

PMID	TITLE	AUTHORS	JOURNAL/BOOK	PUBLICATION YEAR	SUMMARY	CATEGORY	TYPE
2898744	Implicit Bias in Pediatric Academic Medicine	Tiffany J. Johnson, M.D.	J Natl Med Assoc	2017	Little research exists regarding unconscious racial attitudes among pediatric faculty responsible for decisions on workforce recruitment and retention in academic medicine. This study sought to describe the levels of unconscious racial bias and perceived barriers to minority recruitment and retention among academic pediatric faculty leaders. Unconscious pro-white/black racial bias was identified in this sample of academic pediatric faculty and leaders. Further research is needed to examine how unconscious bias impacts decisions in academic pediatric workforce recruitment. Addressing unconscious bias and perceived barriers to minority recruitment and retention represent opportunities to improve diversity efforts.	other contributions search committee composition, implicit bias training, policies	data driven
31315903	Does Gender Bias Still Affect Women in Science?	Rachel L. Rogers	Microbiol Mol Biol	2019	The percentage of women employed in professional scientific positions has been low but is increasing over time. The U.S. National Institutes of Health and the National Science Foundation have both implemented programs to improve women's participation in science, and many universities and companies have diversity and equity programs. While most faculty and scientists believe that they are fair and unbiased, published research in leading peer-reviewed journals shows that gender bias in science and medicine is widespread and persistent today in both faculty and students. Recent studies show that gender bias affects student grading, professional hiring, mentoring, tenure, promotion, respect, grant proposal success, and pay. In addition, sexual harassment remains a significant barrier. Fortunately, several studies provide evidence for programs that raise conscious awareness of gender bias, improve equity in science, and there are a number of recommendations and strategies for improving the participation of women.	search committee composition, implicit bias training, policies	review article
2621416	Are Researcher Development Interventions, Alone or in Any Combination, Effective in Improving Researcher Behavior? A Systematic Review	Paul E Mazeran, Antonette B Coe, Jessica A Evans, Daniel R Longo, Barbara A Wright	Eval Health Prof	2014	Academic institutions funded by the Clinical and Translational Science Awards (CTSA) Program of the National Institutes of Health were challenged recently by the Institute of Medicine to expand traditional mentoring of graduate and postdoctoral scholars to include training and continuing education for faculty, professional staff, and community partners. A systematic review was conducted to determine whether researcher development interventions, alone or in any combination, are effective in improving researcher behavior. PubMed, CINAHL, and Education Research Complete databases and select journals were searched for relevant articles published from January 2000 through October 2012. A total of 3480 papers were identified, and 134 papers were retained for in-depth analysis. None included randomization. Twenty-two papers reported subjects with professional degrees, interventions, and outcomes. Interventions were mentoring, outreach visits, self-paced modules, audit and feedback, and multifaceted interventions. Most studies reported multifaceted interventions (68.2%), often involving mentored learning experiences, and meetings. All studies reported a change in performance, including number of publications or grant applications. Nine studies reported changes in competence, including writing, presentation, or analysis skills, and performance in research practice (40.2%). Even so, the quality of evidence was weak to establish causal linkages between researcher development and improved researcher behavior, nearly all the projects (91.8%) received funding from governmental agencies, professional societies, or other organizations. Those who design researcher development activities and those who evaluate the programs are challenged to develop tools and conduct studies that measure the effectiveness, costs, and sustainability of researcher development in the CTSA Program.	search committee composition, implicit bias training, policies	review article
3146430	Beyond the cultural myth of medical meritocracy	Sahar Razaq, Terstin Riser, Brian Hodges, Yvonne Siskier	Med Educ	2020	Background: We examine the cultural myth of the medical meritocracy, whereby the "best and the brightest" are admitted and promoted within the profession. We explore how this narrative guides medical practice in ways that may no longer be adequate in the contexts of practice today. Methods: Narrative analysis of medical students' and physicians' stories. Results: Hierarchies of privilege within medicine are linked to meritocracy and the trope of the "hero's story" in literature. Gender and other forms of difference are generally excluded from narratives of excellence, which suggests operative mechanisms that may be contributory to observed differences in attainment. We discuss how the notion of diversity in medicine is a "problem" to be accommodated within merit and merit that medical practice today requires a reformulation of the notion of merit in medicine, valorising a diversity of life experience and skills, rather than "retrofitting" diversity concerns as problems to be accommodated within current constructs of merit. Conclusions: Three main action-oriented outcomes for a better formulation of merit relevant to medical practice today are suggested: (a) development of "essential" critical consciousness regarding the structural issues in merit assignment; (b) alignment of merit criteria with relevant social outcomes; and (c) developing inclusive leadership to accommodate the greater diversity of excellence needed in today's context of medical practice. A reformulation of the trope through which medical practitioners and educators communicate and validate aspects of medical practice will be required in order for the profession to continue to have relevance to the diverse societies it serves.	other contributions search committee composition, implicit bias training, policies	data driven
	Rising Above Cognitive Errors: Improving Searches, Evaluations and Decision-Making	Moody Jahan		2020		search committee composition, implicit bias training, policies	book
	Faculty Development & Diversity: Best Practices for Conducting Faculty Searches	Harvard University, Office of the Senior Vice Provost			This brief and accessible guide highlights key points for Harvard faculty to consider throughout the search process, including helpful tactics to use and potential pitfalls to avoid in the routines used here and in most universities. In preparing this guide, we have drawn on extensive social research as well as the practical wisdom of many colleagues at Harvard and elsewhere, gleaned from articles, books, and conversations. A foundational document for us, as for many institutions working to diversify their faculties, was Searching for Excellence & Diversity: A Guide for Search Committees, by Joe Foweraker and Jo Handelman, first published in 2005 (Women in Science and Engineering Leadership Institute (WISE), University of Wisconsin, rev. ed., 2012). We recommend the WISSE guide as a comprehensive source that distills the published research on aspects of the search process to great effect.	search committee composition, implicit bias training, policies	guide
