2010 Pattullo Conference Report

1. Introduction and Executive Summary

Initiated in 2004, MPOWIR (Mentoring Physical Oceanography Women to Increase Retention) is a community-initiated and community-led program aimed at providing mentoring to junior women in physical oceanography in order to improve their retention in the field. MPOWIR activities, fully funded by federal agencies (NSF, ONR, DOE, NOAA and NASA) since the spring of 2007, are guided by the five objectives of the program outlined by the community in a planning workshop in the fall of 2005: (1) to provide continuity of mentoring from a young woman's graduate career, through her postdoctoral years to the first years of her permanent job, (2) to establish a collective responsibility within the physical oceanography community for the mentoring of junior women in the field, (3) to provide a variety of mentoring resources and mentors on a variety of issues, (4) to cast a wide net to avoid exclusiveness and (5) to open this mentoring program to all those who self-identify as a physical oceanographer.

MPOWIR accomplishments to date include:

1. Planning and execution of the first and second biannual Pattullo Conference. This conference, the centerpiece of the MPOWIR effort, was most recently held May 23-26, 2010 in Charleston, South Carolina. Thirty junior women scientists and 18 senior scientists, both men and women, participated in this conference whose primary goal was to help junior women make connections, gain community support and develop professional skills needed for a career in physical oceanography. Extensive surveys of the participants reveal the overwhelming success of this conference.

2. Formation of mentoring groups. To keep the momentum generated by the first Pattullo conference, mentoring groups were established in the fall of 2008. Groups comprise 6-7 junior women, and 2 senior facilitators who combine both mentoring and coaching roles. Five mentor groups are currently enrolled, combining both Pattullo attendees and other individuals who have expressed interest. Two new groups will form this summer. The mentor groups are intended to support both peer and traditional mentoring on a smaller, more intimate basis. A recent survey of mentees confirms that the groups provide needed support and individuals report an increase in their overall professional happiness.

3. Development and maintenance of MPOWIR website. The MPOWIR website (www.mpowir.org) has provided a space for the distribution of MPOWIR surveys, profiles of female physical oceanographers and information on all MPOWIR activities. Additionally, resources associated with tracking, mentoring, and encouraging the participation of women in science are listed and updated. A blog creates further dialogue for physical oceanographers spread across the country. In the coming months, the MPOWIR website will undergo a complete redesign.

4. Events at national meetings. To date MPOWIR has sponsored four events at national meetings. A Town Hall meeting during Ocean Sciences 2006 in Honolulu introduced MPOWIR to the oceanographic community. At the AGU Fall Meeting in San Francisco in 2007, MPOWIR hosted a social that provided networking opportunities. MPOWIR sponsored a seminar on dual-career couples at the 2008 Ocean Sciences Meeting in Orlando. Lastly, at the 2010 Ocean Sciences Meeting in Portland, MPOWIR held a panel discussion on careers in oceanography. In addition to these events, poster presentations on the MPOWIR program were given at the 2008 and 2010 Ocean Sciences and an oral presentation at the 2008 Fall GSA meeting.

5. Statistics and surveys. An MPOWIR database has been created and is actively maintained with historical and current data gathered from institutions on the number of graduate students entering and graduating from physical oceanography departments each year. The data gives a concrete measure of graduation rates and retention in the field. Additionally, a comprehensive survey is administered to physical oceanography graduate students each fall.

Though ultimately a measure of the success of MPOWIR would be the program's own demise due to parity in retention rates, in the interim many indicators point to the program's success: participation by the junior scientists at the Pattullo conference exceeded our estimates; feedback from the conference was overwhelmingly positive, with all participants responding that they would recommend the Pattullo conference to their peers; 22 institutions across the country have responded to our requests for data; numerous graduate students have responded to our surveys; attendance at MPOWIR Town Hall meetings has been healthy and feedback positive; and mentoring groups continue to grow and enhance the MPOWIR effort.

Finally, another measure of our success is the degree to which outside communities take an interest in MPOWIR. During just this past year, MPOWIR representatives have been invited to discuss the MPOWIR program with the steering committee of ESWN (Earth Science Women's Network), to give a talk on MPOWIR at the Ocean Leadership's Ocean Sciences Educators Retreat in November of 2008 and to participate in an ADVANCE Workshop at Rice University on negotiating the ideal faculty position. Three scientists from outside of physical oceanography attended the 2010 Pattullo Conference and plans are underway to export our effort to other geosciences communities.

