

**Meeting Mentoring Needs in Physical Oceanography:
An Evaluation of the Impact of MPOWIR**

Supplementary Materials

This document includes statistical tables and explanations to supplement the main article. The discussion follows the order of material presented in the paper. To increase degrees of freedom and have the most valid results, the analysis reported in the text usually focuses on comparisons between MPOWIR participants and non-participants. The tables below provide details on these comparisons. In addition, results are included that compare (1) MPOWIR participants, (2) other women, and (3) men. It should be noted that four respondents chose “other” as their gender identification. For the three-group analyses, these respondents were grouped with women. This decision assumed that their gender choice could be seen as non-normative and they would be more likely to face exclusion or opposition, much as other minorities in the field.

Are the Groups Comparable?

Table S1 reports demographic characteristics of respondents in the three groups: MPOWIR women, other women, and men. Table S2 compares MPOWIR participants with non-participants (both men and women). Results indicate that respondents in the three groups did not differ significantly in age or marital status. Among non-students, the MPOWIR women had finished their degrees more recently (Tables S1 and S2). These differences appeared in both sets of comparisons.

Tables S3 and S4 report respondents’ perceptions of the demands of a career in oceanography and restrictions on their careers from family desires and obligations. Table S3 gives comparisons between the three groups, and Table S4 compares the participants and non-participants for students and non-students. As reported in the text, the differences were minimal. With measures of perceptions of the discipline, there were no significant differences between the groups in their views of the job market, work load expectations, the appeal of other careers, or reported encouragement from other oceanographers. With the three-group comparison, there was a significant interaction effect between student status and group on the perception of community commitment to diversity, reflecting a substantially higher perception of commitment among non-

student men (see top panel of Table S3). With the two-category analysis, there was a significant interaction regarding perceptions of the difficulty of the tenure and promotion process. With the family related measures, there were no significant differences in perceptions of the difficulty of balancing family and work or reports of conflicts from the career of spouse or partner. There was, however, a significant main effect of group with the three-group analysis, resulting from men being more likely than women to report that they had more geographic restrictions on their careers. It should be noted that Tables S3 and S4 include data from all respondents, whether or not they had mentors. When analyses were repeated with only those that had mentors, the differences became even smaller. (These analyses are available upon request.) Because the group with mentors was the focus of all of our remaining analyses, we do not believe the few differences reported in Tables S3 and S4 seriously challenge the conclusion that the groups are comparable.

Probability of Having a Mentor

Tables S5 and S6 summarize the analyses regarding whether or not respondents currently had mentors. Table S5 gives results with the three-category grouping and Table S6 gives results with the dichotomy, and, again, results are presented separately for students and non-students. All results indicate that the MPOWIR participants were more likely to currently have a mentor, although this difference was not statistically significant with the three-group comparison for non-students ($p = 0.12$). Female graduate students who did not participate in MPOWIR had notably lower rates of mentorship (37% compared to 55% for men and 94% for MPOWIR women). The effect size (Cohen's d) associated with the comparison for students was very large (1.06), while that for non-students was substantively important but smaller (0.36). Note that, throughout the analysis, probability levels for the t-tests are one-tail, reflecting the directional hypothesis that MPOWIR participants would be more likely to have mentors and more favorable career outcomes.

Subsequent analyses omit respondents who did not have mentors. As noted in the text, this reduced the sample size substantially for the two MPOWIR groups. Because analyses with the two-group comparison (MPOWIR vs. non-MPOWIR) have more degrees of freedom, they should be considered more accurate. As noted above, results are occasionally given within this

appendix for the three-group comparison, but these should be interpreted with caution given the relatively small sample size.

Characteristics of Mentors

Tables S7 and S8 summarize analyses of the number of mentors that respondents reported. Table S7 gives results comparing the three groups, and Table S8 reports the results with the two groups (MPOWIR and non-MPOWIR). Results are shown when the number of mentors is treated as a categorical variable and when it is reduced to a dichotomy, distinguishing those with two or fewer mentors from those with more. Analyses with the more powerful dichotomous comparisons indicate that, among graduate students, MPOWIR participants were significantly more likely than non-participants to have more than two mentors. While the same direction of differences appeared with non-students, it was not statistically significant. (See results in the last lines of each panel of Table S8.) The effect size for the comparison for students (0.61) would be considered large.

