

  - Identify and assess existing databases [by July 2000]

  - Develop draft website with three components [by September 2000]

  - Develop registration profile [by September 2000]

  - Develop evaluation questionnaire [by October 2000]

  - Develop mechanisms for formalizing mentoring contracts [by October 2000]

- Market the website initiative (over 1 or 2 years through a series of workshops to teach faculty what it is to mentor and why they should be mentors)

  - Identify and create template for mentoring workshop

  - Have societies commit to workshop at their next annual meetings

AXXS '99

– Identify formal list of benefits of mentoring

– Develop marketing materials

We need different types of mentoring for different issues. Co-mentoring can actually occur at a peer level.

<div align="right">Sue Hepplefinger, Ph.D.
Presenter</div>

Presenter   Sue Hepplefinger, Ph.D.
Assistant Professor, University of Cincinnati
Department of Pathology
Chair, Committee for Career Development,
Women, and Minorities
American Society for Investigative Pathology

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Participant
Do you have any thoughts about how to provide access to this information for people without web access? There are many people around the world without access to the Internet. And what about providing information in Spanish?

Sue Hepplefinger, Ph.D., Presenter
I have no answers and I appreciate the problems. Maybe we could put information in marketing materials and disseminate through society newsletters to get the word out about mentoring workshops at annual meetings. But then, only a small percentage of scientists go to their own society's meetings.

We've thought about bringing NIH activities together with other efforts and discussed the real dilemma of reaching people who don't yet have access to technologies. We might unfairly presume that significant numbers of people in graduate schools have access to some of these technologies. There are insufficient answers; it's something for all of us to grapple with.

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Donna Dean, Ph.D.
Panel Member

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I have the perception that there are areas of science where scientists don't appreciate the importance of belonging to societies, even in significant areas. There's increasing apathy among faculty and students, many of whom are the people who need to have access to what we are talking about. We need to encourage young people to belong to societies and get the attention of people not tuned into the mechanism of societies. How can we reach them?

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Zena Werb, Ph.D.
Panel Member

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It's hard to get to websites that do exist. Some are buried within organizations. And there's no single portal that opens up to 'women in science and engineering' for example.

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Participant

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Category 3
Best Practices

The two initiatives in this category emphasize best practices as models for increasing women's access to, and retention in, scientific careers. Each initiative, however, approaches best practices from a distinct point of view. One initiative requires the development of best practices for advancing women scientists in government, societies, universities, and industry; the other initiative focuses on identifying and publicizing best practices that already exist. The first initiative calls for written policies and procedures for achieving parity between women and men in science, a standard report card, job descriptions and evaluation tools that highlight requirements related to mentoring and other activities that help advance women, and public certificates for "women-friendly" organizations. The second initiative involves defining criteria for selecting best practices, surveying selected groups, and compiling information about winning programs on a highly sophisticated website. Each initiative is listed below.

Initiative 10: Design best practices for the advancement of women

Initiative 11: Establish a best practices clearinghouse

Initiative 10:   Design best practices for the advancement of women

Aim   To design organizational best practices for the advancement of women in diverse organizations (government, universities, and societies) through incentives, rewards, and accountability

Evaluation (indicators of success)

- Statistics show parity between women and men in science.

- Policies and procedures are in place to enable advancement.

- Job descriptions for leaders include requirements to advance women.

- Institutional climate surveys show differences in attitudes and behaviors of leaders.

- Leaders are held accountable (e.g., rewards, resources, advancement are linked to achieving goals).

Method

Description of Initiative: This initiative will involve designing, implementing, and publicizing these elements:

- Database and report card (pre, baseline)

- Climate survey of attitudes and behaviors (pre, baseline) (quantitative and qualitative)

- Upward or 360-degree survey of leaders, managers, and upward
    - Covering data, attitudes, and behaviors
    - Incorporating requirements in leaders' job descriptions, including
        (1) Elements required for advancement of women, such as mentoring and coaching, advancement planning, and advancement results
        (2) Self development and training in necessary skills
        (3) Rewards and lack of rewards linked directly to achieving goals
            - *Rewards:* resources, release time, bonuses, merit awards, promotions

> – *Lack of rewards:* withheld benefits, institutional and federal grants, and accreditation; censure list

- Public certification and awards to organizations designated as "women friendly"

Action Steps:

- Contact Shelia Wellington, Catalyst, about joint effort (ORWH or academia or AWIS coalition)

- Develop coalition to formulate the plan

- Develop nationwide baseline database, making data into "apples and apples"

Presenter   Page Morahan, Ph.D.
Director, National Center of Leadership in Academic Medicine
MCP Hahnemann University

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Donna Dean, Ph.D., Panel Member
Many women are leaving to start their own corporations.

