

PROJECT DESCRIPTION

Civil and Mechanical Systems Workshop for the Advancement and Retention of Underrepresented/Minority Engineer Educators

The proposed program describes a three day workshop designed to foster technical and intellectual exchange among Ph.D. level, underrepresented, and minority engineers who work in the area of civil and mechanical systems. The intent of the workshop is to instill in its participants the sense of a technical community in which they can thrive and to which they can contribute. In keeping with NSF goals (*NSF in a Changing World* and with *The Long View*, p. 4) the workshop is designed to encourage retention and advancement of qualified women and underrepresented minority engineers in pursuit of scientific and engineering advances.

The proposed workshop will be held in Washington D.C. at the Arlington Hilton Hotel adjacent to the NSF headquarters on September 24-26, 1997.

Participants will be underrepresented or minority faculty (70 participants) and faculty candidates (30 participants). Faculty participants will currently be employed in tenure track teaching and research faculty positions. Sixty will be in the first four years of their academic careers and will be actively trying to develop research programs in areas emphasized by the civil and mechanical systems division. Ten will be senior tenured faculty, with a minimum of six years of experience; more experience preferred. Ph.D. candidate participants will be in the final year of their Ph.D. program and actively pursuing tenure track faculty positions.

Specific workshop goals are to:

1. Foster technical and intellectual exchange among Ph.D. level, underrepresented and minority engineers who work in the area of civil and mechanical systems
2. Instill in its participants the sense of a technical community in which they can thrive and to which they can contribute.
3. Increase participant awareness of educational, research, and funding opportunities

The envisioned short-term benefits of participation in the workshop are as follows:

1. Increased awareness of research and funding opportunities and what is required to be successful in academe (teaching, publishing, outreach, etc.).
2. Diversification of participants' research program goals.
3. Development of a network of mentors and peers encountering similar challenges in advancing within academe and specifically in fields related to civil and mechanical systems research and education.

The envisioned long-term benefits of the program are as follows:

1. Increased retention of women and underrepresented minority engineers as active researchers, mentors, and instructors in fields related to civil and mechanical systems.
2. Development of an infrastructure of colleagues working on civil and mechanical systems research that has a rich diversity.

The proposal description is presented in five sections starting with a **background** on the proposed workshop format. Next a description of the **proposed workshop activities** is presented. This is followed by a summary of the **implementation plan** which provides information on the organizing committee and indicates the individuals responsible for the different aspects of the proposed workshop. Then, a **schedule of activities** is given, outlining the activities for each day. The project description concludes with **plans for assessment and dissemination of information**, which summarizes activities planned for web site development, documentation of workshop outcomes and recommendations, and development of an appropriate mechanism for evaluation of the workshop.

1. BACKGROUND

In 1995, a workshop with similar goals was held for forty engineering educators conducting research in the areas supported by Dynamics Systems and Controls Program. Feedback from participants was consistent in indicating that the information provided on research, education, and funding was quite beneficial and perhaps more significantly, that the opportunity for meeting and getting to know fellow underrepresented and minority colleagues and learning about their research activities *in a similar technical area* through the workshop setting was extremely valuable. The proposed workshop draws very heavily from the content of and the feedback about the 1995 workshop.

The 1995 workshop consisted of six formal sessions spread over a 2-1/2 day period and two half day technical tours of national research laboratories. The workshop started with government speaker presentations from the NSF engineering directorate, the Air Force Office of Scientific Research (AFOSR), the Office of Naval Research (ONR), NASA, and the NSF Division of Undergraduate Education. Each speaker summarized the emphasis of their agency's programs and described opportunities available for funding from their organizations. The next three sessions focused on the Dynamic Systems and Controls Program technical areas of: 1) controls, 2) vibrations and acoustics, and 3) dynamics diagnostics. These sessions started with a keynote speaker who presented an overview of prominent research challenges in their emphasis area. The keynote speakers were selected because of their outstanding contributions to their field of expertise and for their reputation as excellent underrepresented/minority role models. For the second part of these three sessions, each workshop participant presented a 10 minute summary of their current research interests and activities. This increased fellow participants' awareness of the rich diversity of related opportunities for involvement in dynamics and controls research and stimulated discussion related to collaborative research endeavors. Lastly, two "working sessions" were held that were devoted to small group discussions (8-10 participants) of topics selected by the participants. The topic areas included research and funding concerns, balancing of family and career, and diversity issues.

