

PMID	TITLE	AUTHORS	JOURNAL/BOOK	PUBLICATION YEAR	SUMMARY	CATEGORY	TYPE
3132043	Scholarly Collaboration, Mentorship, and Resilience: A New Model for Success in Academic Medicine	Erika L. Abramson, Monique M. Nash, Michelle D. Stevenson, Lu Ting U.	Acad Med.	2019	Mentorship can be one of the most important factors in helping faculty members successfully advance academic careers. Finding effective mentorship, however, is extremely challenging and lack of mentorship may negatively impact productivity, promotion, and retention. Women, in particular, identify lack of mentorship as a major factor inhibiting career advancement, which in turn may be one element contributing to the significant gender gap existing in academic medicine. Here, we describe a model of mentoring drawn from our personal experiences as a female faculty that has resulted in a successful collaboration spanning nearly a decade. This model combines different elements of mentoring models previously described in the literature into a single model of network mentoring. Our model aims to promote long-term, collaborative relationships around a shared common research theme, provide long-term mentorship focused on successfully navigating personal and academic hurdles, and create a form of mentorship for faculty at all academic ranks. Key to the success of our model, the academic scholarship through personal engagement with a Collaborative Team (ACT) Model are: 1) a shared overarching research goal that allows for multiple projects to be worked on over time; 2) regular, structured meetings; 3) a collaborative "flexible management with 'group accountability'"; and 4) a focus on the human connection. Our goal in writing this paper is to describe, in detail, lessons learned from our experiences and reflect on why and how this model may be effective in addressing mentoring gaps many faculty members, particularly women, experience.	other contributions	mentorship
2705462	A Multifaceted Mentoring Program for Junior Faculty in Academic Pediatrics	Mary M. Chen, Christy I Sandborg, LouAnne Huggins, Bania Sanford, Laura K. Bachrach	Teach Learn Med.	2016	Problem: The departure of physician-scientists from education and research into clinical practice is a growing challenge for the future of academic medicine. Junior faculty face competing demands for clinical productivity, teaching, research, and work-life integration, which can undermine confidence in the value of an academic career. Mentorship is important to foster career development and satisfaction in junior faculty. Intervention: The goals of this academic pediatrics department were to develop, implement, and evaluate a multifaceted pediatric mentoring program to promote retention and satisfaction of junior faculty. Program elements included one-on-one mentor-mentee meetings, didactic workshops, grant review assistance, and facilitated peer group mentoring. Program effectiveness was assessed using annual surveys of mentees and structured mentee exit interviews, as well as retention data for assistant professors. Context: The mentees were instructors and assistant professors in the department of pediatrics. Outcome: Seventy-nine mentees participated in the program from 2007 through 2014. The response rate from seven annual surveys was 84%. Sixty-five percent of mentees felt more prepared to advance their careers, 83% had a better understanding of the criteria for advancement, 84% were satisfied with the program, and 82% found mentors accessible. Mentees who exited the program reported they must have had the one-on-one mentorship and viewed the experience positively regardless of promotion. Retention of assistant professors improved after initiation of the program; four of 13 exited from 2008 to 2009 to the institution, whereas 14 of 13 exited from 2007 to 2008 were retained. Lessons learned: This multifaceted mentoring program appeared to bolster satisfaction and enhance retention of junior pediatric faculty. Mentees reported increased understanding of the criteria for promotion and viewed the program as a positive experience regardless of career path. Individual mentor-mentee meetings were needed at least twice yearly to establish the mentoring relationship, identify "next steps" at the end of individual programs, and help to hold partners accountable for progress. Mentees most valued workshops fostering development of English skills (such as scientific writing) and those clarifying the criteria for promotion more transparent. Facilitated peer group mentoring for mentees at the instructor rank provided valuable peer support.	other contributions	mentorship
2058112	An Innovative program to train health sciences researchers to be effective clinical and translational research mentors	Malory D Johnson, Leslie L Subak, Isabella S Brown, Kathryn A Lien, Mitchell D Feldman	Acad Med.	2010	The creation of the Clinical Translational Science Awards for academic health sciences campuses in 2006 was implicitly accompanied by a call for a new paradigm of faculty development and mentoring to train the next generation of researchers and leaders in this new approach to research. Effective mentoring is critical to help early-career investigators become successful, independent researchers, and a new approach to mentoring is vital to recruit, advance, and retain fellows and junior faculty engaged in clinical and translational research. However, in addition to the many rewards of mentoring, there are numerous substantive barriers to effective mentoring. These barriers include a lack of training in how to be a mentor, lack of time and structural and financial support for mentoring, and competing personal, administrative, and clinical demands. The authors describe an innovative program, the University of California, San Francisco Mentor Development Program (MDP), established in 2006 and designed to train mid-career academic health sciences researchers to be more effective as clinical and translational research mentors. Using a framework for preventing innovations in academic research, they present the rationale, design, implementation, and outcomes being used to evaluate and sustain the MDP. Specific details of the objectives and content of the MDP sessions are provided as well as evaluation criteria and a link to specific curriculum materials.	other contributions	mentorship
3403259	Introducing the MAVEN Leadership Training Initiative to diversify the scientific workforce	T. Chae Wang, Elizabeth Bonfield, Rachel Moore, Michelle Krenick, Karina W Davidson, MAVEN Leadership Team	PLoS.	2021	Addressing gender and racial-ethnic disparities at all career stages is a priority for the research community. In this article, we focus our efforts to encourage mid-career women, particularly women of color, to move into leadership positions in science and science policy. We highlight the need to strengthen leadership skills for the critical period immediately following promotion to associate professor, which is when career development efforts taper off while institutional demands escalate, and describe a program called MAVEN that has been designed to teach leadership skills to mid-career women scientists, particularly those from underrepresented groups.	other contributions	mentorship
