

Faculty Development in Medical Education: Especially if your institution lacks a senior medical education specialist

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- I. **OBJECTIVE #1: Understand why faculty development in medical education is important and how to demonstrate its value to their colleagues and departmental leadership**
  - a. Fast Facts: Faculty Development Gets Results
    - i. Documented improvement in teaching behaviors
    - ii. Improved evidence-based clinical practice faculty teaching
    - iii. Improved recruitment and retention for talented junior faculty and trainees
    - iv. Programs allow for creation of multi-institutional relationships and projects
    - v. Positive effects on professional and personal lives
    - vi. Doesn't necessarily involve fellowship training
  - b. Key Literature
    - i. Berbano, E. P., et al. (2006). "The impact of the Stanford Faculty Development Program on ambulatory teaching behavior." J Gen Intern Med 21(5): 430-434.
    - ii. Brown, A. M., et al. (2008). "Centralized oversight of physician-scientist faculty development at Vanderbilt: early outcomes." Acad Med 83(10): 969-975.
    - iii. Coates, W. C., et al. (2010). "Faculty development in medical education research: a cooperative model." Acad Med 85(5): 829-836.
    - iv. Connelly, E. N., et al. (2010). "The Vanguard Faculty program: research training for complementary and alternative medicine faculty." J Altern Complement Med 16(10): 1117-1123.
    - v. Danilkewich, A. D., et al. (2012). "Implementing an evidence-informed faculty development program." Can Fam Physician 58(6): e337-343.
    - vi. Knight, A. M., et al. (2007). "Qualitative assessment of the long-term impact of a faculty development programme in teaching skills." Med Educ 41(6): 592-600.
- II. **OBJECTIVE # 2: Identify the key curricular items essential to faculty development in medical education**
  - a. Core domains from AoME Professional Standards Framework
    - i. Designing and Planning Learning
    - ii. Teaching and Facilitating Learning
    - iii. Assessment of Learning
    - iv. Education Research and Scholarship
    - v. Educational Management and Leadership
- III. **OBJECTIVE #3: Know where to look for potential resources and partnerships**
  - a. Within department
    - i. Utilize your own talents
      1. Yourself – you're at this lecture so you're motivated to do this

2. There are probably other faculty at your shop with outstanding skills in various areas whether they are formally trained or not (i.e. a great lecturer, or a great bedside teacher), utilize and empower these folks to teach others
- b. Outside of department
- i. Medical School
    1. Longitudinal medical education fellowships
    2. Faculty development workshops
    3. Webinars – (i.e. <https://dgsom.ucla.edu/education/pages/workshops>)
    4. Dean’s office (lecturers to give grand rounds, workshops, seminars)
    5. **Resources are often there, you just need to look!**
  - ii. Graduate School of Education
    1. **If you have access, these are a gold mine**
    2. Advanced degree options
    3. Workshops and seminars
    4. Exposure to important concepts or skillsets
    5. Networking opportunities
    6. Access to faculty with expertise
      - a. Opportunities for in-house development
      - b. Can help take education scholarship to the next level
  - iii. Professional Societies
    1. CORD
      - a. Academic Assembly, MERC, Academy for Scholarship in Education Coaching Program
    2. SAEM
      - a. Academic Assembly, Med-Ed Bootcamp
    3. ACEP
      - a. Academic Assembly, ACEP teaching fellowship
    4. AAMC
      - a. GEA meetings, MERC
  - iv. Internet
    1. MedEd Portal
    2. Teaching on the run series
      - a. <http://www.meddent.uwa.edu.au/teaching/on-the-run/tips>
    3. International Association of Medical Science Educators
      - a. [Online seminar series http://iamse.org/](http://iamse.org/)
    4. London Deanery
      - a. <http://www.faculty.londondeanery.ac.uk/e-learning>
    5. Coursera ( MOOCs from various institutions)
      - a. <https://www.coursera.org/course/clinicalskills>
      - b. <https://www.coursera.org/course/instructmethodshpe>
    6. The Clinical Teacher Podcasts
      - a. [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1743-498X/homepage/podcasts.htm](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1743-498X/homepage/podcasts.htm)

7. YouTube
8. ACGME
  - a. [https://www.acgme.org/acgmeweb/Portals/0/PDFs/2015%20AEC/Presentations/SES012\\_handout\\_1.pdf](https://www.acgme.org/acgmeweb/Portals/0/PDFs/2015%20AEC/Presentations/SES012_handout_1.pdf)
- v. Outside institutions
  1. Harvard Macy Institute – 5 different programs available
    - a. <http://www.harvardmacy.org/>
  2. Stanford University
    - a. Clinical Teaching Program
    - b. [http://sfdc.stanford.edu/clinical\\_teaching.html](http://sfdc.stanford.edu/clinical_teaching.html)
  3. Johns Hopkins
    - a. Available for consultation to develop and implement special programs
    - b. [http://www.hopkinsmedicine.org/johns\\_hopkins\\_bayview/education\\_training/continuing\\_education/faculty\\_development\\_program/Advice/BestPractices](http://www.hopkinsmedicine.org/johns_hopkins_bayview/education_training/continuing_education/faculty_development_program/Advice/BestPractices)
  4. Ohio State
    - a. FD4ME online modules, offers CME
    - b. <https://fd4me.osu.edu/>
  5. Guest Lecturers
  6. Mentorship

**IV. OBJECTIVE # 4: Identify 3-5 potential teaching strategies/examples effective for this learner group**

- a. General strategies for success
  - i. Identify needs and resources specific to your department
  - ii. Key features of successful programs
    1. Use of experiential learning
    2. Provision of feedback
    3. Effective peer relationship
    4. Well designed interventions following principles of teaching and learning
    5. Diverse educational methods
- b. Specific setting/techniques
  - i. Mini workshops during or post departmental meetings
  - ii. Education journal club
  - iii. Education grand rounds
  - iv. Teaching shifts
  - v. Peer Coaching
  - vi. Train the trainer course at faculty retreat
  - vii. Online modules
  - viii. Mentored reflection

## Literature Review (in Alphabetical Order by First Author)

Al-Eraky, M. M., et al. (2015). "Faculty development for learning and teaching of medical professionalism." Med Teach **37 Suppl 1**: S40-46.

**INTRODUCTION:** Professionalism must be explicitly taught, but teaching professionalism is challenging, because medical teachers are not prepared to teach this content area. **AIM:** This study aims at designing and evaluating a faculty development programme on learning and teaching professionalism in the Arabian context. **Programme development:** The study used a participatory design, where four authors and 28 teachers shared the responsibility in programme design in three steps: orientation workshop for teachers, vignette development, and teaching professionalism to students. The workshop provided the cognitive base on the salient attributes of professionalism in the Arabian context. After the workshop, authors helped teachers to develop a total of 32 vignettes in various clinical aspects, portraying a blend of professionalism dilemmas. A battery of seven questions/triggers was suggested to guide students' reflection. **PROGRAMME EVALUATION:** The programme was evaluated with regard to its "construct" and its "outcomes". The programme has fulfilled the guiding principles for its design and it has emerged from a genuine professionalism framework from local scholarly studies in the Arabian context. Programme outcomes were evaluated at the four levels of Kirkpatrick's model; reaction, learning, behaviour, and results. **DISCUSSION:** The study communicates a number of context-specific issues that should be considered when teaching professionalism in Arabian culture with respect to teachers and students. Three lessons were learned from developing vignettes, as reported by the authors. This study advocates the significance of transforming faculty development from the training discourse of stand-alone interventions to mentorship paradigm of the communities of learning. **CONCLUSION:** A three-step approach (orientation workshop, vignettes development, and teaching professionalism) proved effective for faculty development for learning and teaching of professionalism. Professionalism can be taught using vignettes that demonstrate professionalism dilemmas in a particular context.

AlFaris, E., et al. (2015). "A One-Day Dental Faculty Workshop in Writing Multiple-Choice Questions: An Impact Evaluation." J Dent Educ **79**(11): 1305-1313.

Long training workshops on the writing of exam questions have been shown to be effective; however, the effectiveness of short workshops needs to be demonstrated. The aim of this study was to evaluate the impact of a one-day, seven-hour faculty development workshop at the College of Dentistry, King Saud University, Saudi Arabia, on the quality of multiple-choice questions (MCQs). Kirkpatrick's four-level evaluation model was used. Participants' satisfaction (Kirkpatrick's Level 1) was evaluated with a post-workshop questionnaire. A quasi-experimental, randomized separate sample, pretest-posttest design was used to assess the learning effect (Kirkpatrick's Level 2). To evaluate transfer of learning to practice (Kirkpatrick's Level 3), MCQs created by ten faculty members as a result of the training were assessed. To assess Kirkpatrick's Level 4 regarding institutional change, interviews with three key leaders of the school were conducted, coded, and analyzed. A total of 72 course directors were invited to and attended some part of the workshop; all 52 who attended the entire workshop completed the satisfaction form; and 22 of the 36 participants in the experimental group completed the posttest. The results showed that all 52 participants were highly satisfied with the workshop, and significant positive changes were found in the faculty members' knowledge and the quality of their MCQs with effect sizes of 0.7 and 0.28, respectively. At the institutional level, the interviews demonstrated positive structural changes in the school's assessment system. Overall, this one-day item-writing faculty workshop resulted in positive changes at all four of Kirkpatrick's levels; these effects suggest that even a short training session can improve a dental school's assessment of its students.

Armstrong, E. G. and S. J. Barsion (2006). "Using an outcomes-logic-model approach to evaluate a faculty development program for medical educators." Acad Med **81**(5): 483-488.

**PURPOSE:** This study used an outcomes-logic-model approach to examine the impact of participating in a nontraditional professional development program. Building and using a logic model provides a structure for the program to examine the degree that the desired learner outcomes, the program delivery methods, and the measurement approaches are aligned. **METHOD:** Structured telephone interviews were conducted in 2001 with 16 Harvard Medical School (HMS) participants in the Harvard Macy Program for Physician Educators (HM-PE): five who completed the program in 1998, five in 1999, and six in 2000. Interviews were

also conducted with four Faculty Scholars, alumni of the HM-PE program who taught in subsequent programs. In 2004, online questionnaires were sent to the 16 participants and four Faculty Scholars. Immediate outcomes, such as greater use of active learning principles, and intermediate outcomes, such as commitment to medical education, were examined. RESULTS: Of those interviewed in 2001, 80% responded to the 2004 online questionnaire. Thirteen of 16 (81%) HMS respondents reported increased knowledge about and confidence using learner-center teaching methods; 10 of 16 (63%) said they gave fewer lectures and added alternative educational methods. Thirteen of 16 (81%) reported a stronger commitment to the field of medical education: almost one third felt the HM-PE program was a turning point in their careers. CONCLUSIONS: The outcomes logic model provided data to judge how well the program mission and plan were implemented, and whether outcomes had been attained.

Arnold, R. W., et al. (2009). "Lexicon creation to promote faculty development in medical communication." Patient Educ Couns **74**(2): 179-183.

OBJECTIVE: Most medical educators have little or no training in teaching and assessing medical communication, and they are not consistent in what they teach. The authors set out to reach consensus in our educational community on a lexicon of communication terms for use in teaching physician-patient communication skills to second-year medical students. METHODS: An interdisciplinary medical school physician-patient communication committee assembled 23 important terms and agreed on definitions for each term. Thirty core preclinical faculty representing nine medical specialties reviewed the lexicon. Faculty were surveyed about lexicon definitions, barriers to use, and methods of using during educational encounters. RESULTS: All preclinical faculty members agreed on 19 out of 23 definitions and most respondents agreed on the definitions of the remaining four terms. Sixty-nine percent of respondents said they used the terms during their teaching encounters. CONCLUSION: Implementing a process to create a shared language around physician-patient communication may help unify and enhance faculty educational efforts. We were able to establish that medical educators can agree on the content of a medical communication lexicon for use with students. The use of defined and consistently used terms in multiple venues may reduce ambiguity, standardize teaching, enhance recognition of communication skills, and promote effective reinforcement and remediation by faculty. PRACTICE IMPLICATIONS: Evidence suggests that most medical educators have little or no training in teaching and assessing medical communication and that they are not consistent in what they teach. Asking a community of faculty to share responsibility for creating a communication lexicon may be an efficient and effective way to educate faculty and unify their educational effort.

Baker, L., et al. (2010). "The ties that bind: a network approach to creating a programme in faculty development." Med Educ **44**(2): 132-139.

CONTEXT: Current trends in medical education reflect the changing health care environment. An increasingly large and diverse student population, a move to more distributed models of education, greater community involvement and an emphasis on social accountability, interprofessional education and student-centred approaches to learning necessitate new approaches to faculty development to help faculty members respond effectively to this rapidly changing landscape. METHODS: Drawing upon the tenets of network theory and the broader organisational literature, we propose a 'fishhook' model of faculty development programme formation. The model is based on seven key factors which supported the successful formation of a centralised programme for faculty development that addressed many of the contemporary issues in medical education. These factors include: environmental readiness; commitment and vision of a mobiliser; recruitment of key stakeholders and leaders to committees; formation of a collaborative network structure; accumulation of networking capital; legitimacy, and flexibility. DISCUSSION: Our aim in creating this model is to provide a guide for other medical schools to consider when developing similar programmes. The model can be adapted to reflect the local goals, settings and cultures of other medical education contexts.

Balmer, D., et al. (2011). "How mentoring relationships evolve: a longitudinal study of academic pediatricians in a physician educator faculty development program." J Contin Educ Health Prof **31**(2): 81-86.

INTRODUCTION: Mentoring is increasingly recognized as central to career development. Less attention has been paid, however, to how mentoring relationships evolve over time. To provide a more complete picture of these complex relationships, the authors explored mentoring from a mentee's perspective within the

context of a three-year faculty development program in which the mentor provided specific expertise to assist the mentee in completing a scholarly educational project. **METHODS:** Using an evolving focus group design, the authors interviewed mentee groups in 2007-2009 inclusive. Transcripts were coded inductively; codes were revised as data patterns became more apparent. Preliminary assertions about the answers to guiding questions were made; the trustworthiness of the assertions was assessed via member check. **RESULTS:** Mentees offered a variety of reasons for choosing their project mentor, including proximity, familiarity, and mentor expertise. There was a dyadic relationship with the project mentor in year 1, a broader collaboration with multiple senior mentors in year 2, and mentoring among program peers in year 3. Mentees benefitted from mentors' supportive behaviors and, to a lesser extent, mentors' challenging behaviors. **CONCLUSION:** Mentoring relationships, in the context of this faculty development program, tended not to be an exclusive dyadic connection but rather a constellation of relationships that evolved over time and included peer mentoring. The complex reality of these relationships challenges the application of traditional mentoring models and suggests unique considerations in developing mentoring programs designed to meet the needs of faculty in academic medicine.

Balmer, D. F. and B. F. Richards (2012). "Faculty development as transformation: lessons learned from a process-oriented program." *Teach Learn Med* **24**(3): 242-247.

**BACKGROUND:** Faculty development programs tend to be oriented around content, yet many have produced positive outcomes unrelated to the content. We describe a faculty development program that utilized the processes of shared reading and guided reflection espoused by narrative medicine.

**DESCRIPTION:** To date, 25 preceptors in the Foundations of Clinical Medicine course have participated. The program consists of weekly seminars in which participants actively engage with text as a basis for conversation around content as well as teaching strategies. **EVALUATION:** Using qualitative methods, we examined notes from seminars, in-depth interviews, and review of curricular documents; we used conceptual frameworks from education as interpretive lenses. Participants recognized both personal growth and transformation in relationships with each other, which created the opportunity, and the means, to address and reshape norms and teaching practices at the institution. **CONCLUSIONS:** Process-oriented faculty development programs may foster growth of individuals, contribute to transformation in relationships, and ultimately influence teaching practices.

Balon, R., et al. (2013). "Academic mission revisited: emerging priority of faculty development." *Acad Psychiatry* **37**(2): 69-71.

Beck, E., et al. (2008). "Addressing the health needs of the underserved: a national faculty development program." *Acad Med* **83**(11): 1094-1102.

The authors developed a three-week faculty development program, "Addressing the Health Needs of the Underserved" (funded by Title VII), and later incorporated a year long Fellowship in Underserved Medicine. This article describes these programs from 1999 to 2007, focusing on participants, curricula, outcomes, and potential impact. Participants (n = 107) in the three-week faculty development program came from 29 states and Puerto Rico, with more than 25% from underrepresented minorities in the health professions. The program focused on three skill sets: creating and sustaining community programs and partnerships; core faculty development/academic skills; and personal and professional renewal. Outcomes measured with follow-up surveys and interviews in 2003 revealed that since their participation, the first 53 participants to complete the program had created 30 new or modified residency curricula, 19 new student curricula, and 7 new student-run free clinic projects. Pre-post measures from 2003 to 2007 identified an overall 46% increase in skill confidence, with the greatest increase reported for designing a promotora (community lay health promoter) program. Participants expressed particular satisfaction with becoming part of a national community of scholars in the field of underserved medicine. For the year long, on-site Fellowship in Underserved Medicine, four of the first six fellows who completed the fellowship were former University of California-San Diego Student-Run Free Clinic Project student leaders who left San Diego to complete family medicine residency and returned to complete the fellowship. All six currently work with underserved communities as their primary focus, five in the United States and one internationally with Doctors Without Borders. This article is part of a theme issue of Academic Medicine on the Title VII health professions training programs.

Berbano, E. P., et al. (2006). "The impact of the Stanford Faculty Development Program on ambulatory teaching behavior." J Gen Intern Med **21**(5): 430-434.

CONTEXT: Faculty development has received considerable investment of resources from medical institutions, though the impact of these efforts has been infrequently studied. OBJECTIVE: To measure the impact of the Stanford Faculty Development Program in Clinical Teaching on ambulatory teaching behavior. DESIGN: Pre-post. SETTING AND PARTICIPANTS: Eight internal medicine faculty participating in local faculty development. INTERVENTION: Participants received 7 2-hour sessions of faculty development. Each session included didactic, role-play, and videotaped performance evaluation. MAIN OUTCOME MEASURE: Before and after the intervention, faculty were video-taped during a case presentation from a standardized learner, who had been trained to portray 3 levels of learners: a third-year medical student, an intern, and a senior medical resident. Teacher and learner utterances (i.e. phrases) were blindly and randomly coded, using the Teacher Learner Interaction Analysis System, into categories that capture both the nature and intent of the utterances. We measured change in teaching behavior as detected through analysis of the coded utterances. RESULTS: Among the 48 videotaped encounters, there were a total of 7,119 utterances, with 3,203 (45%) by the teacher. Examining only the teacher, the total number of questions asked declined (714 vs 426,  $P=.02$ ) with an increase in the proportion of higher-level, analytic questions (44% vs 55%,  $P<.0001$ ). The quality of feedback also improved, with less "minimal" feedback (87% vs 76%,  $P<.0005$ ) and more specific feedback (13% vs 22%) provided. CONCLUSIONS: Teaching behaviors improved after participation in this faculty development program, specifically in the quality of questions asked and feedback provided.

