

# Paying it forward: Four-year analysis of the Eastern Association for the Surgery of Trauma Mentoring Program

Tanya L. Zakrison, MD, MPH, Travis M. Polk, MD, Rachel Dixon, Akpofure P. Ekeh, MD, Kirby R. Gross, MD, Kimberly A. Davis, MD, Stanley J. Kurek, Jr., DO, Nicole A. Stassen, MD, and Mayur B. Patel, MD, MPH, FACS, Nashville, Tennessee

**BACKGROUND:** Mentorship programs in surgery are used to overcome barriers to clinical and academic productivity, research success, and work-life balance. We sought to determine if the Eastern Association for the Surgery of Trauma (EAST) Mentoring Program has met its goals of fostering academic and personal growth in young acute care surgeons.

**METHODS:** We conducted a systematic program evaluation of EAST Mentoring Program's first 4 years. Demographic information was collected from EAST records, mentorship program applications, and mentee-mentor career development plans. We reviewed the career development plans for thematic commonalities and results of a structured, online questionnaire distributed since program inception. A mixed methods approach was used to better understand the program goals from both mentee and mentor perspectives, as well as attitudes and barriers regarding the perceived success of this career development program.

**RESULTS:** During 2012 to 2015, 65 mentoring dyads were paired and 60 completed the program. Of 184 surveys distributed, 108 were returned (57% response rate). Respondents were evenly distributed between mentees and mentors (53 vs. 55,  $p = 0.768$ ). In participant surveys, mentoring relationships were viewed to focus on research (45%), "sticky situations" (e.g., communication, work-life balance) (27%), education (18%), or administrative issues (10%). Mentees were more focused on research and education versus mentors (74% vs. 50%;  $p = 0.040$ ). Mentees felt that goals were "always" or "usually" met versus mentors (89% vs. 77%;  $p = 0.096$ ). Two barriers to successful mentorship included time and communication, with most pairs communicating by email. Most respondents (91%) planned to continue the relationship beyond the EAST Mentoring Program and recommended the experience to colleagues.

**CONCLUSION:** Mentee satisfaction with the EAST Mentoring Program was high. Mentoring is a beneficial tool to promote success among EAST's young members, but differences exist between mentee and mentor perceptions. Revising communication expectations and time commitment to improve career development may help our young acute care surgeons. (*J Trauma Acute Care Surg.* 2017;83: 165–169. Copyright © 2017 Wolters Kluwer Health, Inc. All rights reserved.)

**KEY WORDS:** Mentoring; career development; trainees; acute care surgery; trauma.

Many training programs and professional organizations have developed formal mentoring programs to help meet the complex needs of today's complex world. These needs may

include not only both academic and professional growth, but also the realities of work-life balance, personal well-being and the needs of today's modern family. Participation in these formal mentoring programs has been shown to improve academic and research productivity and work satisfaction among junior clinical and translational research faculty.<sup>1</sup> Although mentorship programs exist throughout departments of surgery and surgical societies across the country, many are unstructured with no clear evidence of routine evaluation or formal analysis of outcomes.<sup>2</sup>

In surgery, education and practice are impossible to separate from the concept of mentoring. In fact, the earliest models of surgical education were apprenticeships.<sup>3</sup> Despite many changes in today's practice of surgery, informal mentoring relationships still remain an integral part of every aspect of surgical life. Yet, despite this rich tradition, the needs of young acute care surgeons likely differ from those of their predecessors and the paradigms under which they now train are different.<sup>4</sup> As graduate medical education has become a more convoluted system of checklists and duty hour restrictions, the young surgical trainee can benefit from structured advice and counsel.

The Eastern Association for the Surgery of Trauma (EAST) is the largest US organization dedicated to professional education, leadership and career development for surgeons active in the care of the injured and acutely ill patient. Building on a tradition of networking and commitment to its future leaders, EAST established a formal mentoring program in

Submitted: December 1, 2016, Revised: January 16, 2017, Accepted: January 24, 2017,  
Published online: April 27, 2017.