21274417	A mentor training program improves mentoring competency for researchers working with early-career investigators from underrepresented backgrounds	Malory D Johnson, Monica Gandhi	Adv Health Sci Educ Theory Pract.	2015	Mentoring is increasingly recognized as a critical element in supporting successful careers in academic research in medicine and related disciplines, particularly for trainees and early career investigators from underrepresented backgrounds. Mentoring is often executed ad hoc, there are limited programs to train faculty to become more effective mentors, and the few that exist have a dearth of empirical support for their impact. In 2013, we recruited 34 faculty from across the US engaged in HIV-related clinical research to participate in a 2-day Mentoring the Mentors workshop. The workshop included didactic and experiential sessions focused on a range of topics, such as mentor-mentee communication, leadership styles, emotional intelligence, understanding the impact of diversity (language/culture, microaggressions, discrimination, bias) on mentees, and specific tools and techniques for effective mentoring. Pre- and post-workshop online evaluations documented high rates of satisfaction with the program and statistically significant improvements in self-reported mentoring skills (ie, addressing diversity in mentoring, communication with mentees, sharing mentor-mentee expectations), as assessed via a validated mentoring competency tool. This is the first mentoring training program focused on enhancing mentor abilities to nurture investigations of diversity, filling an important gap, and evaluation results offer support for its effectiveness. Results suggest a need for refinement and expansion of the program and for more comprehensive, long-term evaluation of distal mentoring outcomes for those who participate in the program.	other contributions	mentorship
27626578	Early career mentoring through the American Society of Pediatric Nematology/Diversity: Lessons learned from a pilot program	Sherril M Badawy, Vánczy Black, Emily R Meier, Kazián C Myers, Kárice Pokrýsek, Caroline Huggins, Joanne M Hilden, Patrick Zweder, McKay, Linda C Stork, Theodor S Johnson, Sarah R Vaidubuh	Pediatr Blood Cancer	2017	Background: Effective networking and mentorship are critical determinants of career satisfaction and success in academic medicine. The American Society of Pediatric Nematology/Diversity (ASPD) mentoring program was developed to support Early Career (EC) members. Herein, the authors report on the initial 2-year outcomes of this novel program. Procedure: Members selected mentees with expertise in different subspecialties within the field from mentor profiles at the ASPD Web site. Of 23 enrolled pairs, 13 mentors and 15 mentees completed electronic program feedback evaluations. The authors analyzed data collected between February 2013 and December 2014. The authors used descriptive statistics for categorical data and thematic data for qualitative data. Results: The overall response rate was 70% (25/44). At the initiation of the relationship, career development and research data gathered were the most commonly identified goals for both mentors and mentees. Participants communicated by phone, e-mail, or met in-person at ASPD annual meetings. Most mentor-mentee pairs were satisfied with the mentoring relationship, considered it a rewarding experience that justified their time and effort, achieved their goals to a timely manner, with objective work products, and planned to continue the relationship. However, time constraints and infrequent communications remained a challenge. Conclusions: Participation in the ASPD mentoring program suggests a clear benefit to a broad spectrum of ASPD EC members with diverse personal and professional development needs. Efforts to expand the mentoring program are ongoing and focused on increasing enrollment of mentees to cover a wider diversity of career tracks/subspecialties and evaluating career and academic outcomes more objectively.	other contributions	mentorship
3436230	Program Evaluation of the Research in Academic Pediatrics Initiative on Diversity (RAPID) Impact on Career Development and Professional Society Diversity	Oliver Flores, Fernando Mendez, Michelle B Brimacombe, Willie Fraser 3rd	Acad Med.	2021	Purpose: Despite a demographic surge in U.S. minority children, pediatric workforce diversity has failed to keep pace. The study aim was to evaluate the Research in Academic Pediatrics Initiative on Diversity (RAPID), a research-education program aimed at recruiting, retaining, and professionally advancing diverse early-career faculty in general pediatrics who are pursuing research careers. Method: RAPID includes the following components: small research grants, mentoring by nationally renowned senior investigators, mentoring and networking at an annual breakfast, an annual career-development conference, and monthly mentoring conference calls. Outcomes data from the first 5 years (2012-2017) of RAPID were analyzed. Data sources were Academic Pediatric Association (APA) membership data and postconferences, baseline, and end-of-program follow-up surveys. Outcome measures included mentoring quality, presentations, publications, subsequent grants, impact on career success, conference ratings, and APA membership diversity. Results: The 103 scholars from the first 4 cohorts, mean scores were 4.5 (5 = strongly agree) for RAPID fostering mentoring, diversifying research skills, and helping children feel more comfortable in an underrepresented minority (URM) faculty. 25% additional grant or poster presentation on the project. They published 54 total articles and received a mean of 2.5 subsequent grants. Their mean score for RAPID "advancing my career by facilitating connections or getting a job" was 4.6. The first 4 RAPID conferences were highly rated (mean scores = 4.1-4.8) and resulted in 13 additional URM career investigations. The RAPID URM APA membership aggregated at 63%-74% for 5 years. In RAPID's first year, URM APA membership rose to 8%, then to 10% by 2017 (APR increase, P < .05). Conclusions: RAPID scholars generated multiple presentations and publications. RAPID mentoring and Conferences were highly rated. RAPID was associated with career advancement and increased professional society diversity. RAPID could serve as a national model for enhancing URM career development and professional society diversity.	other contributions	mentorship
34051276	The POD: a new model for mentoring underrepresented minority faculty	Charlotte Lawless-Williams, Virginia A Johnson, Linda A Osborne, Riv F Thomas, Pauline Gayle, Ronald Henry Tilman	Acad Med.	2006	Mentoring, long recognized as a catalyst for successful careers, is particularly important to the career development of underrepresented minority (URM) faculty. In academic medicine, mentor-protégé relationships are seriously threatened by increased clinical, research, and administrative demands, and an emphasis on scholarship over citizenship. New mentoring models are needed, and they should be adaptable to a medical school's unique structure and mission. The Peer-On-Distance (POD) model, developed in 2002 by the authors and introduced at the College of Medicine at the University of Arkansas for Medical Sciences, is a targeted, multiview mentoring prototype that is built on a solid research foundation and tailored to the unique needs of URM medical school faculty. The model addresses individual needs for guidance related to career goals, research, and the content and interaction skills that are known to be critical to successful academic careers and targeted for development. The multiview approach provides a unique network of peers and faculty members who provide the specific career guidance. Also in the network are leaders in their fields who are able to access accurate information, customs, traditions, and announcements of future resources or potential restrictions in academic medicine. Mentor commitments are clearly defined and time commitments are reassured. The POD model aims to promote retention and advance the careers of URM faculty by engaging them in a protective culture of interpersonal and intrapersonal support. The flexibility of the design allows for adaptation to any institution's unique structure and mission.	other contributions	mentorship