Table S9 reports data regarding the mentor's role. Results show that MPOWIR participants were significantly less likely to report that their mentors were also their advisors.

Table S10 reports the percentage of respondents who have mentors of the same gender. For both students and non-students, men were more likely to have a mentor of their own gender, no doubt reflecting the composition of the field as a whole. Differences for non-students were statistically significant and had a large associated effect size. There were no differences by group in the extent to which respondents reported having mentors of their own gender, reflecting the approximately equal numbers of men and women in the non-MPOWIR group ($t = 0.50$, $p = 0.62$).

Interactions with Mentors

Table S11 summarizes data on the topics discussed with mentors. The top panel reports the proportion of respondents who had discussed a given topic with their mentor, giving results by MPOWIR group for students and non-students. Results indicate that students were more likely to report discussing classwork and navigating graduate school, while those who had finished graduate school more often talked about long-term career issues (see total columns in the top

panel). The bottom panel reports results of two-way analyses of variance for each topic. The only significant differences that appeared involved issues related to graduate work: discussions of classwork and navigating graduate school ($p < 0.0001$). Students were significantly more likely to report talking about classwork ($p = 0.03$) and navigating graduate school ($p < 0.0001$). There was also a main effect of MPOWIR participation on discussions regarding graduate school ($p = 0.05$), with MPOWIR participants less often discussing this topic.

Table S12 reports the results of a factor analysis of responses to the series of items asking about the types of support received from mentors. Similar results were obtained when items from the series asking about the type of support wanted were analyzed. Principal components analysis with a varimax rotation was used. Initial analyses showed that three factors had eigenvalues greater than 1.0, and these were retained for the final model. Factor loadings are shown in the first three columns of data in Table S12, and the final column reports the communalities. High loadings on each factor are bolded. The bottom line reports the eigenvalues.

Based on the results of the factor analysis, additive scales were constructed combining items with high loadings on each factor. The scale based on factor 1 included items related to personal support: listening and understanding, building confidence, teaching by example, offering encouragement and tools to complete tasks, giving motivation, emotional support, and information about career paths. The scale based on factor 2 included items related to more direct career assistance, including coaching, providing “wise counsel,” being a role model, giving encouragement and advice, helping develop professional relationships, advocating when necessary, and soliciting input on his or her own work. The scale based on factor 3 involved items that could be seen as involving challenge and task management, including “challenge me,” keeping on schedule, helping secure funding, and assisting in writing. The “encouragement” item loaded highly on both factors 1 and 2 and was included on both. Responses to each item were coded as 1 = yes and 0 = no. Scale scores represent an average value across the items or the proportion of scale items that were endorsed by respondents.

The scales were highly reliable. All but one of the reliability coefficients (Cronbach’s alpha) exceeded 0.75 (Table S13). A difference score was also computed for each factor, subtracting the support received from the support desired, with higher values indicating that respondents wanted more of a given type of support than they received.

Table S14 reports the average scale and difference scores by group (MPOWIR vs. non-MPOWIR) and student status and the associated two-way analyses of variance. Results indicate that the MPOWIR attendees had significantly lower scores than other respondents on the scale regarding motivation and challenge and that this result appeared with both students and non-students. Table S15 examined differences on the scales and difference scores between the three groups (MPOWIR, other women and men) using one-way analyses of variance and Scheffe tests for post-hoc comparisons between the three groups. (Student status was not controlled in these analyses because almost all results regarding student status in Table S14 were not significant and to preserve degrees of freedom.) There were no differences among the groups in the amount of direct career assistance wanted or received, but there were differences in the other two areas. While the MPOWIR women and other women reported similar levels of personal support received and wanted, the men wanted substantially more support than they received (a difference of 0.32, compared to 0.13 and 0.15 for the other two groups of women).

With the scale regarding motivation and challenge, the MPOWIR group expressed wanting and receiving this type of support less often than members of the other two groups. However, this difference can be explained by the greater preponderance of advisors as mentors for the two non-MPOWIR groups. Table S16 summarizes regression analyses in which wanting (panel 1) and receiving (panel 2) support in this area is regressed on MPOWIR status (model 1) and MPOWIR status and having the advisor as a mentor. It can be seen that the relationship of MPOWIR to views of this area became insignificant in model 2 when the mentor as advisor relationship was controlled.