From the Division of Trauma and Surgical Critical Care, Department of Surgery (T.L.Z.), University of Miami Miller School of Medicine, Miami, Florida; Naval Medical Center (T.M.P.), Portsmouth, Virginia; Eastern Association for the Surgery of Trauma (R.D.), Chicago, Illinois; Department of Surgery (A.P.E.), Boonshoft School of Medicine, Wright State University, Dayton, Ohio; US Army Medical Research and Materiel Command (K.R.G.), Fort Detrick, Maryland; Section of General Surgery, Trauma and Surgical Critical Care, Department of Surgery (K.A.D.), Yale School of Medicine, New Haven, Connecticut; Division of Trauma and Acute Care Surgery, Department of Surgery, Baylor Scott & White, Texas A & M University College of Medicine, Temple, Texas; Department of Surgery (S.J.K.), University of South Florida Morsani, Tampa; Lawnwood Regional Medical Center (S.J.K.), Fort Pierce, FL; Division of Acute Care and Trauma Surgery, Department of Surgery (N.A.S.), University of Rochester Medical Center, Rochester, New York; Division of Trauma, Emergency General Surgery, and Surgical Critical Care, Departments of Surgery, Neurosurgery, and Hearing and Speech Sciences, Section of Surgical Sciences (M.B.P.), Vanderbilt Brain Institute, Vanderbilt Center for Health Services Research, Vanderbilt University Medical Center; Surgical Service, General Surgery Section (M.B.P.), Nashville VA Medical Center; and Tennessee Valley Healthcare System (M.B.P.), US Department of Veterans Affairs, Nashville, Tennessee.

T.L.Z., T.M.P., R.D., A.P.E., K.R.G., K.A.D., S.J.K. Jr., N.A.S., M.B.P are members of the Eastern Association for the Surgery of Trauma (EAST).

Address for reprints: Mayur B. Patel, MD, MPH, 1211 21st Avenue South, 404 Medical Arts Building, Nashville, TN 37212; email: mayur.b.patel@vanderbilt.edu.

DOI: 10.1097/TA.0000000000001493

*J Trauma Acute Care Surg*  
Volume 83, Number 1

2012. Although it was initially designed as a 2-year extramural experience, the program has now evolved into a 1-year experience targeting fellows and junior faculty in acute care surgery, due to increasingly high demand for program participation.

The EAST Mentoring Program has grown to be the largest extramural surgical society mentoring program and continues to evolve with each new cohort; however, as the program enters its fifth year with matching for a sixth cohort of participants, a critical look at the program is necessary to strategically plan for the future of the organization. We hypothesized that program strengths and weaknesses and opportunities for improvement could be elicited through a systematic program evaluation that included review of program participants, career development plans, and program surveys.

## METHODS

Approval for this program evaluation was obtained from the University of Miami Institutional Review Board and the EAST Mentoring Committee. The goals of the program are to promote the academic, professional, and personal growth of the young acute care surgeon and it pairs an experienced surgeon with junior members of EAST at the resident, fellow, or junior faculty level.<sup>5</sup> The matched pairs are expected to collaborate on a structured career development plan with goals based on the mentee's needs and to communicate at least monthly. Table 1 shows suggested focus areas for the career development plans. At the conclusion of the assigned mentoring period, the pair may decide whether or not to continue the partnership outside of the program. Additionally, participants are asked periodically to complete a survey to assist with program evaluation.

A dedicated committee of EAST members administers the mentoring program. This group reviews all mentee applications, recruits mentors, performs pairings, and liaisons with pairs throughout the year. EAST has also provided additional mentoring education to the EAST community through workshop offerings at the Annual Scientific Assembly. Additionally, recognizing the growing demand for mentoring in all areas, the committee has developed an online mentoring resource repository.<sup>1</sup> Starting in 2014, in collaboration with the EAST Military committee, the program recognized the unique needs of EAST military members and began to specifically recruit mentors and mentees with a military affiliation.

