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Perceptions of Skill Development of Participants in Three National Career Development Programs For Women Faculty in Academic Medicine

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Abstract

Purpose—The Association of American Medical Colleges (AAMC) and Drexel University College of Medicine have designed and implemented national career development programs (CDPs) to help women faculty acquire and strengthen skills needed for success in academic medicine. The authors hypothesized that skills women acquired in CDPs would vary by career stage and program attended.

Method—In 2011, the authors surveyed a national cohort of 2,779 women listed in the AAMC Faculty Roster who also attended one of three CDPs (Early- and Mid-Career Women in Medicine Seminars, and/or Executive Leadership in Academic Medicine) between 1988 and 2010 to examine their characteristics and CDP experiences. Participants indicated from a list of 16 skills whether each skill was newly acquired, improved, or not improved as a result of their program participation.

Results—Of 2537 eligible CDP women, 942 clicked on the link in an invitation e-mail and 879 (35%) completed the survey. Respondents were representative of women faculty in academic medicine. Participants rated the CDPs highly. Almost all reported gaining and/or improving skills from the CDP. Four skills predominated across all three programs: interpersonal skills, leadership, negotiation, and networking. The skills that attendees endorsed differed by respondents' career stages, more so than by program attended.

Conclusions—Women participants perceived varying skills gained or improved from their attendance at the CDPs. Determining ways in which CDPs can support women's advancement in academic medicine requires a deeper understanding of what participants seek from CDPs and how they use program content to advance their careers.

More than 10 years ago, the Association of American Medical Colleges' (AAMC) Increasing Women's Leadership in Academic Medicine Project implementation committee indicated that "the long-term success of academic health centers is inextricably linked to the development of women leaders."¹ Despite modest gains since then, women continue to be underrepresented, as compared with men, at the highest levels of academic rank and in leadership positions in academic medicine.² For example, from 1989 to 2011, the proportion of women holding department chair positions increased from 5% to only 13%.^{3,4}

In order to be promoted and retained in academic medicine, women faculty must make decisions regarding their personal lives (e.g., childbirth, child rearing, elder care) at the same time that they face increasingly complex organizational policies, practices, and cultures that challenge them at each successive stage of career development.⁵ In late 2008 the National Institutes of Health (NIH), awarded 14 research grants to study the impact of interventions

designed to promote and support the careers of women in biomedical and behavioral science and engineering.⁶⁻⁸ Supported by one of these grant awards, we designed a study to examine the ways in which participation in three national career development programs (CDPs) have shaped career trajectories among women who currently hold faculty positions in academic medical institutions (i.e., schools of medicine).

Background

Appreciating the need to achieve a critical mass of women with leadership skills in academic medicine, the AAMC⁹ and the Medical College of Pennsylvania (now Drexel University College of Medicine) have designed and implemented national-level CDPs for women faculty in the last 25 years.¹⁰

In 1988, the AAMC held its first Women in Medicine (WIM) Professional Development Seminar to provide a support network and career development for women in academic medicine. In 1993, this initiative evolved into two distinct CDPs: Junior Women and Senior Women in Medicine (JrWIM and SrWIM), which subsequently became, respectively, the Early-Career and Mid-Career Women in Medicine Seminars (EWIMS and MidWIMS).⁹ Women in the early stages of their career (instructors, lecturers, and assistant professors) tend to participate in EWIMS whereas associate and full professors participate in MidWIMS. These 3- to 4-day programs provide dedicated time to sharpen skills, obtain knowledge, and engage in strategic career planning necessary for successful careers, preparation for promotion to higher ranks, and success as a senior faculty member and in positions of leadership.

In 1995, leaders at Drexel University College of Medicine welcomed the first class of women faculty into the Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM) program.¹⁰ The ELAM program differs from the AAMC programs in its duration (a 1-year, part-time fellowship with 18 days in residence), focus on strategic finance, intentional community building among a large network of women leaders in academic medicine, and mentored institutional action project. It targets women who have been successful in their academic careers and are supported by their institutions for their leadership potential.¹¹