2. Background on MPOWIR

a. Initiation of the MPOWIR effort

A 2002 diversity study (Nelson, 2002), as well as concerns within our own community, prompted the initiation of an effort within the physical oceanographic community to examine whether mentoring efforts could aid the retention of junior women in the field. Though institutions are increasingly focusing on the role of mentoring in the early career stages of a young scientist, it is generally recognized that a discipline-based community can also foster success during a scientist's early career. Toward this end, a National Science Foundation (NSF) and Office of Naval Research (ONR)-funded workshop entitled, "Mentoring Physical Oceanography Women to Increase Retention (MPOWIR)," was conducted at the Airlie Center in Warrenton, Virginia on October 9-12, 2005. Twenty-nine physical oceanographers, men as well as women, assembled for the purpose of designing a mentoring program for junior women in the field of physical oceanography in order to help remove barriers in their career development. The overall goal of this community effort was to develop a program within physical oceanography that, if successful, could be expanded to include women and minorities in all areas of ocean sciences or geosciences. Further information on the Airlie workshop can be found in the workshop report (Lozier et al., 2005).

b. Steering committee and leadership

The MPOWIR Steering Committee, established at the Airlie Workshop, is responsible for all MPOWIR activities. The current committee is composed of six members, including four women and two men, who are representative of a broad spectrum of work and family conditions. The committee members belong to institutions differing in size, location, and type (academic/research/government laboratories). The term for

each committee member is two years, staggered, except for the lead PI. The committee is responsible for considering and starting new initiatives and planning for the long-term continuation of the program. This includes appointing new members to evolve the committee structure. Additionally, steering committee members act as liaisons in the broader community. Conference calls, web-based communications, and additional meetings during national conferences are arranged, as needed. Day-to-day program activities are managed by the MPOWIR Chair and Program Coordinator.

c. Funding

Funding for MPOWIR is provided by NSF, ONR, NASA, NOAA and DOE, through grants to the chair of the steering committee. NSF has provided the bulk of the funding and all NSF proposals have been peer-reviewed by members of the physical oceanography community.

3. The Pattullo Conference

a. Introduction

The centerpiece of the MPOWIR program is the Pattullo Conference, a two and a half day mentoring event held biannually. The second conference was recently held May 23-26, 2010 at Middleton Place in Charleston, South Carolina. The conference is named for June Pattullo, the first woman to receive a Ph.D. in physical oceanography.

The goals of the Pattullo conference are:

- To bring junior women together with senior scientists to share experiences, advice and concerns.
- To build community networks with peers and senior scientists.
- To build confidence and skills for promoting science.
- To raise awareness of issues confronting junior women among the senior scientist community.

The following section includes a brief description of the participation and sessions at the Pattullo Conference.

b. Junior scientist participation

Participation in the Pattullo conference was open to all junior female physical oceanographers at U.S. establishments, including universities, government labs, and research institutions. "Junior" was defined as being within one year of obtaining a Ph.D. and up to two years after obtaining a PI position. By January 2010, over 30 junior women expressed interest in the Pattullo Conference. Registrants were asked to provide their contact information, dissertation topic, a CV, and contact information for their Ph.D. advisor. The final participant list included 26 junior women across the country. Four participants from the 2008 Pattullo Conference were also invited to return. They participated in the conference as junior scientists and peer facilitators in small group meetings. Costs for the all participants were covered by the supporting grants.

c. Senior scientist participation

A subset of the MPOWIR steering committee selected senior scientist invitees. These male and female scientists were primarily selected to create a range in scientific expertise as well as a representative sampling of work places (e.g., research institution, government laboratory, public and private university) around the country. Additionally, issues such as exposure to dual-career issues, length of career, and past mentoring expertise were also considered. Sixteen senior scientists attended the conference. Program managers from the National

Science Foundation (NSF) and the Office of Naval Research (ONR) were also in attendance, serving as agency representatives as well as senior scientists.

Senior scientists at the conference were asked to offer advice, give feedback and/or offer to put the young scientist in touch with a colleague with similar interests. Senior members were not expected to be at the conference to "find" a mentee, rather to give feedback and advice to all women present, where and when appropriate. During informal discussions and one-on-one time, senior scientists participated in discussions on topics such as balancing work and family, strategies for funding, proposal writing, alternative career paths, and self-promotion. Senior scientists also met several times to discuss the impact of the various conference activities in order to assess their success and plan improvements or different approaches for future conferences.

d. Conference sessions

i. Opening reception and dinner

Prior to dinner, senior scientists met to discuss plans for the next few days while the junior scientists met as a group for the first time to discuss their participation at the conference. This was followed by dinner, which marked the start of the Pattullo conference on Sunday evening. Seats were assigned at all dinners and each table had a mix of junior and senior scientists from differing institutions.