**TABLE 1.** Mentoring Career Development Plans

### Career Development Plan Focus Areas

- Strengthening research skills
- Improving administration skills
- Educational opportunities
- How to manage difficult situations\*
- Navigate the organization (EAST)
- Explore new ideas
- Forge a new career path
- Expand network
- Build confidence

\*Work-life balance, communication, promotion, negotiation, and so on.

Demographic data were obtained from program records and mentor/mentee applications. Submitted career development plans were reviewed for thematic commonalities among the many varied goals. Finally, data obtained from a structured, standard online questionnaire that has been distributed since program inception were reviewed.

We used a mixed methods approach using quantitative and qualitative analysis to understand the goals of the mentoring program from the perspective of mentees and mentors. Quantitative methodology used nonparametric analysis as appropriate ( $p < 0.05$ ). Qualitative methodology used text analysis to generate hypotheses. We performed free-text analysis to code, sort, and categorize open-ended responses into recurrent themes. We also explored attitudes and barriers regarding the perceived success of this mentoring program as a useful tool for mentees for career development.

## RESULTS

### Demographics

Between 2012 and 2015, 65 mentoring dyads were matched and 60 completed the program. Although a large percentage of the mentee program participants were women, most mentors were men. Of the mentorship pairs, 12% overall were military-related pairings. Table 2 illustrates the demographics of the program participants during this first 4 years. An additional cohort of 30 pairs for 2016 is currently participating in the program; however, limited data are available for these individuals at this time.

### Analysis of Career Development Plans

We reviewed 61 career development plans and abstracted 246 discrete goals that were grouped by theme. All career development plans involved several themes with the most frequently cited being research (26%), involvement in professional organizations (18%), and career development (16%). Figure 1 shows the distribution of all extracted career development plan goals.

### Program Survey Results

Throughout the 4-year period, a structured, online survey was provided to all program participants. One hundred eighty-four surveys were distributed, and 108 were returned (57% response rate). Respondents were evenly distributed between mentees and mentors (53 vs. 55;  $p = 0.768$ ).

Survey respondents felt the mentoring relationship focused on research (45%), navigating “sticky situations” (e.g., personal conflict, challenging cases, work-life balance, communication, promotion, negotiation) (27%), education (18%), or administrative issues (10%). Overall, significantly more mentees were focused on research and education as goals, as compared with mentors (74% vs. 50%;  $p = 0.040$ ). Mentees were more likely to feel that goals were “always” or “usually” met, as compared with mentors, (89% vs. 77%  $p = 0.096$ ). Figure 2 illustrates these differing perceptions within the mentoring dyads with regard to goal achievement.

Qualitatively, the program was highly regarded as it offered the opportunity for extramural career development (i.e., beyond one's own institution). The majority of respondents (91%) planned to continue the relationship beyond the EAST

**TABLE 2.** EAST Mentoring Program Mentee-Mentor Demographics

Program Year	Matched Pairs	Matched Mentee Rank			Failed Pairs	Military Mentees Among Active Pairs	Female Mentees Among Active Pairs	Female Mentors Among Active Pairs	<i>p</i>
		Resident	Fellow	Junior Faculty					
2012–2014	10	1	2	7	1	1	4 of 9	1 of 9	0.294
2013–2015	15	2	6	7	2	0	6 of 13	2 of 13	0.21
2014–2015	16	2	7	7	2	2	6 of 14	3 of 14	0.401
2015–2016	24	3	6	15	0	4	6 of 24	1 of 24	0.047*
Total	65	8 (12%) of 65	21 (32%) of 65	36 (55%) of 65	5 (8%) of 65	7 (12%) of 60	23 (38%) of 60	6 (10%) of 60	<0.001*

\**p* < 0.05, *p* Value references gender differences between female mentors/mentees.

Mentoring Program. Eighty-five percent of mentee respondents stated that they would recommend the experience to peers.