These three CDPs – EWIMS, MidWIMS, and ELAM – are intended to assist women in reaching their career goals more successfully by “equipping” them with the necessary skills as they advance in academic medicine.¹² All three are offered annually, are well-respected nationally, and have high levels of participant satisfaction.¹⁰ Participants are selected from a competitive pool of candidates holding appointments from academic medical institutions in the United States and Canada. Between 1988 and 2010, 4,575 women faculty completed at least one of these programs; they form the population from which our study cohort was drawn.¹³

In order to assess the impact of participation in intensive career development training programs, we developed a conceptual model that depicted the factors we believed influenced career advancement.¹⁴ We present here the first analysis in a planned series of studies about the experiences, perspectives, and outcomes of participants in these programs. Future

publications will address the impact of these programs on promotion, retention, and appointment to leadership positions; share stories from interviews with CDP participants; and provide perspectives of focus groups with institutional leaders. We hypothesized that the skills women acquired at a CDP would vary by career stage and program attended.

Method

Survey development

We designed a survey instrument to determine the characteristics and program experiences of faculty who participated in any of the three CDPs between 1988 and 2010. We derived survey items from discussions about the program agendas with both former and current CDP leaders of the AAMC and ELAM and from a review of the literature on benefits of professional development.^{14,15}

Eighteen items asked about current professional status (e.g., degree, academic rank, work history, leadership aspirations) and five addressed demographics (e.g., age, race and ethnicity, family life). Then, each survey was tailored to the experience of respondent according to the programs (i.e., EWIMS, MidWIMS, and/or ELAM) they identified as having attended. Ten items queried participants' encounter with each CDP and their academic rank at the time of participation. One item asked them to judge whether they attended the CDP at the right time, too early, or too late in their career trajectory. Another asked them to rate each of the programs they attended (better than, just as good as, or not as good as others, or first such program in career). From a list of 16 skills, participants indicated whether each skill was newly acquired, improved, or not improved as a result of their CDP participation. We piloted the survey among the research team member to ensure content validity and ease of online navigation and made small changes to improve clarity. The internal consistency of responses for each of the three programs ranged from .78 to .91 (Cronbach alpha).

Recruitment of study sample and survey administration

Staff from the AAMC and ELAM created a master list of 4,575 individuals who attended at least one CDP between 1988 and 2010 (hereafter referred to as "CDP women") and who were believed to currently hold appointments in academic medical institutions in the United States and Canada. AAMC staff matched participant names with the AAMC Faculty Roster database to confirm faculty appointments and then reduced the master list to exclude individuals who no longer held appointments in academic medical institutions (e.g., left academic medicine, retired, or were deceased). During the first week of February 2011, AAMC staff distributed an email to the cohort of 2,779 CDP women (61% of 4,575) who they identified as currently holding appointments in academic medicine, inviting them to complete a survey about their experience in the programs. The email invitation included a statement advising that by clicking on the link to enter the survey domain they were consenting to participate with the assurance of anonymity. AAMC staff sent reminder emails every two weeks until the survey closing date at the end of April 2011. The authors obtained human subject institutional approvals from the University of New Mexico, MD Anderson Cancer Center, and Drexel University College of Medicine.

In 2011, we administered the Advancing Women Skills Survey using the Research Electronic Data Capture (REDCap), a web-based electronic data capture application available to institutions that are recipients of NIH Clinical and Translational Science Awards. (DHHS/NIH/NCRR #1UL1RR031977-01).

Of the 2,779 e-mail invitations sent, 242 were returned as "delivery failed"; we cannot verify delivery or receipt of the remaining 2,537. We know that 942 invitation were opened because the link within the email was clicked, which activated the electronic survey, and the information logged in the REDCap system. Of the individuals who opened the invitations, 879 (93%) completed the survey (35% of eligible women). To minimize recall errors, we excluded 25 respondents who attended only the original WIM programs held between 1988–1992, which brought the analytical cohort to 845 CDP women (hereafter referred to as the “cohort”).

Data preparation and analysis

REDCap generated a data file that scored item responses on a dichotomous scale (1, “yes”; 0 or blank, “no”). Human participant protection policies required the inclusion of a response option of “I prefer not to answer this question”; when participants selected this option, we treated it as missing data, as we did unanswered items. In total, missing data accounted for fewer than 2% of all responses to the survey items. To minimize recall errors and to allow for a more robust comparison, we combined reports of “new skills acquired” with those “improved” to create a skill set of “new and/or improved” skills. We coded moves from one institution to another to include only those subsequent to first academic faculty appointment (thus removing the large number of expected moves for residency, fellowship and/or graduate training). Total respondent numbers vary in the data reported below because not everyone answered all questions in the survey.

