Reducing Implicit Bias: Association of Women Surgeons #HeForShe Task Force Best Practice Recommendations

Sandra R DiBrito, MD, PhD, Carla M Lopez, MD, Christian Jones, MD, MS, FACS, Aarti Mathur, MD, FACS

Since the 1980s, social scientists have endeavored to identify, quantify, and eradicate "implicit bias." This term refers to how unconscious stereotypes or attitudes, which have arisen from pre-formed mental associations, can affect what we say and do without our knowledge and may even contradict our conscious beliefs. These feelings are so deeply woven into our psyche that it has been shown that implicit attitudes may be better at predicting behavior than self-reported explicit attitudes.[1] Repercussions of this phenomenon cannot be overstated. The concept of implicit bias recently garnered attention in the media after several high-profile shootings of black men by police and mistreatment of black individuals in public spaces and businesses. A growing field of research is exploring the role of implicit bias in the medical field. One such study found that white physicians who implicitly associated black patients with being "less cooperative" were less likely to refer black patients with acute coronary symptoms for thrombolysis.[2] Another found that women were more likely to receive less intensive treatment for a heart attack, and less likely to receive deep venous thrombosis prophylaxis.[3,4] Yet another found that physicians were less likely to discuss contraception, sexually transmitted diseases, and emotional health with lesbian, gay, bisexual, and transgender (LGBT) patients, resulting in poorer overall health.[5]

However, the role of implicit bias within the professional domain of medicine has largely gone unstudied. Institutions such as the Association of American Medical Colleges, the Accreditation Council for Graduate Medical Education, and the American Surgical Association have presented sessions or issued statements on the importance of inclusion and diversity; their reports on the current professional environment are noteworthy.[6-8] Only 24.5% of surgery faculty at academic institutions identify as female, and 33.5% identify as nonwhite.[9] Women and racial/ethnic minorities not only receive fewer opportunities to enter academic surgery, but also encounter more challenges for promotion than their white male counterparts, leading to surgical departments consisting of fewer women and under-represented-in-medicine (URiM) faculty.[10] The paucity of data regarding the relative professional success of LGBT surgeons further highlights this unconscious inequity. Implicit bias is a universal phenomenon not limited by race, sex, sexual orientation, or profession, and this has become increasingly apparent, and evermore relevant, since the first academic mention of implicit bias almost 30 years ago.[11]

Even among institutions with the best intentions, implicit bias may still impede efforts that promote more inclusive hiring and promotion practices. Additionally, even when hired, minority groups are subject to "stereotype threat," in which they perform at a lower level when they perceive that they are expected to perform poorly in an otherwise homogeneous group. This self-fulfilling prophecy, analogous to the much more popularized concept of "impostor syndrome," cripples the productivity of minority groups. These unconscious assaults on self-perceptions make it even more important to combat stereotypes and implicit biases in the work place, protect the integrity of minority groups, and reap the benefits that unfettered diversity brings to the professional space.

Although the dynamics of implicit bias are robust and pervasive, once uncovered, they are also malleable. Social scientists have shown that implicit bias can be overcome with rational deliberation and concentrated efforts.[12-14] Recently, several large corporations have engaged in highly publicized training meant to decrease implicit biases of their employees.[15,16] Although admirable, it is likely these efforts will not result in durable change because large-scale training often requires oversimplification of the solution; singular interventions are often doomed to failure. Simply telling people to smile more often at people who are "diverse" is not the right answer, although that has been a checklist recommendation in the past.[17]

Research suggests that through the gradual, purposeful unlearning of biases, durable change can be achieved, and

Disclosure Information: Nothing to disclose.

Received December 10, 2018; Revised December 27, 2018; Accepted December 27, 2018.

From the Department of Surgery, Johns Hopkins School of Medicine, Baltimore, MD.

Correspondence address: Sandra R DiBrito, MD, PhD, Johns Hopkins University School of Medicine, 600 N Wolfe St, Tower 110, Baltimore, MD 21287. email: dibrito@jhmi.edu

https://doi.org/10.1016/j.jamcollsurg.2018.12.011
ISSN 1072-7515/18

even the most pervasive patterns of discriminatory behavior may be altered and eventually eliminated from an institution. Here we aim to highlight several of these approaches. The process starts with identifying specific areas in which implicit bias may affect behaviors and judgment; institutions and individuals can then implement standardized procedures for decision-making that encourage active mindfulness to help counter unconscious biases that contradict our conscious values and beliefs.