Participant
We worked to establish a coalition and developed a leadership circle, with a corporate sponsor for a workshop. We hope to do this on a yearly basis. I think industry has recognized women as the future market.

I take exception to industry being better. It's hard to get data, which may be deceiving.

Participant

Industry may be ahead on this issue because of manpower concerns for the future, but the glass ceiling is still in place. Is it at least cracking?

Carlyle Storm, Ph.D.
Panel Member

Initiative 11: Establish a best practices clearinghouse

Aim   To disseminate best practices for increasing access, retention, and advancement of women in science, engineering, and math careers

Evaluation (indicators of success)

- Large number of hits on website
- Positive website feedback

Method

Description of Initiative: This initiative will create an interactive website to serve as a clearinghouse for best practices that increase women's access to careers, retention, and advancement in science.

Action Steps:

- Secure funding from government and industry partners
- Identify target groups
- Develop survey instrument to define and identify best practices
- Distribute instrument to identified target groups
- Evaluate responses for meeting criteria for best practice
- Compile best practices resource list and post on sophisticated and searchable website (available to everyone worldwide, enabling them to find out what we are doing right with regard to improving women's access to careers in science)

Who: Core group to write proposal and underwrite costs

When: Proposal completed by July 1, 2000

We hope to have a very sophisticated and interactive website with links to other sites.

Mary Ann Stepp, Ph.D.
Presenter

Excellent plan! You might make some kind of cooperative arrangement with an organization called Catalyst, in New York. It works to advance women in business and has put out several books and reports.

<div align="right">
Madeleine Jacobs
Panel Member
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Presenter   Mary Ann Stepp, Ph.D.
Associate Professor, The George Washington University
Department of Anatomy and Cell Biology
Association of Anatomists
and Women in Cell Biology Committee

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Zena Werb, Ph.D., Panel Member
You could include best practices for education (K through 12 and the undergraduate world) for getting women into science, as well as for faculty and postdoctoral levels.

Mary Ann Stepp, Ph.D., Presenter
We thought that the first step was to do this at the post-graduate level and then move into K through 12.

Donna Dean, Ph.D., Panel Member
WEPAN, Women Engineering Program Advocacy Network, has links to Women in Computing, which has its own website. It's a good connection for you.

Participant
The Association for Computing Machinery has a Women's Committee with a NSF grant to compile information on what is being done. The CRA Women's Committee is also doing something focused on research universities. Both have good websites. It's a bit like what you are describing; we should keep in touch.

Jong-on Hahm, Ph.D., Participant
The Committee on Women in Science and Engineering, under
the auspices of the National Academy of Sciences Council, is
going to publish a best practices guide to women in science
and engineering in academia.

*In the business world, many organizations and businesses are required
to subscribe to best practices. As something of this nature matures, you
could have incentives for university departments to comply by tying their
compliance to certification or federal grants.*

Carlyle Storm, Ph.D.
Panel Member

*Make sure that all societies have immediate linkage to your website, and
that you have links to existing websites. You'll need them all to get rolling.
Something like this is so worthwhile.*

Alfred Johnson, Ph.D.
Panel Member

Category 4
Oversight, Tracking, and Accountability

The three initiatives in this category provide formal mechanisms for overseeing and documenting progress in advancing women's careers in science. All three initiatives involve the formation of a working group, committee and/or consortium to provide advice and accountability, as well as quantitative information on efforts to promote equity between women and men in science, engineering, and technology. These groups are responsible, in this category, for developing and managing a database of women scientists, and establishing a "report card" — which also includes a database — that tracks the number of women in leadership positions, career progression statistics, family-friendly policies, and resources within participating institutions and organizations. Success will initially be measured by the number of societies actively participating in the oversight groups and their projects, and by the number of institutions and organizations complying with policies established to advance women's careers in science. Over time, success will be evident in the equity that exists between women and men in scientific careers. These oversight groups may well offer the structure necessary to monitor progress on other initiatives. Each initiative is listed below.