Dr. Mary Anne Holmes, a professor of the practice in Geosciences at the University of Nebraska – Lincoln, gave the conference keynote presentation. She is also the director of Advance-Nebraska, an NSF sponsored program to retain women in science. Dr. Holmes has an appointment in the Women's and Gender Studies Program at UNL and is currently doing research on strategies to overcome barriers to the advancement of geoscience women in academia. She presented her research on women in geoscience and discussed ways to retain women in the field. This talk will be posted on the MPOWIR website.

ii. Science talks

On the first morning of the conference, each junior participant gave an 8-minute, AGU-style talk on their current research. The talks were grouped according to four common research themes. After each talk, members of the audience filled out a feedback sheet on which they noted what they particularly liked about the talk and where they found room for improvement. Each speaker was given these feedback sheets following the session.

iii. One-on-one time

Junior participants were given the opportunity to sign up for one-on-one time with a senior scientist. The agenda included time for two, 30-minute slots. Junior scientists were free to discuss any topic including their research, common interests, career, or work/life balance.

iv. Presentation skills

This interactive session began with a general discussion facilitated by Merlin Walberg on presentation style and body language. The junior women also had an opportunity to look over the feedback sheets they received after their research talk.

v. Designing research projects

Participants were divided into small groups consisting of 3-4 junior scientists and 2 senior scientists. In these groups, which were formulated based on common research interests, participants received personalized feedback and constructive criticism from their peers and senior scientists. The aim of these sessions was to give ideas and advice to the junior researchers on how to convert a research project into a research program, as they transition from Ph.D. students and postdocs to PIs. Senior scientists offered advice on how to broaden the scope of the junior scientist's research, how to maximize the impact of their research and how to seek funding opportunities.

vi. Negotiations

As part of a focus on professional development during the second full day of the conference, all junior women participated in a negotiations workshop led by Dr. Ashleigh Rosette, of Duke University. The goal of this workshop was to give junior women an introduction to negotiation techniques. Through role play and analysis, participants learned about the importance of knowing one's own and others perspectives and monitoring the context of each negotiation. Junior women were encouraged to see the goal of every negotiation as an opportunity to invent options for mutual gain.

Ashleigh Rosette also presented her research to the senior scientists. She spoke about the female leadership advantage and perceptions about women at the top of an organization.

vii. Presentation by program managers

Eric Itsweire from NSF provided information on the type of research agencies fund, how proposals are submitted and how one obtains further information on opportunities for funding. Both senior and junior scientists participated and several senior scientists relayed their experience as a PI, mail reviewer, and panelist reviewer.

viii. Coaching behaviors and giving and receiving feedback

Merlin Walberg of Phoenix Consultancy gave a presentation to the senior scientists about coaching behaviors and giving and receiving feedback. She discussed ways to listen for content, feeling, and intention as well as strategies for giving effect, constructive feedback.

ix. Extending the MPOWIR effort discussion

In this session, Susan Lozier (MPOWIR Chair) and Lisa Gerber (MPOWIR Program Coordinator) led a discussion on extending the MPOWIR effort with senior scientists and agency representatives. The primary goal of MPOWIR is to change the culture for women in physical oceanography and ultimately, extend this effort to other geosciences communities. Several senior scientists from outside physical oceanography were also in attendance to discuss ways to export MPOWIR and improve current offerings.

x. Leadership development

Merlin Walberg gave an interactive presentation to both the junior and senior scientists on Tuesday afternoon. In this session, she spoke about the Seven Habits of Highly Effective People, by Stephen Covey. These habits

focus on proactivity and goal setting. A handout with an exercise on time management was distributed and small groups discussed case studies related to early career and academic issues.

xi. Question and answer session by the junior scientists

On the last morning of the conference, the junior participants presented their perspective through a question and answer session to the senior scientists and agency representatives. Following this presentation, all participants provided feedback on the conference. The conference closed with remarks by the MPOWIR chair and with a slide show of photos taken during the course of the conference.

4. Follow up, feedback, and next steps for the Pattullo Conference

Based on feedback gathered from the participants, the Pattullo Conference was a valuable experience for everyone involved and an extremely successful event. In a follow-up survey administered online after the conference, all said that they would "definitely recommend this conference to another junior scientist." Most importantly, we accomplished our conference goals. In evaluations and in conversation, many junior women spoke of increased confidence and were impressed by the networking opportunities with not only senior scientists, but also their peers. One junior participant commented "The Pattullo conference was extremely valuable to my professional development. This was my first experience in devoting two days to thinking just about my career and how to manage it. I think the close interactions with other students and scientists was what made this conference special." Another participant remarked that "The overall experience was surprisingly rewarding. It allowed me to discuss or even just raise and share questions about how challenging it can be to be a researcher and a fulfilled human being. It is much more than just being a woman in science."