Meeting Career Goals

Table S17 summarizes data regarding the extent to which respondents believed they had met their career goals. The top panel has results for the three-group comparison and the bottom panel has results for the dichotomous comparison. MPOWIR participants were significantly more likely than non-MPOWIR respondents to report that they had met their career goals, but this difference largely reflects the relatively low attainment of the group of other women.

Table S18 summarizes differences between the three groups in responses to questions regarding whether or not they met obstacles in reaching their goals and whether they were

currently employed in oceanography. There were no differences across the three groups in responses.

Eight of the respondents had left oceanography, and Table S19 reports reasons that they gave for leaving the field. While the sample size is too small for valid statistical analyses, it should be noted that the respondents indicated a variety of reasons for this decision. Half of the respondents indicated that the appeal of other careers, geographic restrictions, and the ability to raise a family and “lead a balanced life” contributed to their decisions. Three of the eight women said that the tenure and promotion process and competitiveness in the job market were important factors.

Impact of MPOWIR on Participants

Table S20 reports data from the MPOWIR mentees regarding the impact of the program on their careers. Over three-fourths reported that participation had exposed them to useful professional development skills, impacted their professional network, influenced their ability to perform well in their current positions, and that they had been well mentored. Over half indicated that it had helped them balance work and family and almost one half of the non-students, but substantially fewer of the students, indicated that it had helped them obtain their current positions.

Table S21 reports data from the mentors. The mentors were also very positive, with at least half indicating that MPOWIR had helped them in all areas but obtaining their current positions. Given that the mentors were primarily well established in their careers before participating in the program, this result would be expected.

Table S1

Average Values on Demographic Characteristics, Students and Non-Students, MPOWIR, Non-MPOWIR Women, and Men

<i>Students</i>						
<u>Variable</u>	<u>MPOWIR</u>	<u>Other Women</u>	<u>Men</u>	<u>Total</u>	<u>F</u>	<u>prob</u>
Year born	1987	1988	1987	1988	1.28	0.29
Year of Highest Degree	2005	2005	2006	2005	0.09	0.91
Marital Status	1.5	1.5	1.5	1.5	0.11	0.90
N	16	45	13	74		
<i>Non-Students</i>						
<u>Variable</u>	<u>MPOWIR</u>	<u>Other Women</u>	<u>Men</u>	<u>Total</u>	<u>F</u>	<u>prob</u>
Year born	1980	1981	1980	1980	0.94	0.39
Year of Highest Degree	2008	2005	2007	2007	5.86	0.004
Marital Status	1.3	1.3	1.2	1.3	0.89	0.41
N	63	53	23	139		

Note: Degrees of freedom were 2, 71 for the analysis of students and 2, 136 for the analysis of non-students.

Table S2

Average Values on Demographic Characteristics, Students and Non-Students, MPOWIR Participants and Non-Participants

<i>Students</i>				
<u>Variable</u>	<u>Not-MPOWIR</u>	<u>MPOWIR</u>	<u>t</u>	<u>prob</u>
Year born	1988	1987	0.84	0.4
Year of highest degree	2005	2005	0.31	0.76
Marital status	1.5	1.5	0.12	0.12
N	58	16		
<i>Non-Students</i>				
<u>Variable</u>	<u>Not-MPOWIR</u>	<u>MPOWIR</u>	<u>t</u>	<u>prob</u>
Year born	1981	1980	0.54	0.59
Year of highest degree	2005	2008	3.10	0.002
Marital status	1.3	1.4	1.28	0.2
N	76	63		

Note: All probabilities are two-tail.