Blatt, B. and L. Greenberg (2007). "A multi-level assessment of a program to teach medical students to teach." Adv Health Sci Educ Theory Pract **12**(1): 7-18.

Few longitudinal programs exist to teach senior students (MS4s) to be teachers, nor have there been any reports of comprehensive program evaluation in this area. The primary objectives of this study were to describe our ongoing faculty development effort and to develop a multi-level program evaluation, using Dixon's model. The TALKS (Teaching and Learning Communication Skills) program is a senior elective and open to all MS4s. We evaluated our program through assessment of its participants at three levels: level 1, opinion; level 2, competence; and level 3, performance; but not level 4, patient outcomes. The authors used a retrospective, pre-post questionnaire to assess MS4 attitudes about their educational experiences, a traditional instrument to assess their teaching, an interaction analysis technique using Bloom's taxonomy to assess MS4s' feedback skills, and a SP exam to assess MS4 communication skills. The authors hypothesized that MS4s participating in TALKS would view medical education more positively and informatively, would demonstrate important principles in giving feedback, would be assessed as excellent teachers, and would perform better than controls in an SP exam emphasizing communication skills. Results revealed that MS4s' ratings as teachers were very good to excellent, with the highest scores on the items "knowledgeable, supportive of me, and answering questions clearly." (Level 1, Opinion) MS4s' perceptions of their knowledge, attitudes and skills increased significantly from the pre to the post-questionnaire. (Level 2, Competence) MS4 feedback skills to MS2s revealed they did more talking than ideal, often at the lowest levels of Bloom's taxonomy. (Level 3, Performance) MS4s demonstrated better communication skills than controls on an evaluation by professional SPs. (Level 3, Performance).

Boillat, M., et al. (2012). "Twelve tips for using the objective structured teaching exercise for faculty development." Med Teach **34**(4): 269-273.

BACKGROUND: The importance of faculty development to improve clinicians' teaching skills has been well articulated in the literature. There are few objective measures of the impact of faculty development on teaching skills. The objective structured teaching exercise (OSTE) is a faculty development tool that may meet this challenge. It also has great potential to be used in the development and enhancement of teaching skills. The OSTE consists of a simulated teaching scenario involving a standardized learner with objective and immediate feedback given to the teacher, and includes a pre-determined behaviourally based scale or checklist to assess teaching performance. AIM: There is little information in the literature on the practical aspects of how to develop and deliver an OSTE in a faculty development context. Based on our experience, we created a framework to guide the use of the OSTE for faculty development. METHODS: Twelve tips for using the OSTE for faculty development are outlined in this article. These include: clarifying the goal and

target audience, identifying what teaching skills to focus on, developing the scenario and the assessment tool, choosing and training the standardized learner, holding a dry run, protecting the teacher, integrating the OSTE into one's own context and promoting buy-in, and evaluating the activity. CONCLUSIONS: The OSTE is a novel tool to enhance faculty development. We describe 12 key elements that are important for its successful development and delivery.

Bramson, R., et al. (2007). "Reaching and teaching preceptors: limited success from a multifaceted faculty development program." *Fam Med* **39**(6): 386-388.

We conducted a six-pronged preceptor faculty development program that included a listserv and interactive Web-based teaching scenarios. A total of 144 preceptors in a required preceptorship program were offered traditional continuing medical education (CME), a preceptor listserv, an electronic clinical teaching discussion group, an orientation videotape, a CD-ROM on teaching skills, and technology support. On Web-based evaluation, 31% of participants responded. Eighty percent of preceptors allowed us to subscribe them to the listserv, and most agreed it was useful. One third of preceptors responded to an electronic clinical teaching case discussion, most rating it useful to their precepting. The listserv and electronic teaching cases hold promise for preceptor faculty development.

Branch, W. T., Jr., et al. (2014). "Faculty development to enhance humanistic teaching and role modeling: a collaborative study at eight institutions." *J Gen Intern Med* **29**(9): 1250-1255.

BACKGROUND: There is increased emphasis on practicing humanism in medicine but explicit methods for faculty development in humanism are rare. OBJECTIVE: We sought to demonstrate improved faculty teaching and role modeling of humanistic and professional values by participants in a multi-institutional faculty development program as rated by their learners in clinical settings compared to contemporaneous controls. DESIGN: Blinded learners in clinical settings rated their clinical teachers, either participants or controls, on the previously validated 10-item Humanistic Teaching Practices Effectiveness (HTPE) questionnaire. PARTICIPANTS: Groups of 7-9 participants at 8 academic medical centers completed an 18-month faculty development program. Participating faculty were chosen by program facilitators at each institution on the basis of being promising teachers, willing to participate in the longitudinal faculty development program. INTERVENTION: Our 18-month curriculum combined experiential learning of teaching skills with critical reflection using appreciative inquiry narratives about their experiences as teachers and other reflective discussions. MAIN MEASURES: The main outcome was the aggregate score of the ten items on the questionnaire at all institutions. KEY RESULTS: The aggregate score favored participants over controls ( $P = 0.019$ ) independently of gender, experience on faculty, specialty area, and/or overall teaching skills. CONCLUSIONS: Longitudinal, intensive faculty development that employs experiential learning and critical reflection likely enhances humanistic teaching and role modeling. Almost all participants completed the program. Results are generalizable to other schools.

Brown, A. M., et al. (2008). "Centralized oversight of physician-scientist faculty development at Vanderbilt: early outcomes." *Acad Med* **83**(10): 969-975.

PURPOSE: In 2000, faced with a national concern over the decreasing number of physician-scientists, Vanderbilt School of Medicine established the institutionally funded Vanderbilt Physician-Scientist Development (VPSD) program to provide centralized oversight and financial support for physician-scientist career development. In 2002, Vanderbilt developed the National Institutes of Health (NIH)-funded Vanderbilt Clinical Research Scholars (VCRS) program using a similar model of centralized oversight. The authors evaluate the impact of the VPSD and VCRS programs on early career outcomes of physician-scientists. METHOD: Physician-scientists who entered the VPSD or VCRS programs from 2000 through 2006 were compared with Vanderbilt physician-scientists who received NIH career development funding during the same period without participating in the VPSD or VCRS programs. RESULTS: Seventy-five percent of VPSD and 60% of VCRS participants achieved individual career award funding at a younger age than the comparison cohort. This shift to career development award funding at a younger age among VPSD and VCRS scholars was accompanied by a 2.6-fold increase in the number of new K awards funded and a rate of growth in K-award dollars at Vanderbilt that outpaced the national rate of growth in K-award funding. CONCLUSIONS: Analysis of the early outcomes of the VPSD and VCRS programs suggests that centralized oversight can catalyze growth in the number of funded physician-scientists at an institution. Investment in

this model of career development for physician-scientists may have had an additive effect on the recruitment and retention of talented trainees and junior faculty.

Brutkiewicz, R. R. (2012). "Research faculty development: an historical perspective and ideas for a successful future." Adv Health Sci Educ Theory Pract **17**(2): 259-268.

What does it take to be successful as a tenure-track research faculty member in a School of Medicine? What are the elements necessary to run a successful laboratory? How does one find the resources and help to know what is important for promotion and tenure? Most training in graduate school or in clinical fellowships does not answer these questions. Too often, new junior tenure-track research faculty members are left to learn from the "school of hard knocks" and essentially are reinventing the wheel, which is a huge waste of time. This article describes the history of research faculty, what makes them successful, and offers suggestions on how we can help them reach their greatest potential.

Bulc, M., et al. (2009). "Faculty development for teachers of family medicine in Europe: reflections on 16 years' experience with the international Bled course." Eur J Gen Pract **15**(2): 69-73.

BACKGROUND: Instruction in principles and methods of medical education is a core component of the training of medical teachers. Curricula for new medical teachers have developed across Europe, but few European courses have had the success of the EURACT Bled course for teachers of family medicine. The course focuses on practical issues in medicine and the professional development of physicians. This article describes 16 years' experience with the Bled course for teachers in general practice/family medicine (GP/FM). COURSE STRUCTURE: The course is centred on the preparation of a teaching module, exploring a specific theme in family medicine. The main teaching methods used are: keynote lectures, small group sessions, field work and preparation of a teaching module by the participants. OUTCOMES: This course has attracted 555 participants from 20 countries since 1992. The course and its outputs have been applied in undergraduate and postgraduate teaching, and in continuous professional development (CPD) in several countries. It is a respected forum for faculty development. The experience of the Bled course suggests that academic medicine may be better able to fulfil its responsibilities by paying attention to relevant topics and using appropriate methods in undergraduate and postgraduate medical curricula.

Burdick, W. P. (2014). "Global faculty development: lessons learned from the Foundation for Advancement of International Medical Education and Research (FAIMER) initiatives." Acad Med **89**(8): 1097-1099.

Foundation for Advancement of International Medical Education and Research (FAIMER) faculty development programs have operated since 2001 and are designed to overcome many of the challenges inherent in global health collaborations, including alignment with local needs, avoiding persistent dependency, and development of trust. FAIMER fellowship programs, developed for midcareer faculty members in all health professions from around the world, share goals of strengthening knowledge and skills in education leadership, education methods, and project management and evaluation. Building community is another explicit goal that allows participants to support and learn from each other. The author recommends several practices for successful international collaborations based on 13 years of experience with FAIMER fellowships. These include using authentic education projects to maintain alignment with local needs and apply newly acquired knowledge and skills, teaching leadership across cultures with careful communication and adaptation of concepts to local environments, cultivating a strong field of health professions education to promote diffusion of ideas and advocate for policy change, intentionally promoting field development and leadership to reduce dependency, giving generously of time and resources, learning from others as much as teaching others, and recognizing that effective partnerships revolve around personal relationships to build trust. These strategies have enabled the FAIMER fellowship programs to stay aligned with local needs, reduce dependency, and maintain trust.

Burdick, W. P., et al. (2010). "Measuring the effects of an international health professions faculty development fellowship: the FAIMER Institute." Med Teach **32**(5): 414-421.

While there are many examples of evaluations of faculty development programs in resource rich countries, evaluation of transnational programs for faculty from developing countries is limited. We describe evaluation of the effects of the FAIMER Institute, an international health professions education fellowship that incorporates not only education content, but also leadership and management topics and, in addition,

strives to develop a sustained community of educators. Data were obtained via retrospective pre/post surveys, as well as interviews. Results indicate that participating health professions faculty from developing countries are augmenting their knowledge and skills in education leadership, management, and methodology, and applying that knowledge at their home institutions. Fellows' perceptions of importance of, and their own competence in, all curriculum theme areas increased. Interviews confirmed a nearly universal gain of at least one leadership skill. Findings suggest that the high-engagement experience of the FAIMER model offering integration of education and leadership/management tools necessary to implement change, provides knowledge and skills which are useful across cultural and national contexts and results in the development of a supportive, global, professional network.

Burdick, W. P., et al. (2012). "Faculty development projects for international health professions educators: Vehicles for institutional change?" Med Teach **34**(1): 38-44.

BACKGROUND: Projects are an important tool in faculty development, and project emphasis may offer insights into perceived education priorities. Impact of projects has been focused on individuals, not institutions or health. AIM: Education innovation projects of Fellows in an international faculty development program were examined to better understand perceived needs in health professions education and institutional impact of projects. METHOD: Four hundred and thirty-five projects were analyzed to identify focus areas. Fellows were asked to identify changes in their schools and communities resulting from their projects. RESULTS: New education methods and curriculum change were common project focus areas. Regional differences were evident with a higher percentage of education methods projects by Fellows residing in India (52%), compared with South Africa (25%) and Brazil (24%). Fifty-six percent of projects were incorporated into the curriculum and/or incorporated as institutional policy. One-third to two-thirds of respondents noted improved teaching quality, collaboration, education research interest, assessment, student performance, and curriculum alignment with community health needs. CONCLUSION: National differences in project focus may offer insight into local conditions and needs. High rates of diffusion of projects and impact on faculty, students, and curriculum suggest that faculty development projects may be a strategy for institutional change in resource limited environments.

Butts, G. C., et al. (2008). "Diversity in academic medicine no. 4 Northeast Consortium: innovation in minority faculty development." Mt Sinai J Med **75**(6): 517-522.

In fiscal year 2006, the US Government abruptly and drastically reduced its funding for programs to increase the racial and ethnic diversity of academic medicine, including programs to increase the development of minority medical faculty. Anticipating this reduction, 4 such programs—the Albert Einstein College of Medicine, Mount Sinai School of Medicine, University of Medicine and Dentistry in New Jersey-New Jersey Medical School, and University of Pennsylvania School of Medicine—decided to pool their resources, forming the Northeast Consortium of Minority Faculty Development. An innovation in minority faculty development, the Northeast Consortium of Minority Faculty Development has succeeded in exposing faculty trainees to research and teaching that they might not have considered otherwise, expanding the number and diversity of their mentors and role models, providing them potential access to larger and different populations and databases for purposes of research, and expanding their peer contacts. After introducing the Northeast Consortium of Minority Faculty Development, this article describes the origins and goals of each member program.

Canon, C. L., et al. (2006). "Faculty development program for residents: an incentive to faculty recruitment." J Am Coll Radiol **3**(3): 220-222.

Carney, P. A., et al. (2015). "Transforming primary care residency training: a collaborative faculty development initiative among family medicine, internal medicine, and pediatric residencies." Acad Med **90**(8): 1054-1060.

PROBLEM: The scope and scale of developments in health care redesign have not been sufficiently adopted in primary care residency programs. APPROACH: The interdisciplinary Primary Care Faculty Development Initiative was created to teach faculty how to accelerate revisions in primary care residency training. The program focused on skill development in teamwork, change management, leadership, population management, clinical microsystems, and competency assessment. The 2013 pilot program involved 36 family medicine, internal medicine, and pediatric faculty members from 12 residencies in four locations.

OUTCOMES: The percentage of participants rating intention to implement what was learned as "very likely to" or "absolutely will" was 16/32 (50%) for leadership, 24/33 (72.7%) for change management, 23/33 (69.7%) for systems thinking, 25/32 (75.8%) for population management, 28/33 (84.9%) for teamwork, 29/33 (87.8%) for competency assessment, and 30/31 (96.7%) for patient centeredness. Content analysis revealed five key themes: leadership skills are key drivers of change, but program faculty face big challenges in changing culture and engaging stakeholders; access to data from electronic health records for population management is a universal challenge; readiness to change varies among the three disciplines and among residencies within each discipline; focusing on patients and their needs galvanizes collaborative efforts across disciplines and within residencies; and collaboration among disciplines to develop and use shared measures of residency programs and learner outcomes can guide and inspire program changes and urgently needed educational research. NEXT STEPS: Revise and reevaluate this rapidly evolving program toward widespread engagement with family medicine, internal medicine, and pediatric residencies.

Chan, T. M., et al. (2015). "Creating, curating, and sharing online faculty development resources: the medical education in cases series experience." *Acad Med* **90**(6): 785-789.

PROBLEM: It is difficult to engage clinicians in continuing medical education that does not focus on clinical expertise. Evolving online technologies (e.g., massive open online courses [MOOCs]) are disrupting and transforming medical education, but few online nonclinical professional development resources exist.

APPROACH: In August 2013, the Academic Life in Emergency Medicine Web site launched the Medical Education in Cases (MEdIC) series to engage clinicians in an online professional development exercise. Each month, a complex, realistic scenario featuring a nonclinical medical education dilemma is published with accompanying discussion questions. A weeklong discussion is moderated on Twitter and the Web site. This discussion is curated to create a community commentary, which is published alongside presolicited expert responses. Case resources are available for download. OUTCOMES: The first six MEdIC cases (published August 2013-January 2014) emphasized different CanMEDS and/or Accreditation Council on Graduate Medical Education competencies. Median reader engagement metrics (interquartile range 25%-75%) in the first week following publication were 861 (634-1,114) pageviews, 767 (518-953) unique visitors from 326 (218-405) cities in 45 (32-50) countries, 30 (24-39) comments, 52 (40-56) tweets, 17 (13-30) Facebook Likes, and 5 (5-7) Google Plus +1s. NEXT STEPS: The MEdIC series is proof of concept that online activities can engage clinicians in nonclinical professional development. The early experience suggests the connectivist nature of MEdIC allows for crowdsourcing solutions to ill-defined problems via the wisdom of readers. This methodology may also be effective for other nonclinical and medical education topics.

Chapman, A. B. and L. M. Guay-Woodford (2008). "Nurturing passion in a time of academic climate change: the modern-day challenge of junior faculty development." *Clin J Am Soc Nephrol* **3**(6): 1878-1883.

Chung, H. S., et al. (2012). "The impact of an international faculty development program on simulation-based healthcare education." *Med Teach* **34**(6): 510.

Clay, M. A., 2nd, et al. (2013). "Teaching while learning while practicing: reframing faculty development for the patient-centered medical home." *Acad Med* **88**(9): 1215-1219.

Soaring costs of health care, patients living longer with chronic illnesses, and continued attrition of interest in primary care contribute to the urgency of developing an improved model of health care delivery. Out of this need, the concept of the team-based, patient-centered medical home (PCMH) has developed. Amidst implementation in academic settings, clinical teachers face complex challenges not previously encountered: teaching while simultaneously learning about the PCMH model, redesigning clinical delivery systems while simultaneously delivering care within them, and working more closely in expanded interprofessional teams. To address these challenges, the authors reviewed three existing faculty development models and recommended four important adaptations for preparing clinical teachers for their roles as system change agents and facilitators of learning in these new settings. First, many faculty find themselves in the awkward position of teaching concepts they have yet to master themselves. Professional development programs must recognize that, at least initially, health professions learners and faculty will be learning system redesign content and skills together while practicing in the evolving workplace. Second, all care delivery team members influence learning in the workplace. Thus, the definition of faculty must expand to include nurses,

pharmacists, social workers, medical assistants, patients, and others. These team members will need to accept their roles as educators. Third, learning to deliver health care in teams will require support of both interprofessional collaboration and intraprofessional identity development. Fourth, learning to manage change and uncertainty should be part of the core content of any faculty development program within the PCMH.

Coates, W. C., et al. (2010). "Faculty development in medical education research: a cooperative model." Acad Med **85**(5): 829-836.

As the definition of scholarship is clarified, each specialty should develop a cadre of medical education researchers who can design, test, and optimize educational interventions. In 2004, the Association for American Medical Colleges' Group on Educational Affairs developed the Medical Education Research Certificate (MERC) program to provide a curriculum to help medical educators acquire or enhance skills in medical education research, to promote effective collaboration with seasoned researchers, and to create better consumers of medical education scholarship. MERC courses are offered to individuals during educational meetings. Educational leaders in emergency medicine (EM) identified a disparity between the "scholarship of teaching" and medical education research skills, and they collaborated with the MERC steering committee to develop a mentored faculty development program in medical education research. A planning committee comprising experienced medical education researchers who are also board-certified, full-time EM faculty members designed a novel approach to the MERC curriculum: a mentored team approach to learning, grounded in collaborative medical education research projects. The planning committee identified areas of research interest among participants and formed working groups to collaborate on research projects during standard MERC workshops. Rather than focusing on individual questions during the course, each mentored group identified a single study hypothesis. After completing the first three workshops, group members worked under their mentors' guidance on their multiinstitutional research projects. The expected benefits of this approach to MERC include establishing a research community network, creating projects whose enrollments offer a multiinstitutional dimension, and developing a cadre of trained education researchers in EM.