We are confident that participants will bring their enthusiasm from the conference to their home institutions and the broader oceanography community. To continue to support the efforts of these junior scientists while working to improve future MPOWIR programs, we have taken/are taking the following actions:

a. Survey

At the conclusion of the Pattullo Conference, while all participants were still gathered, we administered a brief, anonymous evaluation survey with space for comments: (1) One thing I really liked about the conference, (2) One idea/suggestion for improvement, (3) Additional sessions/topics that could be included in a future event, (4) Additional comments. This survey allowed participants to give immediate feedback on the conference and we gained valuable insights from junior and senior scientists.

Several weeks after the conference, participants were asked to complete an online survey. This survey asked participants to rate their opinion on specific topics and allowed for comments. The response rate was 90% and results from this survey appear in Appendix III. Overall, the survey results indicate that the program was a tremendous success and that there are few changes to the overall structure or focus of the conference in the future. The survey, however, did reveal ways in which the conference can be improved and these suggestions will be considered in the design of future Pattullo conferences.

b. Establishing a listserv

The first step in continuing the positive momentum from the Pattullo conference was establishing lines of communication between participants. To facilitate communication among the group, we created an email list for all participants. It is a private discussion list where membership is restricted to Pattullo participants and subscribers are free to post messages to the group by sending an email to the list address. Participants were encouraged to share relevant information and maintain regular contact with each other. A full participant list with email addresses for each individual was also made available.

c. Creation of an MPOWIR Facebook Group

A Facebook group for Pattullo participants was established by one of the junior scientists. At present, the group has 33 members and plans are underway to create a Facebook group for all of MPOWIR. The group also allows members to participate in a discussion forum, post pictures, and communicate directly with other members of the group.

d. Submitting an article to the Meeting section of EOS

One of the goals of MPOWIR is to expand our initiative to other STEM communities. To make progress toward this goal, it is extremely important that MPOWIR is visible in the broader scientific community. An article was submitted to the Meeting section of *EOS, Transactions, American Geophysical Union*. The article includes some introductory remarks about MPOWIR, a full description of the Pattullo Conference, and a brief section on our future plans.

e. Writing an article on MPOWIR's survey and data-gathering efforts

To further disseminate information about MPOWIR and the Pattullo conference, an article is planned that will provide a discipline-specific follow-on to the National Diversity Study (Nelson, 2002). Specifically, the focus of the article will be to address some unanswered questions from the National Diversity Study for the physical oceanography community:

1. What are the current positions of men and women with PhDs in physical oceanography? Are men and women represented differently in these positions?
2. Why is there a disproportionate representation of women in physical oceanography?
3. What can be done to increase the retention of women in academia in physical oceanography?

f. Expanding the mentoring group

To encourage the maintenance of the peer network and to provide sustained support on career choices (as well as the elements of a successful career in science), participants have been encouraged to participate in the mentor groups described in Section 5. Currently there are 5 mentor groups each comprised of 6-7 junior scientists and 2 senior facilitators.

g. MPOWIR website

Shortly after the Pattullo conference, the MPOWIR website was updated with pictures and materials from the event. Regular updates and new features to the MPOWIR website will enhance internet-based mentoring by creating a more interactive and lively forum for continued discussion.

5. Update on other MPOWIR Activities

a. Internet-based mentoring

The MPOWIR website (www.mpowir.org) remains the central place for information, resources, discussion opportunities, a blog, and the formation of the mentor groups. As was clear from the geographical distribution of the conference attendees, many junior women are isolated in departments that are not traditionally considered to be "oceanographic". While this provides an opportunity for fruitful interdisciplinary research, and thus places junior women at the leading edge of physical oceanographic science, this can also be isolating and create difficulties for their involvement in larger research programs. The internet based resources are intended to bridge the geographical divides, to provide information/resources, and to encourage peer and traditional mentoring opportunities. The website will be significantly enhanced this summer.

b. Mentor groups

The mentor groups are intended to support both peer and traditional mentoring on a smaller, more intimate basis. The objectives are: to help early career women make connections and gain community support, to help build the confidence of early career women so that they are comfortable promoting themselves and their work, to support early career women scientists with advice and encouragement and strategies for success both professional and personal, and to help them learn from sharing the experiences of both senior scientists and peers.