2466750	Training mentors of clinical and translational research scholars: a randomized controlled trial	Christine Pfund, Stephanie Choua, Pamela Aquilar, Michael F Fleming, Kevin A Barry, Ellen L Barthman, Julie M DeCherberg-Gilmore, W Charles Huggins, Richard McGee, Kathryn Schultz, Suzanne C Shapiro, Kimberly C Spencer, Christina A Sorkness	Acad Med.	2014	Purpose: To determine whether a structured mentoring curriculum improves research mentoring skills. Method: The authors conducted a randomized controlled trial (RCT) at 15 academic health centers (June 2012 to July 2013). Faculty mentors of trainees who were conducting clinical/translational research (20% of the time) were eligible. The intervention was an 8-hour, case-based curriculum focused on six mentoring competencies. The primary outcome was the change in mentors' self-reported protée to protée composite score on the Mentoring Competency Assessment (MCA). Secondary outcomes included changes in the following: mentors' awareness as measured by their self-reported retrospective change in MCA scores, mentors' ratings of their mentees' competency as measured by MCA scores, and mentoring behaviors as reported by mentees and their mentees. Results: In total, 234 mentor-mentee pairs were enrolled. 144 mentors were randomized to the intervention, 139 to the control condition. Self-reported protée to protée composite scores were higher for mentees in the intervention group compared with the control group (P < .001). Retrospective changes in MCA composite scores between the two groups were even greater, and extended to all six subscale scores (P < .001). More intervention group mentees reported changes in their mentoring practices than control mentees (P < .001). Mentees working with intervention group mentors reported larger changes in retrospective MCA pre-/posttest scores (P < .003) and more changes in their mentors' behavior (P < .002) than those paired with control mentors. Conclusions: This RCT demonstrates that a competency-based research mentor training program can improve mentors' skills.	other contributions	mentorship, data-driven
2482644	The value of speed mentoring in a pediatric academic organization	Janet R Sarwitz, Melissa M Galini, Nancy D Spector, Maryellen J Guo	Acad Med.	2014	Objective: A reliable and supportive mentor is indispensable to the career development of successful academic professionals. The Academic Pediatric Association (APA) utilized a speed mentoring format at the 2012 Pediatric Academic Societies meeting to enhance mentoring potential. We sought to evaluate the structure of the speed mentoring event and to determine the benefits and impact from the perspective of the mentor and mentee. Methods: Sixty mentees were matched with 60 mentors within various tracks. Each mentee met with 3 mentors for 10 minutes for each day. Participants were then asked to complete a survey 1 to 4 weeks after the event. Survey items included expectation, impact, and value of the experience along with potential for ongoing mentoring relationship. Results: Fifty-four (90%) of the 60 mentees and 32 (53%) of the 60 mentors completed the evaluation. Mentees stated that the event allowed them to receive advice from multiple mentors in a short time period. Mentors appreciated that they gained new insights, reflected on their own careers, and were able to give back to their field. Both mentors and mentees agreed that the time was well spent, would participate again, and identified chemistry as a major factor in forming an ongoing relationship. Conclusions: This national speed mentoring event provided an innovative, fun, and time-efficient mechanism to establish connections, network, and determine whether chemistry existed for potential mentor-mentee relationships. Further study should evaluate whether it can be used in other venues and lead to the development of lasting mentor-mentee relationships.	other contributions	mentorship

	https://doi.org/10.1016/j.socscirev.2021.100561	Membership in academic medicine: Competitive advantage while reducing burnout?	Joy A. Fishman	Health Services Review	2021		Increased regulatory oversight, mandated use of electronic medical records, and economic constraints on healthcare and research confront academic medical institutions with the care requirements for productivity in research, teaching and excellence and equity in clinical care remain. "Burnout" is an important challenge to healthcare and reflects the allocation, creation and decreased productivity of responsibilities in medicine that may detract from individual career engagement. Membership is advantageous in the successful navigation of careers in academic medicine, notably for individuals in need of specialized knowledge, skills or psychological support to accelerate their development. A formalized membership program provides individuals with the guidance and support needed for career development and may alleviate some of the stressors associated with burnout. The interdisciplinary nature of biomedicine supports the use of multiple mentors to provide diverse perspectives for trainees and junior faculty. Membership programs require collaboration with career education of institutional goals and values as well as the development of a formalized mentorship program. Such programs will identify and train potential leaders throughout an organizational hierarchy, support innovation and flexibility within the organization, increase job satisfaction and retention, and, as a result, enhance an institution's competitive position. Notably, relationships developed within a supportive environment may also instigate the development of professional burnout.	other contributions	mentorship
21029847		Combating Structural Inequality - Diversity, Equity and Inclusion in Clinical and Translational Research	L Ebony Boulware, S. Gwaka Corbin, T. Sergio Aguilera-Gonzalez, S. Cornelia H. Wilkins, T. Raquel Ruiz, L. Alfred Vitis, L. Leonard Egede, J.	N Engl J Med.	2022			other contributions	mentorship
32641312		Peer mentoring for professional and personal growth in academic medicine	Melanie Cree-Green, Anirup Marie Chatterji, Shantim M. Davis, Bridgette F. Fochman, Jill L. Katz, Nina S. Ma, Natalie J. Nokoloff, Jane R. Reusch, Stacy L. Simon, Kristin J. Nishida	J Investiging Med.	2020		Membership is a critical component of career development, particularly in academic medicine. Peer mentorship, which does not adhere to traditional hierarchies, is perhaps more accessible for underrepresented groups, including women and minorities. In this article, we review various models of peer mentorship, highlighting their respective advantages and disadvantages. Structured peer mentorship groups exist in different settings, such as those created under the auspices of formal career development programs, part of training grant programs, or through professional societies. Social media has further enabled the establishment of informal peer mentorship through participatory online groups, blogs, and forums that may provide platforms for peer-to-peer advice and support. Such groups can reach rapidly to address changing conditions, as demonstrated by physician leaders and Facebook groups related to the COVID-19 pandemic. Peer mentorship can also be found among colleagues brought together through a common location, interest, or goal, and typically these relationships are informal and fluid. Finally, we highlight how our experience with intentional formation of a small peer mentorship group that provides care and a safe space for professional and social-emotional growth and support. In order to maximize impact and functionality, this model of peer mentorship requires commitment among peers and a more formalized process than many other peer mentorship models, accounting for group dynamics and the unique needs of members. When done successfully, the depth of these mentoring relationships can produce myriad benefits for individuals with careers in academic medicine including, but not limited to, those from underrepresented backgrounds.	other contributions	mentorship