We created three data sets for analysis: EWIMS, which combined data from JrWIM and EWIMS participants; MidWIMS, which combined data from SrWIM and MidWIMS participants; and ELAM. We analyzed the data comparatively by rank and CDP using descriptive statistics and nonparametric procedures. We used SPSS version 19 (IBM Corporation) for our analyses.

Results

As reported above, 35% of eligible CDP women (879/2,537) completed the survey. We excluded 25 respondents who only attended the original WIM, for an analytical cohort of 845 CDP women.

Respondent characteristics

To determine the comparability of our cohort to the larger population of CDP women, we examined the demographic characteristics of each group. We found no significant differences ($p < .05$) in demographic characteristics between the larger population of CDP women and our cohort sample. The proportion of women attending EWIMs was 39% in the population of CDP women as compared with 41% in the cohort sample; in MidWIMs, the proportions were 45% compared with 38%; and in ELAM, the proportions were 17%

compared with 21%. By rank, there is a less than 2% difference between the larger population of CDO women and cohort at each rank.

Table 1 reports the characteristics and work experiences of the 845 individuals comprising our study cohort.

Demographics—The majority of the 845 respondents self-identified themselves as white (84%, 712/845); were MDs (68%, 578/845 including 34 MD/PhDs); and reported that they currently held an academic rank of associate (35%, 286/826) or full professor (50%, 410/826). Almost half were in the nontenure (clinician or research) track (45%, 371/821); 26% (217/821) were in the tenure track; and 28% (233/821) were already tenured.

Work attributes—More than half of the respondents reported working as clinicians or clinical educators (60%, 362/607). Most provided clinical care (97%, 592/609) and the majority of these provided specialty care only or together with primary care (85%, 505/592). Almost all currently worked full-time (95%, 793/832) and most (78% 650/832) held an administrative role. Current full-time employment was significantly associated with holding an administrative role (79%, 622/786, $P<.02$) and with the rank of full professor (51%, 411/811, $P<.006$). Of the 808 women who provided information on both geographic moves and rank, 60% (488) reported that their career pathway included at least one move to a new institution after completing residency, fellowship and/or graduate training. The difference in geographic moves among respondents by academic rank was not statistically significant ($P>.05$).

Overall, 66% (443/673) of the respondents reported that they had “aspirations to a leadership role beyond that which [they had] already attained.” The proportion of these differed by academic rank at the time of the survey. Analysis of data from the 542 women who responded to questions about both current rank and further leadership aspirations revealed that full professors (247, 46%) were significantly more likely than associate (195, 36%) or assistant (100, 19%) professors to have further leadership aspirations ($P<.001$).

Overall, 60% (500/839) of the respondents reported that they currently had a mentor. Full professors (224, 45%) were significantly more likely than associate (177, 35%) and assistant (99, 20%) professors to report having a mentor ($P<.001$).

Respondent attendance and ratings of CDP experience

Of the 845 respondents, 81% (685) had participated in only one of the three programs examined in our study: 45% (306) in EWIMS, 37% (252) in MidWIMS, and 19% (127) in ELAM. Of the remaining 19% (160) of respondents, most (88%, 140) went to two CDPs and only 2% (14) reported going to all three. We present the findings relevant to CDP experience for the combined cohort of single- and multiple-program attendees, because we found no significant differences among the demographics or skills they reported.

At the time of their CDP participation, nearly all (95%, 363/382) respondents who attended EWIMS were assistant professors and 5% (19) were associate professors. Of the 373 respondents who attended MidWIMS, almost three-fourths (72%, 270) were associate

professors, 12% (45) were assistant professors, and 15% (56) were full professors. The 203 ELAM attendees were a mixture of full (57%, 115) and associate (43%, 88) professors.

A higher proportion of participants who attended EWIMS (80%, 325/405) and ELAM (84%, 174/207) reported that they had attended the program at the “right time” in their career as compared with participants who had attended MidWIMS (69%, 242/353). Correspondingly, more participants who attended MidWIMS (28%, 97) indicated they had attended the CDP “too late” in their career as compared with those who attended EWIMS (12%, 50) and ELAM (14%, 29) ($P<.001$).