Colletti, J. E., et al. (2010). "Developing a standardized faculty evaluation in an emergency medicine residency." J Emerg Med **39**(5): 662-668.

**BACKGROUND:** Quality educators are a core component of successful residency training. A structured, consistent, validated evaluation of clinical educators is important to improve teaching aptitude, further faculty development, and improve patient care. **STUDY OBJECTIVES:** The authors sought to identify specific domains of instructional quality and to develop a composite instrument for assessing instructional quality. **METHODS:** The study setting is a 3-year residency program. Residents rated the quality of faculty member instruction using an 18-item survey twice over a 2-year period (2004-2005). Each survey item used a 9-point scale. Factor analysis employing a Varimax rotation identified domains of instructional performance. Cronbach's alpha was used to assess the internal consistency of the identified domains. **RESULTS:** There were 29 faculty members evaluated. Using 2004 data, five domains of instructional quality were identified that explained 92.5% of the variation in survey responses ( $\chi^2 = 2.33$ ,  $P = 0.11$ ). These were: Competency and Professionalism (30% of variation), Commitment to Knowledge and Instruction (23%), Inclusion and Interaction (17%), Patient Focus (13%), and Openness to Ideas (9%). Competency and Professionalism included appropriate care, effective patient communication, use of new techniques, and ethical principles. Commitment to Knowledge and Instruction included research, mentoring, feedback, and availability. Inclusion and Interaction included procedural participation and bedside teaching. Patient Focus included compassion, effective care, and sensitivity to diverse populations. Openness to Ideas included enthusiasm and receptivity of new ideas. These five domains were consistent in the 2005 data (Cronbach's alpha 0.68-0.75). **CONCLUSIONS:** A five-domain instrument consistently accounted for variations in faculty teaching performance as rated by resident physicians. This instrument may be useful for standardized assessment of instructional quality.

Connelly, E. N., et al. (2010). "The Vanguard Faculty program: research training for complementary and alternative medicine faculty." J Altern Complement Med **16**(10): 1117-1123.

**BACKGROUND:** The increasing use of complementary and alternative medicine (CAM) treatment is paralleled by a growing demand for an evidence-based approach to CAM practice. In 2007, the Helfgott Research Institute at the National College of Natural Medicine (NCNM), in partnership with Oregon Health & Science University (OHSU), both in Portland, OR, began a National Institutes of Health-funded initiative to increase the quality and quantity of evidence-based medicine (EBM) content in the curricula at NCNM. **DESIGN:** One key strategy of the Research in Complementary and Alternative Medicine Program (R-CAMP) initiative was to create a faculty development program that included four components: intensive training in EBM; professional skills enhancement; peer and mentored support; and, ultimately, utilization of these skills to incorporate EBM into the curricula. This initiative is centered on a core group of faculty at NCNM, called the Vanguard Faculty, who receives early, intensive training in EBM and works to incorporate this training into classes. Training consists of an intensive, week-long course, monthly group meetings, and periodic individualized meetings. Vanguard Faculty members also receive mentorship and access to resources to pursue individualized faculty development, research or scholarly activities. **CONCLUSIONS:** Early evaluations indicate that this effort has been successful in increasing EBM content in the curricula at NCNM. This article describes the Vanguard Faculty program in an effort to share the successes and challenges of implementing a wide-ranging faculty development and curricular initiative at a complementary and alternative medicine institution.

Cook, D. A. and Y. Steinert (2013). "Online learning for faculty development: a review of the literature." Med Teach **35**(11): 930-937.

**BACKGROUND:** With the growing presence of computers and Internet technologies in personal and professional lives, it seems prudent to consider how online learning has been and could be harnessed to promote faculty development. **AIMS:** Discuss advantages and disadvantages of online faculty development, synthesize what is known from studies involving health professions faculty members, and identify next steps for practice and future research. **METHOD:** We searched MEDLINE for studies describing online instruction for developing teaching, leadership, and research skills among health professions faculty, and synthesized these in a narrative review. **RESULTS:** We found 20 articles describing online faculty development initiatives for health professionals, including seven quantitative comparative studies, four studies utilizing defined qualitative methods, and nine descriptive studies reporting anecdotal lessons learned. These programs addressed diverse topics including clinical teaching, educational assessment, business administration, financial planning, and research skills. Most studies enrolled geographically-distant learners located in different cities, provinces, or countries. Evidence suggests that online faculty development is at least comparable to traditional training, but learner engagement and participation is highly variable. It appears that success is more likely when the course addresses a relevant need, facilitates communication and social interaction, and provides time to complete course activities. **CONCLUSIONS:** Although we identified several practical recommendations for success, the evidence base for online faculty development is sparse and insubstantial. Future research should include rigorous, programmatic, qualitative and quantitative investigations to understand the principles that govern faculty member engagement and success.

Cox, E. D., et al. (2010). "Care of the underserved: faculty development needs assessment." J Natl Med Assoc **102**(8): 713-719.

**INTRODUCTION:** Because role models are crucial to training physicians to care for the underserved, we examined pediatric faculty's knowledge, attitudes, self-efficacy, skills, and precepting behaviors regarding care for this population. **METHODS:** Faculty knowledge, attitudes, self-efficacy, and skills/precepting behaviors were surveyed. **RESULTS:** Fifty-five (65%) of 85 faculty responded. The mean (standard deviation) knowledge score was 5.9 (1.3) of 8 possible. More than one-third of faculty did not recognize the eligibility criteria, services, and outcomes associated with common resources serving the underserved. Overall attitudes toward underserved families were positive, mean 3.3 (0.3), as was mean self-efficacy, 3.0 (0.7). Self-efficacy was lowest for accessing community resources for underserved families, 2.4 (0.7). Although most faculty performed the surveyed skills, fewer than 50% reported, precepting of these same skills with students. Precepting was lowest for accessing public and community resources. **CONCLUSIONS:** Low rates of student precepting as well as specific knowledge and self-efficacy deficits highlight potential targets for faculty development.

Daley, S. P., et al. (2008). "Diversity in academic medicine no. 6 successful programs in minority faculty development: ingredients of success." Mt Sinai J Med **75**(6): 533-551.

This article describes the ingredients of successful programs for the development of minority faculty in academic medicine. Although stung by recent cuts in federal funding, minority faculty development programs now stand as models for medical schools that are eager to join the 140-year-old quest for diversity in academic medicine. In this article, the ingredients of these successful faculty development programs are discussed by experts in minority faculty development and illustrated by institutional examples. Included are descriptions of program goals and content, mentoring and coaching, selecting participants, providing a conducive environment, managing the program, and sustaining support. This article is a companion to another article, "Successful Programs in Minority Faculty Development: Overview," in this issue of the Mount Sinai Journal of Medicine.

Danilkewich, A. D., et al. (2012). "Implementing an evidence-informed faculty development program." Can Fam Physician **58**(6): e337-343.

OBJECTIVE: To establish an evidence-informed faculty development program. DESIGN: Survey derived from a needs-assessment tool. SETTING: Department of Academic Family Medicine at the University of Saskatchewan, which is geographically dispersed across the province. PARTICIPANTS: Full-time faculty members in the Department of Academic Family Medicine at the University of Saskatchewan. MAIN OUTCOME MEASURES: Creation of an evidence-informed faculty development program. RESULTS: The response rate was 77.3% (17 of 22). The data were stratified by 2 groups: faculty members with less than 5 years of experience and those with 5 or more years of experience. Those with less than 5 years of experience rated the following as their top priorities: teaching, developing scholarly activities, and career development. Those with 5 or more years of experience rated the following as their top priorities: administration and leadership, teaching, and information technology. Although there were differences in overall priorities, the 2 groups identified 17 out of 54 skills as important to faculty development. CONCLUSION: The results of the needs-assessment tool were used to shape a dynamic, evidence-informed faculty development program with full-time faculty in the Department of Academic Family Medicine at the University of Saskatchewan. Future programs will continue to be dynamic, faculty-centred, and evidence-informed.

Dath, D. and W. Iobst (2010). "The importance of faculty development in the transition to competency-based medical education." Med Teach **32**(8): 683-686.

Medical teachers trained in conventional educational systems need faculty development to prepare them to function effectively in a competency-based medical education (CBME) system. Faculty development can provide knowledge about CBME, training in new teaching techniques in different domains of medical practice, and new strategies for providing the authentic and regular assessment that is an essential aspect of CBME. A systems-wide approach as well as efforts to provide training in CBME to individual teachers in both the undergraduate and postgraduate systems will be important. The wide implementation of CBME will be challenging and slow, and will meet with resistance, but various strategies can be used address these challenges. Faculty development is fundamental to the effectiveness of those strategies.

Davis, D. A., et al. (2011). "Rethinking CME: an imperative for academic medicine and faculty development." Acad Med **86**(4): 468-473.

To help address the clinical care gap, a working group discussed the future of faculty development in academic medicine, explored problems within the large, current enterprise devoted to continuing medical education (CME), and described four domains core to its revitalization and reformation. These domains are (1) preparing and supporting an engaged clinician-learner, (2) improving the quality of knowledge or evidence shared, (3) enhancing the means by which to disseminate and implement that knowledge and evidence, and (4) reforming the patient, health care, and regulatory systems in and for which the process of CME exists. Reshaping these domains requires the consideration of a more seamless, evidence-based, and patient-oriented continuum of medical education. Revitalizing CME also requires the full engagement of the academic medical community and its faculty. To achieve the goal of creating a new, more effective, seamless process of CME, the working group recommended an active faculty development process to develop strong clinician-learners, strong involvement of academic health center leaders, the development of an educational home for clinician-learners, and a meaningful national conversation on the subject of CME.

Dawson, S. D., et al. (2013). "Impact of outcome-based assessment on student learning and faculty instructional practices." J Vet Med Educ **40**(2): 128-138.

Increased accountability has been a catalyst for the reformation of curriculum and assessment practices in postsecondary schools throughout North America, including veterinary schools. There is a call for a shift in assessment practices in clinical rotations, from a focus on content to a focus on assessing student performance. Learning is subsequently articulated in terms of observable outcomes and indicators that describe what the learner can do after engaging in a learning experience. The purpose of this study was to examine the ways in which a competency-based program in an early phase of implementation impacted student learning and faculty instructional practices. Findings revealed that negative student perceptions of the assessment instrument's reliability had a detrimental effect on the face validity of the instrument and, subsequently, on students' engagement with competency-based assessment and promotion of student-centered learning. While the examination of faculty practices echoed findings from other studies that cited the need for faculty development to improve rater reliability and for a better data management system, our study found that faculty members' instructional practices improved through the alignment of instruction and curriculum. This snap-shot of the early stages of implementing a competency-based program has been instrumental in refining and advancing the program.

Dhaliwal, G. (2013). "Developing teachers of clinical reasoning." Clin Teach **10**(5): 313-317.

BACKGROUND: Front-line teachers seek guidance and tools to instruct and remediate clinical reasoning, but effective professional development methods to accomplish these goals have not been reported. METHODS: A 2-hour workshop was developed to empower front-line clinician educators to teach and remediate clinical reasoning by understanding the cognitive steps in the clinical reasoning process which can be leveraged in clinical settings. The workshop has been given 19 times over 6 years and uses interactive didactic presentations, facilitated discussion and dyad exercises, followed by small group analysis of trainee cases, where the diagnosis and remediation of clinical reasoning issues are practised. RESULTS: The quality and organisation of the session and the participants' intentions to change their teaching practice were rated higher than faculty development seminars in the same academic years. Participants cited the four-step model, technology analogies and the opportunity to analyse cases with peers as highly effective elements of the workshop. DISCUSSION: Similarly structured faculty development seminars may help bring insights from clinical reasoning theory to bedside and classroom instruction.

Dickinson, W. P. (2010). "Leadership for change: a vital area for faculty development, continuing education, and resident education." Fam Med **42**(9): 659-660.

Dieter, P. E. (2009). "A Faculty Development Program can result in an improvement of the quality and output in medical education, basic sciences and clinical research and patient care." Med Teach **31**(7): 655-659.

The Carl Gustav Carus Faculty of Medicine, University of Technology Dresden, Germany, was founded in 1993 after the reunification of Germany. In 1999, a reform process of medical education was started together with Harvard Medical International. The traditional teacher- and discipline-centred curriculum was displaced by a student-centred, interdisciplinary and integrative curriculum, which has been named Dresden Integrative Patient/Problem-Oriented Learning (DIPOL). The reform process was accompanied and supported by a parallel-ongoing Faculty Development Program. In 2004, a Quality Management Program in medical education was implemented, and in 2005 medical education received DIN EN ISO 9001:2000 certification. Quality Management Program and DIN EN ISO 9001:2000 certification were/are unique for the 34 medical schools in Germany. The students play a very important strategic role in all processes. They are members in all committees like the Faculty Board, the Board of Study Affairs (with equal representation) and the ongoing audits in the Quality Management Program. The Faculty Development program, including a reform in medical education, the establishment of the Quality Management program and the certification, resulted in an improvement of the quality and output of medical education and was accompanied in an improvement of the quality and output of basic sciences and clinical research and interdisciplinary patient care.

Eckstrom, E., et al. (2008). "Aiming to improve care of older adults: an innovative faculty development workshop." J Gen Intern Med **23**(7): 1053-1056.

INTRODUCTION/AIMS: Internists care for older adults and teach geriatrics to trainees, but they often feel ill-prepared for these tasks. The aims of our 1-day Continuing Medical Education workshop were to improve the knowledge and self-perceived competence of general internists in their care of older adults and to increase their geriatrics teaching for learners. SETTING: Two internal medicine training programs encompassing University, Veterans Affairs, and a community-based hospital in Portland, OR, USA. PROGRAM DESCRIPTION: Course faculty identified gaps in assessment of cognition, function, and decisional capacity; managing care transitions; and treatment of behavioral symptoms. To address these gaps, our workshop provided geriatric content discussions followed by small group role plays to apply newly learned content. Forty teaching faculty participated. PROGRAM EVALUATION: Participants completed 13-item multiple-choice pre- and post-workshop geriatric knowledge tests, pre- and post-workshop surveys of self-perceived competence to care for older adults, and completed an open-ended 'commitment to change' prompt after the intervention. Knowledge scores improved following the intervention (61% to 72%,  $p < .0001$ ), as did self-perceived competence (11 of 14 items significant). Seventy-one percent of participants reported success in meeting their commitment to change goals. DISCUSSION: A 1-day intervention improved teaching faculty knowledge and self-perceived competence to care for older patients and led to self-perceived changes in teaching behaviors.

Eckstrom, E., et al. (2006). "Measuring outcomes of a one-minute preceptor faculty development workshop." J Gen Intern Med **21**(5): 410-414.

BACKGROUND: Measuring outcomes of faculty development programs is difficult and infrequently attempted beyond measuring participant satisfaction with the program. Few studies have validated evaluation tools to assess the effectiveness of faculty development programs, and learners have rarely participated in assessing improvement of faculty who participate in such programs. OBJECTIVE: To develop a questionnaire to measure the effectiveness of an enhanced 1-minute preceptor (OMP) faculty development workshop via faculty self-assessment and resident assessment of faculty, and to use the questionnaire to assess an OMP faculty development workshop. DESIGN AND MEASUREMENTS: We developed and tested a questionnaire to assess the 5 "microskills" of a OMP faculty development program, and performed faculty self-assessment and resident assessment using the questionnaire 6 to 18 months before and 6 to 18 months after our experiential skills improvement workshop. PARTICIPANTS: Sixty-eight internal medicine continuity clinic preceptors (44 control and 24 intervention faculty) at a university, a veteran's affairs hospital, and 2 community internal medicine training sites. RESULTS: Twenty-two participants (92%) completed pre- and postintervention questionnaires. Residents completed 94 preintervention questionnaires and 58 postintervention questionnaires on participant faculty. Faculty reported improvement in behavior following the intervention. Residents reported no significant improvements in faculty teaching behaviors following the intervention. CONCLUSION: We attempted to rigorously evaluate a faculty development program based on the OMP. Although the intervention did not show statistically significant changes in teaching behavior, we believe that this study is an important step in extending assessment of faculty development to include resident evaluation of participating faculty.

Evans, K. H., et al. (2014). "The impact of a faculty development program in health literacy and ethnogeriatrics." Acad Med **89**(12): 1640-1644.

PROBLEM: A faculty development curriculum aimed at increasing health literacy and awareness of patient care issues in ethnogeriatrics is essential to address serious deficiencies in faculty and health professionals' training and to prepare future health care professionals to care for older adults. APPROACH: Authors from the Stanford Geriatric Education Center developed and implemented a faculty development program in Health Literacy and Ethnogeriatrics (HLE). The goal was to enhance faculty and health professionals' knowledge, skills, and attitudes in HLE-related areas (e.g., health disparities, low health literacy, quality of care for ethnically diverse elders, patient/provider communication). The curriculum was implemented during an intensive weeklong program over a three-year period (2008-2010). The eight-module core curriculum was presented in a train-the-trainer format, supplemented by daily resource sessions. OUTCOMES: Thirty-four faculty participants from 11 disciplines, including medicine, came from 19 institutions in 12 states. The curriculum positively affected participants' knowledge, skills, and attitudes related to topics in HLE. Participants rated the curriculum's usefulness highly, and they reported that over 57% of the content was new. The HLE curriculum provided a mechanism to increase the self-assessed knowledge, skills, and attitudes

of participants. It also fostered local curricular change: Over 91% of the participants have either disseminated the HLE curriculum through seminars conducted at their home sites or implemented HLE-related projects in their local communities, reaching diverse patient populations. NEXT STEPS: Next steps include measuring the impact on the participants' teaching skills and at their home sites through their trainees and patients.

Evans, R., et al. (2011). "Advancing evidence informed practice through faculty development: the Northwestern Health Sciences University model." Explore (NY) **7**(4): 265-268.

Farley, H., et al. (2008). "An assessment of the faculty development needs of junior clinical faculty in emergency medicine." Acad Emerg Med **15**(7): 664-668.