Reported barriers to successful mentorship included a lack of time, a need for more formalized structure and challenges with communication. Virtually all mentorship pairs used telephone and/or email as the primary method of communication. Surprisingly, only two respondents reported using video-based communication tools, such as FaceTime, Skype, or GoToMeeting (Fig. 3).

## Organizational Impact

Participation of EAST leaders in the mentoring program has been stellar. Six EAST past presidents have served as mentors, whereas over one third of the remaining slate consists of current or previous members of the EAST board of directors or EAST committee chairs. Eighty-six percent of the mentors have served on an EAST committee within the last 10 years.

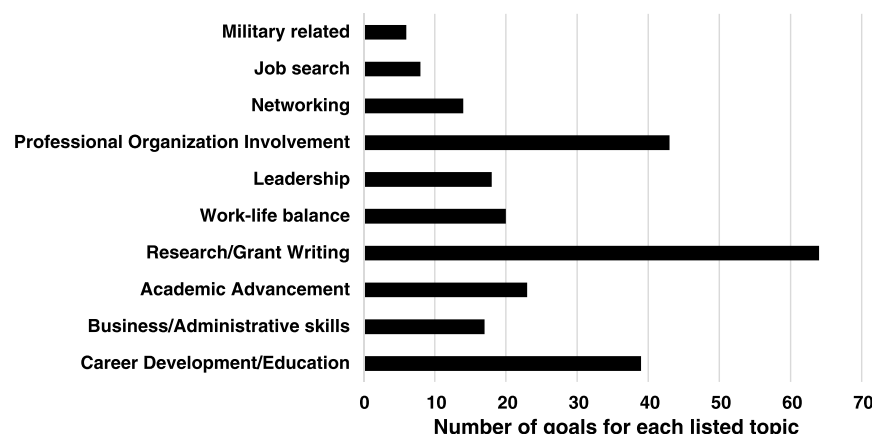
Six past EAST mentees have now paid it forward with service as mentors within the program. Five prior mentees have served on the EAST Board of Directors or as Committee Chairs and 45% of mentee participants have served on an EAST committee. Leadership data include the 2016 mentoring cohort that is not otherwise included in this program evaluation since it is still in progress and did not participate in the survey.

## DISCUSSION

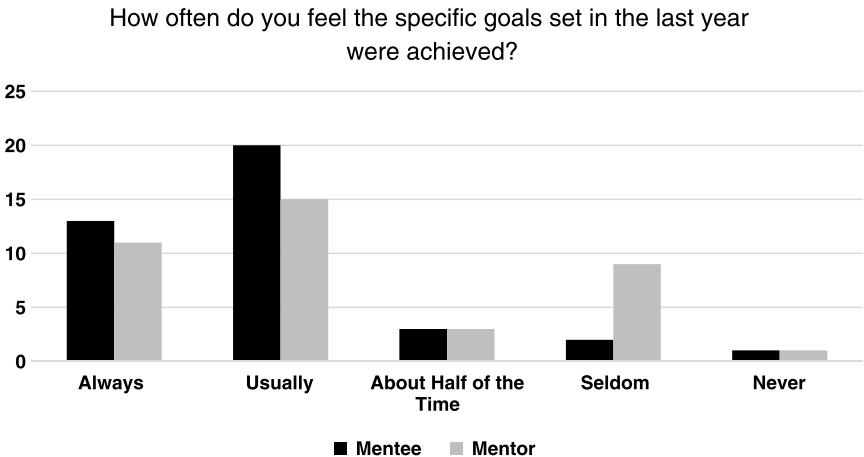
In this systematic program evaluation, we found that program strengths and weaknesses and opportunities for