Initiative 12: Create an umbrella organization of professional societies

Initiative 13: Develop a database of women scientists

Initiative 14: Establish a report card on the status of women in science and engineering

Initiative 12: Create an umbrella organization of professional societies to facilitate networking and exchange of information and ideas

Aim   To move from awareness to action in addressing issues relating to women in science, engineering, and technology (SET)

Evaluation

- A committee is established with a good cross-sectional representation of SET groups, with commitment of resources and a timetable of initiatives.

  – A committee is established.

  – Financial resources are committed.

  – Membership composition is representative.

  – A significant number of projects and initiatives exist.

    (1) List of action items and timeline

    (2) Progress documented in reports, newsletters, etc.

  – There is resulting growth in interest and involvement.

    (1) Greater input from science community ("assessment")

    (2) High status of committee within the SET community (credibility, visibility)

    (3) Open channels of communication and information dissemination

Method

Description of Initiative: This initiative will establish an Organizing Committee and a Steering Committee to oversee the creation of an umbrella organization of societies.

Action Steps:

- Identify and recruit prominent and credible spokesperson(s) to spearhead organization

- Create mechanism to establish Steering Committee

- Disseminate idea to participating AXXS '99 societies

■ Recruit and form Organizing Committee [by June 2000]

■ Establish Steering Committee [by January 2001]

– Example of Steering Committee composition: AAAS, AWIS, ORWH, WEPAN, SFN, Cell Bio, APA, IEEE, SOT, ACS, WICR, AWMA, FASEB, AMS, and ACM

– Responsibilities:

(1) Develop mission statement and timetable (avoid duplication; don't reinvent the wheel; exchange ideas)

(2) Determine where umbrella organization will reside

(3) Identify tasks and resources

Presenter Andrea M. Zardetto-Smith, Ph.D.
Assistant Professor, Women in Neuroscience
and Society of Neuroscience

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Alfred Johnson, Ph.D., Panel Member
Who's on the Steering Committee?

Andrea Zardetto-Smith, Ph.D., Presenter
The organizing committee would discuss.

Participant
Why are you taking so long?

Andrea Zardetto-Smith, Ph.D., Presenter
Because of the internal politics of societies and the time it will take to report back from this workshop, get on the societies' agendas, and clear time for people willing to be involved.

Donna Dean, Ph.D., Panel Member
This might be one area where a group of societies is ready to move ahead to begin, with other societies coming on board later.

Participant

The Federation of Organizations for Professional Women already exists. It had some problems, which are important to look at to make this a strong and viable organization for women. Also, I think it won't take so long. There are a number of organizations that are ready to begin. It will depend on the size of the organization, whether it is run by volunteers, has a central office, etc.

This initiative should supersede politics of societies and be done more quickly. I urge you to keep the momentum going.

Participant

Initiative 13:   Develop a database of women scientists

Aim   To create and publicize a web-based database of women scientists

Evaluation

> *Short term*
>
> - Large number of participating societies
>
> - Large number of entries and participants in database
>
> - Positive feedback from users and large number of hits to site
>
> - Good marketing statistics (brochures distributed, "media mentions")
>
> *Long term*
>
> - Greater number of women on editorial boards
>
> - Greater number of women receiving awards
>
> - Greater number of women speakers (by percent)
>
> - Positive feedback from societies (high number of requests to use site)
>
> - Greater number of women in society power positions
>
> - Positive feedback from listees (increased invitation rate)
>
> - Greater number of women chairs, full professors, etc.