OBJECTIVES: Academic physicians must be able to access the resources necessary to support their ongoing professional development and meet requirements for continued academic advancement. The authors sought to determine the self-perceived career development needs of junior clinical faculty in emergency medicine (EM) and the availability of educational resources to meet those needs. METHODS: An educational "needs assessment" survey was distributed to 954 American College of Emergency Physicians (ACEP) members listed in the ACEP database as being faculty at EM residency programs in the United States and having graduated from an EM residency within the past 7 years. Respondents were asked to rank the importance of 22 areas of faculty development to their own professional growth and then to indicate whether educational resources in each area were available to them. Respondents were also asked to note the educational formats they prefer. A search for currently available resources in each topic area was undertaken and compared to the survey results. RESULTS: A total of 240 responses were received. Self-perceived career development needs were identified in the following areas: bedside teaching, lecture development, business skills, managerial skills, educational research, mentorship and career counseling, interpersonal skills, leadership skills, scholarly writing skills, physician wellness, and knowledge of the faculty development process. While a review of currently available educational resources revealed lectures, conferences, and online materials pertinent to most of these topics, a relative lack of resources in the areas of mentorship and physician wellness was identified. CONCLUSIONS: Junior clinical faculty in EM perceive a lack of educational resources in a number of areas of faculty development. The academic community of EM should strive to improve awareness of and access to currently existing resources and to develop additional resources to address the area of physician wellness. The lack of mentorship in academic EM continues to be a problem in search of a solution.

Fidler, D. C., et al. (2007). "Teaching scholars programs: faculty development for educators in the health professions." Acad Psychiatry **31**(6): 472-478.

OBJECTIVE: This article 1) provides an overview of formal Health Sciences Teaching Scholars Programs as presented in medical education literature and 2) presents information about an innovative multidiscipline Teaching Scholars Program. METHOD: Health Sciences Teaching Scholars Programs and similar programs were reviewed in the medical education literature to identify similar and dissimilar characteristics. The WVU Teaching Scholars Program highlighted in this article is presented with a discussion of goals, objectives, target audiences, course length, session frequency, program topics, learning methods, and assessments of the programs. A summary of the WVU Teaching Scholars Program and two Teaching Scholars Programs at McGill University and the University of Toronto were presented at the Association for American Medical Colleges (AAMC) annual meeting in 2006 for input from the general medical education audience. RESULTS: Comparisons of Health Sciences Teaching Scholars Programs reveal that successful programs are uniquely shaped by their educational environments. Scholars report that they value learning new teaching methods and improving their educational careers. CONCLUSION: Teaching Scholars Programs are valuable for the development of enhancing both teaching and scholarship in Health Sciences Programs and must adapt to the uniqueness of their respective educational environments and must continue to nurture scholars beyond graduation.

Frankel, R. M., et al. (2011). "Crossing the patient-centered divide: transforming health care quality through enhanced faculty development." Acad Med **86**(4): 445-452.

In the report "Crossing the Quality Chasm," the Institute of Medicine asserted that patient-centered care is one of the six domains of quality. In this article, the authors consider how the patient- and relationship-centered components of quality can be achieved in all aspects of medical care. They suggest that faculty

development in three key areas—mindful practice, formation, and training in communication skills—is necessary to achieve patient- and relationship-centeredness. The authors first review the philosophical and scientific foundations of patient-centered and relationship-centered care. They next describe and provide concrete examples to illustrate the underlying theory and practices associated with each of the three faculty development areas. They then propose five key areas for faculty development in patient- and relationship-centered care: (1) making it a central competency in all health care interactions, (2) developing a national curriculum framework, (3) requiring performance metrics for professional development, (4) partnering with national health care organizations to disseminate the curriculum framework, and (5) preserving face-to-face educational methods for delivering key elements of the curriculum. Finally, the authors consider the issues faced in faculty development today in light of the medical education issues Abraham Flexner identified more than a century ago.

Gates, P., et al. (2013). "Faculty development for underrepresented minority dental faculty and residents." *J Dent Educ* **77**(3): 276-291.

This report describes the implementation and evaluation of the Bronx-Lebanon Hospital Center Dental Faculty Development Program (DFDP) for fifteen participants: five advanced dental education faculty members and ten residents. The 100-hour DFDP, designed in the longitudinal immersion model for faculty development, was conducted in four phases at the Bronx-Lebanon Department of Dentistry in the Bronx, New York, in 2010-11. The DFDP was implemented to help underrepresented minority (URM) dental residents and clinical faculty members develop skills necessary for academic careers and enhanced teaching effectiveness. The program's curriculum had four themes: teaching and learning, scholarship, academic leadership, and career planning. For each phase, the participants completed pre- and post-training assessments of their knowledge, attitudes, and confidence, as well as qualitative evaluation of DFDP organization, content, activities, and value. The participants' pre-instruction mean knowledge score for all phases combined was 48.3 percent, and the post-test score was 81.1 percent ( $p=0.01$ ). The participants showed minimal change in their attitudes about educational issues, but they reported enhanced confidence for twenty-five skills addressed in the DFDP. The total confidence score was 77.5 (25 skills  $\times$  3.1 group mean) on all pre-tests combined and 100.2 (25  $\times$  4.0 group mean) on the post-tests ( $p=0.01$ ). The participant ratings for overall DFDP implementation and for twenty-four topical sessions were uniformly positive. The faculty and resident participants in this year-long faculty development initiative at an advanced dental education program with a high URM representation demonstrated enhanced knowledge and confidence and provided positive program evaluations. This report also describes curricular and assessment enhancements for subsequent years of the DFDP based on the first-year outcomes.

George, B. C., et al. (2013). "Duration of faculty training needed to ensure reliable or performance ratings." *J Surg Educ* **70**(6): 703-708.

**OBJECTIVES:** The American Board of Surgery has mandated intraoperative assessment of general surgery residents, yet the time required to train faculty to accurately and reliably complete operating room performance evaluation forms is unknown. Outside of surgical education, frame-of-reference (FOR) training has been shown to be an effective training modality to teach raters the specific performance indicators associated with each point on a rating scale. Little is known, however, about what form and duration of FOR training is needed to accomplish reliable ratings among surgical faculty. **DESIGN:** Two groups of surgical faculty separately underwent either an accelerated 1-hour ( $n = 10$ ) or immersive four-hour ( $n = 34$ ) FOR faculty development program. Both programs included a formal presentation and a facilitated discussion of sample behaviors for each point on the Zwisch operating room performance rating scale (see DaRosa et al.(8)). The immersive group additionally participated in a small group exercise that included additional practice. After training, both groups were tested using 10 video clips of trainees at various levels. Responses were scored against expert consensus ratings. The 2-sided Mann-Whitney U test was used to compare between group means. **SETTING AND PARTICIPANTS:** All trainees were faculty members in the Department of Surgery of a large midwestern private medical school. **RESULTS:** Faculty undergoing the 1-hour FOR training program did not have a statistically different mean correct response rate on the video test when compared with those undergoing the 4-hour training program (88% vs 80%;  $p = 0.07$ ). **CONCLUSIONS:** One-hour FOR training sessions are likely sufficient to train surgical faculty to reliably use a simple evaluation

instrument for the assessment of intraoperative performance. Additional research is needed to determine how these results generalize to different assessment instruments.

Geraci, S. A., et al. (2010). "AAIM Report on Master Teachers and Clinician Educators Part 2: faculty development and training." *Am J Med* **123**(9): 869-872.e866.

Gjerde, C. L., et al. (2008). "Long-term outcomes of a primary care faculty development program at the University of Wisconsin." *Fam Med* **40**(8): 579-584.

**BACKGROUND AND OBJECTIVES:** To meet a need for primary care teachers, the Bureau of Health Professions funds faculty development programs for primary care preceptors. The purpose of this study was to determine how graduates of our faculty development program identified its long-term effect on professional outcomes. **METHODS:** Our program was a year-long series of five weekend workshops focusing on the preparation of preceptors to teach curricular areas relatively new to medical education--evidence-based medicine, teaching skills, technology tools, doctor-patient communication, quality improvement, and advocacy. Participants included physicians in community-based practices and university-based physicians. We surveyed the first 100 graduates of our program about professional and academic outcomes they attributed to program participation. Outcomes were categorized using the Kirkpatrick evaluation model; open-ended comments were analyzed thematically. **RESULTS:** Eighty responses were received (80% response rate). Ninety percent of respondents were teaching medical students and residents. Outcomes attributed to the program included improvement in teaching skills, improvement in clinical skills, intrapersonal growth and increased self-confidence, and increased interdisciplinary networking and mentoring. Ninety-one percent had recommended the program to others. **CONCLUSIONS:** Graduates identified positive outcomes and found the fellowship useful for developing the skills and self-confidence required of teachers. This training may be valuable for teachers in today's learning environment.

Glicken, A. (2014). "Innovations in faculty development: interprofessional oral health workshops combine active learning and community engagement." *J Physician Assist Educ* **25**(3): 31-35.

**PURPOSE:** This paper reports the findings of a retrospective study of PA faculty who attended an innovative oral health faculty development workshop at the PAEA Annual Education Forum in 2011 or 2012. The oral health workshop combined didactic and interactive learning, including a hands-on community service practicum. **METHODS:** The impact of this interprofessional oral health workshop was evaluated by measuring the degree to which participants incorporated workshop concepts into educational curriculum. A follow-up telephone survey was conducted in the fall of 2013 to determine whether participants integrated new curriculum, consistent with general feedback, immediately following the workshop. **RESULTS:** Of the 43 workshop participants, 47% responded. Eighty percent of those responding indicated that they had "completely" or "somewhat" integrated workshop content. **CONCLUSION:** An innovative faculty development workshop including interactive interprofessional education and community service is effective in changing the knowledge, skills, and behavior of faculty in promoting the integration of oral health curriculum.

Glicken, A. D. (2008). "Excellence in physician assistant training through faculty development." *Acad Med* **83**(11): 1107-1110.

Once again, experts predict a shortage of health care providers by 2020. The physician assistant (PA) profession was created in the 1960s to address a similar need. Currently, there are 141 accredited PA training programs in the United States, 75 of them established in the 10 years between 1993 and 2002. Historically, PA education and practice models have been responsive to the ever-changing landscape of health care. It may be the profession's flexibility and adaptability that has enabled it to survive and flourish in a competitive service environment. The growth of new PA programs mandates a need for continuing faculty development, as increasing numbers of educators hail primarily from clinical practice and come equipped with minimal teaching experience. PA faculty development addresses these new recruits' needs to develop model curricula, implement new courses, and enhance instruction--all with the goal of improving both access to and quality of health care. The author describes the impact of Health Resources and Service Administration Title VII, Section 747 (Title VII) contracts in addressing this need. Title VII-funded PA education projects, considered innovative at the time of implementation, included both faculty development workshops that promoted active learning of basic teaching and administrative skills and new curricula designed to enhance

faculty teaching in genomics and practice management. These projects and others resulted in enduring professional resources that have not only strengthened the PA community but also enjoyed broad applicability within other health professions groups. This article is part of a theme issue of Academic Medicine on the Title VII health professions training programs.

Graham, L., et al. (2014). "Faculty development focused on team-based collaborative care." *Educ Prim Care* **25**(4): 227-229.

Hafler, J. P., et al. (2011). "Decoding the learning environment of medical education: a hidden curriculum perspective for faculty development." *Acad Med* **86**(4): 440-444.

Medical student literature has broadly established the importance of differentiating between formal-explicit and hidden-tacit dimensions of the physician education process. The hidden curriculum refers to cultural mores that are transmitted, but not openly acknowledged, through formal and informal educational endeavors. The authors extend the concept of the hidden curriculum from students to faculty, and in so doing, they frame the acquisition by faculty of knowledge, skills, and values as a more global process of identity formation. This process includes a subset of formal, formative activities labeled "faculty development programs" that target specific faculty skills such as teaching effectiveness or leadership; however, it also includes informal, tacit messages that faculty absorb. As faculty members are socialized into faculty life, they often encounter conflicting messages about their role. In this article, the authors examine how faculty development programs have functioned as a source of conflict, and they ask how these programs might be retooled to assist faculty in understanding the tacit institutional culture shaping effective socialization and in managing the inconsistencies that so often dominate faculty life.

Hannah, S. D. and E. Carpenter-Song (2013). "Patrolling your blind spots: introspection and public catharsis in a medical school faculty development course to reduce unconscious bias in medicine." *Cult Med Psychiatry* **37**(2): 314-339.

Cultural competence education has been criticized for excessively focusing on the culture of patients while ignoring how the culture of medical institutions and individual providers contribute to health disparities. Many educators are now focusing on the role of bias in medical encounters and searching for strategies to reduce its negative impact on patients. These bias-reduction efforts have often been met with resistance from those who are offended by the notion that "they" are part of the problem. This article examines a faculty development course offered to medical school faculty that seeks to reduce bias in a way that avoids this problem. Informed by recent social-psychological research on bias, the course focuses on forms of bias that operate below the level of conscious awareness. With a pedagogical strategy promoting self-awareness and introspection, instructors encourage participants to discover their own unconscious biases in the hopes that they will become less biased in the future. By focusing on hidden forms of bias that everyone shares, they hope to create a "safe-space" where individuals can discuss shameful past experiences without fear of blame or criticism. Drawing on participant-observation in all course sessions and eight in-depth interviews, this article examines the experiences and reactions of instructors and participants to this type of approach. We "lift the hood" and closely examine the philosophy and strategy of course founders, the motivations of the participants, and the experience of and reaction to the specific pedagogical techniques employed. We find that their safe-space strategy was moderately successful, largely due to the voluntary structure of the course, which ensured ample interest among participants, and their carefully designed interactive exercises featuring intimate small group discussions. However, this success comes at the expense of considering the multidimensional sources of bias. The specific focus on introspection implies that prior ignorance, not active malice, is responsible for biased actions. In this way, the individual perpetrators of bias escape blame for their actions while the underlying causes of their behavior go unexplored or unaccounted for.

Harris, D. L., et al. (2007). "Academic competencies for medical faculty." *Fam Med* **39**(5): 343-350.

INTRODUCTION: Physicians and basic scientists join medical school faculties after years of education. These individuals are then required to function in roles for which they have had little preparation. While competencies needed to perform in medical school, residency, and practice are defined, there is little guidance for faculty. METHODS: An expert advisory group of the Faculty Futures Initiative developed a document delineating competencies required for successful medical faculty. The proportion of time faculty in

various roles should allocate to activities related to each competency was also identified. Competencies and time allocations were developed for various teacher/administrators, teacher/educators, teacher/researchers, and teacher/clinicians. This work was validated by multiple reviews by an external panel. RESULTS: Trial implementation of the products has occurred in faculty development programs at four medical schools to guide in planning, career guidance, and evaluations of faculty fellows. DISCUSSION: The competencies and time allocations presented here help faculty and institutions define skills needed for particular faculty roles, plan for faculty evaluation, mentoring and advancement, and design faculty development programs based on identified needs.

Hatem, C. J., et al. (2006). "The academic health center coming of age: helping faculty become better teachers and agents of educational change." *Acad Med* **81**(11): 941-944.

There is a growing appreciation of the need for educational faculty development within medical education. The authors describe the establishment and subsequent expansion of one such fellowship in medical education that arose from the cooperative efforts of Harvard Medical School, Beth Israel Deaconess Medical Center, and Mount Auburn Hospital. Three resultant fellowships are outlined that share the common goals of enhancing the skills of the faculty as educators, providing an opportunity to conduct scholarly educational research, supporting the fellows as change agents, and fostering the creation of a supportive community dedicated to enhancing the field of medical education. Curricular structure and content are outlined as well as current approaches to curricular and programmatic evaluation. The fellowships have been well received and are widely perceived as transformative for the faculty, many of whom have assumed increased roles of organizational and educational leadership. Lastly, future directions for these fellowships are presented.

Hatem, C. J., et al. (2009). "Strategies for creating a faculty fellowship in medical education: report of a 10-year experience." *Acad Med* **84**(8): 1098-1103.

The authors present 10 strategies, plus challenges and opportunities, that have informed three well-established, yearlong medical education fellowships (defined as single cohorts of medical teaching faculty who participate in extended faculty development activities) during the period 1998 to 2008. These strategies include (1) defining an operating philosophy, values, and goals, (2) establishing a curriculum that reflects the roles and responsibilities of fellows and faculty, (3) employing a basic approach to adult learning, (4) striving to achieve a balance between stated objectives and openness of discussion, (5) creating optimum learning opportunities for the fellows to acquire and practice skills delineated in the curriculum, (6) fostering interdisciplinary communication, team development, and the creation of a learning community, (7) developing mindfulness and critical self-reflection, (8) systematically reviewing each session, (9) evaluating fellowship outcomes, and (10) planning for the future. This in-depth look presents both curricular content and process, providing a useful starting point from which those who develop and conduct educational faculty development activities at medical schools and academic medical centers may fashion and implement a local curriculum.

Hatem, C. J., et al. (2011). "The educational attributes and responsibilities of effective medical educators." *Acad Med* **86**(4): 474-480.

Of the many roles that the academic-educator may fulfill, that of teacher is particularly challenging. Building on prior recommendations from the literature, this article identifies the skill set of teachers across the medical education continuum—characteristics of attitude and attributes, knowledge, and pedagogic skills that permit effective teaching to be linked with effective learning and understanding. This examination which characterizes teachers' attitudes, knowledge, and skills serves to reemphasize the centrality of teaching within medical education, provides direction for faculty and institutions alike in the discharge of academic responsibilities, and makes educational accountability clear. This listing of teacher attitudes and responsibilities was vetted in 2009 by medical education leaders from across North America during a national conference on faculty development. A set of recommendations concerning faculty development issues for medical teachers is offered. The recommendations are intended to establish an academic culture in medical education that values and rewards—academically and fiscally—those centrally committed to the role of teacher. The challenges of defining skills, developing and funding programs, and ongoing evaluation must be faced to achieve success in teaching throughout medical education, now and in the future. Faculty members, fellow learners, and patients deserve no less.

Hatem, D. S., et al. (2007). "Teaching the medical interview: methods and key learning issues in a faculty development course." *J Gen Intern Med* **22**(12): 1718-1724.

OBJECTIVE: To describe the American Academy on Communication in Healthcare's (AACH) Faculty Development Course on Teaching the Medical Interview and report a single year's outcomes. DESIGN: We delivered a Faculty Development course on Teaching the Medical Interview whose theme was relationship-centered care to a national and international audience in 1999. Participants completed a retrospective pre-post assessment of their perceived confidence in performing interview, clinical, teaching, and self-awareness skills. PARTICIPANTS AND SETTING: A total of 79 participants in the 17th annual AACH national faculty development course at the University of Massachusetts Medical School in June 1999. INTERVENTION: A 5-day course utilized the principles of learner-centered learning to teach a national and international cohort of medical school faculty about teaching the medical interview. MEASUREMENTS AND MAIN RESULTS: The course fostered individualized, self-directed learning for participants, under the guidance of AACH faculty. Teaching methods included a plenary session, small groups, workshops, and project groups all designed to aid in the achievement of individual learning goals. Course outcomes of retrospective self-assessed confidence in interview, clinical, teaching, self-awareness, and control variables were measured using a 7-point Likert scale. Participants reported improved confidence in interview, clinical, teaching, and self-awareness variables. After controlling for desirability bias as measured by control variables, only teaching and self-awareness mean change scores were statistically significant ( $p < .001$ ). CONCLUSIONS: The AACH Faculty Development course on Teaching the Medical Interview utilized learner-centered teaching methods important to insure learning with experienced course participants. Perceived teaching and self-awareness skills changed the most when compared to other skills.