The Association of Women Surgeons is leading the effort to eradicate implicit bias and improve surgical departments everywhere. We recommend adoption of the following practices to departments of surgery interested in improvement.

TASK FORCE RECOMMENDATIONS FOR ORGANIZATIONS READY TO ADDRESS IMPLICIT BIAS

Commit to a culture shift

Although social experiments have demonstrated that implicit bias can be reduced in the short term by exceedingly simple interventions, experts believe that enduring change can be achieved only with substantial repetition and goal-directed effort over time. This requires a change in the culture. Leadership must first place value on bias eradication efforts and then attempt to gain buy-in from the faculty, residents, and other staff. It is not necessary to have 100% buy-in to initiate the interventions described here, but it helps to provide education opportunities to all members. Setting up shared goals and expectations directs an organization forward, allowing cultural change to occur.

Devine and colleagues[12] argue that people must be both aware of their biases and concerned about the consequences associated with those biases before they will engage in actively eliminating them. If the hospital or departmental leadership sets the stage by providing specific examples of how implicit biases have negatively affected them either personally on an individual level or at an institutional level, it will allow others to contextualize the reason for change. Individual and personal examples gain better traction and make this abstract concept easier to grasp for the faculty, residents, and staff. Bias education programs should begin by introducing facts, generating concern, and providing an anticipated framework for interventions to come. Although the commitment to a culture shift should involve department leadership, actions can be taken by individuals or small groups to move a department in the direction of change.

Introduce bias literacy

In 2008, Sevo and Chubin[18] coined the term *bias literacy* at the American Association for the Advancement of Science as a prerequisite to action. This construct refers to uncovering, defining, and understanding the implicit so that it can be made explicit. Therefore, we recommend individual testing for implicit bias among faculty, residents, and staff. Self-reports of implicit bias are known to be inadequate, with most people either unaware of their biases and unable to perform adequate introspection or too afraid to answer truthfully for fear of some sort of retaliation.[19] Social desirability bias, driving respondents to choose the "right" answer rather than the "true" answer for themselves, can hamper self-evaluation.[20]

In order to more accurately detect and measure implicit bias, studies recommend using a standard Implicit Association Test (IAT), several of which are readily available online at https://implicit.harvard.edu/implicit/takeatest.html through Project Implicit.[21] These complex exams have been scrutinized and improved over decades, most recently incorporating the powerful tool of response latency to word association exercises, allowing individuals and companies to measure implicit bias.[22] They are inexpensive, noninvasive, and work as a repeated measure to test change over time, an important component to any longitudinal effort.

Addressing the concept of implicit bias is a first step, and providing tools for team members to evaluate themselves follows suit. It is imperative to allow people to reflect, thoughtfully, either by themselves or in facilitated small groups, on what their individual findings might mean. A department-wide seminar is not the proper venue for this work, but rather the place to start a conversation. Once the IAT has been administered, it is important to discuss the results broadly with the group, interpreting averages and ranges, and leading the team to appreciate what their scores reflect in the real-world context. This is just the beginning of their personal and institutional journey to reducing bias, and it is important to be encouraging. Simply increasing awareness of implicit bias has been associated with "de-biasing" individuals.[23] There are many methods described for de-biasing in the literature, but all require conscious thought in application and repetition. Encouragingly, durable improvements in bias eradication have been demonstrated at 12 weeks post-intervention, and even as long as 6 months,[12] but it is important to maintain departmental dedication to change.

Provide counter-stereotypic exposure

Many techniques can be implemented in departmental and individual quests to eradicate implicit bias.[12] Even when people are not specifically tasked with eliminating their personal biases, changes can take place with even the simplest interventions. This is highly encouraging because it means that people who do not necessarily buy in to the importance of eradicating bias will likely

have a reduction of personal implicit biases simply by participating in group activities. For example, if a department invites a guest speaker for grand rounds who is a prominent scientist, and happens to be female and African American, this "counter-stereotypic image" will subconsciously reduce implicit bias in a tangible way.