Groups consist of 6-7 junior women, and 2 senior facilitators who play both mentoring and coaching roles. There are currently five mentor groups and groups include both Pattullo attendees and other individuals who have expressed an interest. To ensure that the groups do not constitute an excessive time drain on the leaders, and to ensure that the group leaders are adequately prepared for the challenges that emerge, the MPOWIR Program Coordinator, Lisa Gerber, provides logistical support, and Merlin Walberg of Phoenix Consulting provides training. To ensure that the groups provide an immediate tangible benefit to attendees, the junior women are asked to formulate specific goals that they can work towards with the encouragement and insights of the group. Each member and mentor leader receives a notebook we have tailored to the group containing training information, contact information, and the biography and goal information for each participant. We also created a formal mentor group policy with input from the 10 mentor group leaders. This policy guides us as we add new groups, rotate or disband groups, and provide support for peer groups. Meetings occur each month for 60-90 minutes via teleconference. Groups meet face-to-face at national meetings and MPOWIR events. Two new groups will be added this summer.

c. Socials and Town Hall meetings at national meetings

To date MPOWIR has sponsored four events at national meetings:

• Town Hall meeting at Ocean Sciences in 2006

At Ocean Sciences 2008 in Honolulu, Hawaii, MPOWIR held a Town Hall meeting to introduce MPOWIR to the oceanographic community. Over 150 people, men and women, attended this informational meeting. At the meeting, a panel of Airlie workshop participants, presented the goals and planned activities of the MPOWIR program.

• AGU Fall Meeting reception in 2007

At the AGU Fall Meeting in San Francisco in 2007, MPOWIR hosted a social for the purpose of providing networking opportunities for junior researchers in the field. Though welcoming remarks were given by the MPOWIR steering committee chair, no other program was planned.

• Town Hall meeting at Ocean Sciences in 2008

MPOWIR sponsored a social at the 2008 Ocean Sciences Meeting in Orlando, Florida on Dual-Career Couples. Dr. Elizabeth Creamer, a professor and researcher of issues related to faculty careers at Virginia Tech, spoke about her research to approximately 75 people. The background and career-stage of the audience was varied, and while many of the audience members were physical oceanographers, scientists from all of ocean science were in attendance. The interactive presentation put forward statistics about the number of dual-career couples in the sciences and summarized recent research about the impact of children and/or an academic spouse on faculty research productivity

• Town Hall meeting at Ocean Sciences in 2010

Our fourth town hall meeting on career paths in oceanography was held at the 2010 Ocean Sciences Meeting in Portland. LuAnne Thompson, a member of the steering committee and mentor group leader, presented data on physical oceanography graduates (much of this data was gathered by MPOWIR). Five panelists also participated in a question and answer session with approximately 120 audience members. Video from the presentation is available on the MPOWIR website.

d. Statistics and surveys

A database is actively maintained and filled with historical and current data gathered from institutions on the number of graduate students entering and graduating from physical oceanography departments. The data gives a concrete measure of graduation rates and retention in the field. As with data collected by NSF and by other researchers, our data shows that nearly 40% of all Ph.D. graduates in physical oceanography are female and the percentage of women in the field drops sharply they progress in their careers.

A comprehensive survey was administered to graduate students in the fall of 2007 and the survey is repeated each fall. While the survey was anonymous, the majority of respondents provided contact information, which will allow us to track their progress and changing attitudes through their early career. Survey results show that approximately 65% of respondents have at least one mentor who may or may not be their advisor. While approximately the same proportion of women and men have mentors, women are more likely to have a mentor that is not their academic advisor. After several years of data, we are pleased to see a clear trend among MPOWIR participants: those involved in MPOWIR report more positive feelings toward their graduate school experience. These results are informative, encouraging, and help to guide our mentoring efforts.

A recent survey of the mentor groups revealed other positive impacts stemming from our mentoring efforts. The survey had an 88% response rate and results spoke to the value of the mentor groups. 92% of respondents report that they will continue to participate in a mentor group when their group disbands after 2 years. Additionally, nearly all respondents (84-92%) say that their participation has had a positive effect on their general happiness at work, their connection to the field, their professional network, their support network, and their understanding of early career transitions.

The MPOWIR internet-based mentoring program inherently contains natural measures for use as metrics. For instance, web servers can easily log hits on pages, re-visits, volume of downloaded content, and other such quantities, all as a function of time. Similarly, the success of MPOWIR meetings and workshops can be measured by attendance and by estimates of the fraction of the community reached. We also use surveys, particularly for the Pattullo conference, to obtain valuable feedback from participants about their experience as we work to improve our future programs. Ultimately, the MPOWIR effort will be successful if we see an increase in the continuation rates from graduation to postdoc and from postdoc to principle investigator, and the percentage of women in leadership roles (principle investigators, department chairs, and participation on committees).