Heflin, M. T., et al. (2009). "'So you want to be a clinician-educator...': designing a clinician-educator curriculum for internal medicine residents." *Med Teach* **31**(6): e233-240.

BACKGROUND: Despite a growing demand for skilled teachers and administrators in graduate medical education, clinician-educator tracks for residents are rare and though some institutions offer 'resident-as-teacher' programs to assist residents in developing teaching skills, the need exists to expand training opportunities in this area. METHODS: The authors conducted a workshop at a national meeting to develop a description of essential components of a training pathway for internal medicine residents. Through open discussion and small group work, participants defined the various roles of clinician-educators and described goals, training opportunities, assessment and resource needs for such a program. RESULTS: Workshop participants posited that the clinician-educator has several roles to fulfill beyond that of clinician, including those of teacher, curriculum developer, administrator and scholar. A pathway for residents aspiring to become clinician educators must offer structured training in each of these four areas to empower residents to effectively practice clinical education. In addition, the creation of such a track requires securing time and resources to support resident learning experiences and formal faculty development programs to support institutional mentors and leaders. CONCLUSION: This article provides a framework by which leaders in medical education can begin to prepare current trainees interested in careers as clinician-educators.

Hendricson, W. D., et al. (2007). "Does faculty development enhance teaching effectiveness?" *J Dent Educ* **71**(12): 1513-1533.

Academic dentists and members of the practice community have been hearing, for more than a decade, that our educational system is in trouble and that the profession has lost its vision and may be wavering in the achievement of its goals. A core of consistently recommended reforms has framed the discussion of future directions for dental education, but as yet, most schools report little movement toward implementation of these reforms in spite of persistent advocacy. Provision of faculty development related to teaching and assessment strategies is widely perceived to be the essential ingredient in efforts to introduce new curricular approaches and modify the educational environment in academic dentistry. Analyses of the outcomes of efforts to revise health professions curricula have identified the availability and effectiveness of faculty development as a predictor of the success or failure of reform initiatives. This article will address faculty development for purposes of enhancing teaching effectiveness and preparing instructors for potential new roles associated with curriculum changes. Its overall purpose is to provide information and insights about faculty development that may be useful to dental schools in designing professional growth opportunities for

their faculty. Seven questions are addressed: 1) What is faculty development? 2) How is faculty development accomplished? 3) Why is faculty development particularly important in dental education? 4) What happens when faculty development does not accompany educational reform? 5) Why are teaching attitudes and behaviors so difficult to change? 6) What outcomes can be expected from faculty development? and 7) What does the available evidence tell us about the design of faculty development programs? Evidence from systematic reviews pertaining to the teaching of evidence-based dentistry, strategies for continuing professional education, and the Best Evidence in Medical Education review of faculty development outcomes are presented to answer this question: does faculty development enhance teaching effectiveness? Characteristics consistently associated with effective faculty development are described.

Herrmann, M., et al. (2007). "Faculty development in general practice in Germany: experiences, evaluations, perspectives." *Med Teach* **29**(2-3): 219-224.

From 1999 to 2001, the German Society of General Practice and Family Medicine (DEGAM) pioneered a faculty development programme to help general practitioners (GPs) interested in an academic career to develop their skills in teaching, primary care, quality assurance and research. The programme involves five weekend-training sessions over 18 months and applies a learner-centred approach. Participants choose the learning formats and switch between the roles of learners, teachers, chair persons and programme organizers. This article evaluates the acceptability and feasibility of the programme. Data were collected over a two-year period from the 16 participants who completed the first training programme. The evaluation involved a focus group, telephone interviews and email questionnaires. Participants appreciated the learner centred format of the programme and gained new teaching and research skills. They also learned to better assess and critically reflect on their professional work as GPs and reported improved academic 'survival skills' due to collaborative networks with colleagues. The faculty development programme proved advantageous for the personal and professional development of the participating GPs. It constitutes a promising tool for the further development of General Practice as an academic discipline that is still in the process of establishing itself at medical schools in Germany.

Hicks, J. L., et al. (2013). "Career transition and dental school faculty development program." *Tex Dent J* **130**(11): 1115-1122.

Academic dentistry, as a career track, is not attracting sufficient numbers of new recruits to maintain a corps of skilled dental educators. The Faculty Development Program (FDP) at the University of Texas Health Science Center at San Antonio Dental School received federal funds to institute a 7-component program to enhance faculty recruitment and retention and provide training in skills associated with success in academics including: (1) a Teaching Excellence and Academic Skills (TEAS) Fellowship, (2) training in research methodology, evidence-based practice research, and information management, (3) an annual dental hygiene faculty development workshop for dental hygiene faculty, (4) a Teaching Honors Program and Academic Dental Careers Fellowship to cultivate students' interest in educational careers, (5) an Interprofessional Primary Care Rotation, (6) advanced education support toward a master's degree in public health, and (7) a key focus of the entire FDP, an annual Career Transition Workshop to facilitate movement from the practice arena to the educational arm of the profession. The Career Transition Workshop is a cap stone for the FDP; its goal is to build a bridge from practice to academic environment. It will provide guidance for private practice, public health, and military dentists and hygienists considering a career transition into academic dentistry. Topics will be addressed including: academic culture, preparation for the academic environment, academic responsibilities, terms of employment, compensation and benefits, career planning, and job search / interviewing. Instructors for the workshop will include dental school faculty who have transitioned from the practice, military, and public health sectors into dental education. Objectives of the Overall Faculty Development Program: \* Provide training in teaching and research skills, career planning, and leadership in order to address faculty shortages in dental schools and under representation of minority faculty. \* Provide resident and faculty training in cultural and linguistic competency. \* Develop and conduct a collaborative inter professional education project with a Pediatric Medicine department, a nursing school, and other health professions' education programs. \* Provide faculty and residents with financial support to pursue a master's degree in public health; and \* Provide support and assistance for dental practitioners desiring to explore a transition into the educational environment.

Hindman, B. J., et al. (2013). "Research, education, and nonclinical service productivity of new junior anesthesia faculty during a 2-year faculty development program." *Anesth Analg* **117**(1): 194-204.

**BACKGROUND:** As a specialty, anesthesiology has relatively low research productivity. Prior studies indicate that junior faculty development programs favorably affect academic performance. We therefore initiated a junior faculty development program and hypothesized that most (>50%) new junior faculty would take <50 nonclinical days to achieve a primary program goal (e.g., investigation or publication), and <5 nonclinical days to achieve a secondary program goal (e.g., teaching or nonclinical service). **METHODS:** Twenty new junior faculty participated in the 2-year program which had a goal-oriented structure and was supported by nonclinical time, formally assigned mentors, and a didactic curriculum. Goal productivity equaled the number of program goals accomplished divided by the amount of nonclinical time received. Primary goal productivity was expressed as primary goals accomplished per 50 nonclinical days. Secondary goal productivity was expressed as secondary goals accomplished per 5 nonclinical days. **RESULTS:** Median primary goal productivity was 0.45 primary goals per 50 nonclinical days (25th-75th interquartile range = 0.00-0.73). Contrary to our hypothesis, most new junior faculty needed >50 nonclinical days to achieve a primary goal (17/20, P = 0.0026). Median secondary goal productivity was 0.57 secondary goals per 5 nonclinical days (25th-75th interquartile range = 0.38-0.77). Contrary to our hypothesis, most new junior faculty needed >5 nonclinical days to accomplish a secondary goal (18/20, P = 0.0004). It was not clear that the faculty development program increased program goal productivity. **CONCLUSIONS:** Even with structured developmental support, most new junior anesthesia faculty needed >50 nonclinical days to achieve a primary (traditional academic) goal and >5 nonclinical days to achieve a secondary goal. Currently, most new anesthesia faculty are not productive in traditional academic activities (research). They are more productive in activities related to clinical care, education, and patient care systems management.

Hitchcock, M. A. and W. A. Anderson (2008). "On whose shoulders we stand: lessons from Exemplar medical educators." *Adv Health Sci Educ Theory Pract* **13**(5): 563-569.

The hiring of educators in medical schools (faculty who study the educational process and prepare others to become educators) has been one of the most successful educational innovations ever. Starting in 1954, through a collaboration between the Schools of Medicine and Education at the University of Buffalo, the innovation has spread to over half of the medical schools in the United States and to medical schools in several other countries. Practically every medical school and specialty now hires educators to conduct faculty development, evaluate learners, and develop or revise curricula. This article focuses on lessons learned by six-first-generation educators hired in medical education. These individuals made unique contributions that improved the process of educating and evaluating future physicians. Among their most important contributions have been the use of standardized patients, faculty development to improve instruction, and the use of clinical decision making theory. In addition, these professional educators created a home and career path for other professionals and nurtured proteges to continue the work they started. Ten lessons are reported from structured interviews using a standardized protocol. These lessons will hopefully inform current and future medical educators to help them sustain the effective collaboration between medical schools and educators.

Holmboe, E. S., et al. (2011). "Faculty development in assessment: the missing link in competency-based medical education." *Acad Med* **86**(4): 460-467.

As the medical education community celebrates the 100th anniversary of the seminal Flexner Report, medical education is once again experiencing significant pressure to transform. Multiple reports from many of medicine's specialties and external stakeholders highlight the inadequacies of current training models to prepare a physician workforce to meet the needs of an increasingly diverse and aging population. This transformation, driven by competency-based medical education (CBME) principles that emphasize the outcomes, will require more effective evaluation and feedback by faculty. Substantial evidence suggests, however, that current faculty are insufficiently prepared for this task across both the traditional competencies of medical knowledge, clinical skills, and professionalism and the newer competencies of evidence-based practice, quality improvement, interdisciplinary teamwork, and systems. The implication of these observations is that the medical education enterprise urgently needs an international initiative of faculty development around CBME and assessment. In this article, the authors outline the current challenges and provide suggestions on where faculty development efforts should be focused and how such an initiative

might be accomplished. The public, patients, and trainees need the medical education enterprise to improve training and outcomes now.

Hull, L., et al. (2015). "Facilitating the implementation of the American College of Surgeons/Association of Program Directors in Surgery phase III skills curriculum: training faculty in the assessment of team skills." *Am J Surg* **210**(5): 933-941.e932.

**BACKGROUND:** Effective teamwork is critical to safety in the operating room; however, implementation of phase III of the American College of Surgeons (ACS) and Association of Program Directors in Surgery (APDS) Curriculum that focuses on team-based skills remains worryingly low. Training and assessing the complexities of teamwork is challenging. The objective of this study was to establish guidelines and recommendations for training faculty in assessing/debriefing team skills. **METHODS:** A multistage survey-based consensus study was completed by 108 experts responsible for training and assessing surgical residents from the ACS Accredited Educational Institutes. **RESULTS:** Experts agreed that a program to teach faculty to assess team-based skills should include training in the recognition of teamwork skills, practice rating these skills, and training in the provision of feedback/debriefing. Agreement was reached that faculty responsible for conducting team-based skills assessment should be revalidated every 2 years and stringent proficiency criteria should be met. **CONCLUSIONS:** Faculty development is critical to ensure high-quality, standardized training and assessment. Training faculty to assess team-based skills has the potential to facilitate the effective implementation of phase III of the ACS and APDS Curriculum.

Huwendiek, S., et al. (2010). "Expertise, needs and challenges of medical educators: Results of an international web survey." *Med Teach* **32**(11): 912-918.

**BACKGROUND:** Little is known about how medical educators perceive their own expertise, needs and challenges in relation to medical education. **AIM:** To survey an international community of medical educators with a focus on: (1) their expertise, (2) their need for training and (3) perceived challenges. **METHODS:** A web-based survey comprising closed and open free-text questions was sent to 2200 persons on the mailing list of the Association for Medical Education in Europe. **RESULTS:** Of the 2200 medical educators invited to participate, 860 (39%) from 76 different countries took part in the survey. In general, their reported areas of expertise mainly comprised principles of teaching, communication skills training, stimulation of students in self-directed learning and student assessment. Respondents most often indicated a need for training with respect to development in medical-education-research methodology, computer-based training, curriculum evaluation and curriculum development. In the qualitative analysis of 1836 free-text responses concerning the main challenges faced, respondents referred to a lack of academic recognition, funding, faculty development, time for medical education issues and institutional support. **CONCLUSIONS:** The results of this survey indicate that medical educators face several challenges, with a particular need for more academic recognition, funding and academic qualifications in medical education.

Irby, D. M. (2014). "Excellence in clinical teaching: knowledge transformation and development required." *Med Educ* **48**(8): 776-784.

**CONTEXT:** Clinical teachers in medicine face the daunting task of mastering the many domains of knowledge needed for practice and teaching. The breadth and complexity of this knowledge continue to increase, as does the difficulty of transforming the knowledge into concepts that are understandable to learners. Properly targeted faculty development has the potential to expedite the knowledge transformation process for clinical teachers. **METHODS:** Based on my own research in clinical teaching and faculty development, as well as the work of others, I describe the unique forms of clinical teacher knowledge, the transformation of that knowledge for teaching purposes and implications for faculty development. **RESULTS:** The following forms of knowledge for clinical teaching in medicine need to be mastered and transformed: (i) knowledge of medicine and patients; (ii) knowledge of context; (iii) knowledge of pedagogy and learners, and (iv) knowledge integrated into teaching scripts. This knowledge is employed and conveyed through the parallel processes of clinical reasoning and clinical instructional reasoning. Faculty development can facilitate this knowledge transformation process by: (i) examining, deconstructing and practising new teaching scripts; (ii) focusing on foundational concepts; (iii) demonstrating knowledge-in-use, and (iv) creating a supportive organisational climate for clinical teaching. **CONCLUSIONS:** To become an excellent clinical teacher in medicine requires the transformation of multiple forms of knowledge for teaching purposes. These domains

of knowledge allow clinical teachers to provide tailored instruction to learners at varying levels in the context of fast-paced and demanding clinical practice. Faculty development can facilitate this knowledge transformation process.

Jackevicius, C. A., et al. (2014). "A formal mentorship program for faculty development." *Am J Pharm Educ* **78**(5): 100. OBJECTIVE: To describe the development, implementation, and evaluation of a formal mentorship program at a college of pharmacy. METHODS: After extensive review of the mentorship literature within the health sciences, a formal mentorship program was developed between 2006 and 2008 to support and facilitate faculty development. The voluntary program was implemented after mentors received training, and mentors and proteges were matched and received an orientation. Evaluation consisted of conducting annual surveys and focus groups with mentors and proteges. RESULTS: Fifty-one mentor-protege pairs were formed from 2009 to 2012. A large majority of the mentors (82.8%-96.9%) were satisfied with the mentorship program and its procedures. The majority of the proteges (>=70%) were satisfied with the mentorship program, mentor-protege relationship, and program logistics. Both mentors and proteges reported that the proteges most needed guidance on time management, prioritization, and work-life balance. While there were no significant improvements in the proteges' number of grant submissions, retention rates, or success in promotion/tenure, the total number of peer-reviewed publications by junior faculty members was significantly higher after program implementation (mean of 7 per year vs 21 per year,  $p=0.03$ ) in the college's pharmacy practice and administration department. CONCLUSIONS: A formal mentorship program was successful as measured by self-reported assessments of mentors and proteges.

Jacobs, J. C., et al. (2014). "Five teacher profiles in student-centred curricula based on their conceptions of learning and teaching." *BMC Med Educ* **14**: 220.

BACKGROUND: Teachers' conceptions of learning and teaching are partly unconscious. However, they are critical for the delivery of education and affect students' learning outcomes. Lasting changes in teaching behaviour can only be realized if conceptions of teachers have been changed accordingly. Previously we constructed a questionnaire named COLT to measure conceptions. In the present study, we investigated if different teacher profiles could be assessed which are based on the teachers' conceptions. These teacher profiles might have implications for individual teachers, for faculty development activities and for institutes. Our research questions were: (1) Can we identify teacher profiles based on the COLT? (2) If so, how are these teacher profiles associated with other teacher characteristics? METHODS: The COLT questionnaire was sent electronically to all teachers in the first three years of the undergraduate curriculum of Medicine in two medical schools in the Netherlands with student-centred education. The COLT (18 items, 5 point Likert scales) comprises three scales: 'teacher centredness', 'appreciation of active learning' and 'orientation to professional practice'. We also collected personal information about the participants and their occupational characteristics. Teacher profiles were studied using a K-means cluster analysis and calculating Chi squares. RESULTS: The response rate was 49.4% (N = 319/646). A five-cluster solution fitted the data best, resulting in five teacher profiles based on their conceptions as measured by the COLT. We named the teacher profiles: Transmitters (most traditional), Organizers, Intermediates, Facilitators and Conceptual Change Agents (most modern). The teacher profiles differed from each other in personal and occupational characteristics. CONCLUSIONS: Based on teachers' conceptions of learning and teaching, five teacher profiles were found in student-centred education. We offered suggestions how insight into these teacher profiles might be useful for individual teachers, for faculty development activities and for institutes and departments, especially if involved in a curriculum reform towards student-centred education.

Jacobs, J. C., et al. (2012). "Development of an instrument (the COLT) to measure conceptions on learning and teaching of teachers, in student-centred medical education." *Med Teach* **34**(7): e483-491.

BACKGROUND: Conceptions of medical teachers regarding learning and teaching affect their teaching practice. Therefore conceptions should be addressed in faculty development. AIM: To facilitate this, we constructed the Conceptions Of Learning and Teaching (COLT) instrument. METHOD: The COLT was adapted based on experts' comments during a meeting and interviews, followed by a Delphi procedure (Part I). It was administered to teachers from two Dutch medical schools with different traditions in student-centred education (Part II; N=646). The data were analyzed using confirmatory factor analysis and reliability analysis. RESULTS: 324 Teachers (50.2%) completed the questionnaire. Confirmatory factor analysis did not confirm

the underlying theoretical model, but an alternative model demonstrated a good fit. This led to an instrument with eighteen items reflecting three underlying factors: 'teacher centredness', 'appreciation of active learning', and 'orientation to professional practice'. We found significant differences in COLT scores between the faculty of the two medical schools. CONCLUSIONS: The COLT appears to be a construct valid tool resulting in reliable scores of teachers' conceptions of learning and teaching, in student-centred medical education. Two of the three factors are new and may be specific for student-centred medical education. The COLT may be a promising tool to improve faculty development.

Joy, J. A., et al. (2008). "Supervising the supervisors: a case-based group forum for faculty development." Acad Psychiatry **32**(6): 521-524.

OBJECTIVE: Faculty development has increasingly become a focus in medical education. Many models are employed around the United States. The authors present a group model process developed to train new educators to teach our medical students. METHODS: The authors met monthly with a diverse faculty over the past 4 years and interacted in a nonhierarchical manner. The authors reviewed the literature, supervised one another, and developed a participatory method of solving educational and administrative problems. RESULTS: What emerged was a "case-based," collaborative group format to develop an educational philosophy, address challenging supervisory problems, develop tangible educational materials and "products," and promote academic careers. CONCLUSION: The authors propose this model for faculty development.