Repeated exposure to counter-stereotypic individuals has been shown to build new associations and combat implicit bias.[13] Additionally, inviting female or minority faculty from other institutions to speak at grand rounds or for other prominent lectureships not only helps eliminate implicit bias for all of those attending conferences, but also promotes the career of that individual, further elevating minority surgeons. Evaluate those your department invites to speak at these events. Are they individuals of the same demographic week after week? If so, it may be time to broaden your search for new faces in the field instead of the stand-by institutional friends. If this type of counter-stereotyping becomes incorporated into your daily departmental activities, where more diverse people are seen in roles of power and prominence, the impact will be dismantling of stereotypes and reducing implicit bias for even the most stalwart team members.

Conduct an introspective departmental assessment

Departmental leadership should perform an introspective evaluation of its environment. Investigating the demographic breakdown of roles and ranks provides a true, stark look at the "state of the department" and can help provide a baseline from which to see change over time. In creating this map of diversity, it would be helpful to identify potential partners in every training level to move the team forward in the fight against implicit bias. However, this does not mean that the most "diverse" individuals should be sought out to shoulder the burden of moving the diversity needle forward. In fact, it is more reasonable and effective to choose team members who routinely engage in department-building efforts, have social currency with the team, and are well respected. These advocates need to buy in to the goals for change, but do not have to be a marginalized group to do so. A common pitfall to increase diversity is to force the "most diverse" to be drivers of change. This can add to increasing feelings of marginalization and may limit the reach of the efforts, as these team members might need to work harder at baseline to feel like an "insiders."

However, in their introspective evaluation, the department should also attempt to identify those who feel like outsiders already. It may not always be obvious and can be difficult to ask and receive an open and honest answer. Therefore, departmental surveys are rarely helpful because anonymity is highly suspect. We suggest implementing a third-party service or a disconnected complaint channel to help uncover those who feel like outsiders and specific issues of unfairness and hidden biases. It is important to build trust in the department, and anything remotely retaliatory will compromise the entire effort. Individuals who feel that they do not "fit in" to their work environment have a higher degree of self-uncertainty. This has been shown to result in homogenization of the group, in which those in the periphery begin to behave more like those in the "in group."[24] This decreases the power of having a diverse team, and results in personal dissatisfaction and self-doubt for those on the periphery. This is exactly the opposite of functional team building.

We would also recommend an open-door meeting policy for those individuals interested in talking more about the work environment as opposed to singling out people you suspect are outsiders. These meetings should be outside of routine progress or performance reports, to make it clear that they will not be associated with performance whatsoever. They might even need to be conducted by a third party who is not involved in promotions or departmental decision-making, or is distilling thoughts into a batched recommendation, in order to decrease concerns about retaliation or impact on evaluations.

Finally, many companies suggest exit surveys for former team members, those who have already moved onward and upward, to gain insight on the environment. These individuals are less likely to fear retaliation, and may be willing to provide more real, valuable feedback. Exit interviews for faculty and trainees might be the best setting for gaining this insight.[23] It may be difficult to collect this information, and it would be subject to substantial recall bias; however, if implemented in real time, it could add value as 1 part of a multipronged plan for departmental evaluation.

Implement deliberative processing strategies for hiring and promotion

Gender and racial bias, implicit or explicit, exists in the hiring and promotion process of nearly every institution across the country. It has been shown that evaluators who report feeling most objective and rational are even more likely to act on group-based biases.[25] This underscores the importance of implicit bias testing, feedback, and de-biasing training for anyone involved in hiring or admissions in a department.

"In-group bias can compel people to favor those who are most similar to themselves, thereby leading to a tendency to hire or promote those who mirror attributes or qualities that align with their own."[26] We have all seen this first hand on admissions and interview committees. It is therefore easy

to believe that "fit" has been ranked as 1 of the 3 most important criteria used to assess candidates, with more than half of the elite employers studied ranking "fit" as the most important criterion, higher than communication and analytical thinking.[23,26,27] There have been many studies of fictitious resumes, studying gender and racial bias, demonstrating that despite an applicant's qualifications, an application with a white-sounding name will receive more calls for interview than a black-sounding name.[28] Repeated internationally, the minority group will always receive lesser calls.[23]