19246662		A call for training the trainers: focus on mentoring to enhance diversity in mental health research	Dilip V Jeste, Elizabeth W Tearey, Veronica Cardenas, Bari Lohmeier, Charles F Reynolds, 3rd	Am J Public Health	2009		There is a widening disparity between the proportion of ethnic minority Americans in the population and the number of researchers from these minority groups. One major obstacle to this arena relates to a dearth of mentors for such trainees. The present academic settings are not optimal for development and sustenance of research mentors, especially for mentees from underrepresented minority ethnic groups. Mentoring skills can and should be evaluated and enhanced. Universities, medical schools, and funding agencies need to join hands and implement national- and local-level programs to help develop and reward mentors of junior scientists from ethnic minority groups.	other contributions	mentorship
1952959		Mentorship of Underrepresented Physicians and Trainees in Academic Medicine: A Systematic Review	Elana Bonifacio, Eliza D Ullmann, Amy R Feltus, A. Rose Turner, Jennifer A Corbelli	J Gen Intern Med	2021		Background: Though the USA is becoming increasingly diverse, the physician workforce contains a disproportionately low number of physicians from racial and ethnic groups that are described as underrepresented in medicine (URM). Mentorship has been proposed as a way to improve the retention and experiences of URM physicians and trainees. The objective of this systematic review was to identify and describe mentoring programs for URM physicians in academic medicine and to describe important themes from existing literature that can aid in the development of URM mentorship programs. Methods: The authors searched PubMed, PsycINFO, EBC, and Cochrane databases, and included original publications that described a US mentorship program involving academic medical doctors at the faculty or trainee level and were created for physicians who are URM or provided results stratified by race/ethnicity. Results: Our search yielded 5,549 unique citations and 31 publications met our inclusion criteria. Frequently cited objectives of these programs were to improve research skills, to diversify representation in specific fields, and to recruit and retain URM participants. Subjective outcomes were primarily participant satisfaction with the program and/or work climate. The dyad model of mentoring was the most common, though several newer models were also described. Program evaluations were generally subjective and reported high satisfaction, although some reported negative outcomes including publications, retention, and promotion. All showed satisfactory outcomes for the mentorship programs. Discussion: This review describes a range of successful mentoring programs for URM physicians. Our recommendations based on our review include the importance of institutional support for diversity, tailoring programs to local needs and resources, training mentors, and utilizing URM and non-URM mentors.	other contributions	mentorship
20229808		Evaluating research mentors working in the area of clinical translational science: a review of the literature	Emma Meagher, Lauren Taylor, Jeff Prosserfeldt, Mike Fleming	Clin Transl Sci.	2011		The goal of this paper is to review the evaluation of mentors with a focus on training new investigators in clinical translational science. These scholars include physicians and Ph.D. scientists who are generally assistant professors in clinical departments. This white paper is one of a series of articles focused on the programmatic elements of effective mentoring practices and the "current state of the art." Evaluating mentor performance and providing formative feedback can lead to stronger mentors and ultimately lead to increased success of one clinical and translational investigator. While there is general agreement that mentor evaluation can be helpful, the process is difficult. Trainees are reluctant to share negative experiences and to rate their mentors. Mentors are not sure they want to be evaluated. Program leaders are not sure how to effectively use the information. This white paper provides mentees, mentors, and program leaders with new perspectives on mentor evaluation and ideas for future research.	other contributions	mentorship
22322226		Identifying and aligning expectations in a mentoring relationship	W Charles Huskins, Karim Shah, Anne Marie Weber-Main, Melissa D Bagg, Vanessa de Feitor, J, John Hamilton, Michael Fanning	Clin Transl Sci.	2011		The mentoring relationship between a scholar and their primary mentor is a core feature of research training. Anecdotal evidence suggests this relationship is suboptimally defined when scholar and mentor expectations are not aligned. We examined three questions: (1) What is the value in assuming that the expectations of scholar and mentor are mutually identified and aligned? (2) What types of programmatic interventions facilitate this process? (3) What types of expectations are important to identify and align? We addressed these questions through a systematic literature review, focus group interviews of mentors and mentees, a survey of clinical and translational science Association (CTSA) 12 program directors, and a review of formal programmatic mechanisms used by CTSA programs. We found broad support for the importance of identifying and aligning the expectations of scholar and mentors and evidence that training programs, agreements, and training programs facilitate this process. This review has implications for expectations with respect to the scholar's research, education, professional development and career advancement as well as support, communication, and personal contact and interpersonal relations. Research is needed to assess the efficacy of formal alignment activities.	other contributions	mentorship
22376261		Evaluating and giving feedback to mentors: new evidence-based approaches	Lauren Anderson, Karim Shah, Michael Fleming	Clin Transl Sci.	2012		A comprehensive mentoring program includes a variety of components. One of the most important is the ongoing assessment of and feedback to mentors. Scholars need strong active mentors who have the expertise, disposition, motivation, skills, and the ability to mentor performance and to adjust their mentoring style. Assessing the effectiveness of a given mentor is no easy task. Variability in learning needs and academic goals among scholars makes it difficult to develop a single evaluation instrument or a standardized procedure for evaluating mentors. Scholars, mentors, and program leaders are often reluctant to conduct formal evaluations, as there are no commonly accepted measures. The process of giving feedback is often difficult and there is limited empirical data on efficacy. This article presents a new and innovative six-component approach to mentor evaluation that includes the assessment of mentor training and empowerment, peer learning and mentor training, scholar absence, mentor-mentor expectations, mentor self-reflection, and mentee evaluation of their mentor.	other contributions	mentorship