The workshop also included technical tours of laboratories and on-going research activities at the National Institute of Standards and Technology (NIST), The Naval Surface Warfare Center (NSWC), and the Naval Research Laboratories (NRL). In addition to the technical benefits of visiting these labs, the tours provided an informal environment that promoted socializing, networking, and generally getting to know one-another. (One interesting note is that only the bus ride to the first tour was fairly quiet; the subsequent four bus rides were all quite loud with the full gambit of conversations related to technical and personal issues taking place!) Both networking and socializing among participants was strongly encouraged and facilitated by the scheduling of the working sessions, the informal atmosphere of the tours, meals, and evening free time.

During the closing session of the workshop, participants were asked to fill out workshop evaluation questionnaires. Responses provided by 30 out of 40 participants are summarized in Table 1. Also, almost all participants contributed written responses to the request for general comments and recommendations. All of these, along with comments from e-mail and letters participants sent in the weeks following the workshop are given in the workshop proceedings[2]. Select comments are included below to convey the overwhelming participant enthusiasm and their strong sentiment that this forum for discussing research, career objectives, and career challenges *with fellow underrepresented and minority engineering educators* is valuable.

typical workshop evaluation questionnaire comments

"This workshop was a very good idea. It gave an opportunity, mostly to junior faculty, to obtain considerable insight into the working of Gov. funding agencies (not only about NSF). The

Table 1. Summary of participant responses to workshop evaluation questionnaire.

Time spent on:	Too Much / Just Right / Too Little
Government Speakers	1 / 22 / 6
Keynote Speakers	5 / 22 / 3
Participant Presentations	16 / 10 / 4
Tours	14 / 14 / 2
Number of days at workshop	4 / 21 / 5
"Working" Sessions	1 / 5 / 23
Socializing/Networking	0 / 16 / 13

information imported normally takes faculty many years to 'figure out' the things that were explicitly stated @ the conference. Additionally, the mix of invites that also included faculty that had been on-board past receiving tenure was important here (I'm not referring to those who were in for a long time but those who were in for 6-10 years). Those persons added a slightly more mature component but still could benefit from the networking and grant seeking strategies presented. I think the distribution of balance of experiences possessed by the invitees was right. The field trips were a good idea, ... Keep it up! The 10-min. presentations, while long because of the number of participants, was excellent. It gave everyone some insight into a broad range of topics and exposed opportunities for collaboration and/or consultation."

"...I think the idea of bringing these people together was not only wonderful, but timely and needed also. I hope that this program is not only continued, but expanded....."

"This was a great experience. I feel I have made life time contacts and friends. We should do this more and we need to interact more. It was wonderful to be around more "minorities" with experience and concerns like me."

"This was a wonderful group of diverse people. Coming from a mixed background, it was very beneficial to meet and hear talks on such a variety of topics. Also, the lab tours were very inspiring. People do actually have a great test facilities."

typical post workshop e-mail

"I just want to say hello and open the lines of communications.... Being a new professor, I feel this was the most beneficial program that I have attended. I will support it anyway I can..."

"...I think that it is very important for this workshop to NOT be a one-time affair. I think we've been given a mechanism to support each other in our respective careers. ..."

"Just a quick note to say thank you for making this past week a most memorable occasion in my life. The discussions, both public and private have been to my benefit. ..."