e. NASA MPOWIR Speaker Series

We launched the NASA MPOWIR Speaker Series in order to raise the awareness of MPOWIR within the NASA Labs and to familiarize junior women in the field with the research conducted at the NASA Labs. Each year, one junior participant will be invited to JPL for a seminar and visit; another participant will be invited to Goddard. This fall, MPOWIR received 10 applications and 2 junior women were selected. Feedback from the junior participants and senior hosts at NASA was extremely positive.

f. NOAA MPOWIR Internship

In partnership with NOAA, we began soliciting applications for the NOAA MPOWIR Internship in fall 2009. The goal of the NOAA MPOWIR internship program is to familiarize junior women in the field of physical oceanography with the research conducted at the NOAA labs and to afford NOAA scientists the opportunity to work with a graduate student on a project of joint interest. Each year, two junior scientists will be chosen for an internship at either AOML, GFDL or PMEL. The students will be integrated into an ongoing program of mutual interest for a period of 8 to 10 weeks. The students will be supervised and mentored by a designated NOAA researcher and 9 NOAA scientists volunteered to host an intern. Two internships at PMEL are currently underway.

6. Next steps

To continue to meet the MPOWIR objectives, several steps are currently underway. These include:

1. Expanding the MPOWIR effort. Our goal is to see other communities in the geosciences adopt a similar mentoring program. At the conference, we discussed ways to export our effort to other disciplines with the senior scientists in attendance. Now we will work on establishing partnerships with ESWN and chemical oceanography.

2. Additional mentoring groups. Two new mentoring groups are scheduled to go “online” in Fall 2010.

3. Advertisement of the MPOWIR effort and its activities via articles, presentations at national meetings and seminars at universities and institutions with physical oceanography programs. Articles are planned for *EOS* and for *NatureJobs.*

4. Website updates. We will continue to update the blog with articles, job postings, MPOWIR events, and mentoring resources. The site will also be reorganized and new content will be added.

5. Data gathering and surveying. The graduate database will be updated every fall and opinion surveys will be administered periodically.

6. Planning for the next Pattullo conference, scheduled for the spring of 2012. Data from the survey of past participants will aid these planning efforts.

7. Continuation of the NASA Speaker Series and NOAA Internship. Both programs will be advertised on the MPOWIR website and we will actively work with NASA and NOAA to provide these opportunities to junior scientists.

References:

1. Nelson, D.J., 2002, Nelson Diversity Surveys. Diversity in Science Association, Norman, OK.
2. Lozier, M.S. et al., 2005, MPOWIR Mentoring Physical Oceanography Women to Increase Retention. Report of a workshop held October 9-12, 2005. 32 pp. Available at http://www.mpowir.org.

Appendix 1: Pattullo Conference Attendees

Registrants:
Sheekela Baker (Massachusetts Institute of Technology)
Diane Bennett (University of Connecticut)
Valerie Bennington (University of Wisconsin – Madison)
Jessica Benthuysen (Woods Hole Oceanographic Institution)
Martha Buckley (Massachusetts Institute of Technology)
Fei Chen (Texas A&M University)
Laura Ciasto (Climate Change Research Centre)
Silvia T. Cole (Scripps Institution of Oceanography)
Xujing Jia Davis (Woods Hole Oceanographic Institution)
Stephanie Downes (Princeton University)
Melanie Fewings (University of California)
Michelle Marie Gierach (University of Miami – RSMAS)
Corinne A. Hartin (University of Miami – RSMAS)
Hristina G. Hristova (JISAO, University of Washington)
Erin Hult (Stanford University)
Detelina Ivanova (Lawrence Livermore National Laboratory)
Hsun-Ying Kao (Earth and Space Research)
Jessica Kleiss (University of Washington)
Tetyana Margolina (Naval Postgraduate School)
Colleen Mouw (University of Wisconsin – Madison)
Rym Msadek (GFDL/NOAA Princeton University)
Julia Mullarney (Washington State University - Vancouver)
Kerry J. Nickols (University of California, Davis)
Jaime Palter (Princeton University)
Berit Rabe (University of Delaware)
Emily Shroyer (Woods Hole Oceanographic Institution)
Debra Tillinger (Lamont-Doherty Earth Observatory)
Lora J. Van Uffelen (Scripps Institution of Oceanography)
Ana Carolina Vaz (University of Hawaii)
Sally Warner (University of Washington)