Table S3

Table 3

Perceptions of Career Demands and Restrictions, Three-Group Comparison

<u>Measure</u>	<u>Average Values</u>						
	<u>MPOWIR</u>	<u>Students</u>			<u>Non-Students</u>		
		<u>Other Women</u>	<u>Men</u>		<u>MPOWIR</u>	<u>Other Women</u>	<u>Men</u>
Job market in oceanography, very difficult	3.8	3.8	3.9	3.8	4.2	3.9	
Work load expectations, very high	4.3	4.0	3.9	4.1	3.9	3.9	
Community commitment to diversity very high	2.6	2.9	2.8	2.7	2.4	3.4	
Tenure and promotion process, very difficult	4.4	4.1	4.0	3.8	4.2	4.1	
Other careers very appealing	3.3	3.5	3.3	3.2	3.6	3.3	
Very Encouraged by other oceanographers	4.4	4.0	3.6	4.0	3.8	4.1	
Spouse's/partner's career poses no conflict	3.2	3.1	3.2	3.1	3.1	3.0	
Geographic restrictions very high	3.3	2.9	3.9	3.7	3.4	3.7	
Raising a family and leading a balanced life is very difficult	4.1	3.8	3.5	4.0	3.9	4.0	

	<u>Two-Way Analyses of Variance, F-Values</u>		
	<u>Group</u>	<u>Student</u>	<u>Interaction</u>
Job market in oceanography, very difficult	0.44	0.87	1.01
Work load expectations, very high	1.93	0.6	0.15
Community commitment to diversity very high	2.55	0.12	3.56*
Tenure and promotion process, very difficult	0.23	1.25	2.73
Other careers very appealing	1.12	0.03	0.20
Very Encouraged by other oceanographers	1.57	0.05	1.41
Spouse's/partner's career poses no conflict	0.02	0.37	0.11
Geographic restrictions very high	3.33*	0.32	0.45
Raising a family and leading a balanced life is very difficult	0.96	0.81	0.67

Note: Item description indicates meaning of higher score. Values could range from 1 to 5. For students, sample size for the MPOWIR group was 14 to 15, for the other women group was 44, and for men was 11. For non-students, sample size for MPOWIR was 61 to 63, for other women it was 38 to 44, and for men it was 18 to 20. * indicates $p < .05$

Table S4

Perceptions of Career Demands and Restrictions, Two-Group Comparison, Means by Group and Analysis of Variance Results

<i>Average Values</i>				
<u>Item</u>	<u>Students</u>		<u>Non-Students</u>	
	<u>Non-MPOWIR</u>	<u>MPOWIR</u>	<u>Non-MPOWIR</u>	<u>MPOWIR</u>
Job market in oceanography, very difficult	3.8	3.8	4.1	3.8
Work load expectations, very high	4.0	4.3	3.9	4.1
Community commitment to diversity very high	2.9	2.6	2.7	2.7
Tenure and promotion process, very difficult	4.1	4.4	4.1	3.8
Other careers very appealing	3.4	3.3	3.5	3.2
Very Encouraged by other oceanographers	3.9	4.4	3.9	4.0
Spouse's/partner's career poses no conflict	3.1	3.2	3.1	3.1
Geographic restrictions very high	3.1	3.3	3.5	3.7
Family/ balanced life is very difficult	3.8	4.1	3.9	4.0

<i>Two-Way Analyses of Variance, F- Ratios</i>			
<u>Item</u>	<u>Group</u>	<u>Student</u>	<u>Interaction</u>
Job market in oceanography, very difficult	0.62	1.16	0.77
Work load expectations, very high	3.72	0.99	0.27
Community commitment to diversity very high	0.47	0.04	0.57
Tenure and promotion process, very difficult	0.06	3.92*	5.32*
Other careers very appealing	1.12	0.00	0.24
Very Encouraged by other oceanographers	2.83	1.30	1.30
Spouse's/partner's career poses no conflict	0.02	0.28	0.02
Geographic restrictions very high	0.93	3.17	0.01
Family/ balanced life is very difficult	1.47	0.07	0.62

Note: * indicates $p < 0.05$, see Table S3 for other information.

Table S5

Percentage of Respondents Who Currently Have a Mentor by Group and Student Status

<i>Students</i>				
Mentor Status	MPOWIR	Other Women	Men	Total
No Mentor	6	63	45	47
Have Mentor	94	37	55	53
Total	100	100	100	100
N	16	43	11	70
Chi-square = 14.98, p = 0.001				
<i>Non-Students</i>				
Mentor Status	MPOWIR	Other Women	Men	Total
No Mentor	40	57	60	49
Have Mentor	60	43	40	51
Total	100.0	100.0	100.0	100.0
N	63	42	20	125
Chi-Square = 4.27, p = 0.12				

Note: DF = 2 for both chi-square tests.