Fighting this implicit bias is imperative to moving forward in surgery. We call on departments to look inward and evaluate the search and hiring process. We are certainly not advocating for quotas, in which a minimum of "diverse" applicants are accepted or hired. Instead, we recommend "engaging in deliberative processing." This requires developing individual and quantifiable criteria to evaluate prospective hires, and has been shown to help mitigate bias, particularly with time-sensitive decisions such as admissions or promotions.[1] To initiate deliberative processing, interviewers and evaluators must be given individual constructive feedback, based on specific interactions that address examples of gender, race, or other biases that have occurred in order to promote personal reflection and possible change.[29] Generally speaking, it is not enough to say that gender bias may have influenced an admissions committee decision. It is imperative to call out an exact interviewee who may have suffered from an exact discrimination and ask for a response by the interviewer. These brutal but powerful opportunities for self-reflection and introspection allow for individual growth.[29] Feedback can be given in a tactful and nonconfrontational manner, but should make the interviewer or evaluator uncomfortable because he or she will appreciate the weight of the decision on the applicant's future career.

A single round of videotaping and individual review for an interviewer may be all it takes to address the elephant in the room. This should not be performed in a punitive way and should be undertaken in a manner that intends to support, engage, and improve the interviewer's skill. Framing these sessions as an opportunity for growth and not a cross-examination is important for maintaining good relationships with people who volunteer to interview. Because video-taping may seem extreme and out of reach, an easier way to introspectively assess bias is to provide multi-interviewer opportunities.

Social research suggests that having multiple interviewers in a single session, or even videotaping interviews, can aid in investigating the impact of implicit bias in the hiring process.[30] We suggest formal training on implicit bias for admissions and promotions committee members to combat implicit bias.[17] We also strongly recommend structured rating procedures and rubrics for standard interview processes as the absolute minimum for improving admissions and hiring.[29] Use a team to build the rubric and give thoughtful evaluation to implicit bias that may be built in. Also, although it is extremely common practice, it is best to avoid asking for a "gut reaction" from interviewers. These "gut feelings" are simply expressions of implicit biases and will often result in giving preference to someone who "fits" in a homogeneous but potentially suboptimal way.[1,31-34] Choosing the best qualified candidate for the job is important in diversifying the workforce in your department.[31,35,36]

Encourage mentoring and sponsorship

A strong, supportive mentor or sponsor has the potential to have a great impact on the career trajectory of a medical student, resident, or junior faculty member. Early career faculty demonstrate greater research productivity, career satisfaction, and decreased time to promotion with formal institutional mentoring programs.[37-39] Despite this obvious benefit, faculty from under-represented groups suffer from lack of mentorship, low institutional expectations, and isolation.[40,41] Although unconscious bias may seep through the mentor-mentee relationship, this relationship also provides a unique opportunity to combat implicit biases.

Building interpersonal connections has been shown to reduce prejudice, and this can be done through formal mentorship assignments or in any variety of team building exercises. Deliberate creation of diverse teams for workgroups or research-mentor partnerships drives the formation of interpersonal bonds, thereby increasing opportunities for contact between people who may not be in the same demographic groups. Encouraging team members to interact in a meaningful way with diverse individuals helps eliminate bias through a mechanism called individuation, in which all team members are treated as individuals and not simply as representatives of a stereotype. Simply being put to work with a more diverse team can have lasting impact on decreasing bias.[42]

On an institutional level, the department head can facilitate this process by identifying strong mentors and engaging them in the bias eradication effort. A common pitfall in designing mentorship programs is to pair those with similar demographic backgrounds. However, "diverse" junior faculty and residents should be purposefully connected with experienced mentors who enjoy mentoring and can facilitate growth of the mentee. It is important to share some interests, but senior mentors in very different specialties can provide valuable advice to junior faculty members or trainees regarding other realms of surgery or life as a surgeon. Mentorship pairs or teams should not be limited by

demographics, specialty or subspecialty, or research interest. Care should be taken to not call on the same small group of faculty to mentor every trainee because this may lead to burnout. Creative pairings can allow every department member to feel included.