31454337	Women in Pediatrics: Progress, Barriers, and Opportunities for Equity, Diversity, and Inclusion	Nancy D Spector, Pibonema A Asante, Jeanette B Mendicino, Julie A Poorman, Allison R Larson, Ashwani Sahni, Amy S Chantemans, Jack E Gower	Pediatrics	2019	Gender bias and discrimination have profound and far-reaching effects on the health care workforce, delivery of patient care, and advancement of science and are antithetical to the principles of professionalism. In the quest for gender equity, medicine must abandon its adherence to highly educated and qualified women, should be leading the way. The sheer number of women who comprise the majority of pediatricians in the United States suggests this specialty has a unique opportunity to advance progress in diversity and inclusion. Indeed, there has been much progress for women in medicine and pediatrics. However, many challenges remain, and there are areas in which progress is too slow, stalled, or even regressing. The fair treatment of women pediatricians will require continued progress from government, industry, academia, and the public. This review examines progress to academic medicine, hospitals, health care organizations, and practice, medical societies, journals, and funding agencies. In this report, we describe the 6-step equity, diversity, and inclusion cycle, which provides a strategic methodology: (1) examine equity, diversity, and inclusion data; (2) share results with stakeholders; (3) investigate causes; (4) implement strategies; (5) track outcomes and adjust strategies; and (6) disseminate results. Next steps include the enforcement of a climate of transparency and accountability, with leaders prioritizing and financially supporting workforce gender equity. This scientific and data-driven approach will accelerate progress and help pave a pathway to better health care and science.	search committee composition, implicit bias training, policies	program evaluation
31609072	Strategies to improve equity in faculty hiring	Neelshi Bhatta	Med Biol Cell	2019	Through targeted recruitment and interventions to support their success during training, the fraction of trainees (graduate students and postdoctoral fellows) in academic science from historically underrepresented groups has steadily increased. However, this trend has not translated to a concomitant increase in the number of faculty from those underrepresented groups. Here, I focus on proven strategies that departments and research institutions can develop to increase equity in faculty hiring and promotion to address the lack of racial and gender diversity among their faculty.	search committee composition, implicit bias training, policies	program evaluation
3023471	Advancing Holistic Review for Faculty Recruitment and Advancement	Tori Blakely Harris, William A Thomson, Nancy A Moreno, Sarah Conrad, Elizabeth White, Geoffrey Young, Erik D Malmberg, Bonnie Weisman, Alicia D'N Monroe	Acad Med	2018	Problem: The challenges to developing a physician and scientific workforce that both reflects and provides quality care for the complex and richly diverse population of the United States are considerable. Approach: One medical school (Baylor College of Medicine) sought to adapt the Holistic Review in Admissions process developed by the Association of American Medical Colleges and apply it to faculty. In the fall of 2016, academic leaders received on-site training and completed several workshop exercises. The goal was for the leaders to build consensus around a holistic review framework for hiring and advancing faculty that is based on the institution's mission, vision, and values. Outcomes: This training occurred during Baylor's ongoing strategic planning and helped inform improvements in the faculty recruitment and hiring process, in the guidelines for faculty hiring, and in the pilot of a new academic leadership hiring tool, the "experience attributes-academic metrics model." The model that developed from the pilot translates the holistic review concepts into a tool for identifying, hiring, and promoting faculty members and administrative leaders that is aligned to the values of Baylor. The utility of this framework lies in the clear delineation of metrics and qualifications along with the prioritization of attributes and experiences. Next steps: This innovation is being piloted and evaluated to determine its effect on advancing the institutional mission of Baylor.	search committee composition, implicit bias training, policies	program evaluation
29502149	Where are the rest of us? Improving representation of minority faculty in academic medicine	Jose E Rodriguez, Kendall M Campbell, Roxann W Mouridsen	South Med J	2014	Objectives: Low numbers of underrepresented minority faculty members in academic medicine (Black, Hispanic, Asian/Pacific Islander, Native American/Alaskan) continue to be a concern for medical schools because there is higher attrition and talent loss among this group. Although much has been written on this topic, there has not been a systematic review of the relevant literature published. Methods: We searched MEDLINE, Web of Knowledge, ProQuest, and Google Scholar for articles relating to minority faculty and identified relevant articles. We then graded the evidence using the Strength of Recommendation Taxonomy. The same criteria were applied to extract evidence and observations of challenges faced by minority faculty and provide recommendations. Results: Of the 548 studies identified and reviewed, 25 met inclusion criteria for this literature review. Of the 15, 9 were cross-sectional studies and 6 were analyses of existing Association of American Medical College workforce data. The cross-sectional studies documented pervasive bias in the recruitment of faculty, identified the lack of minority mentors, and revealed that black and Hispanic faculty members are more prevalent in states with higher minority populations. Studies using the Association of American Medical College workforce data also documented evidence of promotion bias, the lack of diversity in academic plastic surgery, and the lack of minority researchers funded by the National Cancer Institute. Conclusions: This systematic review provides evidence that racism, promotion disparities, funding disparities, lack of mentorship, and diversity pressures exist and affect minority faculty in academic medicine. Based on these observed challenges, this review also provides specific recommendations that could improve representation of minority faculty members in academic medicine. These recommendations include implementing proven pipeline programs to increase the number of minority medical students, a systematic adoption of proven culture change initiatives, reevaluation of assignments to ensure equitable time distribution, and a reduction of medical school debt.	search committee composition, implicit bias training, policies	review