Almost half of respondents (45%, 181/407) reported that EWIMS was the first CDP they had attended, 37% (137/370) reported MidWIMS was their first CDP, and 23% (48/209) reported ELAM was their first CDP. Among respondents who reported having attended other training programs, significantly more rated the two AAMC and ELAM programs as “better than” others they had attended (EWIMS 81%, 182/226; MidWIMS 57%, 133/233; ELAM 87%, 140/161) ($P<.003$).

Skill development across the CDPs

Nearly all respondents, regardless of CDP attended, reported overall gain in skills (EWIMS, 95% [396/416]; MidWIMS, 93% [356/382]; ELAM, 99% [211/214]; see Table 2).

Regardless of academic rank or program attended, 4 of the 16 skills appeared among the top five selected: interpersonal skills, leadership, negotiation, and networking. Three skills showed a connection to specific programs: planning for promotion (EWIMS), communication (MidWIMS and ELAM), and finance (ELAM).

Further comparative analysis among the three programs found that significantly more ELAM attendees than EWIMS or MidWIMS attendees reported gaining or improving 11 of the 16 skills (Table 2). The only skills not significantly associated with ELAM were achieving work/life balance, interview preparation, managing difficult discussions, mentoring, and planning for promotion. Two of these skills (achieving work/life balance and planning for promotion) were reported significantly more often by EWIMS participants than by MidWIMS and ELAM ($P<.001$). MidWIMS attendees did not report any particular skill more often than other CDP attendees to a level of statistical significance, although the skills they selected aligned more closely with those of the ELAM participants than EWIMS attendees.

Skill Development by Academic Rank

Skills gained and/or improved differed by participants' academic rank as well as the AAMC CDP program (EWIMS or MidWIMS) they attended (see Table 3). The top five skills that assistant professors attending EWIMS reported as gained and/or improved included interpersonal skills, leadership, negotiation, networking, and planning for promotion. Associate professors attending EWIMS endorsed almost the same list, except that communication replaced planning for promotion. Assistant professors attending MidWIMS were similar to their EWIMS counterparts in choosing interpersonal skills, leadership, negotiation, networking and planning for promotion, and they also identified managing

difficult discussions. Associate professors attending MidWIMS selected a top five skill set that exactly matched those of their associate professor EWIMS counterparts: interpersonal skills, leadership, negotiation, networking, and communication. Full professors attending MidWIMS (none of whom had participated in EWIMS) selected four of the same top five skills as associate professors, but leading meetings replaced negotiation.

Statistical analysis of the differences by rank found that assistant professors in both AAMC CDPs were significantly more likely to report gaining skills in planning for promotion than were associate or full professors ($P=.001$). Communication was selected by proportionately more full than associate or assistant professors who attended MidWIMS ($P=.043$; Table 3).

Table 4 presents the new and/or improved skills reported by ELAM participants by academic rank. Three skills appear among the top skills for both ranks: leadership and networking (both also identified with the AAMC programs), and finance (unique for ELAM). Associate professors attending ELAM also selected managing difficult discussions and negotiation, while full professors selected communication and interpersonal skills. Statistical analysis of the differences by rank within ELAM participants found that leadership ($P=.043$), managing difficult discussions ($P=.055$), and planning for promotion ($P=.002$) were skills that associate professors were significantly more likely than full professors to report as new and/or improved.

Discussion and Conclusions

We report here the results of the first comparative analysis of how women faculty participants perceive the contributions of three longstanding national CDPs in academic medicine—the AAMC’s seminars for early-career and mid-career faculty (EWIMS and MidWIMS), and ELAM—to their armamentarium of work-related skills. Respondents represented 19% (879/4575) of all CDP participants over the past 22 years and 35% (879/2537) of those were identified as faculty at academic medical institutions who were accessible by email at the time of the study. As the respondents were predominantly white/non-Hispanic and full-time medical specialists, mirroring the population eligible for this study, we consider them a representative sample.