31660217		Diversity and the next generation physician-scientist	Antti Behrakis, Jessica Tan, Henna Erickson	J Clin Transl Sci.	2019		The fields in which physician-scientists work have much to gain by including people with different backgrounds and unique experiences in the search for new knowledge and solutions for existing problems (2, 3). The next generation of physician-scientists will be from the midlevel and Gen Z generations which are far more diverse than previous generations and have the potential to diversify the workforce (3). Yet, many systemic and cultural barriers exist to the entry and advancement of physician-scientists from underrepresented backgrounds (4). Thus, while addressing the diversity of physician-scientist workforce has been a major focus of the last four decades (5), we argue that promoting diversity in the workforce and reducing barriers for underrepresented groups should also be a priority. Here, we highlight many underrepresented groups that deserve attention and provide suggestions for how to support their inclusion in the physician-scientist workforce.	other contributions	mentorship
33502380		Mentoring as an intervention to promote gender equality in academic medicine: a systematic review	Allan House, Neela Daxini, Prada Burkhombas, Vicky Ward, Louise D Bryant	BMJ Open	2021		Background: Mentoring is frequently suggested as an intervention to address gender inequalities in the workplace. Objective: To systematically review evidence published since a definitive review in 2006 on the effectiveness of mentoring interventions aimed at achieving gender equality in academic medicine. Design: Systematic Review, using the Template for Intervention Description and Replication as a template for data extraction and synthesis. Sample Studies were included if they described a specific mentoring intervention in a medical school or analogous academic healthcare organisation and included results from an analysis of the intervention. Eligibility criteria: Mentoring was defined as (1) a formally organised intervention entailing a supportive relationship between a mentor, defined as a more senior/experienced person and a mentee defined as a more junior/experienced person; (2) mentoring intervention involved academic career support (3) the mentoring relationship was suitable for management or supervision of performance and was defined by contact over an extended period of time. Outcomes: The impact of mentoring was usually reported at the level of individual participants, for example, satisfaction and well-being or self-reported career progression. We sought evidence of impact on gender equality via reports of organisation-level effectiveness, of promotion or retention, pay and academic performance of female staff. Results: We identified 32 publications. 8 review articles, 20 primary observational studies and 4 randomised controlled trials. A further 19 discussed mentoring in relation to gender but did not meet our eligibility criteria. The terminology used, and the structures and processes reported as constituting mentoring, varied greatly. We identified that mentoring is popular with many who receive it; however, we found no robust evidence of effectiveness in reducing gender inequalities. Primary research used weak evaluation designs. Conclusions: Mentoring is a complex intervention. Future evaluations should adopt standardised approaches used in applied health research to the design and evaluation of effectiveness and cost-effectiveness.	other contributions	mentorship
33430479		Mentoring New and Early-Stage Investigators and Underrepresented Minority Faculty for Research Success in Health-Related Fields: An Integrative Literature Review (2010-2020)	Lynell B. Baskett, Tawana S. Lane, Anne Schwartz, Heidi A. Wymore, Julia A Baldwin	Int J Environ Res Public Health	2021		Mentoring to develop research skills is an important strategy for facilitating faculty success. The purpose of this study was to conduct an integrative literature review to examine the barriers and facilitators to mentoring in health-related research, particularly for three categories: new investigators (NI), early-stage investigators (ESI) and underrepresented minority faculty (UMF). PubMed, PsycINFO, CINAHL, and PubMed were searched for papers published in English from 2010 to 2020, and 46 papers were reviewed. Most papers recommended having multiple mentors and many recommended assessing baseline research skills. Barriers and facilitators were both individual and institutional. Individual barriers mentioned most frequently were lack of time and finding work-life balance. UMF mentioned barriers related to bias, discrimination and isolation. Institutional barriers included lack of mentors, lack of access to resources, and hours teaching and service loads. UMF experienced institutional barriers such as devaluation of experience or expertise. Individual facilitators were subdivided and included writing and technical skills, networking and collaborating as interpersonal skills, and accountability, leadership, time management, and networking as personal skills. Institutional facilitators included access to mentoring, professional development opportunities, and workload assigned to research. Advocacy for diversity and cultural humility were included as unique interpersonal and institutional facilitators for UMF. Several overlapping and unique barriers and facilitators to mentoring for research success for NI, ESI and UMF in the health-related disciplines are presented.	other contributions	mentorship
34053085		Mentoring as a Buffer for the Systemic Impact of Racism and COVID-19 among Diverse Faculty within Academic Medicine	Janette B South-Paul, Kendall M Campbell, Norma Pol-Torrey, Audrey J Murrell	Int J Environ Res Public Health	2021		Within this article, we explore the dual impact of two pandemics, racism and COVID-19, on the career and psychological well-being of diverse faculty within academic medicine. First, we present a discussion of the history of racism in academic medicine and the institutionalization of racial disparities due to the COVID-19 pandemic. As a result of the syndemics of racism and COVID-19, the outlook for the recruitment, retention, and advancement of diverse faculty and leaders within academic medicine is at risk. While mentoring is known to have benefits for career and personal development, we focus on the unique and often unacknowledged role that mentoring can play as a buffer for women and people of color, especially when working in institutions that lack diversity and are now struggling with the syndemics of racism and COVID-19. We also discuss the implications of acknowledging mentoring as a buffer for future leadership development, research, and programs within academic medicine and health professions.	other contributions	mentorship