3156620	An Institutional Approach to Fostering Inclusion and Addressing Racial Bias: Implications for Diversity in Academic Medicine	Tomas Diaz, J Renee Weaver, Esther Orban	Taylor & Francis	2019	Issue: While an increasingly diverse workforce of clinicians, researchers, and educators will be needed to address the nation's future healthcare challenges, underrepresented in medicine (UIM) perspectives remain relatively absent from academic medicine. Evidence: Prior studies have identified differential experiences within the training environment, lack of social supports, and implicit bias in evaluations as barriers to the academic interests and success of UIM trainees. The UCSF Differences Matter initiative has shown that interventions focused on recruiting diverse academic faculty, building strong social communities, facilitating cross-cultural communication and understanding, and mitigating disparities in summative assessments can positively affect the educational experience for UIM trainees and contribute to their academic success. Implications: Institution-level initiatives are needed to foster a culture of inclusion, teach cultural humility, and build a culture of trust within academic medicine. Such initiatives should aim to teach a common language to discuss diversity issues and place the responsibility of fostering inclusion on all members of the academic community. Our own institutional experience with systemic cultural reform challenges others to develop novel approaches toward fostering inclusion in academic medicine.	search committee composition, implicit bias training, policies	program evaluation
2685507	How Hiring? Empirically Testing a Three-Step Intervention to Increase Faculty Gender Diversity in STEM	Jessie L Smith, Ian M Handley, Alexander J Zuck, Sara Ruhling, Martina A Potvin	Bioscience	2015	Workforce homogeneity limits creativity, discovery, and job satisfaction; nonetheless, the vast majority of university faculty in science, technology, engineering, and mathematics (STEM) fields are men. We conducted a randomized and controlled three-step faculty search intervention based in self-determination theory aimed at increasing the number of women faculty in STEM at one US university where increasing diversity had historically proved elusive. Results show that the number of women candidates considered for and offered tenure-track positions were significantly higher in the intervention groups compared with those in controls. Searches in the intervention were 6.3 times more likely to make an offer to a woman candidate, and women who were made an offer were 5.8 times more likely to accept the offer from an intervention search. Although the focus was on increasing women faculty within STEM, the intervention can be adapted to other scientific and academic communities to advance diversity along any dimension.	search committee composition, implicit bias training, policies	data driven/program evaluation
1872849	Supporting the academic mission in an era of centralized research: approaches at the University of Arizona College of Medicine	Kath A Jasser, Ann Libardo, Anne E Cross, Steve Wornatow, Patricia S German, Robert Berg, Philip Milan	Acad Med	2008	The authors describe initiatives at the University of Arizona College of Medicine to markedly expand faculty, build research along programmatic lines, and promote a new, highly integrated medical school curriculum. Accomplishing these goals in the era of declining resources is challenging. The authors describe their approaches and outcomes to date, derived from a solid theoretical framework in the management literature, to (1) support research faculty recruitment, emphasizing return on investment, by using net present value to guide formulation of recruitment packages; (2) stimulate efficiency and growth through incentive plans, by using utility theory to optimize incentive plan design; (3) distribute resources to support programmatic growth, by allocating research space and recruitment dollars to maximize joint hires between units with shared interests; and (4) distribute resources from central administration to encourage medical student teaching, by aligning state dollars to support a new integrated organ-system based curriculum. Detailed measurement is followed by application of management principles, including mathematical modeling, to make projections based on the data collected. Although each of the initiatives was developed separately, they were integrated and individual faculty to achieve their goals, and to create a clear line of sight between expectations and rewards. Implementation is occurring in a hypothesis-driven fashion, permitting feedback and refinement of the strategies.	distribution of space search committee composition, implicit bias training, policies	program evaluation

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19116472	A Simple Model to Optimize Resource Allocations When Expanding the Faculty: Research Base: A Case Study	Keith A. Joiner, MD, MPH	Acad Med	2009	Construction of new biomedical research facilities has outpaced the funding sources for faculty to occupy those facilities. This puts a premium on the efficient allocation of central resources for faculty recruitment. The author developed a mathematical model to determine the optimal structure (dollars/space) for allocating resource packages when recruiting new faculty, based on unexpected financial returns from those faculty. Surprisingly, the optimal strategy was to allocate homogeneous recruitment packages, independent of the recruited faculty member's rank or the individual's expected revenue generation. Optimization results were used to allocate recruitment packages to one department head and center director in the University of Arizona College of Medicine during the last four years (2005-2008). At any institution that uses this model, appropriate distribution of facilities and administrative revenues at the institution is needed to equitably balance the costs and benefits associated with faculty expansion.	distribution of space salary expectations	data driven
	CHERI Survey of Start-Up Costs and Laboratory Allocation Rules	Cornell Higher Education Research Institute	Cornell Higher Education Research Institute	2002	During the late spring of 2002, the Cornell Higher Education Research Institute (CHERI) conducted a survey on start-up costs and laboratory allocation rules at research and doctorate universities in the United States. CHERI has plans to sponsor a conference at Cornell in May 2003 on the implications of the growing importance of scientific research for universities. [1] This survey provided background information on two important aspects of universities' costs of scientific research, namely the start-up costs that the institutions incur for new faculty at both the junior and senior levels and the laboratory space allocation rules that the institutions follow. The latter are particularly important as many scientists and engineers are approaching ages when they might consider retiring and the promise of being able to "keep" their labs after retirement may be a powerful tool to encourage them to retire. Such promises, however, may also prove to be extremely costly for universities.	distribution of space distribution of institutional resources	data driven