Karg, A., et al. (2013). "Integrating continuing medical education and faculty development into a single course: effects on participants' behaviour." Med Teach **35**(11): e1594-1597.

BACKGROUND: Integrating continuing medical education (CME) and faculty development (FD) into a single course can save time for physicians with teaching responsibilities. However, little is known about the effectiveness of integrated courses. AIM: To determine if there are differences in effectiveness between the CME and FD items as they were integrated in one course. METHODS: Using the commitment-to-change model to assess plans for change from all participants and reported implementation of plans three months after courses. This model is suitable for stimulating and assessing effectiveness of CME. Unplanned changes were also recorded. RESULTS: One hundred and twenty-seven respondents (of 182 participants) referred to 266 planned changes (out of 384), of which 168 (63%) were reported as implemented. Furthermore, 83 non-planned changes were indicated. In total 251 changes were reported and demonstrated that CME as well as FD items were effective. CONCLUSIONS: This study reveals that integrating CME and FD into a single course is highly effective in changing physicians' medical practice as well as teaching practice. Although all course items were effective, participants choose more FD items than CME, so future research has to focus on which variables determine those choices.

Khan, N., et al. (2013). "The surgeon as educator: fundamentals of faculty training in surgical specialties." BJU Int **111**(1): 171-178.

OBJECTIVE: To explore faculty training in the field of surgical specialties with a focus on the educational aspect of faculty training. Teaching is an important commitment for academic surgeons alongside duties of patient care, research and continuing professional development. Educating surgical faculty in the skills of teaching is becoming increasingly important and the realisation that clinical expertise does not necessarily translate to teaching expertise has led to the notion that faculty members require formal training in teaching methods and educational theory to teach effectively. The aim of faculty training or development is to increase knowledge and skills in teaching, research and administration of faculty members. MATERIALS AND METHODS: A range of resources, e.g. journal articles, books and online literature was reviewed to investigate faculty development programmes in surgery. Various issues were addressed, e.g. the need for faculty development, evaluating the various types of training programmes and their outcomes, and exploring barriers to faculty training. Recommendations were provided based on the findings. RESULTS: There is increased recognition that faculty members require basic training in educational theory and teaching skills to teach effectively. Most faculty training programmes are workshops and short courses, which use participant satisfaction as an outcome measure. However, there is growing consensus that longer term interventions, e.g. seminar series, longitudinal programmes and fellowships, produce more sustainable change in learning, behaviour and organisational culture. Barriers to faculty development include lack of protected time, reward

and recognition for teaching. CONCLUSION: Recommendations are made including better documentation of faculty training interventions within surgery, further investigation into the effectiveness of long- vs short-term interventions, improved methodology, and increased recognition and reward for educational accomplishments.

Klein, M., et al. (2013). "Innovative online faculty development utilizing the power of social media." *Acad Pediatr* **13**(6): 564-569.

OBJECTIVE: Faculty development (FD) is important for continued professional development, but expense and distance remain challenging. These challenges could be minimized by the free and asynchronous nature of social media (SM). We sought to determine the utility and effectiveness of conducting a national online FD activity on Facebook by assessing participants' perceptions and use and facilitators' challenges. METHODS: An educational activity of a national FD program was managed on a closed Facebook group. Activities included postings of educational technology goals, abstracting an article, and commenting on peers' postings. Sources of quantitative data included the Facebook postings and the survey responses. Surveys before, after, and 6 months after the activity assessed knowledge, attitudes and self-reported behaviors. Sources of qualitative data were the open-ended survey questions and the content of the Facebook postings. RESULTS: All participants completed the FD activity and evaluations, yielding 38 postings and 115 comments. Before the activity, 88% had a personal Facebook account, 64% were somewhat/very confident using Facebook, 77% thought SM would be useful for professional networking, and 12% had used it professionally. Six months after the activity, professional usage had increased to 35%. Continued use of Facebook for future presentations of this FD activity was recommended by 76%. Qualitative analysis yielded 12 types of Facebook postings and 7 themes related to using SM for FD. CONCLUSIONS: Conducting a national FD activity on Facebook yielded excellent participation rates and positive participant impressions, and it affected professional usage. Facebook may become an additional tool in the educator's toolbox for FD as a result of its acceptability and accessibility.

Knight, A. M., et al. (2007). "Qualitative assessment of the long-term impact of a faculty development programme in teaching skills." *Med Educ* **41**(6): 592-600.

CONTEXT: The long-term impact of faculty development programmes (FDPs) is poorly understood, and most assessments of them have been quantitative in nature. OBJECTIVE: This study aimed to use qualitative methods to better understand the long-term impact of an FDP in teaching skills (FDP/TS). METHODS: A survey was carried out in July 2002 of the 242 faculty members and fellows who had participated in a 9-month FDP/TS at any time from 1987 through 2000. The survey included 2 quantitative questions and an open-ended qualitative question about the impact of the programme on the participants' professional and personal lives. RESULTS: A total of 200 past participants (83%) responded to the survey. Participants from early and recent cohorts were similarly represented. In all, 82% of respondents said programme participation had had 'a moderate' or 'a lot' of impact on their professional life, and 49% said their personal life had been affected to this degree. Four major domains, each containing at least 3 subcategories, emerged from qualitative analysis. The domain intrapersonal development included changes participants reported in themselves and in their approach to self-management. Interpersonal development contained subcategories relating to how participants interact with others. Subcategories in the domain development as a teacher related to increased teaching ability and enjoyment. The domain career development included professional growth and career opportunities attributed to programme participation. CONCLUSIONS: Longitudinal FDPs can have broad and sustained positive effects on the professional and personal lives of participants. Qualitative evaluation methods may result in a richer and deeper understanding of the impact of these programmes.

Kogan, J. R., et al. (2015). "How faculty members experience workplace-based assessment rater training: a qualitative study." *Med Educ* **49**(7): 692-708.

CONTEXT: Direct observation of clinical skills is a common approach in workplace-based assessment (WBA). Despite widespread use of the mini-clinical evaluation exercise (mini-CEX), faculty development efforts are typically required to improve assessment quality. Little consensus exists regarding the most effective training methods, and few studies explore faculty members' reactions to rater training. OBJECTIVES: This study was conducted to qualitatively explore the experiences of faculty staff with two rater training approaches -

performance dimension training (PDT) and a modified approach to frame of reference training (FoRT) - to elucidate how such faculty development can be optimally designed. METHODS: In a qualitative study of a multifaceted intervention using complex intervention principles, 45 out-patient resident faculty preceptors from 26 US internal medicine residency programmes participated in a rater training faculty development programme. All participants were interviewed individually and in focus groups during and after the programme to elicit how the training influenced their approach to assessment. A constructivist grounded theory approach was used to analyse the data. RESULTS: Many participants perceived that rater training positively influenced their approach to direct observation and feedback, their ability to use entrustment as the standard for assessment, and their own clinical skills. However, barriers to implementation and change included: (i) a preference for holistic assessment over frameworks; (ii) challenges in defining competence; (iii) difficulty in changing one's approach to assessment, and (iv) concerns about institutional culture and buy-in. CONCLUSIONS: Rater training using PDT and a modified approach to FoRT can provide faculty staff with assessment skills that are congruent with principles of criterion-referenced assessment and entrustment, and foundational principles of competency-based education, while providing them with opportunities to reflect on their own clinical skills. However, multiple challenges to incorporating new forms of training exist. Ongoing efforts to improve WBA are needed to address institutional and cultural contexts, and systems of care delivery.

Korin, T. L. (2007). "Problem-based learning faculty development: a comprehensive approach." Med Educ **41**(11): 1086-1087.

Kumagai, A. K., et al. (2007). "Use of interactive theater for faculty development in multicultural medical education." Med Teach **29**(4): 335-340.

BACKGROUND: The development of critical consciousness, anchored in principles of social justice, is an essential component of medical education. AIM: In order to assist faculty instructors in facilitating small-group discussions on potentially contentious issues involving race, gender, sexual orientation, and socioeconomic class, a faculty development workshop was created. METHODS: The workshop used 'Forum Theater' techniques in which the audience was directly involved in determining the course of a simulated classroom discussion and conflict. We assessed the workshop's impact on the instructors' attitudes regarding facilitation of small-group discussions through two surveys: one to gauge immediate impressions, and another, 9-15 months later, to assess impact over time. RESULTS: Immediately after the workshop, participants reported that the topics covered in the sketch and in the discussion were highly relevant. In the follow-up survey, the instructors agreed that the workshop had raised their awareness of the classroom experiences of minorities and women and had offered strategies for addressing destructive classroom dynamics. 72% reported that the workshop led to changes in their behavior as facilitators. Differences in responses according to gender were observed. CONCLUSIONS: A workshop using interactive theater was effective in training faculty to facilitate small-group discussions about multicultural issues. This approach emphasizes and models the need to foster critical consciousness in medical education.

Kuo, T. and K. E. Wolf (2007). "Faculty development as a strategy for retaining family physicians in academic medicine." Fam Med **39**(3): 159-160.

Ladhani, Z., et al. (2011). "Online role-playing for faculty development." Clin Teach **8**(1): 31-36.

BACKGROUND: There has been a rapid growth of online teaching in the past few years, yet the implementation of role-play for formal educational activities in an online setting is growing more slowly. The use of online role-playing for the development of health professions educators is virtually un-documented in the literature. INNOVATION: In the project reported here we use role-playing as a method to motivate and increase active participation in an online web-based discussion on community-based medical education (CBME). The Foundation for Advancement of International Medical Education & Research (FAIMER((R)) ) Institute hosts virtual group discussions for fellows as part of its fellowship programmes, in order to deepen their knowledge base in health professions education and research. In June 2008, a group of seven FAIMER((R)) fellows and faculty members moderated an online discussion on CBME using an online role-play exercise with other fellows and faculty members. RESULTS: Out of a total of 102 fellows, 36 (35.3%) participated actively, which exceeded the typical percentage of list server participation. In addition, a rich

discussion resulted in a comprehensive report on the goals, challenges, logistical components, role of Health Ministry policy and the possible ethical mandate of CBME in developing countries. CONCLUSION: Online role-play encouraged distributed participation among a highly diverse international group of participants, supporting the conclusion that role-playing can be used effectively with mid-career health professional faculty members in the online environment.

LaMantia, J., et al. (2012). "Faculty development in medical education research." Acad Emerg Med **19**(12): 1462-1467. This 2012 Academic Emergency Medicine consensus conference breakout session was devoted to the task of identifying the history and current state of faculty development in education research in emergency medicine (EM). The participants set a future agenda for successful faculty development in education research. A number of education research and content experts collaborated during the session. This article summarizes existing academic and medical literature, expert opinions, and audience consensus to report our agreement and findings related to the promotion of faculty development.

Lang, V. J., et al. (2012). "Collaborative development of teaching scripts: an efficient faculty development approach for a busy clinical teaching unit." J Hosp Med **7**(8): 644-648.

BACKGROUND: Exemplary teachers have been shown to use teaching scripts, ways of organizing the content and instructional approach for commonly encountered teachable moments. This study describes a busy hospitalist unit's early experience with the collaborative development of teaching scripts. METHODS: In 2010, during monthly workshops, 10 faculty members each prepared and presented a teaching script for a different commonly encountered diagnosis. Open-ended surveys assessing the impact on faculty were analyzed using an iterative approach. Changes in faculty self-efficacy, and the frequency and applicability of teaching were measured. RESULTS: The program required 10 hours of attendance time and a mean of 4.3 hours for each faculty member who prepared a teaching script. No significant differences in quantity or applicability of teaching were detected, but faculty self-efficacy improved significantly. In addition, faculty described beneficial effects in their individual professional development, development of a shared mental model of professional responsibility, and interpersonal relationships. A majority of comments were positive; negative comments focused on the time required to prepare scripts, and apprehension about presenting to peers. CONCLUSIONS: The program was an efficient approach to improve self-rated teaching skills, enhance professional development, and build collegiality among clinician-teachers.

Lawrence, E. A. and O. N. Oyama (2013). "Faculty development activities in family medicine: in search of innovation." Int J Psychiatry Med **45**(4): 345-356.

OBJECTIVE: To describe the Accreditation Council for Graduate Medical Education's (ACGME) faculty development requirements, explore the range of faculty development activities and support currently used by family medicine residencies to meet these requirements, and describe one innovative approach to satisfy this need. METHOD: An electronic survey of faculty development activities and support offered to faculty by residency programs was sent to a random sample of 40 medical school and community based family medicine residency programs across the United States. Data were examined using t-tests, Fisher's exact tests, and Analysis of Variance. RESULTS: Faculty development, beyond traditional clinical CME, was strongly encouraged or required by a large proportion of the sample (73%). Only 58% of programs reported having discussed the ACGME's faculty development component areas (clinical, educational, administrative, leadership, research, and behavioral). In each component area except the "clinical" area, the absence of discussing the ACGME component areas with residency faculty was associated with fewer faculty development activities and support being offered by the program. CONCLUSIONS: These results, although preliminary, suggest that family medicine residency programs may value and encourage faculty development. The majority of programs use traditional activities and strategies such as CME, faculty meetings, faculty conferences and workshops; and a smaller number of programs are exploring the utility of mentoring programs, faculty discussion groups, and technology based learning systems. The challenge is to develop faculty development activities tailored to individual program and faculty needs and resources.

Leslie, K., et al. (2013). "Advancing faculty development in medical education: a systematic review." Acad Med **88**(7): 1038-1045.

PURPOSE: To (1) provide a detailed account of the nature and scope of faculty development (FD) programs in medical education, (2) assess the quality of FD studies, and (3) identify in what areas and through what means future research can purposefully build on existing knowledge. METHOD: The authors searched MEDLINE, CINAHL, and ERIC for articles reporting evaluations of FD initiatives published between 1989 and 2010. They applied standard systematic review procedures for sifting abstracts, scrutinizing full texts, and abstracting data, including program characteristics, evaluation methods, and outcomes. They used a modified Kirkpatrick model to guide their data abstraction. RESULTS: The authors included 22 articles reporting on 21 studies in their review. The most common program characteristics included a series/longitudinal format, intended for individuals, and offered to physicians only. Although the most common aim was to improve teaching effectiveness, several programs had multiple aims, including scholarship and leadership. Program evaluation focused on quantitative approaches. A number of studies employed longitudinal designs and included some follow-up component. Surveys were the most popular data collection method, participants the most common data source, and self-reported behavior changes the most commonly reported outcome. CONCLUSIONS: Although the authors' findings showed some recent expansion in the scope of the FD literature, they also highlighted areas that require further focus and growth. Future research should employ more rigorous evaluation methods, explore the role of interprofessional teams and communities of practice in the workplace, and address how different organizational and contextual factors shape the success of FD programs.

Lieff, S. and M. Albert (2012). "What do we do? Practices and learning strategies of medical education leaders." Med Teach **34**(4): 312-319.

BACKGROUND: Continuous changes in undergraduate and postgraduate medical education require faculty to assume a variety of new leadership roles. While numerous faculty development programmes have been developed, there is little evidence about the specific practices of medical education leaders or their learning strategies to help inform their design. AIM: This study aimed to explore what medical education leaders' actually do, their learning strategies and recommendations for faculty development. METHOD: A total of 16 medical education leaders from a variety of contexts within the faculty of medicine of a large North American medical school participated in semi-structured interviews to explore the nature of their work and the learning strategies they employ. Using thematic analysis, interview transcripts were coded inductively and then clustered into emergent themes. RESULTS: Findings clustered into four key themes of practice: (1) intrapersonal (e.g., self-awareness), (2) interpersonal (e.g., fostering informal networks), (3) organizational (e.g., creating a shared vision) and (4) systemic (e.g. strategic navigation). Learning strategies employed included learning from experience and example, reflective practice, strategic mentoring or advanced training. CONCLUSIONS: Our findings illuminate a four-domain framework for understanding medical education leader practices and their learning preferences. While some of these findings are not unknown in the general leadership literature, our understanding of their application in medical education is unique. These practices and preferences have a potential utility for conceptualizing a coherent and relevant approach to the design of faculty development strategies for medical education leadership.

Love, J. N., et al. (2009). "The MERC at CORD Scholars Program in medical education research: a novel faculty development opportunity for emergency physicians." Acad Emerg Med **16 Suppl 2**: S37-41.

Medical educators are increasingly charged with the development of outcomes-based "best practices" in medical student and resident education and patient care. To fulfill this mission, a cadre of well-trained, experienced medical education researchers is required. The experienced medical educator is in a prime position to fill this need but often lacks the training needed to successfully contribute to such a goal. Towards this end, the Association of American Medical Colleges (AAMC) Group on Educational Affairs developed a series of content-based workshops that have resulted in Medical Education Research Certification (MERC), promoting skills development and a better understanding of research by educators. Subsequently, the Council of Emergency Medicine Residency Directors (CORD) partnered with the AAMC to take MERC a step further, in the MERC at CORD Scholars Program (MCSP). This venture integrates a novel, mentored, specialty-specific research project with the traditional MERC workshops. Collaborative groups, based on a common area of interest, each develop a multi-institutional project by exploring and applying the concepts learned through the MERC workshops. Participants in the inaugural MCSP have completed three MERC workshops and initiated a project. Upon program completion, each will have completed MERC

certification (six workshops) and gained experience as a contributing author on a mentored education research project. Not only does this program serve as a multi-dimensional faculty development opportunity, it is also intended to act as a catalyst in developing a network of education scholars and infrastructure for educational research within the specialty of emergency medicine.

Lown, B. A., et al. (2009). "The personal and professional impact of a fellowship in medical education." Acad Med **84**(8): 1089-1097.

**BACKGROUND:** Faculty development is essential to fostering excellence in medical education and desired learning outcomes. Little is known, however, about the personal and professional impact of faculty development programs on participants, learners, and institutions. We explored the perspectives of medical education fellowship graduates on their skills, self-perceptions, participation in learning communities, and reflective practice. We also explored the results of the implementation of a scholarly medical education project. **METHOD:** The study was a qualitative analysis of semistructured interviews with 40 faculty from multiple disciplines who, between 1999 and 2005, had completed a yearlong fellowship in medical education. **RESULTS:** Through qualitative analysis, we identified 11 themes. Study participants described postfellowship changes in knowledge, self-perceptions, and behaviors and institutional changes that resulted from education projects. With a foundation of principles and skills, the Fellows' confidence and identity as educators were strengthened by their sense of self-efficacy, others' perceptions of their credibility, and support from a community of peers and mentors. This change affected the graduates' professional career trajectories. **CONCLUSIONS:** Common themes in this and other studies suggest that enhancement of knowledge about medical education and teaching skills, protected time, a supportive learning environment, relationships with peers and mentors, validation of educational expertise by others, community building and networking, and emphasis on self-reflection and awareness are essential elements of faculty fellowships in medical education. This analysis suggests that these elements foster the evolution of identity, confidence, and self-efficacy among fellowship graduates. This personal development promotes the professional development of the medical educator.