32891152		Mentoring Millennials	Jennifer F. Walden, Vinnet Chopra, Sarah Jant	JAMA	2020		Context: Mentoring, as a partnership in personal and professional growth and development, is central to academic medicine, but it is challenged by increased clinical, administrative, research, and other educational demands on medical faculty. Therefore, evidence for the value of mentoring needs to be evaluated. Objective: To systematically review the evidence about the prevalence of mentorship and its relationship to career development. Data sources: MEDLINE, Current Contents, Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effects, Cochrane Central Register of Controlled Trials, PsycINFO, and Scopus databases from the earliest available date to May 2020. Study selection and data extraction: We identified all studies evaluating the effect of mentoring on career choices and academic advancement among clinical students and physicians. Minimum inclusion criteria were a description of the study population and evidence of extractable data. No restrictions were placed on study methods or language. Data synthesis: The literature search identified 3640 citations. Review of abstracts led to retrieval of 142 full-text articles for assessment. 42 articles describing 39 studies were selected for review. Of these, 34 (82%) were cross-sectional self-report surveys with small samples and response rates ranging from 5% to 93%. One case-control study yielded a survey used a comparison group that had not received mentoring, and 1 cohort study had a small sample size and a large loss to follow-up. Less than 50% of medical students and in some fields less than 20% of faculty members had a mentor. Fewer perceived that they had more difficulty finding mentors than their colleagues who are men. Mentorship was reported to have an important influence on personal development, career guidance, career choice, and research productivity, including publication and grant success. Conclusions: Mentoring is perceived as an important part of academic medicine, but the evidence to support this perception is not strong. Practical recommendations on mentoring in medicine that are evidence-based will require studies using more rigorous methods, addressing contextual issues, and using cross-disciplinary approaches.	other contributions	mentorship
16954490		Mentoring in academic medicine: a systematic review	Daria Samurçakli, Sharon E Straus, Ana Marusic	JAMA	2006		Study selection and data extraction: We identified all studies evaluating the effect of mentoring on career choices and academic advancement among clinical students and physicians. Minimum inclusion criteria were a description of the study population and evidence of extractable data. No restrictions were placed on study methods or language. Data synthesis: The literature search identified 3640 citations. Review of abstracts led to retrieval of 142 full-text articles for assessment. 42 articles describing 39 studies were selected for review. Of these, 34 (82%) were cross-sectional self-report surveys with small samples and response rates ranging from 5% to 93%. One case-control study yielded a survey used a comparison group that had not received mentoring, and 1 cohort study had a small sample size and a large loss to follow-up. Less than 50% of medical students and in some fields less than 20% of faculty members had a mentor. Fewer perceived that they had more difficulty finding mentors than their colleagues who are men. Mentorship was reported to have an important influence on personal development, career guidance, career choice, and research productivity, including publication and grant success. Conclusions: Mentoring is perceived as an important part of academic medicine, but the evidence to support this perception is not strong. Practical recommendations on mentoring in medicine that are evidence-based will require studies using more rigorous methods, addressing contextual issues, and using cross-disciplinary approaches.	other contributions	mentorship

2342590	Mentor networks in academic medicine: moving beyond a dyadic conception of mentoring for junior faculty researchers	Rochelle DeCastro 1, Dana Sambors, Felice A Ubel, Akshay Swamin, Reshma Singh	Acad Med.	2013	<p>Purpose: Career development award programs often require formal establishment of mentoring relationships. The authors sought to gain a nuanced understanding of mentoring from the perspective of a diverse national sample of faculty clinician-researchers who were members of formal mentoring relationships.</p> <p>Method: Between February 2010 and August 2011, the authors conducted semistructured, in-depth telephone interviews with 100 former recipients of National Institutes of Health mentored career development awards and 28 of their mentors. Purposeful sampling ensured a diverse range of viewpoints. Multiple analysis iteratively coded verbatim transcripts using qualitative data analysis software.</p> <p>Results: Three relevant themes emerged: (1) the numerous roles and behaviors associated with mentoring in academic medicine, (2) the impossibility of finding a single person who fulfills the mentoring needs of another individual, and (3) the importance of mentor networks and sponsor networks. Many respondents described the need to cultivate more than one mentor. Several participants discussed the use of peer mentors, citing benefits such as pooled resources and mutual learning. Female participants generally acknowledged the importance of having at least one female mentor. Some observed that their portfolio of mentors needed to evolve to remain effective.</p> <p>Conclusions: Those who seek to promote the careers of faculty in academic medicine should focus on developing mentoring networks rather than on hierarchical mentoring dyads. The members of faculty members' mentoring team or network should reflect the protégé's individual needs and preferences, with special attention toward ensuring diversity in terms of area of expertise, academic rank, and gender.</p>	other contributions	mentorship
2342589	Mentoring programs for underrepresented minority faculty in academic medical centers: a systematic review of the literature	Bethina M Beach, Jorge Calfee, Eusebio, Kristian G Sanchez, Sarah F Langford, Brenda A Latham-Sailler, Nancy A Bell	Acad Med.	2013	<p>Purpose: Mentoring is critical for career advancement in academic medicine. However, underrepresented minority (URM) faculty often receive less mentoring than their nonminority peers. The authors conducted a comprehensive review of published mentoring programs designed for URM faculty to identify "promising practices."</p> <p>Method: Databases (PubMed, PsycINFO, ERIC, PsycFirst, Google Scholar, Dissertation Abstracts International, CNTRL, Sociological Abstracts) were searched for articles describing URM faculty mentoring programs. The REAM framework (Reach, Effectiveness, Adoption, Implementation, and Maintenance) formed the model for analyzing programs.</p> <p>Results: The search identified 71 citations. Abstract reviews led to retrieval of 58 full-text articles for assessment; 18 articles describing 13 programs were selected for review. The reach of these programs ranged from 7 to 128 participants. Most evaluated programs on the basis of the number of grant applications and manuscript production or satisfaction with program content. Program offered a variety of training experiences, and adoption was relatively high, with minor changes made for implementing the intended content. Barriers included time-restricted funding, inadequate evaluation due to few participants, significant time commitments required from mentors, and difficulty in addressing institutional challenges faced by URM faculty. Program sustainability was a concern because programs were supported through external funds, with restricted financial support.</p> <p>Conclusions: Mentoring is an important part of academic medicine, particularly for URM faculty who often experience unique career challenges. Despite this need, relatively few publications exist to document mentoring programs for this population. Institutionally supported mentoring programs for URM faculty are needed, along with detailed plans for program sustainability.</p>	other contributions	mentorship