Nearly all of the respondents reported having gained and/or improved skills as a result of their participation in a CDP, a finding which confirms other reports on the benefits of such programs.^{16–20} Participants rated the CDPs highly; more than 81% of EWIMS participants and 87% of ELAM participants rated the programs “better than” other (unspecified) training programs they had attended. Participants perceived the “value added” from MidWIMS participation as less than that of EWIMS and ELAM, and the data show a less robust alignment between career stage and MidWIMS than with the other two programs. This weaker alignment between career stage and program (assistant, associate, and full professors attended MidWIMS) may explain why new and/or improved skills were not as strongly endorsed by MidWIMS participants and why attendees held MidWIMS in lower regard as compared with EWIMS and ELAM.

We have previously described our model of systems of career influences on women's progression to advanced academic rank. Our model situates faculty development in four domains of the academic medical environment: personal and professional roles and values; engagement in career development; societal expectations and bias; and institutional resources and strategies.¹⁴

For this first analysis in the planned series of studies, we hypothesized that the skills women faculty acquire at a CDP would vary by career stage and program attended. This hypothesis was partially supported by our findings in this study. Our study showed that four new and/or improved skills predominated across all three programs: interpersonal skills, leadership, negotiation, and networking. These skills are typical competencies for leaders in academia and health care.^{17,21} When we analyzed the data by academic rank, we found that assistant professors, regardless of CDP attended, reported planning for promotion as one of the top five skills acquired or improved. This is consistent with the importance of achieving the transition from assistant to associate professor for career success, and the fact that providing participants with the skills needed for planning for promotion is a major EWIMS objective. When we analyzed the data by CDP, we found that ELAM participants selected finance as one of the top five skills acquired or improved. This is consistent with the ELAM curriculum, which has financial knowledge as a key goal.¹¹

Considerable research has shown that career phases exist and that different competencies are needed at different phases.^{22–24} Some skills are needed at particular junctures (e.g., assistant professors need skills in planning for promotion); others are needed throughout the career continuum but in different ways (e.g., faculty at all levels need negotiation skills).²⁵ CDP program directors should consciously develop content that parallels career advancement, much as the medical school curriculum is designed for progressive increase in competencies.²⁶ For example, women at mid-career stages may benefit most from training that helps them to strategically identify leadership opportunities within their university. Women faculty at more advanced stages may benefit from training to guide their pursuit of leadership opportunities outside their university at the national or international level. Our data suggest that the more closely aligned the CDP content is with career stage, the greater the perceived value of the program.

One of the goals shared by the three CDPs is the retention and advancement of women faculty into leadership positions in academic medicine. We found that leadership aspiration was aligned with career stage; significantly more full professors than assistant or associate professors reported interest in future leadership opportunities beyond their current role. This is similar to other data from medicine showing that assistant professors are focused on the immediate challenges of the day-to-day responsibilities of career and family.^{22, 23, 27, 28}

Our study has several limitations. The respondent cohort was limited to women faculty CDP attendees who were currently in academic medicine and who had email addresses available to the AAMC. The cohort did not include women who were no longer in academic medicine (left, retired, deceased) or those in academic medical institutions who did not have an accurate or current email address, whose emails were undelivered (e.g., possibly due to institutional firewalls, classification as junk mail, invalid addresses, or “full inbox”), or who

chose not to open it the email]. Therefore, we could not measure what impact, if any, CDP participation had on those women or receive input from women who may have obtained leadership positions outside academic medicine (e.g., at the NIH, in higher education, or in professional organizations). Also, the proportion of respondents who were full professors (50%) far exceeded the national statistic (19%).¹ As with all on-line survey-based studies, only email recipients who were interested clicked on the link and the data consist entirely of participant perceptions – both of which create potential for voluntary, self-report, and/or recall biases. Additionally, cohort size placed a constraint on statistical analyses and precluded our offering more than tentative conclusions in some cases.

In this report, we have given a snapshot of how women faculty who ranged in career stage perceive the skills and benefits they acquired and/or improved through their attendance at one or more of the three national CDPs studied. We plan to use data collected from interviews to provide a deeper understanding of what participants seek from CDPs and how they use CDP content to advance their careers in academic medicine. We also plan to present quantitative analyses comparing career outcomes in terms of retention and pursuit of academic leadership roles among women CDP participants with men, and with women who have not participated in CDPs.