Invited Scientists:
Manda Adams (University of North Carolina – Charlotte)
Robert Beardsley (Woods Hole Oceanographic Institution)
Claudia Benitez-Nelson (University of South Carolina)
Meghan Cronin (NOAA/PMEL)
Wiilliam Dewar (Florida State University)
Rana Fine (University of Miami – RSMAS)
Silvia Garzoli (NOAA/AOML)
Tong Lee (NASA – JPL)
Sonya Legg (NOAA/GFDL)
Susan Lozier (Duke University)
Jeffrey Paduan (Naval Postgraduate School)
Alberto Scotti (University of North Carolina - Chapel Hill)
Kipp Shearman (Oregon State University)
Fiamma Straneo (Woods Hole Oceanographic Institution)
Amit Tandon (University of Massachusetts – Dartmouth)
LuAnne Thompson (University of Washington)

Additional Participants and Guests:
Sarah Clem (Duke University)
Lisa Gerber (Duke University)
Mary Anne Holmes (University of Nebraska - Lincoln)
Eric C. Itsweire (National Science Foundation)
Terri Paluszkiewicz (Office of Naval Research)
Ashleigh Rosette (Duke University)
Merlin Walberg (Phoenix Consultancy)

Appendix II – Pattullo Conference Agenda

Sunday

5:00 - 6:00 pm	Check in, pick up name tag and folder, attend reception at the Lodge
6:00 - 6:30 pm	Senior scientists - meet in the conference center
	Junior scientists - introductions at the Lodge
6:45 pm	Meet at the Lodge and walk to Middleton Place
7:00 - 7:30 pm	Dinner at Middleton Place, welcome and introductions by Susan Lozier
7:30 - 8:30 pm	Dinner
8:30 - 10:00 pm	Pattullo Keynote speaker Mary Anne Holmes, University of Nebraska - Lincoln

Monday

Breakfast buffet - food available at 8:00 am

8:30 am	Morning remarks and sign-ups for meeting activities
9:00 am - 12:00 pm	Junior scientist presentations (10 minute talks with break at ~10:45 am)
12:00 - 1:00 pm Lunch	
1:00 - 1:30 pm	One-on-one time (from sign-up sheets)
1:30 - 3:30 pm	Junior scientist presentations (10 minute talks with break at ~2:45 pm)
3:30 - 5:00 pm	Senior scientists - meet to discuss presentations and prepare for designing research projects followed by a research talk by Ashleigh Rosette, Duke University
	Junior scientists - meet with Merlin Walberg for review of presentations
5:00 - ?	Senior scientists - Giving and receiving feedback with Merlin Walberg
	Junior scientists - small groups
6:45 - ?	Shuttle departs at 6:45 pm
	Dinner off-site at Shem Creek (RB's - reservation at 7:30)

Tuesday

Breakfast buffet - food available at 7:30 am

8:00 - 10:00 am	Designing research projects small groups (9:15 am - concurrent session on writing proposals with Eric Itsweire)
10:00 - 11:00 am	Junior scientists - small groups
	Senior scientists - coaching behaviors with Merlin Walberg
11:00 am - 12:00 pm	Junior scientists - negotiations with Ashleigh Rosette
12:00 - 1:00 pm	Lunch
1:00 - 2:30 pm	Junior scientists - negotiations discussion with Ashleigh Rosette
	Senior scientists - discussion on extending the MPOWIR effort
2:30 - 3:00 pm	One-on-one time (from sign-up sheets)
3:00 - 4:30 pm	Large group - leadership development with Merlin Walberg
4:30 - 6:00 pm	Extended break for hiking, kayaking, site-seeing, etc.
6:15 -?	Shuttle departs at 6:15 pm
	Dinner off-site in downtown Charleston (Magnolia's - reservation at 7 pm)

Wednesday

Breakfast buffet and morning remarks - food available at 7:30 am

8:00 - 9:30 am	Designing research projects in small groups (8:45 am - concurrent session on writing proposals with Eric Itsweire)
9:30 - 10:30 am	Junior scientists - preparation for group presentation with Merlin
	Senior scientists - meet with Susan Lozier and discuss the conference
10:30 - 11:30 am	Junior scientists' group presentation
11:30 - 11:45 am	Break
11:45 am - 12:30 pm	Final remarks and slide show
12:30 pm	Lunch