3100827	Optimizing Your Mentoring Relationship: A Toolkit for Mentors and Mentees	Megan Ayler, Mario Guo, Adhee Varanasi, Cathy Chen, Yu, Joseph Loprinzi, Kathy M Moore, Rhonda Graves-Achobon, Teri Lee Turner, Janet B Spertzel, Theodore Charles Satchis, Manisha S Anderson, Nancy D Spector	MedEdPORTAL	2016	<p>Introduction: Mentorship is a vital component of academic and professional development. Mentees report positive impacts from mentorship programs, yet institutions and societies may struggle to meet their mentees' needs due to factors such as mentor fatigue and lack of mentor training. To address this in our own professional society, the Association of Pediatric Program Directors, we developed a mentor toolkit in order to utilize a variety of mentoring models, provide faculty development for midlevel mentors, and offer guidance to mentees.</p> <p>Methods: Most of these tools were designed to be administered in an interactive format such as a workshop or seminar with think-pair-share opportunities. The toolkit begins by providing a definition of mentoring and reinforces the benefits and the characteristics of effective mentoring relationships. Next, we discuss the important role that mentors have in creating and maintaining effective mentoring relationships (i.e., mentee-driven mentoring). We then introduce a mentoring model activity designed to help mentees recognize their professional interests and think about how they might expand it to fulfill the spectrum of their mentoring needs. Next, we present guidelines for the implementation of four mentoring models that can be used within one's institution: traditional dyadic mentoring, peer group mentoring, ment the professor mentoring, and speed mentoring. We then provide tools that can be used to help facilitate effective mentoring development.</p> <p>Results: This toolkit has successfully served as a self-guided resource at national meetings for many years, garnering positive feedback from mentors and mentees alike.</p> <p>Discussion: The principles and methods are easily generalizable and may be used to guide mentorship programs within institutional and professional societies, as well as to assist mentors and mentees in optimizing their individual mentoring relationships.</p>	other contributions	mentorship
2477211	Promoting education, mentorship, and support for pediatric research	Committee on Pediatric Research	Pediatrics	2014	<p>Pediatricians play a key role in advancing child health research to both attain and improve the physical, mental, and social health and well-being of all infants, children, adolescents, and young adults. Child health research issues that require investigation include scientific and pediatric research, and the scope of the pediatric research enterprise is transdisciplinary and includes the full spectrum of basic science, translational, community-based, health services, and child health policy research. Although most pediatricians do not directly engage in research, knowledge of research methodologies and approaches promotes critical evaluation of scientific literature, the practice of evidence-based medicine, and advocacy for evidence-based child health policy. This additional, specific recommendation to promote further research education and support at all levels of pediatric training, from premedical to continuing medical education, as well as recommendations to increase support for research and research activities. Pediatric research is crucial to the American Academy of Pediatrics' goal of improving the health of all children. The American Academy of Pediatrics continues to promote and encourage efforts to facilitate the creation of new knowledge and ways to reduce barriers experienced by trainees, practitioners, and academic faculty pursuing research.</p>	other contributions	mentorship
3375905	Diversity of Mentorship to Increase Diversity in Academic Pediatrics	Colin J Orr, Skyler McLaurin-Jiang, Shaohua D Jackson	Pediatrics	2021	<p>Increasing the number of academic physicians from underrepresented groups in medicine is a complex problem requiring multiple solutions. Increasing diversity in academic medicine requires investment of time and resources from institutions, public and private organizations, and individuals. For early career academic physicians who are underrepresented in medicine, a cornerstone of career development has been the presence of mentored mentors of various races, sex, and race and ethnicity.¹ The objective with this article is to outline the distinct approaches and varied types of mentorship that are necessary to create a more diverse academic pediatric community.</p>	other contributions	mentorship
3073604	Organizational best practices towards gender equality in science and medicine	Ingeborg R Cox, Ryan Wiley, Linda-Gail Bekker	Lancet	2019	<p>In August 2018, the president of the World Bank noted that "human capital" the potential of individuals is going to be the most important long-term investment any country can make for its people's future prosperity and quality of life. Nevertheless, leaders and practitioners in academic science and medicine continue to be unaware of the gender equality issues that exist, and most are hampered by a full participation of women and minorities in science and medicine around the world. This lack of awareness and education results in failures to fully mobilize the human capital of half the population and limits global technological and medical advancements. The chronic lack of recruitment, promotion, and retention of women in science and medicine is due to systemic, structural, organizational, institutional, cultural, and societal barriers to equity and inclusion. These barriers must be identified and removed through increased awareness of the challenges combined with evidence-based, data-driven approaches leading to measurable change and outcomes. In this Review, we discuss these issues and highlight actions that could address gender equality in science and medicine. We survey approaches and insights that have helped to identify and remove systemic bias and barriers in science and medicine, and propose tools that will help organizational change towards gender equality. We describe tools that include formal legislation and national or large-scale levels (eg, gender parity), techniques that increase fairness (eg, gender equity) through facilitated organizational cultural change at institutional levels, and professional development of core competencies at individual levels. This Review is not intended to be an extensive analysis of the literature currently available on achieving gender equality in academic medicine and science, but rather, a reflection on finding multifactorial solutions.</p>	other contributions	mentorship
1203243	Critical choices in mentoring the next generation of academic pediatricians: one article of faith to reflect on	Dennis Orsler, Eli D Auner	J Pediatr	2003	<p>Women's representation in science and medicine has slowly increased over the past few decades. However, this rise in numbers of women, or gender diversity, has not been matched by a rise in gender inclusion. Despite increasing representation, women still encounter bias and discrimination when compared with men in their fields across a variety of outcomes, including treatment at school and work, living, compensation, evaluation, and promotion. Individual and systemic biases create unwelcoming environments for women, particularly for those who additionally identify with other traditionally disadvantaged groups (eg, women of color). This Review draws on several decades of research in the field of management and its cognate disciplines to identify the myths that hinder gender bias and the strategies for success. We argue for a move away from a singular focus on interventions aimed at targeting individual attitudes and behavior to more comprehensive interventions that address structural and systemic changes.</p>	other contributions	mentorship