"I want to add my personal thanks to those feelings already expressed. ... I was particularly impressed by the warmth and congeniality of this group - I can't remember the last time I went to an engineering workshop and hugged the other participants when I left. That kind of warmth and generosity of spirit truly complements the technical excellence of everyone involved. I hope we can continue to grow in this spirit of community - the world is at our fingertips, ready for change! ..."

"Just thought I'd take the time to express my sincere congratulations on hosting such a wonderful workshop. My life and perspective has been greatly enhanced as a result of attending this workshop. A rare event indeed....."

".... I had a wonderful time interacting with many of the participants, learning about their research interests and discussing possible areas of collaboration. We have already started exchanging ideas through e-mail and we hope to continue this productive interaction..... In short, this was one of the most interesting and informative workshops I have ever attended. Thank you very much for all your hard work in making this workshop a big success. ..."

2. PROPOSED WORKSHOP ACTIVITIES

Building on feedback from the 1995 NSF Dynamic Systems and Controls Workshop for Underrepresented and Minority Engineering Educators discussed above, the proposed workshop program keeps the key components of government speakers, participant technical presentations, and invited technical presentations from select outstanding role models. Time devoted to small group interaction in working sessions will be doubled, so as to increase discussion of topics focused on identifying obstacles to success and to provide recommendations for improving retention rates among fellow underrepresented and minority engineers. Time allotted for technical tours will be decreased with options provided to better match different participant interests. Similarly, time allotted for participant presentations will be reduced. Two additions to the format include a panel of deans to focus on academic career issues and evening activities to enhance opportunities for networking and socializing.

DAY 1: The workshop will open with a presentation in which integration of research and education will be emphasized. A speaker such as Dr. Joseph Bordogna, deputy director of the NSF will be invited to make the opening presentation. This will be followed with invited presentations on research directions and funding opportunities from technical program managers in agencies including NSF, ARO, AFOSR, ONR, DARPA, and NASA.

Following lunch, a working session for discussion of academic career issues will be held, with the senior participants acting as discussion facilitators (ten groups of ten participants each). In addition to knowledge gained through discussions and getting to know one-another through small group interactions, this session is designed to provide participants with a common foundation for the deans' presentations and panel discussion which follows. The following session will be devoted to a panel of university deans who will discuss their perspectives on reasonable academic career expectations and demands. The forum for this panel will be set up to include discussion of issues related to tenure, teaching, research, publications, funding, outreach *and* a rewarding personal life along the career path of an engineering educator.

The day's formal activities conclude with student participants presenting a brief summary of their research interests (4 minutes each with a 2 viewgraph maximum). This session will increase fellow participants' awareness of the diversity of related opportunities for involvement in civil and mechanical systems research and provide exposure of outstanding faculty candidates to fellow participants and the deans who happened to participate in the previous session.

That evening a banquet for all participants will be held, with a banquet speaker. Funding for this event will be arranged through either workshop organizing committee fund raising activities or a nominal participant registration fee.

DAY 2: The morning and early afternoon sessions will alternate between invited speaker presentations and faculty participant presentations. The invited speakers will be role models selected based on their outstanding technical abilities and successful careers. Invited speaker sessions will consist of 20 minute technical presentations, blended with personal and professional insights, followed by 10 minutes of discussion. Faculty participants in research areas similar to the invited speaker will follow with a brief summary of their current research interests (4 minutes with a 3 viewgraph maximum), increasing fellow participants' awareness of the diversity of related opportunities for involvement in civil and mechanical systems research areas.

These sessions will be followed by a series of three 45 minute long working sessions devoted to small group discussions (10 per group). These sessions will promote the exchange of ideas and concerns between underrepresented and minority colleagues who work on related research topics. Several sessions will target identifying obstacles to success and to provide recommendations for improving retention rates among fellow underrepresented and minority engineering educators. Topics of broader interest will be discussed by multiple groups, for example all participants will participate in a small group discussion focusing on preparing successful proposals. Potential working session topics include: 1. Diversity Issues, 2. Teaching, Research and Tenure, 3. Collaborative Research, 4. Mentoring, 5. Juggling Family and Academia, 6. Interdisciplinary Research Funding, 7. How to Sell an Idea / Industrial Interaction / Networking and Establishing Contacts, 8. What Makes a Good Engineering Educator, 9. Skills for Preparing Successful Proposals, and 10. Ideas for Generation of a Workshop Outcomes Assessment .