Many national specialty groups, including the Association of Women Surgeons, Association of Academic Surgeons, Eastern Association for the Surgery of Trauma, and the Society of American Gastrointestinal and Endoscopic Surgeons, have formal mentorship programs. Participation in these opportunities can help junior staff and trainees blossom and expose diverse team members to additional mentorship on a national level. This can lead to career-enhancing networking that is invaluable and free. It is equally important to encourage senior faculty to participate in these exchanges as mentors. By gaining national exposure to an increasingly diverse workforce in surgery, senior faculty will also reap benefits in bias eradication. We also recognize that ultimately, the responsibility and impetus fall on the mentee to seek out a diverse group of mentors and develop a mentoring network, whether through a formal departmental program or with a thoughtful approach to faculty, which are encountered every day in the hospital or at national meetings.

Sponsorship is an increasingly discussed adjunct to mentorship in the institutional and academic environment. Sponsors build connections to opportunities, advocate for advancement, and publicly support or endorse trainees or junior faculty. Being a sponsor is as easy as including someone on a committee, putting out a nomination for a junior colleague for a leadership role, or even using social media to promote achievements of trainees. Literature has shown that women in business are undermentored compared with male peers.[43] Women who are sponsored receive better pay, more high profile assignments, and improved institutional advancement.[44] Think about how to encourage and facilitate sponsorship in the department and build incentives for sponsorship.

Empower the individual

If there is not acceptance for culture change (Step 1) in a particular department or division, and you are an individual with a desire to personally improve, do not despair. Resources exist to help people recognize and fight their own implicit biases.[20,45] Taking an online Implicit Association Test can be an eye-opening experience and is a great way to start an individual journey. For a more in-depth exploration of implicit bias, we highly recommend the book *Blindspot: Hidden Biases of Good People* by Mahzarin Banaji and Anthony Greenwald, which reports scientific findings in the context of our individual lives and gives helpful direction as we try to move forward.

In addition to empowering yourself, either sponsor people around you who may be on the same path or seek out a diverse sponsor to help you. Look out for opportunities in which you can offer or receive mentorship, sponsorship, or context for others. Even the most junior team members often have someone they can mentor or sponsor—medical students and pre-medical undergraduates are often thrilled to find engaged mentors in the surgical community. Small opportunities for trainees in the form of case reports, invitations to local or regional meetings, or invitations to dinner with senior colleagues, can be stepping stones to greater opportunities. Do not underestimate the value of things you can personally offer.

Similarly, do not underestimate the power of 1 person in terms of driving positive culture change toward inclusivity. Proactively seeking out potential speakers or visiting professors, then recommending or requesting them from senior leadership, can simultaneously take the burden of finding people off of leadership and can lead to a more diverse representation of experts and counter-stereotype exposure. When choosing articles for journal clubs or group discussion, actively seek out new publications from diverse researchers instead of the standard readings. Including broader perspectives from fresh, diverse voices helps. If you have the opportunity to introduce a speaker, ensure that you provide a formal introduction, including their credentials and titles appropriately. This small and seemingly obvious recommendation is a force for counter-stereotyping, and simply respecting experts in the field by introducing them as "doctor," when appropriate, is a step forward.[46]

SUMMARY

Implicit bias is a prevalent phenomenon that can have serious repercussions. Through thoughtful effort and commitment, it is possible to mitigate the negative impact of implicit bias and allow for greater inclusivity in surgical departments. The Association of Women Surgeons recommends several initial concrete steps that can be implemented immediately in departments across the country. There is no doubt that repetition and reinforcement of the ideas presented here are critical to the success of bias eradication campaigns.[47] The biggest hurdle is to not only commit to a culture that has a desire to understand that these unconscious beliefs exist and may actually counter conscious beliefs, but also have the willingness and desire for change. It is then imperative to identify and counter these biases, breaking down barriers to equitable treatment of women and minorities in medicine. Trying to apply any or all of these techniques over time will result in individual IAT score improvements, and a stronger department overall. Moving forward together

requires education, introspection, and dedicated efforts over time. The benefit of this longitudinal approach will be a more inclusive and diverse body of modern surgeons, which will, in turn, allow for more inclusive and better care of patients.

Author Contributions

Study conception and design: DiBrito, Lopez, Jones, Mathur
Acquisition of data: DiBrito, Lopez, Jones, Mathur
Analysis and interpretation of data: DiBrito, Lopez, Jones, Mathur
Drafting of manuscript: DiBrito, Lopez, Jones, Mathur
Critical revision: DiBrito, Lopez, Jones, Mathur

Acknowledgment: The authors are members of the Association of Women Surgeons #HeForShe Task Force, and this work was produced under its auspices and vetted by the AWS Executive Council.