3073603	Working toward gender diversity and inclusion in medicine: myths and solutions	Sonia K Kang, Sarah Kaplan	Lancet	2019	<p>Women's representation in science and medicine has slowly increased over the past few decades. However, this rise in numbers of women, or gender diversity, has not been matched by a rise in gender inclusion. Despite increasing representation, women still encounter bias and discrimination when compared with men in their fields across a variety of outcomes, including treatment at school and work, living, compensation, evaluation, and promotion. Individual and systemic biases create unwelcoming environments for women, particularly for those who additionally identify with other traditionally disadvantaged groups (eg, women of color). This Review draws on several decades of research in the field of management and its cognate disciplines to identify the myths that hinder gender bias and the strategies for success. We argue for a move away from a singular focus on interventions aimed at targeting individual attitudes and behavior to more comprehensive interventions that address structural and systemic changes.</p>	other contributions	mentorship
1813759	Mentoring faculty in academic medicine: A new paradigm?	Linda Pohl, Sharon Knight	J Gen Intern Med	2005	<p>In this paper, we discuss an alternative structure and a broader vision for mentoring of medical faculty. While there is recognition of the need for mentoring for professional advancement in academic medicine, there is a dearth of research on the process and outcomes of mentoring medical faculty. Supported by the literature and our experience with both formal dyadic and group peer mentoring programs as part of our federally funded National Center of Leadership in Academic Medicine, we assert that a group-peer, collaborative mentoring model founded on principles of adult education is one that is likely to be an effective and practically viable form of mentoring for both senior and new academic physicians.</p>	other contributions	mentorship
2404236	Pediatric faculty diversity: a new landscape for academic pediatricians in the 21st century	Leslie R Walker 1, Bradley Stagerlin	AMA Pediatr	2013	<p>Academic pediatrics has not kept pace with the changing demographics in the United States population and the children and families we serve. By 2020, the majority of children and adolescents in the United States will come from ethnic minority backgrounds. We will have a new "majority minority" population, with Latino and Asian ethnicities contributing the largest proportion.^{1,2} This change in demographics is significant because health care disparities occur disproportionately in those who will soon make up the largest proportion of the US population. To date, pediatric organizations have not developed national strategies to respond specifically to the ethnic diversity of our pediatric population. Doing so is critical to ensuring excellence in our profession and our professional societies. Because the impact of the dramatic changes in US demographics is manifesting first in the pediatric population, we must lead the medical profession in creating a national strategy to address organizational change in the academic and practice workforce and thus ensure the best health outcomes in the 21st century.</p>	other contributions	mentorship
3395878	First-generation physician-scientists are underrepresented and need better support	Briana Christophers, Briana Micozzi, Eileen Nudda-Bedello, Mollie Marie, Chad F Anderson, Catherine Bechteloff	Nat Med.	2021	<p>First-generation students, whose parents do not have baccalaureate degrees, are less likely to apply to MD-PhD programs than to MD programs, which has led to a worrying lack of diversity among physician-scientists.</p>	other contributions	mentorship
2370234	The Mentoring Competency Assessment: validation of a new instrument to evaluate skills of research mentors	Michael Fleming, Stephanie Hovine, Yvonne Sheehankar-Reinos, Len Yu, Jane Garbutt, Richard McGee, Kurt Knoke, Zannie Mendis, Dori M Rubin	Acad Med.	2013	<p>Purpose: To determine the psychometric properties of the Mentoring Competency Assessment (MCA), a 26-item skills inventory that enables research mentors and mentees to evaluate six competencies of mentors: maintaining effective communication, alignment, identification, assessing understanding, addressing diversity, fostering independence, and promoting professional development.</p> <p>Method: In 2010, investigators administered the MCA to 283 mentor-mentee pairs from 18 universities participating in a trial of a mentoring curriculum for clinical and translational research mentors. The authors analyzed baseline MCA data to describe the instrument's psychometric properties.</p> <p>Results: Coefficient alpha scores for the MCA showed reliability (internal consistency). The hypothesized model with its six latent competencies (competencies) resulted in an acceptable fit to the data. For the instrument completed by mentors, chi-square = 463.20, χ^2 / df = 284, p < .001, root mean square error of approximation (RMSEA) = 0.069 (90% CI, 0.062-0.076); comparative fit index (CFI) = 0.85, and Tucker-Lewis index (TLI) = 0.83. For the instrument completed by mentees, chi-square = 840.26, χ^2 / df = 286, p < .001, RMSEA = 0.086 (90% CI, 0.082-0.077); CFI = 0.87, and TLI = 0.83. The correlations among the six competencies were high, 0.49-0.87 for mentors, 0.58-0.92 for mentees. All parameter estimates for the individual items were significant, standardized factor loadings ranged from 0.2 to 0.83 for mentors and 0.16 to 0.90 for mentees.</p> <p>Conclusions: The findings demonstrate that the MCA has reliability and validity. In addition, this study provides preliminary norms derived from a national sample of mentors and mentees.</p>	other contributions	mentorship
https://www.aapublichealth.org/mentoring-relationships/	Clinical Research Scholars Program	Seattle Children's	Program		<p>The Clinical Research Scholars Program (CRSP) is a mentored research career development program for CTRP investigators. The program objective is to support junior faculty in the development of successful clinical, translational and outcomes research at Seattle Children's. This goal is accomplished through a structured program of mentoring by dedicated CRSP faculty, educational seminars, and financial support.</p>	other contributions	mentorship
https://medicine.utah.edu/uvcrat/	UVCAT Research Scholars Program	University of Utah	Program		<p>The UVCAT Research Scholars Program has been designed to offer intensive mentorship and support to early-stage faculty members engaged in clinical and translational research in transitioning to accomplished, funded principal investigators.</p> <p>UVCAT leverages the resources of our institution to augment departmental resources in support of junior faculty investigators using a holistic framework, the Mentor-Mentoring Model, that includes four levels of mentorship: self, scientific, peer, senior, and staff. During the year program, scholars receive training in scientific career development, grant writing and management, and leadership designed to create empowered principal investigators.</p>	other contributions	mentorship
https://www.fischerresearch.com/	Picture a Scientist	Tribeca Film Festival	Film		<p>PICTURE A SCIENTIST chronicles the groundswell of researchers who are writing a new chapter for women scientists. Biologist Nancy Hopkins, chemist Raychelle Burke, and geologist Jane Willingham lead viewers on a journey deep into their own experiences in the sciences, ranging from brutal harassment to years of unpaid nights. Along the way, from campus laboratories to spectacular field stations, we encounter scientific luminaries, including social scientists, neuroscientists, and psychologists - who provide new perspectives on how to make science itself more diverse, equitable, and open to all.</p>	other contributions	mentorship