2913798	Allocating research space in the university medical center: use of a mathematical formula	S S Solomon, S C Tom	Am J Med Sci.	1989	Allocation of research space often is one of the most emotional and contentious issues facing a university medical center. With decreasing dollars available for building new research laboratories in medical schools, the assignment of laboratory space to basic science and clinical departments presents a difficult problem for deans, chairmen, and faculty. In this article, the authors outline a formula in which net square feet of traditional research space (ie, wet-bench laboratories) may be allocated on the basis of research dollars, output of manuscripts and abstracts averaged over 3 years, and the number of personnel who will use the space. Caution is urged for arbitrarily applying a space formula when it does not apply, ie, nontraditional research, and when insufficient consideration has been given to the individual case. The formula is most useful when applied within a specific institution and primarily for comparative purposes. Nonetheless, once the formula is established, it provides an objective mechanism by which the need for space and the relative merits of space assignments within a department or among departments can be more effectively determined and managed.	distribution of space	data driven
9192591	Assessing facility and space resources in an academic health science center: a process that works	R P Maurer Jr, D M Shaw	Best Pract Benchmarking Healthc.	1996	Background: The authors served as external consultants to an academic health science center in the eastern United States to identify, quantify, and future space needs in response to reported deficiencies, especially in the medical school. This work established a framework to identify, prioritize, and plan future facility and space improvement projects. Methods: The authors used several methods to quantify and profile current space needs and future space requirements, including data and plan reviews, surveys and questionnaires, and on-site facility tours and inspections. Most important, the consultants brought their collective experience as well as their proprietary planning database and guidelines to formulate findings and develop practical recommendations. Results: The engagement substantiated faculty's concerns and perceptions that additional space was necessary for many existing programs, especially the medical school. However, specific space needs, by department or program, frequently differed from faculty's perceived needs as well as those of the university administration. Conclusions: Several important conclusions dealt with the client's need to develop and formalize the space planning and management process. Appropriate guidelines for space planning purposes for this academic health science center also were identified as were the "next steps" to build on this successful study.	distribution of space	data driven
18316864	A comprehensive space management model for facilitating programmatic research	Ann Libecap, Steven Wormsley, Anne Cress, Mary Matthews, Angie Souza, Keith A Joiner	Acad Med.	2008	In FY04, the authors developed and implemented models to manage existing and incremental research space, and to facilitate programmatic research, at the University of Arizona College of Medicine. Benchmarks were set for recovery of total sponsored research dollars and for facilities and administrative (F&A) dollars/net square foot (nsf) of space, based on college-wide metrics. Benchmarks were applied to units (departments, centers), rather than to individual faculty. Performance relative to the benchmark was assessed using three-year moving averages, and applied to existing blocks of space. Space was recaptured or allocated, in all cases to programmatic themes, using uniform policies. F&A revenues were returned on the basis of performance relative to a benchmark. During the first two years after implementation of the model (FY05 and FY06), and for the 24 units occupying research space, median total sponsored research revenue/nsf increased from \$393.96 to \$474.46 (20.4%), and median F&A revenue/nsf increased from \$57.42 to \$91.86 (60.0%). These large increases in median values are driven primarily from redistribution and recapturing of space. Recruiting policies for unit heads were developed to facilitate joint hires among units. In combination, these policies created a comprehensive space management model for facilitating programmatic research. Although challenges remain in implementing the programmatic recruitment strategy, and selected modifications to the original policy were introduced later (e.g., research space for newly recruited junior faculty is now exempted from calculations for three years), overall, the models have created a climate of transparency that is now accepted and that allows efficient and equitable management of research space.	distribution of space	data driven/program evaluation
18728439	Supporting the academic mission in an era of constrained resources: approaches at the University of Arizona College of Medicine	Keith A Joiner, Ann Libecap, Anne E Cress, Steve Wormsley, Patricia St Germain, Robert Berg, Philip Malan	Acad Med.	2008	The authors describe initiatives at the University of Arizona College of Medicine to markedly expand faculty, build research along programmatic lines, and promote a new, highly integrated medical school curriculum. Accomplishing these goals in this era of declining resources is challenging. The authors describe their approaches and outcomes to date, derived from a solid theoretical framework in the management literature, to (1) support research faculty recruitment, emphasizing return on investment, by using net present value to guide formulation of recruitment packages, (2) stimulate efficiency and growth through incentive plans, by using utility theory to optimize incentive plan design, (3) distribute resources to support programmatic growth, by allocating research space and recruitment dollars to maximize joint hires between units with shared interests, and (4) distribute resources from central administration to encourage medical student teaching, by aligning state dollars to support a new integrated organ-system based-curriculum. Detailed measurement is followed by application of management principles, including mathematical modeling, to make projections based on the data collected. Although each of the initiatives was developed separately, they are linked functionally and financially, and they are predicated on explicitly identifying opportunity costs for all major decisions, to achieve efficiencies while supporting growth. The overall intent is to align institutional goals in education, research, and clinical care with incentives for unit heads and individual faculty to achieve those goals, and to create a clear line of sight between expectations and rewards. Implementation is occurring in a hypothesis-driven fashion, permitting testing and refinement of the strategies.	distribution of space search committee composition, implicit bias training, policies distribution of institutional resources	program evaluation