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Table 1

Characteristics of Women Faculty Who Attended Three National Career Development Programs for Women in Academic Medicine from 1988–2010 (n=854), 2011 Survey^a

Demographics	No. (%) of respondents
Race/ethnicity (n=845)*	
American Indian/Alaska native	6 (<1)
Asian	58 (7)
Black or African American	30 (4)
Hispanic/Latina	25 (3)
Native Hawaiian or Pacific Islander	4 (<1)
White	712 (84)
Degree (n=845)*	
MD	544 (64)
PhD/ScD	209 (25)
MD/PhD	34 (4)
Other	58 (7)
Rank (n=826)*	
Assistant professor	130 (16)
Associate professor	286 (35)
Full professor	410 (50)
Track (n=821)*	
Already tenured	233 (28)
Tenure track	217 (26)
Nontenure track	371 (45)
Work attributes Area (n=607)*	
Clinical (including education & research)	362 (60)
Research (including research & education)	222 (37)
Education	23 (4)
Area of responsibility	
Administrative role (i.e., division chief, department chair, assistant dean) (n=832)	650 (78)
Clinical care (n=827)	609 (74)
Type of clinical care (n=592)*	
Primary care	87 (15)
Specialty care	435 (73)
Both	70 (12)
Full time/part time	
Currently full time (n=832)	793 (95)
Ever part time (n=845)	120 (14)
Geographic moves as faculty (n=808)*	

Demographics	No. (%) of respondents
At least one move	488 (60)
No other moves as faculty	320 (40)

^a Respondent totals for each attribute varied because a participant's selection of the response option of "I prefer not to answer" was treated as missing data.

Table 2

Perceptions About Skills Acquired and/or Improved at Three National Career Development Programs Among Women Faculty Who Attended from 1988–2010, 2011 Survey

New and/or Improved Skills	EWIMS, no. (% of 416) ^b	MidWIMS, no. (% of 382) ^b	ELAM, no. (% of 214) ^b	P value ^c
Achieving work/life balance	182 (44)	119 (31)	58 (27)	.000
Communication ^a	186 (45)	<i>181 (47)</i>	147 (69)	.053
CV/executive summary	168 (40)	145 (38)	98 (46)	.038
Finance ^a	53 (13)	91 (24)	<i>160 (75)</i>	.000
Human resources	65 (16)	75 (20)	95 (44)	.000
Interpersonal ^a	222 (54)	<i>167 (44)</i>	<i>150 (70)</i>	.000
Interview preparation	73 (18)	66 (17)	74 (35)	–
Leadership ^a	<i>219 (53)</i>	<i>246 (64)</i>	<i>179 (84)</i>	.002
Leading meetings	102 (24)	136 (36)	99 (46)	.016
Managing difficult discussions	146 (35)	144 (38)	144 (67)	–
Public relations	24 (6)	47 (12)	53 (25)	.002
Mentoring	145 (35)	117 (31)	79 (37)	–
Negotiation ^a	<i>216 (52)</i>	<i>172 (45)</i>	<i>149 (70)</i>	.001
Networking ^a	<i>206 (50)</i>	<i>182 (48)</i>	<i>167 (78)</i>	.000
Planning for promotion ^a	<i>202 (49)</i>	120 (31)	50 (23)	.000
Planning for next career stage	178 (43)	157 (41)	117 (55)	.001
Total new/improved skills	396 (95)	356 (93)	211 (99)	–

Abbreviations: AAMC indicates Association of American Medical Colleges; EWIMS, Early-Career Women in Medicine Seminar; MidWIMS, Mid-Career Women in Medicine Seminar; ELAM, Hedwig van Ameringen Executive Leadership in Academic Medicine program.

^aThis is one of the top skills. The data for the top five skills for each program (are indicated in italics).

^bIn computing percentages, .5 is rounded to the nearest even number.

^cCochran's Q is a nonparametric procedure used to test distributions among several dependent samples when variables are dichotomous (coded 0 or 1). The samples are considered one related (dependent) population, which minimizes the effect of sample size. A significant Cochran Q statistic shows that the ELAM participant responses were significantly different from the other two programs.