improvement could indeed be elicited through a systematic program evaluation and that the EAST mentoring program has met its goals of fostering academic and personal growth in young acute care surgeons. In her EAST 2015 Presidential Address, K.D. quotes filmmaker Steven Spielberg as he describes that “the delicate balance of mentoring someone is not creating them in your own image, but giving them the opportunity to create themselves”.<sup>5</sup> To accomplish this mission, the EAST mentoring program's objectives are broadly structured to encompass the needs of all members from burgeoning academic surgeons to young community and military acute care surgeons. An unintended effect of this wide-reaching format has been the discordant perception between mentees and mentors with regard to both the EAST Mentoring Program's overall purpose and the participants' individualized goals as highlighted by the survey results. However, despite the high overall satisfaction among program participants, future incorporation of more structured tools for goal development and communication, as well as improvements in mentor training will likely benefit this program. This initiative represents the largest academic surgical society mentoring program in the country and represents a blueprint for success for other societies on a national and perhaps international level.

The potential benefits for academic and career growth through participation in a mentoring program are well established. Improved clinical, administrative, and research productivity are often cited as goals of such programs. Additionally, numerous organizations now offer mentoring programs for their young surgeons or trainees interested in their specialties.<sup>6,15</sup> In



**Figure 1.** Distribution of EAST mentee career development plan goals.



**Figure 2.** Perceived differences between mentee and mentors with respect to goal achievement.

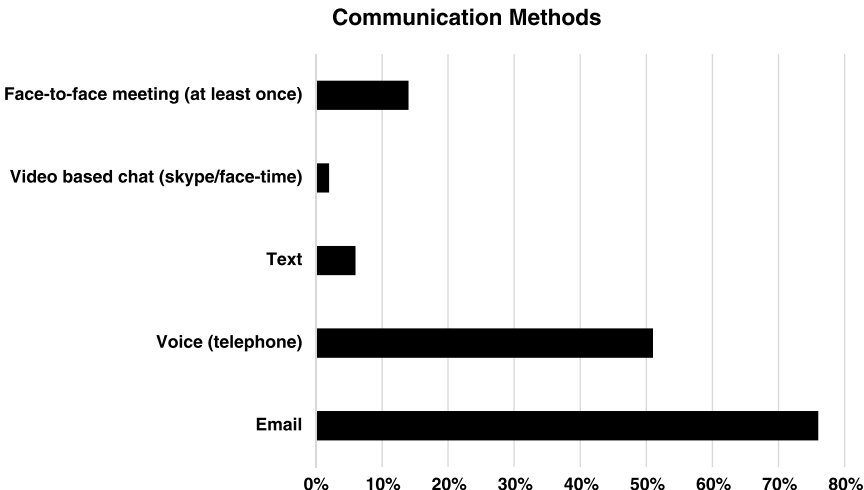
addition to the EAST mentoring program, the American College of Surgeons Committee on Trauma now offers a mentoring program for selected young trauma surgeons within 5 years of completing fellowship training.<sup>15</sup>

Although mentorship continues to be an integral part of the professional training and career of surgeons, little time has been focused on the development of the surgeon as a successful mentor. However, programs like the University of California San Francisco's highly effective mentor development program have proved the benefit of formalized mentor training. This program includes several universally applicable open access resources that are available online.<sup>16–18</sup>

Five initially matched pairs failed to complete the program (8% attrition). Although the goal of the program is certainly to provide an optimal mentoring experience for all participants, a certain percentage will not succeed due to a variety of factors. Straus et al.<sup>19</sup> interviewed over 50 faculty members from two academic health centers determined characteristics of success and failure in mentoring relationships. Successful mentoring relationships were characterized by reciprocity, mutual respect, clear expectations, personal connection, and shared values, whereas failed mentoring relationships were plagued by poor communication, lack of

commitment, personality differences, perceived (or real) competition, conflicts of interest, and the mentor's lack of experience.