Table S6*Probability of Currently Having Mentor, MPOWIR and Other Respondents, by Student Status*

<u>Mentor Status</u>	<u>Other</u>	<u>MPOWIR</u>	<u>Total</u>	<u>Cohen's d</u>	<u>t</u>	<u>prob.</u>
Students	0.41	0.94	0.53	1.06	4.11	0.0001
Not Students	0.42	0.60	0.51	0.36	2.07	0.02

Probability is one-tail reflecting the directional hypothesis.

Table S7*Number of Mentors by Group and Student Status*

<i>Students</i>				
<u>Number</u>	<u>MPOWIR</u>	<u>Other Women</u>	<u>Men</u>	<u>Total</u>
1 to 2	31	60	67	50
3 to 4	54	33	33	41
5 to 6	15	7	0	9
Total %	100	100	6	100
Total N	13	15	6	34
chi-square = 3.66, df = 4, p = 0.45				
<i>Non-Students</i>				
<u>Number</u>	<u>MPOWIR</u>	<u>Other Women</u>	<u>Men</u>	<u>Total</u>
1 to 2	47	47	25	44
3 to 4	37	41	63	41
5 to 6	16	12	12	14
Total %	100	100	100	100
Total N	38	17	8	63
chi-square = 1.99, df = 4, p = 0.74				

Note: Sample is limited to those with a mentor.

Table S8

Number of Mentors by MPOWIR Status, by Student Status, Number as Categorical and Dichotomy

<i>Students</i>		
<u>Number</u>	<u>Non-MPOWIR</u>	<u>MPOWIR</u>
Three Categories		
1 to 2	62	31
3 to 4	33	54
5 to 6	5	15
Total %	100	100
Total N	21	13
chi-square = 3.40, df = 2, p = 0.18		
Dichotomous Results		
More than 2 mentors	38	69
t = 1.80, df = 32, p = 0.04; Cohen's d = 0.61		
<i>Non-Students</i>		
<u>Number</u>	<u>Non-MPOWIR</u>	<u>MPOWIR</u>
Three Categories		
1 to 2	40	47
3 to 4	48	37
5 to 6	12	16
Total %	100	100
Total N	25	38
chi-square = 0.79, df = 2, p = 0.67		
Dichotomous Results		
More than 2 mentors	60	53
t = 0.57, df = 61, p = 0.28		

Note: Values are percentages. Probabilities for t-ratios are one-tail reflecting the directional hypothesis. Percentages given in results for the dichotomous measure reflect the percentage of respondents reporting more than 2 mentors. Results limited to respondents with mentors.

Table S9*Proportion of Mentors Who Were Advisors by MPOWIR and Student Status*

<u>Student Status</u>	<u>Non- MPOWIR</u>	<u>MPOWIR</u>	<u>t-ratio</u>	<u>prob.</u>	<u>Cohen's d</u>
Students	0.82	0.53	1.90	0.03	0.30
Non-Students	0.58	0.32	2.12	0.02	0.52

Note: Probability levels are one-tail reflecting the directional hypothesis.

Table S10

Percentage of Respondents with Mentors of Same Gender by Student Status and Gender of Mentee

<u>Group</u>	<u>Women</u>	<u>Men</u>	<u>t-ratio</u>	<u>prob.</u>	<u>Cohen's d</u>
Students	39	50	0.047	0.32	0.22
Non-Students	49	88	2.07	0.02	0.76
Total Group	46	71	1.79	0.04	0.52

Note: Degrees of freedom = 32 for student group, 59 for non-students, and 93 for the total group. There were 6 men in the student group and 8 in the non-student group.