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25112462	Gender Differences in Resources and Negotiation Among Highly Motivated Physician-Scientists	Emma Holiday	J Gen Intern Med	2014	Many career development award recipients report resource needs and negotiate for increased resources. Gender differences in perceived access to research support personnel exist even in this select cohort of K awardees. Institutions should provide appropriate training in negotiation and ensure adequate and equitable distribution of resources to promote academic success.	distribution of institutional resources	data driven
23702518	Mentoring Programs for Physicians in Academic Medicine: A Systematic Review	Deanne T. Kashiwagi	Acad Med	2013	The authors reviewed mentoring programs for physicians and aimed to identify key components that contribute to these programs' success. The authors identified seven potential components of a formal mentoring program: mentor preparation, planning committees, mentor-mentee contracts, mentor-mentee pairing, mentoring activities, formal curricula, and program funding.	distribution of institutional resources other contributions	review article
31315903	Does Gender Bias Still Affect Women in Science?	Rachel L. Ropera	Microbiol Mol Biol	2019	The percentage of women employed in professional scientific positions has been low but is increasing over time. The U.S. National Institutes of Health and the National Science Foundation have both implemented programs to improve women's participation in science, and many universities and companies have diversity and equity programs. While most faculty and scientists believe that they are fair and unbiased, numerous well-designed studies published in leading peer-reviewed journals show that gender bias in science and medicine is widespread and persistent today in both faculty and students. Recent studies show that gender bias affects student grading, professional hiring, mentoring, tenure, promotion, respect, grant proposal success, and pay. In addition, sexual harassment remains a significant barrier. Fortunately, several studies provide evidence that programs that raise conscious awareness of gender bias can improve equity in science, and there are a number of recommendations and strategies for improving the participation of women.	search committee composition, implicit bias training policies other contributions distribution of institutional resources	review article
29384751	Gender Differences in Academic Medicine: Retention, Rank, and Leadership Comparisons From the National Faculty Survey	Phyllis L. Carr, MD	Acad Med	2019	Prior studies have found that women in academic medicine do not advance or remain in their careers in parity with men. The authors examined a national cohort of faculty from the 1995 National Faculty Survey to identify predictors of advancement, retention, and leadership for women faculty.	distribution of institutional resources other contributions	review article
31548337	Women in Pediatrics: Progress, Barriers, and Opportunities for Equity, Diversity, and Inclusion	Nancy D. Spector	Pediatrics	2019	The fair treatment of women pediatricians will require enhanced and simultaneous commitment from leaders in 4 key gatekeeper groups: academic medical centers, hospitals, health care organizations, and practices; medical societies; journals; and funding agencies. In this report, we describe the 6-step equity, diversity, and inclusion cycle, which provides a strategic methodology to (1) examine equity, diversity, and inclusion data; (2) share results with stakeholders; (3) investigate causality; (4) implement strategic interventions; (5) track outcomes and adjust strategies; and (6) disseminate results. Next steps include the enforcement of a climate of transparency and accountability, with leaders prioritizing and financially supporting workforce gender equity. This scientific and data-driven approach will accelerate progress and help pave a pathway to better health care and science.	salary expectations expectations of external funded time distribution of institutional resources	program evaluation
	CHERI Survey of Start-Up Costs and Laboratory Allocation Rules	Cornell Higher Education Research Institute	Cornell Higher Education Research Institute	2002	During the late spring of 2002, the Cornell Higher Education Research Institute (CHERI) conducted a survey on start-up costs and laboratory allocation rules at research and doctorate universities in the United States. CHERI has plans to sponsor a conference at Cornell in May 2003 on the implications of the growing importance of scientific research for universities.[1] This survey provided background information on two important aspects of universities' costs of scientific research, namely the start-up costs that the institutions incur for new faculty at both the junior and senior levels and the laboratory space allocation rules that the institutions follow. The latter are particularly important as many scientists and engineers are approaching ages when they might consider retiring and the promise of being able to "keep" their labs after retirement may be a powerful tool to encourage them to retire. Such promises, however, may also prove to be extremely costly for universities.	distribution of space distribution of institutional resources	data driven
31160738	Underrepresented faculty play a disproportionate role in advancing diversity and inclusion	Miguel F Jimenez, Theresa M Lavery, Sara P Bombaci, Kate Wilkins, Drew E Bennett, Liba Pechter	Nat Ecol Evol.	2019	A diverse and inclusive scientific community is more productive, innovative and impactful, yet ecology and evolutionary biology continues to be dominated by white male faculty. We quantify faculty engagement in activities related to diversity and inclusion and identify factors that either facilitate or hinder participation. Through a nationwide survey, we show that faculty with underrepresented identities disproportionately engage in diversity and inclusion activities, yet such engagement was not considered important for tenure. Faculty perceived time and funding as major limitations, which suggests that institutions should reallocate resources and reconsider how faculty are evaluated to promote shared responsibility in advancing diversity and inclusion.	other contributions distribution of supported research time distribution of institutional resources	data driven