REFERENCES

1. Beattie G, Cohen D, McGuire L. An exploration of possible unconscious ethnic biases in higher education: the role of implicit attituds on selection for university posts. Semiotica 2013;197:171−201.
2. Green A, Carney D, Pallin D, et al. Implicit bias among physicians and its prediction of thrombolysis decisions for black and white patients. J Gen Intern Med 2007;22:1231−1238.
3. Vaccarino V, Rathore S, Wenger N, et al. Sex and racial differences in the management of acute myocardial infarction 1994-2002. N Engl J Med 2005;353:671−682.
4. Pietripaoli A, Glance L, Oakes D, Fisher S. Gender differences in mortality in patients with severe sepsis and septic shock. Gend Med 2010;7:422−437.
5. American Osteopathic Organization. Unconscious bias among physicians results in low quality care for LGBT, disabled patients: Invisible barrier may be responsible for poorer health overall among special patient populations. Available at: https://www.sciencedaily.com/releases/2015/10/151005132723.htm. Accessed January 15, 2019.
6. Greenberg C. Association for Academic Surgery presidential address: sticky floors and glass ceilings. J Surg Res 2017;219:ix−xviii.
7. West MA, Hwang S, Maier RV, et al. Ensuring Equity, Diversity, and Inclusion in Academic Surgery: An American Surgical Association White Paper. Ann Surg 2018;268:403−407.
8. American Surgical Association Task Force on Equity. Diversity, and Inclusion. Ensuring equity, diversity, and inclusion in academic surgery. 2018. Available at: http://americansurgical.org/equity/. Accessed January 9, 2019.
9. American Association of Medical Colleges. US Medical School Faculty, 2017. Available at: https://www.aamc.org/data/facultyroster/reports/486050/usmsf17.html. Accessed 1/9, 2019.
10. Julien J, Lang R, Brown T, et al. Minority underrepresentaiton in academia: factors impacting careers of surgery residents. J Racial Ethn Heal Disparities 2014;1:238−246.
11. Devine P. Stereotypes and prejudice: their automatic and controlled components. J Pers Soc Psychol 1989;56:5−18.
12. Devine PG, Forscher PS, Austin AJ, Cox WT. Long-term reduction in implicit race bias: A prejudice habit-breaking intervention. J Exp Soc Psychol 2012;48:1267−1278.
13. Dasgupta N, Greenwald A. On malleability of automatic attitudes: combating automatic prejudice with images of admired and disliked individuals. J Pers Soc Psychol 2001;81:800−814.
14. Blair I. The malleability of automatic sterotypes and prejudice. Personal Soc Psychol Rev 2002;6:242−261.
15. Gino F. What Facebook's anti-bias training program gets right. 2018. Available at: https://hbr.org/2015/08/what-facebooks-anti-bias-training-program-gets-right. Accessed January 9, 2019.
16. Carpenter J. What does unconscious bias training look like? I took 3 courses to find out Richard Quest: Companies should follow Starbucks' example. 2018. Available at: http://money.cnn.com/2018/05/29/pf/online-trainings-unconscious-bias/index.html. Accessed January 9, 2019.
17. Lieber LD. Hidden dangers of implicit bias in the workplace. Employ Relat Today 2009:93−98.
18. Sevo R, Chubin D. Bias Literacy : A review of concepts in research on discrimination 2008. https://doi.org/10.4018/978-1-61520-657-5.ch002.
19. Nosek B, Riskind R. Policy implications of implicit social cognition. Soc Issues Policy Rev 2012;6:113−147.
20. Dasgupta N. Implicit attitudes and beliefs adapt to situations: a decade of research on the malleability of implicit prejudice, stereotypes, and the self-concept. Adv Exp Soc Psychol 2013:233−279.
21. Greenwald A, McGhee D, Schwartz J. Measuring individual differences in implicit cognition: the implicit association test. J Pers Soc Psychol 1998;74:1464−1480.
22. Kang J, Lane K. Seeing through colorblindness: implicit bias and the law. UCLA Law Rev 2010;58:465−520.
23. Staats C, Ross H. State of the science: implicit bias review 2014. Kirwan Inst 2014;27:0.
24. Hohman ZP, Gaffney AM, Hogg MA. Who am I if I am not like my group? Self-uncertainty and feeling peripheral in a group. J Exp Soc Psychol 2017;72:125−132.
25. Uhlmann E, Cohen G. "I think it, therefore it's true": Effects of self-perceived objectivity on hiring discrimination. Organ Behav Hum Decis Process 2007;104:207−223.
26. Banajo M, Bazrman M, Chugh D. How (un)ethical are you? Harv Bus Rev 2003;81:56−64.
27. Rivera L. Hiring as cultural matching: the case of elite professional service firms. J Exp Soc Psychol 2012;77:999−1022.
28. Bertrand M, Mullainathan S. Are Emily and Greg more employable than Lakisha and Jamal? Am Econ Rev 2004;94:991−1013.
29. Parker L, Monteith MJ, Moss-Racusin CA, Van Camp AR. Promoting concern about gender bias with evidence-based confrontation. J Exp Soc Psychol 2018;74:8−23.
30. Segrest Purkiss S, Perrewe P, Gillespie T, et al. Implicit sources of bias in employment interview judgments and decisions. Organ Behav Hum Decis Process 2006;101:152−167.
31. Mangurian C, Linos E, Sarkar U, et al. What's holding women in medicine back from leadership. 2018. Available at: https://hbr.org/2018/06/whats-holding-women-in-medicine-back-from-leadership. Accessed January 10, 2019.
32. Heilman ME, Wallen AS, Fuchs D, Tamkins MM. Penalties for success: reactions to women who succeed at male gender-typed tasks. J Appl Psychol 2004;89:416−427.