Lu, W. H., et al. (2014). "Faculty development on professionalism and medical ethics: the design, development and implementation of Objective Structured Teaching Exercises (OSTEs)." Med Teach **36**(10): 876-882.

**BACKGROUND:** As students are expected to develop competency in professionalism and medical ethics, faculty are also expected to facilitate medical students' learning and understanding of these areas. One of the main challenges to success in this domain has been uncertainty of whether or not faculty know the content and the methods to teach and assess these competencies. **AIM:** We used the Objective Structured Teaching Exercise (OSTE) format as a faculty development tool to train and evaluate faculty on how to teach professionalism and medical ethics to students in clinical settings. **METHODS:** The process for the design, development and implementation of OSTEs consisted of five phases: (1) performing a literature review and student needs assessment, (2) developing the OSTE cases and performance checklists, (3) recruiting and training of standardized students, (4) conducting a mock training session and (5) organizing faculty development workshops using OSTEs. **RESULTS:** Twenty clinical faculty members participated in one of three half-day OSTE workshops offered. Faculty confidence and attitudes about teaching professionalism increased significantly ( $p < 0.05$ ) from before participating in the workshop to afterwards. **CONCLUSIONS:** Faculty feedback were positive stating that the OSTE scenarios were reflective of issues they generally encounter while teaching medical students, the information and skills they learned from the workshop are important to them as clinical educators, and that the information and skills will likely have an impact on the way they teach professionalism and ethics in the future.

Malik, R., et al. (2007). "Continuous quality improvement and community-based faculty development through an innovative site visit program at one institution." Acad Med **82**(5): 465-468.

This article describes and evaluates a unique site-visit process for community-based teaching sites. A continuous quality-improvement program was developed by the undergraduate program in the Department of Family and Community Medicine at the University of Toronto Faculty of Medicine to facilitate and document both self- and peer-assessment. A pilot program was launched in 2000, and, after some adjustments based on initial feedback, the program in its current form was implemented in 2002. This program provides individualized support mechanisms to address the faculty development needs and

infrastructure requirements of community-based, mostly volunteer, teachers. It also trains participating reviewers to provide individualized faculty development at the point of teaching. During their training, reviewers receive a toolkit consisting of suggestions for initial contact with teachers, guidelines for peer assessments, previously completed previsit teacher surveys, reviewer checklists, postvisit feedback forms, sample thank-you letters, and a faculty development reference resource list. A two-year evaluation of the program demonstrated that faculty and reviewer participants perceived it to be comprehensive, consistent, informative, and an acceptable method of reviewing existing and prospective community-based teaching sites. This program should be transferable to other institutions that engage in community-based teaching.

McKimm, J. and T. Swanwick (2010). "Web-based faculty development: e-learning for clinical teachers in the London Deanery." *Clin Teach* **7**(1): 58-62.

**BACKGROUND:** the London Deanery has provided a web-based resource for supporting the educational development needs of clinical teachers since 2002. This forms part of a range of resources supporting the professional development of clinical teachers and postgraduate supervisors. Following a review in 2007, the deanery commissioned a series of new e-learning modules designed as an introduction to clinical teaching. **CONTEXT:** the deanery's faculty development initiatives are one response to requirements of the Postgraduate Medical Education and Training Board (PMETB), other policy drivers, workforce demands and service changes. Increasingly, doctors are required to provide an educational portfolio of evidence, and satisfy the teaching and training component of Good Medical Practice in revalidation or recertification. **INNOVATION:** 'E-learning for clinical teachers' comprises 16 short, open-access, free-standing modules. The modules are built around a unifying structure, and cover core topics in clinical teaching: feedback; supervision; workplace-based learning; assessment; diversity and equal opportunities; career development; appraisal; lecturing; small group teaching; interprofessional education; and setting learning objectives. The modules can be used as a complementary resource to award-bearing programmes. On completion of a module, a certificate can be printed out for the teacher's portfolio. **IMPLICATIONS:** reflective practice and engagement with an individual's teaching practice is encouraged through self-assessment and a reflective log. The open-access, web-based format enables engagement with the material to suit a doctor's working and learning patterns, and is a valuable adjunct to other forms of learning. The site has been accessed by over 64000 health professionals (including students, trainees, qualified professionals, supervisors and staff developers) from 155 countries.

McLean, M., et al. (2008). "Faculty development: yesterday, today and tomorrow." *Med Teach* **30**(6): 555-584.

Medical education has evolved to become a discipline in its own right. With demands on medical faculties to be socially responsible and accountable, there is now increasing pressure for the professionalisation of teaching practice. Developing a cadre of professional and competent teachers, educators, researchers and leaders for their new roles and responsibilities in medical education requires faculty development. Faculty development is, however, not an easy task. It requires supportive institutional leadership, appropriate resource allocation and recognition for teaching excellence. This guide is designed to assist those charged with preparing faculty for their many new roles in teaching and education in both medical and allied health science education. It provides a historical perspective of faculty development and draws on the medical, health science and higher education literature to provide a number of frameworks that may be useful for designing tailored faculty development programmes. These frameworks can be used by faculty developers to systematically plan, implement and evaluate their staff development programmes. This guide concludes with some of the major trends and driving forces in medical education that we believe will shape future faculty development.

McLeod, P., et al. (2009). "Which pedagogical principles should clinical teachers know? Teachers and education experts disagree. Disagreement on important pedagogical principles." *Med Teach* **31**(4): e117-124.

**BACKGROUND:** In a previous study, a group of non-clinician medical education experts identified 30 pedagogical principles, knowledge of which might enhance clinical teaching effectiveness. **AIMS:** To assess expert teachers' perceptions of which basic pedagogical principles, if known and understood, would enhance their teaching effectiveness. **METHOD:** We conducted an on-line Delphi consensus-building study with 25 expert clinical teachers who rated the importance to teaching effectiveness of each of the 30 principles. **RESULTS:** There was agreement between clinicians and PhD education experts on the importance

of several of the principles but there was major disagreement between the 2 groups for many principles, including those related to assessment and those relevant to clinical teachers' day to day teaching activities. CONCLUSIONS: The lack of concordance between clinical teachers and education experts with respect to how the 30 principles rank in importance may have serious implications for faculty development and for the design, development, and assessment of educational programs. Program directors and curriculum designers should exploit the strengths of both clinician and non-clinician educators to assure the success of educational programs.

McSparron, J. I., et al. (2015). "The ProSTE: identifying key components of effective procedural teaching." Ann Am Thorac Soc **12**(2): 230-234.

RATIONALE: Novel approaches for faculty development and assessment of procedural teaching skills are needed to improve the procedural education of trainees. The Objective Structured Teaching Exercise (OSTE) entails a simulated encounter in which faculty are observed teaching a standardized student and has been used to evaluate teaching skills. Use of an OSTE to assess the teaching of central venous catheterization has not been reported. OBJECTIVES: The purpose of this study was to develop a procedural OSTE for subclavian central venous catheter (CVC) insertion and to determine specific aspects of procedural teaching associated with improved skills in novices. METHODS: Critical care faculty/fellows taught a standardized student to insert a CVC in a simulator. We assessed the instructor's teaching skills using rating scales to generate a procedural teaching score. After this encounter, the instructor taught novice medical students to place CVCs in simulators. Novices then independently placed catheters in simulators and were evaluated by trained observers using a checklist. Generalized estimating equations were used to examine the correlation between specific teaching behaviors and the novices' skills in CVC placement. MEASUREMENTS AND MAIN RESULTS: We recruited 10 participants to serve as teachers and 30 preclinical medical students to serve as novice learners. The overall mean procedural teaching score was 85.5 (+/-15.4). Improved student performance was directly related to the degree to which the teacher "provided positive feedback" (beta = 1.53, SE = 0.44, P = 0.001), "offered learner suggestions for improvement" (beta = 1.40, SE = 0.35, P < 0.001), and "demonstrated the procedure in a step-by-step manner" (beta = 2.50, SE = 0.45, P < 0.001). There was no significant correlation between total scores and student skills (beta = 0.06, SE = 0.46, P = 0.18). CONCLUSIONS: The OSTE is a standardized method to assess procedural teaching skills. Our findings suggest that specific aspects of procedural teaching should be emphasized to ensure effective transfer of psychomotor skills to trainees.

Mennin, S., et al. (2013). "Project-based faculty development by international health professions educators: practical strategies." Med Teach **35**(2): e971-977.

BACKGROUND: Project design and implementation, applied to real life situations, is emerging as an educational strategy for application of health professions faculty development learning within a supportive environment. AIM: We conducted a retrospective analysis of project evolution to identify common experiences, challenges, and successful strategies of 54 mid-career faculty members from 18 developing countries who attended the Foundation for the Advancement of International Medical Education and Research Institute between 2001 and 2006 and designed, conducted, and evaluated education innovations at their home institutions. METHODS: Chronological analysis of the evolution of 54 projects over the initial 16-18 months of the 2-year Fellowship was based on an iterative qualitative analysis of 324 reports and individual interview transcripts collected over 6 years. RESULTS: Useful skill areas for project implementation included educational methods, leadership and management, and relationships/collaboration. Common challenges included competing responsibilities, lack of protected time, and limited resources. Themes identified with the evolution and success of education innovation projects included leadership and organization, collaboration, personal professional growth, and awareness of the relevant societal context. CONCLUSIONS: Common challenges and success factors in project-based faculty development were identified. Twelve practical strategies to promote successful project-based faculty development emerged that can be generalized for faculty development.

Mihalic, A. P., et al. (2007). "Cultural competence teaching in U.S. pediatric clerkships in 2006." Acad Med **82**(6): 558-562.

PURPOSE: Cultural sensitivity may be especially important in the care of children, and national pediatric associations have issued policy statements promoting cultural competence in medical education. The authors conducted a national survey to investigate the current state of cultural competence teaching and learning within U.S. pediatric clerkships. METHOD: The authors surveyed 125 U.S. pediatric clerkship directors concerning the presence or absence of cultural curricula, content, teaching methods, and evaluation. Question types were multiple-choice single/best answer, checklists, five-point Likert-type scales, and free-text responses. RESULTS: Of 100 respondents (80% response rate), most agreed or strongly agreed that teaching culturally competent care is important (91%), enhances the physician/patient/family relationship (99%), and improves patient outcomes (90%). Twenty four of 98 respondents (25%) reported cultural competence teaching. The most common teaching methods were lectures (63%), experiential learning through community activities (58%), and small-group discussions (54%). Only 14 respondents reported any curricular evaluation, the commonest methods being student surveys, clinical case presentations, and standardized patient experiences. Top factors facilitating curriculum development were culturally diverse populations of patients, students, faculty, and hospital staff, and faculty interest and expertise. Top challenges included lack of protected time for program development, funding, and faculty expertise. CONCLUSIONS: Few U.S. pediatric clerkships currently provide cultural competence curricula. The authors' suggestions to promote cultural competence teaching include providing faculty development opportunities and developing and disseminating teaching materials and evaluation tools. Such dissemination is important to graduate physicians, who can provide culturally sensitive pediatric care to the changing U.S. population.

Mintz, M., et al. (2015). "Validation of the 25-Item Stanford Faculty Development Program Tool on Clinical Teaching Effectiveness." *Teach Learn Med* 27(2): 174-181.

CONSTRUCT: The 25-item Stanford Faculty Development Program Tool on Clinical Teaching Effectiveness assesses clinical teaching effectiveness. BACKGROUND: Valid and reliable rating of teaching effectiveness is helpful for providing faculty with feedback. The 25-item Stanford Faculty Development Program Tool on Clinical Teaching Effectiveness was intended to evaluate seven dimensions of clinical teaching. Confirmation of the structure of this tool has not been previously performed. APPROACH: This study sought to validate this tool using a confirmatory factor analysis, testing a 7-factor model and compared its goodness of fit with a modified model. Acceptability of the use of the tool was assessed using a 6-item survey, completed by final year medical students (N = 119 of 156 students; 76%). RESULTS: The testing of the goodness of fit indicated that the 7-factor model performed poorly,  $\chi^2(254) = 457.4$ ,  $p < .001$  (root mean square error of approximation [RMSEA] = 0.08, comparative fit index [CFI] = 0.91, non-normed fit index [NNFI] = 0.89). Only standardized root mean square residual (SRMR) indicated acceptable fit (0.06). Further exploratory analysis identified 10 items that cross-loaded on 2 factors. The remainder of the items loaded on factors as originally intended. By removing these 10 items, repeat confirmatory factor analysis on the modified 15-item, 5-factor model demonstrated a better fit than the original model: SRMR = 0.075, NNFI = 0.91,  $\chi^2(80) = 150.1$ ,  $p < .001$ ; RMSEA = 0.09; CFI = 0.93. Although 75% of the participants stated they were willing to fill the tool on their preceptors on a biweekly basis, only 25% were willing to do so on a weekly basis. CONCLUSIONS: Our study failed to confirm factor structure of the 25-item tool. A modified tool with fewer, more conceptually distinct items was best fit by a 5-factor model. Further, the acceptability of use for the 25-item tool may be poor for rotations with a new preceptor weekly. The abbreviated tool may be preferable in that setting.

Mookherjee, S., et al. (2014). "Faculty development for hospitalists: structured peer observation of teaching." *J Hosp Med* 9(4): 244-250.

BACKGROUND: Hospitalists provide much of the clinical teaching in internal medicine, yet formative feedback to improve their teaching is rare. METHODS: We developed a peer observation, assessment, and feedback program to improve attending hospitalist teaching. Participants were trained to identify 10 optimal teaching behaviors using a structured observation tool that was developed from the validated Stanford Faculty Development Program clinical teaching framework. Participants joined year-long feedback dyads and engaged in peer observation and feedback on teaching. Pre- and post-program surveys assessed confidence in teaching, performance of teaching behaviors, confidence in giving and receiving feedback, attitudes toward peer observation, and overall satisfaction with the program. RESULTS: Twenty-two attending hospitalists participated, averaging 2.2 years (+/- 2.1 years standard deviation [SD]) experience; 15 (68%) completed pre- and post-program surveys. Confidence in giving feedback, receiving feedback, and teaching

efficacy increased (1 = strongly disagree, 5 = strongly agree, mean +/- SD): "I can accurately assess my colleagues' teaching skills," (pre = 3.2 +/- 0.9 vs post = 4.1 +/- 0.6, P < 0.01), "I can give accurate feedback to my colleagues" (pre = 3.4 +/- 0.6 vs post = 4.2 +/- 0.6, P < 0.01), and "I am confident in my ability to teach students and residents" (pre = 3.2 +/- 0.9 vs post = 3.7 +/- 0.8, P = 0.026). CONCLUSIONS: Peer observation and feedback of teaching increases hospitalist confidence in several domains that are essential for optimizing teaching. Further studies are needed to examine if educational outcomes are improved by this program.

Moza, R., et al. (2015). "Academy of Resident Educators: A Framework for Development of Future Clinician-Educators." J Grad Med Educ **7**(2): 294-295.

Myers, J. S., et al. (2014). "The Quality and Safety Educators Academy: fulfilling an unmet need for faculty development." Am J Med Qual **29**(1): 5-12.

Educating physician trainees in the principles of quality improvement (QI) and patient safety (PS) is a national imperative. Few faculty are trained in these disciplines, and few teaching institutions have the resources and infrastructure to develop faculty as instructors of these skills. The authors designed a 3-day, in-person academy to provide medical educators with the knowledge and tools to integrate QI and PS concepts into their training programs. The curriculum provided instruction in quality and safety, curriculum development and assessment, change management, and professional development while fostering peer networking, mentorship, and professional development. This article describes the characteristics, experiences, and needs of a cross-sectional group of faculty interested in acquiring skills to help them succeed as quality and safety educators. It also describes the guiding principles, curriculum blueprint, program evaluation, and lessons learned from this experience which could be applied to future faculty development programs in quality and safety education.

Naeem, N., et al. (2012). "Faculty development on item writing substantially improves item quality." Adv Health Sci Educ Theory Pract **17**(3): 369-376.

The quality of items written for in-house examinations in medical schools remains a cause of concern. Several faculty development programs are aimed at improving faculty's item writing skills. The purpose of this study was to evaluate the effectiveness of a faculty development program in item development. An objective method was developed and used to assess improvement in faculty's competence to develop high quality test items. This was a quasi experimental study with a pretest-midtest-posttest design. A convenience sample of 51 faculty members participated. Structured checklists were used to assess the quality of test items at each phase of the study. Group scores were analyzed using repeated measures analysis of variance. The results showed a significant increase in participants' mean scores on Multiple Choice Questions, Short Answer Questions and Objective Structured Clinical Examination checklists from pretest to posttest (p < .0005). The effect sizes were 1.38, 3.84 and 2.20 for Multiple Choice Questions, Short Answer Questions and Objective Structured Clinical Examination, respectively. This study emphasizes that items written by faculty without faculty development are generally lacking in quality. It also provides evidence of the value of faculty development in improving the quality of items generated by faculty.

Narayan, A. P., et al. (2012). "An innovative process for faculty development in residency training." Teach Learn Med **24**(3): 248-256.

BACKGROUND: For programs to accomplish the goals of the Accreditation Council of Graduate Medical Education (ACGME) Outcome Project, faculty must be trained to deliver and assess education that is level-specific, competency-based, standardized, integrated, and easily accessible. DESCRIPTION: An innovative faculty development model that accomplishes these goals is described. This model trained faculty to analyze curricular needs and then to design, disseminate, and evaluate their curricula. This model utilized guided experiential learning that promoted the creation of residency program curricula and faculty buy-in. EVALUATION: Key outcomes included high levels of resident satisfaction and use of the curricula, improved tracking of rotation progress, improved faculty satisfaction with their role as educators, perceived improvement in resident evaluations, and increased involvement of faculty in creating and teaching to the curriculum. CONCLUSION: This process may be adapted by other programs based on their available

resources to address faculty development needs. The process serves as a model for meeting ACGME requirements.

Nichols, D., et al. (2013). "Coaching the coaches: targeted faculty development for teaching." Med Educ **47**(5): 534-535.

Niebuhr, V., et al. (2014). "Online faculty development for creating E-learning materials." Educ Health (Abingdon) **27**(3): 255-261.

BACKGROUND: Faculty who want to develop e-learning materials face pedagogical challenges of transforming instruction for the online environment, especially as many have never experienced online learning themselves. They face technical challenges of learning new software and time challenges of not all being able to be in the same place at the same time to learn these new skills. The objective of the Any Day Any Place Teaching (ADAPT) faculty development program was to create an online experience in which faculty could learn to produce e-learning materials. METHODS: The ADAPT curriculum included units on instructional design, copyright principles and peer review, all for the online environment, and units on specific software tools. Participants experienced asynchronous and synchronous methods, including a learning management system, PC-based videoconferencing, online discussions, desktop sharing, an online toolbox and optional face-to-face labs. Project outcomes were e-learning materials developed and participants' evaluations of the experience. Likert scale responses for five instructional units (quantitative) were analyzed for distance from neutral using one-sample t-tests. Interview data (qualitative) were analyzed with assurance of data trustworthiness and thematic analysis techniques. RESULTS: Participants were 27 interprofessional faculty. They evaluated the program instruction as easy to access, engaging and logically presented. They reported increased confidence in new skills and increased awareness of copyright issues, yet continued to have time management challenges and remained uncomfortable about peer review. They produced 22 new instructional materials. DISCUSSION: Online faculty development methods are helpful for faculty learning to create e-learning materials. Recommendations are made to increase the success of such a faculty development program.