25112462	Gender differences in resources and negotiation among highly motivated physician-scientists	Emma Holiday, Kent A Griffith, Rochelle De Castro, Abigail Stewart, Peter Ubel, Reshma Jagi	J Gen Intern Med	2015	Background: Resources, including space, equipment, funding, personnel, and protected time, are essential in academic medical careers. Negotiation often plays a key role in the distribution of these resources. Objective: This study explored gender differences in resources, negotiation behaviors, and negotiation outcomes in a sample of career development awardees. Design: Postal survey of a cohort of 1,708 clinician-researchers with responses from 1,275 (75% response rate). Participants: Researchers who received NIH K08 or K23 awards between 2006 and 2009. Main measures: We analyzed gender differences in resources, negotiation behaviors, and negotiation outcomes, using regression models adjusted for race, K award type, K award year, degree, academic rank, specialty, and institutional funding. Key results: Over one-fifth of respondents reported inadequate access to research space and one-third had asked for increased space or equipment. Perceived adequacy of these physical resources did not differ significantly by gender, but a higher proportion of women reported inadequate access to grant administrators (34.8%) and statistical support (49.9%) than men (26.9%; p = 0.002 and 43.4%; p = 0.025, respectively). Women were more likely to have asked for reduction in clinical hours (24.1% vs. 19.3%; p = 0.02) and to have raised concerns about unfair treatment (50.2% vs. 38.2%; p < 0.001). Overall, 42.9% of women and 35.9% of men asked for a raise in the two years preceding the survey (p = 0.09), and among those who had asked for increased resources, the likelihood that the request was granted did not differ significantly by gender. Conclusion: Many career development award recipients report resource needs and negotiate for increased resources. Gender differences in perceived access to research support personnel exist even in this select cohort of K awardees. Institutions should provide appropriate training in negotiation and ensure adequate and equitable distribution of resources to promote academic success.	distribution of institutional resources distribution of space distribution of supported research time	data driven
19116472	A simple model to optimize resource allocations when expanding the faculty research base: a case study	Keith A Joiner	Acad Med.	2009	Construction of new biomedical research facilities has outpaced the funding sources for faculty to occupy these facilities. This puts a premium on the efficient allocation of central resources for faculty recruitment. The author developed a mathematical model to determine the optimal structure (dollars, space) for allocating resource packages when recruiting new faculty, based on expected financial returns from those faculty. Surprisingly, the optimal strategy was to allocate homogeneous recruitment packages, independent of the recruited faculty member's rank or the individual's expected revenue generation. Optimization results were used to allocate recruitment packages to new department head and center directors in the University of Arizona College of Medicine during the last four years (2005-2008). At any institution that uses this model, appropriate distribution of facilities and administrative revenues at the institution is needed to equitably balance the costs and benefits associated with faculty expansion.	distribution of institutional resources	data driven
18728439	Supporting the academic mission in an era of constrained resources: approaches at the University of Arizona College of Medicine	Keith A Joiner, Ann Libecap, Anne E Cress, Steve Wormsley, Patricia St Germain, Robert Berg, Philip Malan	Acad Med.	2008	The authors describe initiatives at the University of Arizona College of Medicine to markedly expand faculty, build research along programmatic lines, and promote a new, highly integrated medical school curriculum. Accomplishing these goals in this era of declining resources is challenging. The authors describe their approaches and outcomes to date, derived from a solid theoretical framework in the management literature, to (1) support research faculty recruitment, emphasizing return on investment, by using net present value to guide formulation of recruitment packages, (2) stimulate efficiency and growth through incentive plans, by using utility theory to optimize incentive plan design, (3) distribute resources to support programmatic growth, by allocating research space and recruitment dollars to maximize joint hires between units with shared interests, and (4) distribute resources from central administration to encourage medical student teaching, by aligning state dollars to support a new integrated organization-based curriculum. Detailed measurement is followed by application of management principles, including mathematical modeling, to make projections based on the data collected. Although each of the initiatives was developed separately, they are linked functionally and financially, and they are predicated on explicitly identifying opportunity costs for all major decisions, to achieve efficiencies while supporting growth. The overall intent is to align institutional goals in education, research, and clinical care with incentives for unit heads and individual faculty to achieve those goals, and to create a clear line of sight between expectations and rewards. Implementation is occurring in a hypothesis-driven fashion, permitting testing and refinement of the strategies.	distribution of space search committee composition, implicit bias training policies distribution of institutional resources	program evaluation

PMID	TITLE	AUTHORS	JOURNAL/BOOK	PUBLICATION YEAR	SUMMARY	CATEGORY	TYPE
32704594	Changes to the ACGME Common Program Requirements and Their Potential Impact on Emergency Medicine Core Faculty Protected Time	Sarah M Greenberger, John T Finnell Zrd, Bernard P Chang, Nishi Gang, Shawn M Quinn, Steven Bird, Deborah B Diercks, Christopher I Doty, Fiona E Galliano, Maria E Moreira, Megan L Ranney, Loren Rives, Chad S Kessler, Bruce Lo, Gillian Schmitz	AEM Educ Train	2020	The Accreditation Council for Graduate Medical Education (ACGME), which regulates residency and fellowship training in the United States, recently revised the minimum standards for all training programs. These standards are codified and published as the Common Program Requirements. Recent specific revisions, particularly removing the requirement ensuring protected time for core faculty, are poised to have a substantial impact on emergency medicine training programs. A group of representatives and relevant stakeholders from national emergency medicine (EM) organizations was convened to assess the potential effects of these changes on core faculty and the training of emergency physicians. We reviewed the literature and results of surveys conducted by EM organizations to examine the role of core faculty protected time. Faculty nonclinical activities contribute greatly to the academic missions of EM training programs. Protected time and reduced clinical hours allow core faculty to engage in education and research, which are two of the three core pillars of academic EM. Loss of core faculty protected time is expected to have detrimental impacts on training programs and on EM generally. We provide consensus recommendations regarding EM core faculty clinical work hour limitations to maintain protected time for educational activities and scholarship and preserve the quality of academic EM.	distribution of supported research time	program evaluation