Within our program, a notable discrepancy was apparent between the relatively large number of female mentees participating in the program, while very few of the mentors were female. Although not a specific goal of the program, it will be important to recruit additional experienced female surgeons for the mentor pool, although there is conflicting evidence as to the importance of same-sex mentorship pairing.<sup>20</sup> The same holds true in mentoring other groups of individuals who have been historically underrepresented in trauma surgery, due to real or perceived barriers. Additionally, military surgeons rising through unique hierarchies (e.g., Army, Navy, Air Force, Marine) engaged in combat casualty related-research, or transitioning to civilian practice may also face unique barriers and challenges. This represents an important area of future exploration within the EAST Mentoring Program, to ensure that identified mentees are indeed those that may benefit from such a program. Still, a continued need for targeted mentoring of young women in surgery exists,<sup>21–24</sup> and several other programs have been specifically designed to address the needs for this growing demographic.<sup>9–12</sup>



**Figure 3.** Frequency of communication methods by EAST mentoring pairs.

There are several other limitations to this study. First of all, the majority of the data are self-reported. Although the notable differences in perception between mentee and mentor are interesting, more concrete data will be useful in determining its significances. Although career development plans with very specific goals were collected, the postparticipation survey asked very broad questions regarding program purpose and goal completion, leaving much room for interpretation. In the future, survey redesign coupled with a specific exit report or interview would be helpful to document compliance with career development plans. Mentor-mentee focus groups would be another rich source of qualitative data to continue with program improvement through future iterations. Furthermore, the addition of more specific deliverables (e.g., EAST contributions, academic promotions, grants, publications) to the participant survey will be beneficial in objectively quantifying the ongoing benefits of the program.

## CONCLUSION

Mentoring is a beneficial tool to promote success among EAST's young members, but differences exist between mentee and mentor perceptions. Overall, mentee satisfaction with the EAST Mentoring Program was high. Achievement of program goals may be limited by discordant perceptions of goals between mentees and mentor as a result of interpersonal communication difficulties within mentoring dyads, as well as need for more programmatic structure and enhanced mentor training. In the future, the EAST Mentoring Program may benefit from improved matching techniques, structured tools for goal development and communication, and increased use of electronic media for mentor-mentee communications. The mentoring relationship is a special one that is built on trust, encouragement, and targeted development. Although the EAST Mentoring Program continues to evolve, it remains a highly successful program dedicated to the personal, professional and academic development for young acute care surgeons.

## AUTHORSHIP

M.P., T.P., R.D., P.A., T.Z., K.G., S.K., K.D., N.S. participated in conceptual design. T.Z., T.P., R.D., P.A., K.G., M.P. participated in the data extraction. T.P., M.P., T.Z., R.D. participated in the article preparation. All authors participated in the critical revisions to article.

## ACKNOWLEDGMENTS

We thank the EAST Mentorship Program committee members for continued support of this program, and feedback during this process. We would also like to thank the EAST Manuscript and Literature Review Section for the opportunity for presubmission peer-review.

## DISCLOSURE

Disclosures of Funding Received for this Work: Vanderbilt Faculty Research Scholars Program (mbp), National Institutes of Health NHLBI R01 HL111111 (mbp), NIGMS R01 GM120484 (mbp); NCATS UL1 TR000445 (REDCap, all authors). Conflict of Interest with All Sources of Support: T.L.Z. has served in the EAST Research-Scholarship Section and as an EAST Mentee. T.V.P., A.P.E., K.R.G., and M.B.P. have served in the EAST Mentoring Section. K.A.D., S.J.K., and N.A.S. have served in numerous EAST leadership positions, including President. M.B.P. has been or is supported by the Vanderbilt Institute for Clinical

and Translational Research awards (VR1584, VR5351, VR9276, VR12073) via CTSA grant UL1TR000011 (NCRR/NCATS/NIH), a 2013 EAST Trauma Foundation Research Scholarship, and speaker fees from Pfizer.