Table S11

Topics Discussed with Mentor by Student and MPOWIR Status and Results of Two-Way Analysis of Variance

<i>Proportions</i>						
<u>Topic</u>	<u>Student</u>			<u>Not Student</u>		
	<u>Not MP</u>	<u>MPOWIR</u>	<u>Total</u>	<u>Not MP</u>	<u>MPOWIR</u>	<u>Total</u>
Research	0.95	0.87	0.92	0.88	0.89	0.89
Teaching responsibilities	0.36	0.20	0.30	0.15	0.24	0.20
Classwork	0.36	0.20	0.30	0.12	0.11	0.11
Navigating graduate school	0.68	0.53	0.62	0.23	0.05	0.12
Applying for jobs	0.55	0.73	0.62	0.65	0.74	0.70
Negotiating	0.14	0.07	0.11	0.23	0.29	0.27
Long term career	0.55	0.40	0.49	0.65	0.76	0.72
Family/Personal	0.45	0.40	0.43	0.42	0.53	0.48
N	22	15	37	26	38	64

<i>Results of Two-Way Analysis of Variance</i>						
<u>Topic</u>	<u>MPOWIR</u>		<u>Student status</u>		<u>Interaction</u>	
	<u>F</u>	<u>prob</u>	<u>F</u>	<u>prob</u>	<u>F</u>	<u>prob</u>
Research	0.37	0.54	0.11	0.74	0.59	0.44
Teaching responsibilities	0.20	0.65	0.92	0.34	1.88	0.17
Classwork	1.21	0.27	4.70	0.03	0.94	0.33
Navigating graduate school	3.90	0.05	31.7	<.0001	0.03	0.85
Applying for jobs	1.86	0.18	0.32	0.57	0.28	0.6
Negotiating	0.00	0.95	3.46	0.07	0.57	0.45
Long term career	0.03	0.86	5.59	0.02	1.63	0.20
Family/Personal	0.05	0.82	0.20	0.66	0.55	0.46

Table S12*Factor Analysis of Items Regarding What Mentors Do for the Mentees*

<u>Variable</u>	<u>Factor Loadings</u>			<u>Commun.</u>
	<u>Factor1</u>	<u>Factor2</u>	<u>Factor3</u>	
Listen/understands me	0.64	0.23	0.05	0.46
Challenge me	0.16	0.30	0.53	0.40
Coach me	0.28	0.47	0.36	0.43
Build self confidence	0.60	0.15	0.23	0.44
Provide wise counsel	0.28	0.61	0.13	0.46
Teach by example	0.55	0.20	0.21	0.39
Are a role model	0.15	0.65	0.23	0.50
Offer encouragement	0.44	0.47	0.07	0.42
Give advice	0.32	0.42	0.03	0.28
Offer tools to complete tasks	0.55	0.10	0.41	0.48
Keep me on schedule	0.15	0.13	0.28	0.12
Motivate me	0.50	0.32	0.10	0.36
Help me secure funding	0.08	0.13	0.57	0.35
Help develop professional relationships	0.31	0.44	0.36	0.42
Assist in writing	0.15	0.19	0.60	0.42
Advocate for me when necessary	0.18	0.46	0.33	0.36
Provide emotional support	0.52	0.23	0.16	0.35
Provide information about career paths	0.55	0.24	-0.01	0.36
Solicit my input on his/her work	0.12	0.25	0.32	0.18
Eigenvalues	2.90	2.37	1.90	

Table S13

Reliability (Cronbach's Alpha) of Additive Scales of Support Want and Get from Mentors

<u>Scale</u>	<u>Want</u>	<u>Receive</u>
Factor 1: Personal Support	0.85	0.82
Factor 2: Career Assistance	0.85	0.81
Factor 3: Motivation/Encouragement	0.77	0.66

Table S14

Average Scale Scores of Help Want and Receive from Mentors by MPOWIR Dichotomy and Student Status, and Two-Way Analyses of Variance

<i>Mean Values</i>						
<u>Scale</u>	<u>Student</u>			<u>Not Student</u>		
	<u>Not MP</u>	<u>MPOWIR</u>	<u>Total</u>	<u>Not MP</u>	<u>MPOWIR</u>	<u>Total</u>
Want Personal Support	0.75	0.61	0.69	0.65	0.66	0.66
Want Career Assistance	0.79	0.67	0.74	0.77	0.8	0.79
Want Motivation/Challenge	0.75	0.51	0.65	0.61	0.48	0.53
Receive Personal Support	0.51	0.52	0.52	0.5	0.52	0.51
Receive Career Assistance	0.66	0.53	0.61	0.69	0.77	0.73
Receive Motivation/Challenge	0.6	0.37	0.51	0.51	0.37	0.43
Diff. Factor 1, Personal Support	0.24	0.08	0.18	0.16	0.14	0.15
Diff. Factor 2, Career Assistance	0.13	0.14	0.14	0.09	0.03	0.05
Diff. Factor 3, Motivation	0.15	0.13	0.15	0.1	0.11	0.11
N	22	15	37	26	38	64