31160738	Underrepresented faculty play a disproportionate role in advancing diversity and inclusion	Miguel F Jimenez, Theresa M Lavery, Sara P Bombaci, Kate Wilkins, Drew E Bennett, Liba Fejchar	Nat Ecol Evol.	2019	A diverse and inclusive scientific community is more productive, innovative and impactful, yet ecology and evolutionary biology continues to be dominated by white male faculty. We quantify faculty engagement in activities related to diversity and inclusion and identify factors that either facilitate or hinder participation. Through a nationwide survey, we show that faculty with underrepresented identities disproportionately engage in diversity and inclusion activities, yet such engagement was not considered important for tenure. Faculty perceived time and funding as major limitations, which suggests that institutions should reallocate resources and reconsider how faculty are evaluated to promote shared responsibility in advancing diversity and inclusion.	other contributions distribution of supported research time distribution of institutional resources	data driven

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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 Li	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, Rania Santford, 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 due to the institution, whereas 11 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. Identifying "next steps" at the end of individual programs was helpful 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 Sobel, Jennifer 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 on 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 variety of structural 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 mentorship best practices, 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, adjusting 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	Shirli M Badawy, Vánczy Black, Emily R Meier, Kazián C Myers, Kárice Pokroy, 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: Mentees selected mentors 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 III	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 105 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, multivector 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 multivector 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

2342590	Mentor networks in academic medicine: moving beyond a dyadic conception of mentoring for junior faculty researchers	Rochelle DeCastro I, Dana Sambors, Felice A Ubel, Akhmal Stewart, 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 sponsorship. 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 such 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 Francisco, 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, CNINA, Social Science 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 manuscripts produced or submitted 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 Cusi, Adhee Varanasi, Cathy Chen Yu, Joseph Loprinzi, Kathy M. Moore, Rhonda Graves-Achobon, Teri Lee Turner, Janet B Spertus, 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, meet 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 best 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 in addition to the scope of the pediatric research enterprise in translational and clinical research 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 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 limit 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 change in the system. In this Review, we discuss these issues and highlight actions that could advance 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 all the literature 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 last publication?	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 mentoring and not only the number of women in medicine, but also their level of experience, capacity to aspire, and opportunity to succeed. 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 mentoring and not only the number of women in medicine, but also their level of experience, capacity to aspire, and opportunity to succeed. 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 Pulos, 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 practical 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, Brad Stagerman	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, who 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 often 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 Hesse, Yvonne Sheehankar-Reinos, Len Yu, Jane Garbutt, Richard McGee, Kurt Knoke, Zaneta 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 = 482.62, χ^2 df = 286, $p < .001$, RMSEA = 0.066 (90% CI, 0.059-0.072); CFI = 0.87, and TLI = 0.83. The correlations among the six competencies were high: 0.49-0.87 for mentors, 0.58-0.52 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 0.80 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-mentees-mentorship-relationships-101/	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

PMID	TITLE	AUTHORS	JOURNAL/BOOK	PUBLICATION YEAR	SUMMARY	CATEGORY	TYPE
19116472	A Simple Model to Optimize Resource Allocations When Expanding the Faculty: Research Base: A Case Study	Keith A. Joiner, MD, MPH	Acad Med	2009	Construction of new biomedical research facilities has outpaced the funding sources for faculty to occupy those facilities. This puts a premium on the efficient allocation of central resources for faculty recruitment. The author developed a mathematical model to determine the optimal structure (dollars, space) for allocating resource packages when recruiting new faculty, based on expected financial returns from those faculty. Surprisingly, the optimal strategy was to allocate homogeneous recruitment packages, independent of the recruited faculty member's rank or the individual's expected revenue generation. Optimization results were used to allocate recruitment packages to new departments head and center directors at the University of Arizona College of Medicine during the last four years (2005-2008). At any institution that uses this model, appropriate distribution of facilities and administrative revenues at the institution is needed to equitably balance the costs and benefits associated with faculty expansion.	distribution of space salary expectations	data driven
31548337	Women in Pediatrics: Progress, Barriers, and Opportunities for Equity, Diversity, and Inclusion	Nancy D. Spector	Pediatrics	2019	The fair treatment of women pediatricians will require enhanced and simultaneous commitment from leaders in 4 key gatekeeper groups: academic medical centers, hospitals, health care organizations, and practices; medical societies; journals; and funding agencies. In this report, we describe the 6-step equity, diversity, and inclusion cycle, which provides a strategic methodology to (1) examine equity, diversity, and inclusion data; (2) share results with stakeholders; (3) investigate causality; (4) implement strategic interventions; (5) track outcomes and adjust strategies; and (6) disseminate results. Next steps include the enforcement of a climate of transparency and accountability, with leaders prioritizing and financially supporting workforce gender equity. This scientific and data-driven approach will accelerate progress and help pave a pathway to better health care and science.	salary expectations expectations of external funded time distribution of institutional resources	program evaluation