Table 3

Perceptions About Skills Acquired and/or Improved at Two AAMC Career Development Programs, by Academic Rank and Program, Among Women Faculty Who Attended from 1988–2010, 2011 Survey

New and/or Improved Skills	AAMC EWIMS ^b			AAMC MidWIMS ^b		
	Assistant professor, no. (% of 359)	Associate professor, no. (% of 17)	P value ^c	Assistant Professor, no. (% of 46)	Associate professor, no. (% of 270)	Full professor, no. (% of 57)
Achieving work/life balance	162 (45)	6 (35)	.375	18 (39)	84 (31)	16 (28)
Communication ^a	166 (46)	8 (47)	.365	16 (35)	130 (48)	34 (60)
CV/executive summary	151 (42)	3 (18)	.195	18 (39)	107 (39)	17 (30)
Finance	49 (14)	2 (12)	.846	10 (22)	65 (24)	16 (26)
Human resources	57 (16)	4 (24)	.473	8 (17)	54 (20)	13 (23)
Interpersonal ^a	197 (54)	8 (47)	.267	20 (44)	120 (44)	26 (46)
Interview preparation	68 (19)	2 (12)	.659	9 (20)	45 (17)	11 (19)
Leadership ^a	191 (53)	10 (59)	.660	26 (57)	180 (67)	39 (68)
Leading meetings	91 (25)	2 (12)	.381	17 (37)	90 (33)	28 (49)
Managing difficult discussions	130 (36)	2 (12)	.154	19 (41)	105 (39)	20 (35)
Public relations	20 (6)	3 (18)	.079	6 (13)	30 (11)	11 (19)
Mentoring	128 (35)	2 (12)	.102	15 (33)	85 (32)	16 (28)
Negotiation ^a	187 (52)	8 (47)	.424	22 (48)	129 (47)	21 (37)
Networking ^a	178 (49)	8 (47)	.986	19 (41)	133 (49)	28 (49)
Planning for promotion ^a	187 (52)	3 (18)	.013 ^d	20 (44)	92 (34)	7 (12)
Planning for next career stage	159 (44)	5 (29)	.636	18 (39)	115 (43)	22 (39)
Total new/improved skills	349 (97)	15 (88)	.055	43 (94)	253 (94)	55 (97)
						–

Abbreviations: AAMC indicates Association of American Medical Colleges; EWIMS, Early-Career Women in Medicine Seminar; MidWIMS, Mid-Career Women in Medicine Seminar.

^aThis is one of the top skills. The data for the top five skills (six in case of tie) for each program are indicated in italics.

^bIn computing percentages, .5 is rounded to the nearest even number.

^cThe χ^2 procedure for nominal measures was used to analyze differences between ranks for both programs.

^d Statistically significant difference by rank within program ($P < .05$).

Table 4

Perceptions About Skills Acquired and/or Improved at the ELAM program, by Rank, Among Women Faculty Who Attended from 1995–2010, 2011 Survey

New and/or Improved Skills List ^a	Associate professor	Full professor	<i>P</i> value ^c
	No. (% of 88) ^b	No. (% of 115) ^b	
Achieving work life/balance	23 (26)	32 (28)	.759
Communication ^a	58 (66)	81 (71)*	.358
CV/executive summary	38 (43)	55 (48)	.474
Finance ^a	64 (73)	91 (80)	.237
Human resources	36 (41)	56 (49)	.245
Interpersonal	62 (70)	80 (70)	.966
Interview preparation	36 (41)	37 (32)	.215
Leadership ^a	80 (91)	92 (80)	.043 ^d
Leading meetings	44 (50)	52 (45)	.536
Managing difficult discussions ^a	66 (75)	71 (62)	.055 ^d
Public relations	22 (25)	29 (25)	.943
Mentoring	30 (34)	43 (37)	.595
Negotiation ^a	64 (73)	78 (68)	.507
Networking ^a	68 (77)	91 (80)	.660
Planning for promotion	29 (33)	17 (15)	.002 ^d
Planning for next career stage	51 (58)	62 (54)	.612
Total new/improved skills	88 (100)	114 (99%)	–

Abbreviations: ELAM indicates Hedwig van Ameringen Executive Leadership in Academic Medicine program.

^a This is one of the top skills. The data for the top five skills (six in case of tie) for each program are indicated in italics.

^b In computing percentages, .5 is rounded to the nearest even number.

^c The χ^2 procedure for nominal measures was used to analyze differences between ranks within ELAM.

^d Statistically significant difference by rank and within ELAM.