The day concludes with time for socializing in a restaurant near the workshop hotel, where a room will be reserved for an informal participant gathering and dinner.

DAY 3: During the morning of the third day, participants will have the option of participating in additional small discussion groups or taking one of two tours of national research laboratories (NIST, NASA Goddard, or U.S. Navy facilities; tour content to be determined based on participant research areas).

The rationale for offering both tours and working sessions, two distinctly different activities, is based on feedback from the '95 workshop participants. Half the responses in Table 1 indicate that the amount of time spent on tours was "just right", with the other half indicating "too much". Several written comments, in particular those from participants more heavily involved in experimental aspects of research activities, indicated that the tours were an extremely valuable and "inspiring" component of the time spent at the workshop. In contrast comments were also received indicating the tour time would have been better spent in working sessions. Table 1 does indicate that all but one respondent felt "too little" time was spent in working sessions. As such, participants will be allowed to choose whether technical tours or additional time involved in working session will be more valuable for their own professional needs.

One specific activity for several of this morning's working session discussion groups will be the generation of a statement of workshop outcomes and recommendations. These working groups will discuss topics focusing on the workshop goals and the advancement and retention of underrepresented and minority engineering educators. A draft of these statements will be copied and passed out after lunch as participants reconvene as a single group for general discussion. The first afternoon session will start with a panel of the working session facilitators summarizing key topics addressed on all three days in their small groups discussions. The workshop will conclude with general discussion lead by a panel of the invited speakers, focusing on workshop outcomes and recommendations. These discussions will be recorded for subsequent transcription and inclusion in the proceedings and workshop WEB page.

3. IMPLEMENTATION PLAN

Workshop activities will be directed by an organizing committee. The organizing committee will be chaired by Dr. Alison Flatau, the organizer of the 1995 NSF dynamic systems and controls workshop for the advancement and retention of underrepresented engineering educators. She is an Associate Professor of Aerospace Engineering and Engineering Mechanics at Iowa State University and is an NSF Young Investigator. Organizing committee members are Dr. Devendra P. Garg, initiator of the underrepresented and minority engineering educator workshop concept, the 1995 workshop's three keynote speakers, Dr. Ephraim Garcia, Dr. Mardi C. Hastings, and Dr. James

E. Hubbard Jr., and Dr. Brian C. Fabien, a 1995 workshop participant. Dr. Garcia is of Hispanic-American origin. He is an Associate Professor of Mechanical Engineering at Vanderbilt University, and is an NSF Presidential Faculty Fellow. Dr. Hastings is an Associate Professor of Mechanical Engineering at The Ohio State University. She is an NSF Presidential Young Investigator. Dr. Hubbard is of African-American origin. He is a Senior Research Engineer at the Boston University Center for Photonics Research and an Associate Professor of Mechanical Engineering at Boston University. Dr. Brian Fabien is an American originally from the West Indies. He is an Associate Professor at the University of Washington and is an NSF Presidential Faculty Fellow. Specific responsibilities being assumed by the organizing committee members include:

- Dr. Flatau, chair: participant invitations, work with meeting planner on conference facilities and participant travel arrangements, coordinate WEB page development and workshop assessment and evaluation activities, primary interface between organizing committee and NSF sponsors, general supervision of workshop.
- Dr. Fabien: preliminary proceedings for workshop, final copy of proceedings to include workshop assessment and statement of outcomes and recommendations, coordinating recording of select sessions for subsequent transcription.
- Dr. Garcia: fund raising for evening programs, coordinating government speaker session.
- Dr. Hastings: working session topic selection, scheduling times, facilitators, and participants, training facilitators.
- Dr. Hubbard: fund raising, coordinating invitations to technical session keynote speakers and to dean's for panel on academic career issues.