	Why Are Colleges So Cowardly?	Tom Bartlett	The Chronicles of Higher Education	2021	Jennifer Freyd sued the University of Oregon in 2017, alleging that she had been paid less than her male colleagues in the psychology department. Last week the two parties announced an agreement under which Oregon will pay the now-retired psychology professor \$350,000 in damages, thereby avoiding a jury trial. In addition, the university will donate \$300,000 to the Center for Institutional Courage, an organization Freyd founded last year that's dedicated to "rigorous scientific research, wide-reaching education, and data-driven action."	salary expectations other contributions	editorial summary
	Promising Practices for Understanding and Addressing Salary Equity at U.S. Medical Schools	Valerie M. Dandar, MA, AAMC, Diana M. Lautenberger, MAT, AAMC, Owen E. Garrison, PhD, consultant to the AAMC.	AAMC	2019	Achieving salary equity in academic medicine is the right thing to do and the smart thing to do — yet it is a challenging task, requiring an institutional commitment to transparency, cross-campus collaboration, ongoing communication, dedicated resources, and enlightened leadership. There are few guides to assist institutions in this process. On behalf of the Association of American Medical Colleges (AAMC), I am very pleased to present this monograph, Promising Practices for Understanding and Addressing Salary Equity at U.S. Medical Schools. This publication and the related online toolkit are valuable resources for medical school leaders and faculty to use in launching, revising, and sustaining local salary equity studies and initiatives. Promising Practices contains data from the annual AAMC Faculty Salary Report analyzed by gender. Analyses highlight national trends that medical schools may wish to investigate in their local studies. The publication also presents 11 institutional case studies and their promising practices to help medical schools develop local salary equity initiatives. This effort is the first of many by the AAMC to share national data, tools, and promising practices to help schools understand and achieve salary equity. It is our hope that this publication prompts conversation on your campus and spurs momentum to address this critical issue.	salary expectations	data driven
	Closing the Gender Pay Gap in Medicine: A Roadmap for Healthcare Organizations and the Women Physicians Who Work for Them		Springer		Our road map begins with an evidence-based discussion of how gender-based differences in performance assessments, specialty choice, domestic responsibilities, negotiation, professional resources, sponsorship, and clinical productivity, accumulate across women's careers in medicine and impact evaluation, promotion, and therefore compensation in the healthcare workplace. Next, we describe traditional physician compensation models and explore how these pay programs support conventional practice styles that disproportionately monetize characteristics more commonly displayed by male physicians. Since organizational leaders seeking to narrow the gender pay gap must be aware of the legal context surrounding this type of endeavor, Chap. 4 provides a robust review of relevant statutory imperatives like the Equal Pay Act, Title VII of the Civil Rights Act of 1964, and state laws that prohibit gender discrimination in employment. Chap. 5 describes how to install infrastructure and conduct robust salary studies to identify baseline inequities, ensure reliable analysis, and facilitate organizational trust and forward movement in closing the gender pay gap. Chap. 6 details specific strategies healthcare enterprises can adopt to support the culture change necessary to identify and address biased workplace expectations that may be unintentionally sustaining the disparities discovered in salary studies. Lastly, the road map culminates with a chapter describing the efforts of one medical institution that has successfully made the journey from identifying compensation equity as a high-priority, organizational objective to creating the infrastructure, assessments, and policies necessary to support this enterprise mission.	salary expectations other contributions	data driven

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31548337	Women in Pediatrics: Progress, Barriers, and Opportunities for Equity, Diversity, and Inclusion	Nancy D. Spector	Pediatrics	2019	The fair treatment of women pediatricians will require enhanced and simultaneous commitment from leaders in 4 key gatekeeper groups: academic medical centers, hospitals, health care organizations, and practices; medical societies; journals; and funding agencies. In this report, we describe the 6-step equity, diversity, and inclusion cycle, which provides a strategic methodology to (1) examine equity, diversity, and inclusion data; (2) share results with stakeholders; (3) investigate causality; (4) implement strategic interventions; (5) track outcomes and adjust strategies; and (6) disseminate results. Next steps include the enforcement of a climate of transparency and accountability, with leaders prioritizing and financially supporting workforce gender equity. This scientific and data-driven approach will accelerate progress and help pave a pathway to better health care and science.	salary expectations expectations of external funded time distribution of institutional resources	program evaluation
31633016	Topic choice contributes to the lower rate of NIH awards to African-American/black scientists	Tavis A Hoppo, Aviva Litovitz, Kristine A Willis, Rebecca A Meseroll, Matthew J Perkins, Brian Hutchins, Alison F Davis, Michael S Lauer, Hannah A Valentine, James M Anderson, George M Santangelo	Sci Adv.	2019	Despite efforts to promote diversity in the biomedical workforce, there remains a lower rate of funding of National Institutes of Health R01 applications submitted by African-American/black (AA/B) scientists relative to white scientists. To identify underlying causes of this funding gap, we analyzed six stages of the application process from 2011 to 2015 and found that disparate outcomes arise at three of the six: decision to discuss, impact score assignment, and a previously unstudied stage, topic choice. Notably, AA/B applicants tend to propose research on topics with lower award rates. These topics include research at the community and population level, as opposed to more fundamental and mechanistic investigations; the latter tend to have higher award rates. Topic choice alone accounts for over 20% of the funding gap after controlling for multiple variables, including the applicant's prior achievements. Our findings can be used to inform interventions designed to close the funding gap. Copyright © 2019 The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. Distributed under a Creative Commons Attribution NonCommercial License 4.0 (CC BY-NC).	expectations of external funded time other contributions	data driven