Appendix III - Post Pattullo Survey of Junior and Senior Scientists	Junior Scientists		Senior Scientists	
	Average	St. Dev.	Average	St. Dev.
Please rate on a scale of 1-5 (poor-excellent)				
Networking opportunities	4.81	0.40		
Professional development opportunities	4.52	0.58		
Feedback on research	3.89	0.80		
Please rate on a scale of 1-5 (strongly disagree - strongly agree)				
My skills and expertise were used to their fullest.			4.13	0.64
My time was well spent at this conference.			4.67	0.62
I had enough information/background about the conference to participate fully.			4.40	0.74
I would attend another Pattullo Conference.			0.67	0.62
Please rate on a scale of 1-5 (not valuable - extremely valuable)				
Value of conference to you in your current position	4.59	0.69		
Expected value of conference to you for your future position	4.44	0.75		
Overall value of conference	4.70	0.47		
Perceived value of conference to the junior scientists			4.80	0.41
Value of conference to yourself			4.27	0.59
Please rate on a scale of 1-5 (definitely not - definitely)				
Would you recommend this conference to another junior scientist?	5.00	0.00	4.93	0.26
Would you recommend this conference to another senior scientist?	4.54	0.58	4.60	0.63
Programmatic Balance				
1 = Too much focus on research 5 = Good balance of research and professional development 10 = Too much focus on professional development	5.54	1.21	5.21	0.70
Please complete this sentence: At future conferences,				
1 = no mid-career/transitional scientists should attend, 2 = a few mid-career/transitional scientists should attend, but the majority of non-junior participants should be senior scientists in the field, 3 = more mid-career/transitional scientists should attend such that all career stages are represented.	2.52	0.51	2.27	0.59
1 = no one from outside of physical oceanography should attend, 2 = a few scientists outside of physical oceanography (biological, chemical, etc.) should attend, but the majority of participants should be physical oceanographers, 3 = more scientists outside of physical oceanography (biological, chemical, etc.) should attend such that all oceanography fields are represented.	2.07	0.47	1.93	0.26
1 = no non-academic scientists should attend, 2 = a few non-academic scientists should attend, but the majority of participants should be working in academia, 3 = more non-academic scientists should attend such that more scientists in alternative careers are represented	2.59	0.50	2.29	0.61
Should the balance of junior to senior scientists a) decrease (fewer senior scientists), b) stay the same, c) increase (more senior scientists)?	2.00	0.00	1.87	0.35
Should the total number of participants 1) decrease, 2) stay the same, 3) increase?	1.96	0.19	1.80	0.41
Please rate on a scale of 1-5 (poor - excellent)				
Communication, organization, and logistics by MPOWIR	4.81	0.40	4.87	0.35
Scheduling of conference (month, day, length of conference)	4.52	0.58	4.53	0.52
Conference folder and handout materials	4.59	0.57	4.67	0.49
Hotel facilities at Middleton Place	4.00	1.07	3.60	1.18
Meeting facilities at Middleton Place	4.15	0.86	3.47	0.99
Meals and refreshments at Middleton Place	3.26	1.20	3.07	1.16
Session Time and Value				

Time: Please rate on a scale of 1-3 (not enough time - too much time) **Value: Please rate on a scale of 1-5 (not valuable - extremely valuable)**	**Time (1-3)**	**Value (1-5)**	**Time**	**Value**	**Time (1-3)**	**Value (1-5)**	**Time**	**Value**
Check in and reception at the Lodge	1.69	3.35	0.55	0.78	1.93	3.55	0.27	0.69
Dinner, opening remarks, and introductions	2.08	4.13	0.27	0.45	2.00	3.93	0.00	0.73
Keynote presentation by Mary Anne Holmes	2.08	4.08	0.27	0.81	2.47	3.40	0.52	0.99
Research talks by Junior Scientists	2.07	4.30	0.55	0.67	2.20	4.60	0.77	0.51
One-on-one time	1.62	4.50	0.57	0.76	1.80	4.60	0.56	0.51
Designing research projects in small groups	2.04	4.35	0.59	0.94	2.07	4.36	0.46	0.74
Proposal discussion with Eric Itsweire	1.78	4.50	0.51	0.58	1.92	4.50	0.29	0.52
Seven Habits with Merlin Walberg	2.26	3.33	0.53	1.21	2.77	2.36	0.44	0.93
Question and answer session led by Junior Scientists	1.52	4.41	0.58	0.57	1.47	4.60	0.52	0.74
Slide show and final remarks	1.85	3.52	0.37	0.77	2.07	3.29	0.47	1.20
Presentation skills with Merlin Walberg	1.96	3.96	0.34	1.02				
Junior Scientist small groups	2.22	3.93	0.70	0.92				
Negotiations with Ashleigh Rosette	2.11	4.19	0.42	0.79				
Female leadership talk by Ashleigh Rosette					2.14	3.69	0.36	1.03
Coaching behaviors and feedback with Merlin Walberg					2.30	3.69	0.48	1.18
Extending the MPOWIR effort discussion					1.92	3.87	0.67	0.74
Discussion to give feedback about the conference					2.07	3.80	0.26	0.94
Extended break	1.74	NA	0.45	NA	1.79	NA	0.43	NA
Meals	1.96	NA	0.19	NA	2.00	NA	0.00	NA
Free time	1.59	NA	0.50	NA	1.73	NA	0.46	NA