Participants will be identified through several means. Self nomination forms will be made available to those interested in the workshop. Information on the workshop will be sent to deans of engineering colleges and to chairs of appropriate departments (AerE, Archt., CE, Con.E, EE, EM, Geo., ME, and MSE), soliciting nominations from appropriate candidates. In addition, mailing and e-mail lists from workshops and organizations whose memberships include underrepresented and minority engineers will be used to inform potential participants of the workshop activities. Such organizations will include, among others, the National Action Council for Minorities in Engineering, Society for the Advancement of Chicanos and Native Americans In Science, American Indian Society for Engineers and Scientists, Mexican American Engineering Society, Material Consortium for Graduate Education for Minorities, Society of Hispanic Professional Engineers, Hispanic Engineering National Achievement Awards Conf., National Assoc. of Minority Engineers Program Administrators, Women in Engineering Program Advocates Network, National Society of Black Engineering, and the Society of Women Engineers.

Several criteria will be used to select individuals for participation. The self nomination forms will be used to identify a mix not only of race, gender, and ethnic origin, but to ensure diversity in areas of technical expertise and a distribution in affiliation with universities from all regions of the United States. Information on the workshop and self nomination forms similar to those used for the 1995 workshop (in Appendix A of workshop proceedings) will be used to attract participants.

Financial arrangements (participant travel, lodging, facilities, etc.) will predominately be contracted with the company through which the NSF contracts travel and meeting planning. This is currently Omega Travel, a Washington D.C. based travel agency having experience in organizing meetings. Omega Travel has prepared the estimate for transportation, meals, lodging and room rental associated with conducting the proposed workshop. The organizing committee will undertake fundraising activities to supplement the budget to allow participants to partake in evening reception and dinner activities without the need for a workshop registration fee.

In addition, two undergraduate students will be employed part time to assist with the organizing committee activities of WEB page development and both video and tape (voice) recording appropriate segments of the workshop for subsequent transcription to documents to be available through the proposed WEB page. A graduate student in either sociology or psychology will be employed to develop appropriate questionnaires for assessment of the impact of the workshop and evaluation of the workshop.

4. SCHEDULE OF ACTIVITIES

Arlington VA Hilton Hotel
9/24/97 - 9/26/97 (Tentative: 3/30/97)

Tuesday Evening 9/23/97

8:30-10:00 PM - Arrival and Registration - pick up workshop proceedings and evaluation forms

Wednesday 9/24/97

8:00 AM - 8:15 - Opening Remarks and Welcome

8:15 AM - 12:00 PM - Session 1: Education, Research & Funding Opportunities. The workshop will open with a presentation in which integration of research and education will be emphasized. A speaker such as Dr. Joseph Bordogna, deputy director of the NSF will be invited to make the opening presentation. This will be followed with detailed presentations on funding opportunities from technical program managers in agencies including NSF, ARO, AFOSR, ONR, DARPA, and NASA. Topics will include but are not limited to discussions of a. characteristics that distinguish strong proposals from others; b. directions that program managers consider to be important growth areas; and c. funding opportunities.

1:00-2:00 PM - Session 2: Academic Career Issues. A working session on academic career issues, with the senior faculty participants acting as discussion facilitators. In addition to knowledge gained through discussions and participants getting to know one-another through small group interactions, this session is designed to provide a common foundation to all participants for the deans' presentations and panel discussion which follows.

2:00-3:15 PM - Session 3: Dean's Panel on Academic Career Issues. Deans will discuss their perspectives on reasonable career expectations and demands. The forum for this panel will be set up to include discussion of issues related to tenure, teaching, research, publications, funding, outreach *and* a rewarding personal life along the career path of an engineering educator.