Method

> **Description of Initiative:** This initiative will develop an online list of women scientists with links to societies (voluntary submission and universal access) to make names available for recruitment, speakers, advisory committees, editorial boards, and collaborative leadership positions.
>
> **Action Steps:**
>
> - Publicize the need and value of this initiative (editorial)
>   - Communicate with societies regarding existing structures and establish links and buy-in

- Establish representative advisory group and meet
  [by May 2000]

  – Submit proposal to societies

  – Establish managing and working groups
    (with society collaboration)

  – Gain agreement for participation by societies

  – Write a grant and identify funding sources

  – Establish input fields

  – Ensure that each society is responsible for updating list

  – Hire point person

- Develop implementation plan — time line and proposal,
  website architecture, and budget [by January 2001]

  – Establish website (test and evaluate)

- Launch site [by July 2001]

Presenter Paula B. Kavathas
Chair, American Association of Immunologists
Committee on the Status of Women

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Participant
I echo the need for a database and see societies following
NIH's example to attend a certain number of meetings.

Participant
There have been lists of women before, but people not familiar
with the names will not invite them. They don't know if they're
good speakers. I'm not sure you can expect hits except for the
people already known.

Paula Kavathas, Presenter
Some may not be looking for a good speaker, but rather for
someone who has published something interesting. We could
also match people to journals and papers.

Participant
One way to collect data is from societies using a common template and setting criteria for validation.

Participant
Physicians represent a large segment of medical communities and none have a woman president. The best resources for a speakers list are the societies. You could create a template and merge lists.

Participant
A list is not enough. It has to be organized by subject.
You have to make it effective, so people want to use it.

Many times I've wished for a single web portal for identifying women and minorities when a request is made of me. This would be valuable to have for any of us. We could get speakers from across all fields of science.

Donna Dean, Ph.D.
Panel Member

AWIS has a database that requires references, someone who knows the work of listee. You also have to distinguish those who are willing to be contacted for jobs and you need to have consistency of information, standardized across disciplines and activities.

Catherine Jay Didion
Panel Member

Initiative 14: Establish a report card on the status of women in science and engineering

Aim   To use a "carrot and stick" approach to encourage long-term change toward institutional equity

Evaluation

> *Short term*
>
> ■ Higher percentage of society participation
>
> ■ Higher percentage institutional compliance
>
> ■ Positive media reports
>
> *Long term*
>
> ■ Positive responses from institutions to questionnaires requesting 5-year evaluation of utility of database and report

Method

> **Description of Initiative:** This initiative will compile and publicize information from institutions and departments in top 100 research universities to create a report card that can provide national visibility and ranking.
>
> **Action Steps:**
>
> ■ Request or recommend that AAAS establish a consortium of professional societies to
>
> > – develop a questionnaire and mechanisms for gathering data
> >
> > – identify institutions and departments for inclusion in database
> >
> > – develop a database
>
> ■ Identify key data on numbers and percentages regarding
>
> > – structural demographics — the number of women in senior leadership, decisionmaking, academia, and administrative positions
> >
> > – career progress (rank, salary, time to tenure or professor)
> >
> > – resources (space, students, discretionary, institutional funding)

- other (e.g., such as flexible tenure, family-friendly policies, daycare)

   ■ Collect and compile data on annual basis in web-based "report card" with subsequent professional and lay dissemination

   ■ Evaluate and track in 5-year intervals

Presenter Merry Bullock
Associate Executive Director, American Psychological Association, Science Directorate

Question, Comments, and Suggestions from Panel and Participants
(statements are paraphrased)

Zena Werb, Ph.D., Panel Member
You've got to put thought behind this and determine the target group that would have the greatest impact.

Participant
How would you get data? How would you make it stick, especially regarding salary?

Merry Bullock, Presenter
We could ask for salary ranges or ask departments to rank themselves within national norms.

Participant
Be sure to consider bonuses, not just salaries. Being a woman has been shown to be a negative predictor of salary.

This would look at the assumptions behind what makes an institution a good one. It would help prospective students consider the 'success' rate of their predecessors.

Catherine Jay Didion
Panel Member

This is one of the best suggestions. It has teeth. If data is collected in a way that includes mentorship, it could help women decide where to get degrees and faculty positions. It needs to be part of the ranking of universities.

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Zena Werb, Ph.D.
Panel Member

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If we do this, we should offer tools and assistance to help institutions improve their scores, so that the program provides both incentive and assistance.

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Participant

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