<i>Two-Way Analysis of Variance Results</i>						
<u>Scale</u>	<u>MPOWIR</u>		<u>Student Status</u>		<u>Interaction</u>	
	<u>F</u>	<u>prob</u>	<u>F</u>	<u>prob</u>	<u>F</u>	<u>prob</u>
Want Personal Support	0.95	0.33	0.1	0.75	1.17	0.29
Want Career Assistance	0.67	0.42	0.79	0.37	1.36	0.25
Want Motivation/Challenge	6.81	0.01	1.46	0.23	0.68	0.41
Receive Personal Support	0.08	0.77	0.02	0.89	0.00	0.99
Receive Career Assistance	0.21	0.65	4.38	0.04	2.92	0.09
Receive Motivation/Challenge	7.94	0.01	0.56	0.46	0.45	0.50
Diff. Factor 1, Personal Support	2.52	0.12	0.05	0.83	1.78	0.18
Diff. Factor 2, Career Assistance	0.23	0.63	2.72	0.10	0.57	0.45
Diff. Factor 3, Motivation	0.01	0.93	0.4	0.53	0.07	0.79

Note: Higher difference scores indicate respondents want more support than they receive.

Table S15

Average Scale Scores of Help Want and Receive from Mentors by Group, Analysis of Variance Results and Scheffe Comparisons

<i>Average Values and One-Way Analyses of Variance</i>						
<u>Scale</u>	<u>MPOWIR</u>	<u>Other Women</u>	<u>Men</u>	<u>Total</u>	<u>F</u>	<u>p</u>
Want Personal Support	0.65	0.68	0.75	0.67	0.56	0.57
Want Career Assistance	0.76	0.74	0.88	0.77	1.06	0.35
Want Motivation/Challenge	0.49	0.67	0.69	0.58	3.75	0.03
Receive Personal Support	0.52	0.53	0.43	0.51	0.50	0.61
Receive Career Assistance	0.70	0.66	0.72	0.69	0.31	0.74
Receive Motivation/Challenge	0.37	0.55	0.54	0.46	4.29	0.02
Diff. Factor 1, Personal Support	0.13	0.15	0.32	0.16	3.22	0.04
Diff. Factor 2, Career Assistance	0.06	0.09	0.15	0.08	0.92	0.40
Diff. Factor 3, Motivation	0.12	0.12	0.14	0.12	0.05	0.95
N	53	34	14	101		
<i>Scheffe Probabilities</i>						
<u>Scale</u>	<u>MPOWIR v. Other Women</u>		<u>MPOWIR v. Men</u>		<u>Other Women v. Men</u>	
Want Personal Support	0.92		0.58		0.78	
Want Career Assistance	0.97		0.43		0.38	
Want Motivation/Challenge	0.06		0.16		0.99	
Receive Personal Support	0.99		0.66		0.63	
Receive Career Assistance	0.82		0.96		0.78	
Receive Motivation/Challenge	0.03		0.18		0.99	
Diff. Factor 1, Personal Support	0.94		0.05		0.11	
Diff. Factor 2, Career Assistance	0.87		0.40		0.66	
Diff. Factor 3, Motivation	1.00		0.96		0.96	

Table S16

Regressions of Factor 3, Motivation and Encouragement, Want and Receive, on MPOWIR and Mentor as Advisor

<i>Want Motivation and Encouragement</i>				
<u>Independent Variables</u>	<u>Model 1</u>		<u>Model 2</u>	
	<u>b</u>	<u>prob</u>	<u>b</u>	<u>prob</u>
MPOWIR	-0.19	0.007	-0.11	0.12
Advisor is mentor	-----	-----	0.26	<.001
Constant	0.675	<.001	0.49	<.001
R sq	0.07	0.007	0.2	<.0001
<i>Receive Motivation and Encouragement</i>				
<u>Independent Variables</u>	<u>Model 1</u>		<u>Model 2</u>	
	<u>b</u>	<u>prob</u>	<u>b</u>	<u>prob</u>
MPOWIR	-0.18	0.004	-0.1	0.09
Advisor is mentor	-----	-----	0.25	<.001
Constant	0.55	<.001	0.38	<.001
R sq	0.08	0.004	0.22	<.0001