3:30-5:30 PM - Session 4: Student Technical Presentations. Each student participant will give a brief summary of their current research interests (4 minutes with a 3 viewgraph maximum). This will increase fellow participants' awareness of the diversity of related opportunities for involvement in research activities, and provide exposure of outstanding faculty candidates to fellow participants and the deans who happened to participate in the previous session.

6:30-9:00 PM. - Reception/Dinner Banquet and Evening Speaker. Funding for this event will be arranged through either workshop organizing committee fund raising activities or a nominal participant registration fee. Dr. Barbara Lazarus, Associate Provost at Carnegie Mellon University will provide an after dinner speech.

Thursday 9/25/97

7:30 AM-9:45, 10:00-12:00 PM and 1:00-3:00 PM - Sessions 5-7: Invited Speaker and Participant Presentations. The morning and early afternoon sessions will alternate between invited speaker presentations and faculty participant presentations. The invited speakers will be role models selected based on their outstanding technical abilities and successful careers. Invited

speaker will make 20 minute technical presentations, blended with personal and professional insights, followed by 10 minutes of discussion. For the participant presentations, faculty will present a brief summary of their current research interests (4 minutes with a 3 viewgraph maximum), increasing fellow participants' awareness of the diversity of related opportunities for involvement in civil and mechanical systems research.

3:15-5:30 PM - Session 8: Working Sessions. Participants will each attend three different small group discussions on topics of their choice. The three sequential sessions will consist of 45 minutes of discussion in groups of ten participants each. The more senior participants will be given guidance on acting as discussion facilitators. Discussions will focus on identifying obstacles to success and providing recommendations for improving retention rates among fellow underrepresented and minority engineers. These sessions (a total of thirty) will promote the exchange of ideas and concerns between underrepresented and minority colleagues. Multiple sessions for discussion of topics of broader interest will be offered, including up to ten sessions focusing on preparation of successful proposals. Other potential working session topics include: 1. Diversity Issues, 2. Teaching, Research and Tenure, 3. Collaborative Research, 4. Mentoring, 5. Juggling Family and Academia, 6. Interdisciplinary Research Funding, 7. How to Sell an Idea / Industrial Interaction / Networking and Establishing Contacts, 8. What Makes a Good Engineering Educator, 9. Skills for Preparing Successful Proposals, and 10. Ideas for Generation of a Workshop Outcomes Assessment.

6:30-8:30 PM - Social Hour/Dinner: The day concludes with time for socializing at a restaurant near the workshop hotel, where a room will be reserved for an informal participant gathering and dinner.

Friday 9/26/97

7:30 AM-12:00 PM - Session 9: Working Sessions and Tours. Participants will be given the option of either attending a series of small group discussion working sessions as an extension of the previous afternoon's activities or selecting from one of two tours of experimental test facilities and on-site visits with program managers from government research laboratories (possibly NASA Goddard, David Taylor Naval Basin or NIST facilities). Working session topics will include ideas for generation of an workshop outcomes assessment and a workshop recommendations statement.

1:00-3:15 PM - Session 10: Discussion on Goals and Recommendations. All participants will reconvene for panel presentations and group discussion. The first panel will consist of the working session facilitators. Each facilitator will provide a brief summary of topics covered in their smaller group discussions. The floor will then be opened for discussion on recommendations and comments related to topics discussed within smaller groups. This will be followed by a panel of the invited speakers, who will present their perspectives on a workshop outcome assessment. They will open the floor to general discussion on goals and recommendations for improved advancement and retention of underrepresented/minorities in Civil and Mechanical Systems related educational and research activities.

3:15-3:30 PM - Closing remarks

**NSF Civil and Mechanical Systems Workshop for the
Advancement & Retention of Underrepresented & Minority Engineering Educators**

Schedule of Events 9/24/97 - 9/26/97 (Tentative: 3/30/97)

Wednesday

8:00 AM - 8:15 AM Opening Remarks and Welcome.