33. Sei Jin Ko, Judd CM, Stapel DA. Stereotyping based on voice in the presence of individuating information: vocal femininity affects perceived competence but not warmth. Personal Soc Psychol Bull 2009;35:198–211.
34. Steele CM, Spencer SJ, Aronson J. Contending with group image: The psychology of stereotype and social identity threat. Adv Exp Soc Psychol 2002:379–440.
35. Donovan RA. Tough or tender: (dis)similarities in white college students' perceptions of black and white women. Psychol Women Q 2011;35:458–468.
36. Heilman ME. Description and prescription: How gender stereotypes prevent women's ascent up the organizational ladder. J Soc Issues 2001;57:657–674.
37. Stamm M, Buddeberg-Fischer B. The impact of mentoring during postgraduate training on doctors' career success. Med Educ 2011;45:488–496.
38. Cohen JG, Sherman AE, Kiet TK, et al. Characteristics of success in mentoring and research productivity - A case-control study of academic centers. Gynecol Oncol 2012;125:8–13.
39. Morrison LJ, Lorens E, Bandiera G, et al. Impact of a formal mentoring program on academic promotion of Department of Medicine faculty: A comparative study. Med Teach 2014;36:608–614.
40. Beech BM, Calles-Escandon J, Hairston KG, et al. Mentoring programs for underrepresented minority faculty in academic medical centers: A systematic review of the literature. Acad Med 2013;88:541–549.
41. Pololi L, Cooper LA, Carr P. Race, disadvantage and faculty experiences in academic medicine. J Gen Intern Med 2010;25:1363–1369.
42. Pettigrew T, Tropp L. A meta-analytic test of intergroup contact theory. J Pers Soc Psychol 2006;90:751–783.
43. Ibarra H, Carter N, Silva C. Why men still get more promotions than women. Harv Bus Rev 2010;88. 80–85, 126.
44. Hewlett SA. Forget a Mentor, Find a Sponsor: The New Way to Fast-Track Your Career. Watertown, MA: Harvard Business Review Press; 2013.
45. Mavin S. Queen Bees, Wannabees and afraid to bees: no more 'best enemies' for women in management? Br J Manag 2008;19:S75–S84.
46. Files JA, Mayer AP, Ko MG, et al. Speaker introductions at internal medicine grand rounds: forms of address reveal gender bias. J Women's Heal 2017;26:413–419.
47. Faragher J. Overcoming your unconscious bias. Pers Today. https://www.personneltoday.com/hr/overcoming-your-unconscious-bias/. Accessed January 15, 2019.