Note: N = 101

Table S17*Proportion of Respondents That Had Met Career Goals, by Group*

<i>Three-Group Comparison</i>					
	<u>MPOWIR</u>	<u>Other women</u>	<u>Men</u>	<u>F</u>	<u>Prob.</u>
Prop yes	0.45	0.11	0.38	3.25	0.05
N	38	18	8		
Scheffe Probabilities					
MPOWIR v. Other Women	0.05				
MPOWIR v. Men	0.92				
Other Women v. Men	0.41				
<i>MPOWIR versus Non-MPOWIR Comparison</i>					
	<u>Not MPOWIR</u>	<u>MPOWIR</u>	<u>t-ratio</u>	<u>Prob.</u>	<u>Cohen's d</u>
Prop yes	0.19	0.45	2.15	0.02	0.25
N	26	38			

Note: Data limited to respondents who had finished Ph.D. Proportion for total group was 0.34, n = 64.
 Probability for t-value is one-tail.

Table S18*Encountered Obstacles in Reaching Goal and Current Field of Work by Group*

<u>Question</u>	<u>MPOWIR</u> <u>Women</u>	<u>Non-</u> <u>MPOWIR</u> <u>Women</u>	<u>Men</u>	<u>Total</u>	<u>Chi-Sq</u>
Encountered obstacles in reaching goal	65.8	77.8	62.5	68.8	0.98
Currently working in oceanography	84.2	94.4	87.5	87.5	1.17
N	38	18	8	64	

Note: Questions only asked of those who weren't students. * indicates that probability < 0.05.

Table S19*Reasons for Leaving Oceanography*

<u>Reason</u>	<u>N out of 8</u>
Appeal of other careers	4
Geographic restrictions	4
Ability to raise a family and lead a balanced life	4
Tenure and promotion process for university and research position	3
Competitiveness in job market	3
Work load expectations	2
Other	2
Community's commitment to diversity	1
Lack of encouragement from other oceanographers	1
Spouse's partner's career	1

Table S20*Rated Impact of MPOWIR by Participants (Mentees)*

<u>Item</u>	<u>To a great extent</u>	<u>Somewhat</u>	<u>Neutral</u>	<u>Very little</u>	<u>Not at all</u>
To what extent did MPOWIR aid you in your efforts to obtain your current position?	26	22	17	11	24
To what extent has MPOWIR exposed you to useful professional development skills, e.g. negotiation skills?	48	34	10	5	3
To what extent has MPOWIR influenced your ability to balance work and family?	19	39	29	5	8
To what extent has MPOWIR impacted your professional network?	45	44	3	3	5
To what extent has MPOWIR influenced your ability to perform well in your current position?	24	53	17	2	5
How well do you feel you have been mentored via your MPOWIR connections?	48	36	7	5	3

Note: Values are percentages. Data limited to those who participated in MPOWIR. Sample size ranges from 54 to 62.

Table S21*Rated Impact of MPOWIR, Women Born Before 1973 Who Participated in MPOWIR (Mentors)*

<u>Item</u>	<u>To a great extent</u>	<u>Somewhat</u>	<u>Neutral</u>	<u>Very little</u>	<u>Not at all</u>
To what extent did MPOWIR aid you in your efforts to obtain your current position?	6.3	12.5	12.5	6.3	62.5
To what extent has MPOWIR exposed you to useful professional development skills, e.g. negotiation skills?	33.3	27.8	16.7	16.7	5.6
To what extent has MPOWIR influenced your ability to balance work and family?	12.5	37.5	0.0	37.5	12.5
To what extent has MPOWIR impacted your professional network?	41.2	23.5	11.8	11.8	11.8
To what extent has MPOWIR influenced your ability to perform well in your current position?	41.2	17.7	17.7	11.8	11.8
How well do you feel you have been mentored via your MPOWIR connections?	35.3	17.7	23.5	0.0	23.5

Note: Sample size ranged from 16 to 17.