8:15 AM - 12:00 PM Session I. Research & Funding Opportunities.

sample of talks given during similar session at 1995 Workshop:

- Dr. Elbert L. Marsh, Deputy Assistant Director, National Science Foundation - "NSF in A Changing World"
- Dr. Leonidas Sakell, Program Manager, External Aerodynamics and Hypersonics, AFOSR, Bolling Air Force Base, Washington D.C., "Basic Research Funding at AFOSR."
- Dr. Geoffrey L. Main, Office of Naval Research, "Navy Applications of Basic Research in Structural Dynamics."

Break

- Dr. Dexter Johnson, Structural Dynamics Branch, NASA Lewis Research Center, "Research and Funding Opportunities at NASA."
- Dr. Daniel B. Hodge, Program Director, National Science Foundation - Course and Curriculum Development Section of the Division of Undergraduate Education.

Lunch

1:00 PM - 2:00 PM Session 2. Working Session on Academe.

2:00 PM - 3:15 PM Session 3. Dean's Presentations and Panel Discussion.

Break

3:30 PM - 5:30 PM Session 4. Student Participant Technical Presentations.

6:30 PM - 9:00 PM Banquet. Speaker: Dr. Barbara Lazarus, Associate Provost, Carnegie Mellon.

Thursday

7:30 AM - 8:00 AM Session 5a. Invited Speaker Presentation and Discussion.

8:00 AM - 9:45 AM Session 5b. Participant Presentations.

Break

10:00 AM - 10:30 AM Session 6a. Invited Speaker Presentation and Discussion.

10:30 AM - 12:00 PM Session 6b. Participant Presentations.

Lunch

1:00 PM - 1:30 PM Session 7a. Invited Speaker Presentation and Discussion.

1:30 PM - 3:00 PM Session 7b. Participant Presentations.

Break

3:15 PM - 5:30 PM Session 8a-c. Three blocks of 10 parallel Working Sessions.

6:30 PM - 8:30 PM Social Hour and Dinner.

Friday

7:30 AM - 12:00 PM Session 9. Working Sessions and Tours.

Lunch

1:00 PM - 2:00 PM Session 10a. Facilitators Panel on Discussion Topics

2:00 PM - 3:15 PM Session 10b. Invited Speaker Panel on Goals and Recommendations.

3:15 PM - 3:30 PM Closing Remarks.

5. PLANS FOR ASSESSMENT AND DISSEMINATION OF INFORMATION

Two distinct assessment activities are planned. Participant questionnaires will be prepared, one to assess participant perspectives on the advancement and retention of underrepresented and minority engineering educators and a second to assess and evaluate the impact of the workshop. A graduate student in either sociology or psychology (together with appropriate faculty and the workshop chair) will be employed to prepare appropriate tools for providing useful assessments. At this time, a three step assessment process is envisioned. Participants will be asked to respond to a questionnaire prior to the workshop, one at the conclusion of the workshop, and one six months after the workshop. E-mail will be used to facilitate obtaining responses prior to and after the workshop.

Several activities will be undertaken to promote dissemination of information gathered through workshop activities. First, a formal workshop proceedings will be generated that includes documentation of the diversity of research areas of the participants and includes a two page abstract from each participant describing their research interests, provides documentation of workshop outcomes and recommendations. It will include written summaries of working session discussions and provides results of the participant assessment and evaluation of the workshop activities. The proceedings will start with a preface including this introductory material and an agenda describing the flow of the workshop in detail. Information on the participants such as their affiliations and research interests will also be included. WEB page will also be developed and maintained to open the lines of communication between participants and others, making available to a much larger audience ideas and the sense of community developed during the workshop. The WEB site will include links to participant homepages, government agencies, and transcription of select portions of the workshop deemed to be of general interest. In addition, voice tape recording and select video recording of discussions will be made available upon request.