## REFERENCES

1. Feldman MD, Acrean PA, Marshall SJ, Lovett M, O'Sullivan P. Does mentoring matter: results from a survey of faculty mentees at a large health sciences university. *Med Educ Online*. 2010;15.
2. Kibbe MR, Pellegrini CA, Townsend CM Jr, Helenowski IB, Patti MG. Characterization of mentorship programs in departments of surgery in the United States. *JAMA Surg*. 2016;151(10):900–906.
3. Assael LA. Every surgeon needs mentors: a Halsteadian/Socratic model in the modern age. *J Oral Maxillofac Surg*. 2010;68(6):1217–1218.
4. Rashid P, Narra M, Woo H. Mentoring in surgical training. *ANZ J Surg*. 2015;85(4):225–229.
5. Davis KA. EAST 2015 Presidential Address: look both ways. *J Trauma Acute Care Surg*. 2015;79(1):1–9.
6. Find a Mentor: Society of Vascular Surgery; Available from: <https://www.vascularweb.org/studentsresidentstraineers/Pages/find-a-mentor.aspx>. Accessed January 14, 2017.
7. AATS Member for a Day Program: American Association of Thoracic Surgery; Available from: <http://aats.org/Association/Member-for-a-day.cgi>. Accessed January 14, 2017.
8. Looking to the Future Scholarship: Society of Thoracic Surgeons; Available from: <http://www.sts.org/misc/looking-future>. Accessed January 14, 2017.
9. Women in Surgery Committee: American College of Surgeons; Available from: <https://www.facs.org/about-acg/governance/acg-committees/women-in-surgery-committee/activities>. Accessed January 14, 2017.
10. Mentorship: Association of Women Surgeons; Available from: <https://www.womensurgeons.org/>. Accessed January 14, 2017.
11. Mentoring Scheme: Women in Transplantation; Available from: <http://www.tts-wit.org/mentoring-scheme/about-the-scheme>. Accessed January 14, 2017.
12. Mentoring and Scholarships: Women in Thoracic Surgery; Available from: <http://wtsnet.org/scholarship/>. Accessed January 14, 2017.
13. YFA Mentoring Program: American College of Surgeons; Available from: <https://www.facs.org/member-services/yfa/mentor>. Accessed January 14, 2017.
14. EAST Mentoring Program [cited 2016 11/15/2016]. Available from: <http://www.east.org/career-management/mentoring>. Accessed January 14, 2017.
15. Future Trauma Leaders: American College of Surgeons; Available from: <https://www.facs.org/quality-programs/trauma/mets/flt>. Accessed January 14, 2017.
16. Clinical Translational Science Institute Mentor Training Program: University of California San Francisco; Available from: <https://accelerate.ucsf.edu/training/mtp>. Updated 2016. Accessed January 14, 2017.
17. Abedin Z, Biskup E, Silet K, Garbutt JM, Kroenke K, Feldman MD, McGee R Jr, Flemming M, Pincus HA. Deriving competencies for mentors of clinical and translational scholars. *Clin Transl Sci*. 2012;5(3):273–280.
18. Johnson MO, Subak LL, Brown JS, Lee KA, Feldman MD. An innovative program to train health sciences researchers to be effective clinical and translational research mentors. *Acad Med*. 2010;85(3):484–489.
19. Straus SE, Johnson MO, Marquez C, Feldman MD. Characteristics of successful and failed mentoring relationships: a qualitative study across two academic health centers. *Acad Med*. 2013;88(1):82–89.
20. Jackson VA, Palepu A, Szalacha L, Caswell C, Carr PL, Inui T. "Having the right chemistry": a qualitative study of mentoring in academic medicine. *Acad Med*. 2003;78:328–334.
21. Colletti LM, Mulholland MW, Sonnad SS. Perceived obstacles to career success for women in academic surgery. *Arch Surg*. 2000;135(8):972–977.
22. Fried LP, Francomano CA, MacDonald SM, Kazis LE. Career development for women in academic medicine: multiple interventions in a department of medicine. *JAMA*. 1996;276(11):898–905.
23. Hoover EL. Mentoring women in academic surgery: overcoming institutional barriers to success. *J Natl Med Assoc*. 2006;98(9):1542–1545.
24. Zhuge Y, Kaufman J, Simeone DM, Chen H, Velazquez OC. Is there still a glass ceiling for women in academic surgery? *Ann Surg*. 2011;253(4):637–643.