Nivet, M. A., et al. (2008). "Diversity in academic medicine no. 1 case for minority faculty development today." Mt Sinai J Med **75**(6): 491-498.

For the past 20 years, the percentage of the American population consisting of nonwhite minorities has been steadily increasing. By 2050, these nonwhite minorities, taken together, are expected to become the majority. Meanwhile, despite almost 50 years of efforts to increase the representation of minorities in the healthcare professions, such representation remains grossly deficient. Among the underrepresented minorities are African and Hispanic Americans; Native Americans, Alaskans, and Pacific Islanders (including Hawaiians); and certain Asians (including Hmong, Vietnamese, and Cambodians). The underrepresentation of underrepresented minorities in the healthcare professions has a profoundly negative effect on public health, including serious racial and ethnic health disparities. These can be reduced only by increased recruitment and development of both underrepresented minority medical students and underrepresented minority medical school administrators and faculty. Underrepresented minority faculty development is deterred by barriers resulting from years of systematic segregation, discrimination, tradition, culture, and elitism in academic medicine. If these barriers can be overcome, the rewards will be great: improvements in public health, an expansion of the contemporary medical research agenda, and improvements in the teaching of both underrepresented minority and non-underrepresented minority students.

Nora, L. M. (2010). "The 21st century faculty member in the educational process--what should be on the horizon?" Acad Med **85**(9 Suppl): S45-55.

One of Abraham Flexner's legacies was the concept of a professional faculty community responsible for teaching, scholarly work, and the creation and nurturing of the academic environment in medical schools. Dramatic shifts in society, health care, and educational practice have occurred over the century since Flexner's report, and these shifts have resulted in changes and challenges for medical school faculty. Fundamental principles that were articulated in Flexner's work remain relevant today: medicine is a profession, and as such is responsible for the education of the next generation of physicians; and the essential work of the medical school is the education of current and future generations of physicians.

Medical schools must reconsider and restate the required characteristics and work of faculty members. Furthermore, we must develop a core faculty with primary responsibility for the educational program, the teaching of students, and the creation and nurturing of the academic environment. Enhancing the diversity of the faculty community, providing necessary faculty development, and further clarifying the forms of scholarly work in medicine are three ways that individual schools and national organizations can advance the educational mission through support of the faculty.

Notzer, N. and R. Abramovitz (2008). "Can brief workshops improve clinical instruction?" *Med Educ* **42**(2): 152-156. CONTEXT: The impact of faculty development activities aimed at improving the teaching skills of clinical instructors requires elucidation. Since 2003, all instructors at our school of medicine have been required to undertake a brief workshop in basic clinical instructional skills as a prerequisite for promotion and tenure. The impact of this has, so far, remained unknown. OBJECTIVE: This study aimed to examine to what extent participation in a brief workshop can improve clinical instructors' performance in the long run, and which particular dimensions of performance are improved. METHODS: The study included a sample of 149 faculty members who undertook a required workshop in basic instructional skills. The teaching performance of these faculty members was measured by student feedback a year after the workshop. The study used pre- and post-test design, with a comparison group of 121 faculty members. RESULTS: Student ratings for 5 dimensions of clinical instruction increased significantly, but only for the study group who had participated in a workshop. The comparison group's ratings were unchanged. The highest improvement in the instructors' performance related to availability of teachers to students. CONCLUSIONS: The study supports previous findings about the added value gained by longterm improvement of instructional skills after participation in even a brief workshop. The meaningful improvement in instructor availability to students is associated with the workshops' emphasis on a learner-centred approach and the need to provide continuous feedback.

Notzer, N. and R. Abramovitz (2010). "Faculty-development activity to promote effective communication between instructors and students." *Clin Teach* **7**(2): 121-125.

BACKGROUND: Educators claim that conflicts and teacher-student miscommunications interfere in achieving optimal learning outcomes. CONTEXT: Conflicts arise when clinical instructors communicate in a patronising fashion, expressing values that are not those of their medical students. This paper presents our approach of coping with such conflicts. It is based on the notion that language is comprised of developmental levels. The objective is to switch the instructor's lower level of language from an uncontrolled reaction to a high level of efficient communication. INNOVATION: During our faculty-development workshops, we piloted sessions consisting of vignettes depicting instructor-student conflicts. The workshop participants were asked to react and discuss questions on their feelings in similar conflicts, and their immediate speech reaction to students. The workshop's facilitator pointed out that there was no one right solution. She singled out the reaction that takes into account the student's personality, avoiding imposing solutions. The feedback on these sessions was very favourable, indicating a high level of satisfaction. IMPLICATIONS: The positive feedback is very encouraging. We believe that our workshops amplify the desired effective instructor-student communication, and suggest that the success of this intervention is partly achieved by selecting problematic issues of communication, and adjusting them to the current needs of our faculty members. In order to reproduce our approach, we suggest that other institutions should define their own values and communication code. We recommend them to use the same technique of intervention among a small group in an empowering atmosphere of discussion, using their own situations.

Ogden, P. E., et al. (2008). "The effect of two different faculty development interventions on third-year clerkship performance evaluations." *Fam Med* **40**(5): 333-338.

BACKGROUND AND OBJECTIVES: Clinical performance evaluations of medical students often fail to identify significant deficiencies. Many physicians are unwilling to give a poor or failing performance evaluation. Consequently, many clinical rotation grades are inflated and do not reflect actual student performance. We developed a computer-based faculty development tutorial designed to teach faculty members to use defined standards in the evaluation process and to give accurate performance grades to students and residents. METHODS: We administered the tutorial to 25 family medicine faculty members. Immediate posttests and 3-month posttests were given to determine their mastery of the material. Grades were tracked for 2 years prior to the intervention and for the year following the intervention. After the 1-year intervention,

the clerkship director went to each site and met directly with each faculty member. The computer tutorial material was reviewed again with faculty members. Grades for this academic year were tracked and compared with the control years and first intervention year. RESULTS: The faculty demonstrated mastery of the material and retention at 3 months, yet the grades for the first year following the computer tutorial by itself did not change. However, after establishing a face-to-face intervention, the grades were significantly lower overall, compared to the control (88.3 versus 91.8). CONCLUSIONS: Self-directed, computer-based faculty development resulted in knowledge mastery and retention but was by itself not enough to change faculty grading practices. An additional face-to-face intervention did change grading practices. Faculty development via independent study may provide basic knowledge, but it must be combined with direct interaction, feedback, and policy change to influence clinical grading practices.

Onyura, B., et al. (2015). "Affordances of knowledge translation in medical education: a qualitative exploration of empirical knowledge use among medical educators." *Acad Med* **90**(4): 518-524.

PURPOSE: Little is known about knowledge translation processes within medical education. Specifically, there is scant research on how and whether faculty incorporate empirical medical education knowledge into their educational practices. The authors use the conceptual framework of affordances to examine factors within the medical education practice environment that influence faculty utilization of empirical knowledge.

METHOD: In 2012, the authors, using a purposive sampling strategy, recruited medical education leaders in undergraduate medical education from a Canadian university. Recruits all had direct teaching and curricular development roles in either preclinical or clinical courses across the four years of the undergraduate curriculum. Data were collected through individual semistructured interviews on participants' use of empirical evidence, as well as the factors that influence integration of empirical knowledge into practice.

Data were analyzed using thematic analysis. RESULTS: Fifteen medical educators participated. The authors identified both constraining and facilitating affordances of empirical medical education knowledge use. Constraining affordances included poor quality and availability of evidence, inadequate knowledge delivery approaches, work and role overload, faculty and student change resistance, and resource limitations.

Facilitating affordances included faculty development, peer recommendations, and local involvement in medical education knowledge creation. CONCLUSIONS: Affordances of the medical education practice environment influence empirical knowledge use. Developing strategies for effective knowledge translation thus requires careful assessment of contextual factors that can enable, constrain, or inhibit evidence use. Empirical knowledge use is most likely to occur among medical educators who are afforded rich, facilitative opportunities for participation in creating, seeking, and implementing knowledge.

O'Sullivan, P. S. and D. M. Irby (2011). "Reframing research on faculty development." *Acad Med* **86**(4): 421-428.

Research on faculty development has focused primarily on individual participants and has produced relatively little generalizable knowledge that can guide faculty development programs. In this article, the authors examine how current research on faculty development in medical education can be enriched by research in related fields such as teacher education, quality improvement, continuing medical education, and workplace learning. As a result of this analysis, the authors revise the old model for conceptualizing faculty development (preferably called professional development). This expanded model calls for research on educational process and outcomes focused on two communities of practice: the community created among participants in faculty development programs and the communities of teaching practice in the workplace (classroom or clinic) where teaching actually occurs. For the faculty development community, the key components are the participants, program, content, facilitator, and context in which the program occurs and in which the faculty teach. For the workplace community, associated components include relationships and networks of association in that environment, the organization and culture of the setting, the teaching tasks and activities, and the mentoring available to the members of that academic and/or clinical community of teaching practice. This expanded model of faculty development generates a new set of research questions, which are described along with six recommendations for enhancing research, including establishment of a national center for research in health professions education.

O'Toole, J. K., et al. (2014). "Placing faculty development front and center in a multisite educational initiative: lessons from the I-PASS Handoff study." *Acad Pediatr* **14**(3): 221-224.

Owolabi, M. O. (2014). "Development and psychometric characteristics of a new domain of the stanford faculty development program instrument." J Contin Educ Health Prof **34**(1): 13-24.

INTRODUCTION: Teacher's attitude domain, a pivotal aspect of clinical teaching, is missing in the Stanford Faculty Development Program Questionnaire (SFDPQ), the most widely used student-based assessment method of clinical teaching skills. This study was conducted to develop and validate the teacher's attitude domain and evaluate the validity and internal consistency reliability of the augmented SFDPQ. METHODS: Items generated for the new domain included teacher's enthusiasm, sobriety, humility, thoroughness, empathy, and accessibility. The study involved 20 resident doctors assessed once by 64 medical students using the augmented SFDPQ. Construct validity was explored using correlation among the different domains and a global rating scale. Factor analysis was performed. RESULTS: The response rate was 94%. The new domain had a Cronbach's alpha of 0.89, with 1-factor solution explaining 57.1% of its variance. It showed the strongest correlation to the global rating scale ( $\rho = 0.71$ ). The augmented SFDPQ, which had a Cronbach's alpha of 0.93, correlated better ( $\rho = 0.72$ ,  $p < 0.00001$ ) to the global rating scale than the original SFDPQ ( $\rho = 0.67$ ,  $p < 0.00001$ ). DISCUSSION: The new teacher's attitude domain exhibited good internal consistency and construct and factorial validity. It enhanced the content and construct validity of the SFDPQ. The validated construct of the augmented SFDPQ is recommended for design and evaluation of basic and continuing clinical teaching programs.

Paige, J. T., et al. (2015). "Debriefing 101: training faculty to promote learning in simulation-based training." Am J Surg **209**(1): 126-131.

BACKGROUND: Debriefing is recognized as essential for successful simulation-based training. Unfortunately, its effective use is variable. We developed a train the trainer workshop to teach key evidence-based components of effective debriefing. METHOD: A workshop focusing on best practices for debriefing in surgical simulation-based training was developed for the 2012 Annual Meeting of the Association for Surgical Education. Content emphasized key theoretical concepts related to and evidence-based components of an effective debriefing. Additionally, the workshop incorporated experiential learning via active debriefing following a simulated scenario. RESULTS: Content of the workshop emphasized effective debriefing as the key to learning in simulation-based education. Key elements of debriefing for educators to keep in mind include the following: approach, learning environment, engagement of learners, reaction, reflection, analysis, diagnosis, and application. CONCLUSIONS: Effective debriefing is an essential skill for educators involved in surgical simulation-based training. Without it, learning opportunities are missed. Training the trainer in effective debriefing is essential to ensure standardization of practice.

Palermo, A. G., et al. (2008). "Diversity in academic medicine no. 5 successful programs in minority faculty development: overview." Mt Sinai J Med **75**(6): 523-532.

Despite recent drastic cutbacks in federal funding for programs to diversify academic medicine, many such programs survive and continue to set examples for others of how to successfully increase the participation of minorities underrepresented in the healthcare professions and, in particular, how to increase physician and nonphysician minority medical faculty. This article provides an overview of such programs, including those in historically black colleges and universities, minority-serving institutions, research-intensive private and public medical schools, and more primary care-oriented public medical schools. Although the models for faculty development developed by these successful schools overlap, each has unique features worthy of consideration by other schools seeking to develop programs of their own. The ingredients of success are discussed in detail in another article in this theme issue of the Mount Sinai Journal of Medicine, "Successful Programs in Minority Faculty Development: Ingredients of Success."

Perera, J., et al. (2008). "Formative feedback to students: the mismatch between faculty perceptions and student expectations." Med Teach **30**(4): 395-399.

BACKGROUND: Formative assessments and other learning tools are ineffective in the absence of formative feedback. METHODS: A study was carried out on preclinical students and teachers using mixed methods approach that included questionnaire surveys, focus group discussions and post survey discussions to determine perceptions and expectations of students on feedback and those of teachers. RESULTS: Students expected formative feedback to be incorporated into all teaching activities from the beginning of the course in medicine to promote self regulated and self directed learning. Students stated that provision of model

answers and grades in assessments are inadequate but require teacher student dialogue sessions to clarify issues. Students considered immediate feedback or feedback within two weeks on a written activity, simple but focused, by a content expert would be the best form. In contrast, the teachers perceived the feedback provided using a model answer by a non content expert to be acceptable. Students also believed that formative feedback is of particular importance in salvaging poor performers. CONCLUSIONS: There is a need to create awareness among teachers on the usefulness of this tool in higher education and for moulding teaching practices by including training on this aspect of teaching-learning, in routine faculty development activities. The study showed the importance of including feedback as a generic feature in all learning activities, and this may require incorporating into institutional policy for successful implementation.

Pernar, L. I., et al. (2012). "Spaced education faculty development may not improve faculty teaching performance ratings in a surgery department." *J Surg Educ* **69**(1): 52-57.

OBJECTIVES: To determine the effectiveness of spaced education as a faculty development tool designed to improve teaching skills in a surgery department. DESIGN: Faculty members were randomized to receive either weekly spaced education e-mails with content designed to improve teaching skills (group A) or no e-mails (group B). Using qualitative and quantitative surveys, we assessed both medical students' perception of faculty members' teaching effectiveness and faculty members' perception of the usefulness of the spaced education e-mails. SETTING: Academic medical center. PARTICIPANTS: Twenty-nine surgery faculty members with teaching responsibility for medical students in their Core Surgery Clerkship. RESULTS: All 41 medical students who rotated through the Core Surgery Clerkship rated the quality of teaching for each faculty members; 172 online rating surveys were completed. Overall, faculty members received high ratings on the teaching skills included on the surveys. Additionally, no significant differences were found between the perceived skill level of the faculty members who received the weekly e-mails and those who did not. Specifically, 53.8% and 54% ( $p = 0.47$ ) of the faculty were felt to deliver feedback more than three times per week; 87.1% and 89.9% ( $p = 0.15$ ) of faculty were felt to deliver useful feedback; 89.2% and 90.8% ( $p = 0.71$ ) of faculty were perceived to encourage student autonomy; and 78.1% and 81.9% ( $p = 0.89$ ) of faculty were felt to set clear learning expectations for students. Postprogram comments from faculty revealed they did not find the e-mails useful as a faculty development tool. CONCLUSIONS: Students perceived high levels of teaching skills among the clinical faculty. Faculty members who received e-mail-based spaced education-based faculty development were not rated to be more effective teachers on the student surveys. Electronically based faculty development does not satisfy faculty expectations.

Pololi, L. H., et al. (2015). "Faculty Vitality-Surviving the Challenges Facing Academic Health Centers: A National Survey of Medical Faculty." *Acad Med* **90**(7): 930-936.

PURPOSE: Faculty with high vitality are essential to the missions of academic health centers (AHCs). Because little is known about how to measure or enhance faculty vitality, the authors assessed current faculty vitality and identified its predictors. METHOD: In a stratified random sample of 26 nationally representative U.S. AHCs, the authors surveyed 4,578 full-time faculty during 2007-2009. The validated survey measured detailed faculty perceptions of their professional experiences and organizational culture. Vitality was measured with a previously evaluated five-item scale. RESULTS: Of the faculty invited, 2,381 (52%) responded, with 2,218 eligible for analysis. Respondents included 512 (23%) underrepresented in medicine minority (URMM) faculty and 1,172 (53%) women. In a multivariable model including individual- and AHC-level factors, the strongest predictors of vitality were faculty members' perceptions of four dimensions of AHC culture: Relationships/inclusion, Values alignment, Work-life integration, and Institutional support (all  $P < .001$ ). Weaker predictors were faculty age, institution type (public/private), and the AHC's National Institutes of Health funding rank (all  $P \leq .03$ ). Half of the respondents scored high on vitality, whereas 25% had low, or suboptimal, scores. Holding perceptions of culture constant, neither female nor URMM faculty had vitality scores that were different on average from male or nonminority faculty. CONCLUSIONS: A large percentage of faculty lack the vitality essential to meeting the AHC missions of discovery, education, and patient care. Enhancing faculty vitality, and AHC resilience, requires more attention to strengthening relationships, improving the misalignment between faculty and institutional values, and improving work-life integration.

Puddester, D., et al. (2015). "Designing faculty development to support the evaluation of resident competency in the intrinsic CanMEDS roles: practical outcomes of an assessment of program director needs." *BMC Med Educ* **15**: 100. BACKGROUND: The Royal College of Physicians and Surgeons of Canada and the College of Family Physicians of Canada mandate that faculty members demonstrate they are evaluating residents on all CanMEDS (Canadian Medical Education Directions for Specialists) roles as part of the accreditation process. Postgraduate Medical Education at the University of Ottawa initiated a 5-year project to develop and implement a comprehensive system to assess the full spectrum of CanMEDS roles. This paper presents the findings from a needs assessment with Program Directors, in order to determine how postgraduate medical faculty can be motivated and supported to evaluate residents on the intrinsic CanMEDS roles. METHODS: Semi-structured individual interviews were conducted with 60 Postgraduate Program Directors in the Faculty of Medicine. Transcribed interviews were analyzed using qualitative analysis. Once the researchers were satisfied the identified themes reflected the views of the participants, the data was assigned to categories to provide rich, detailed, and comprehensive information that would indicate what faculty need in order to effectively evaluate their residents on the intrinsic roles. RESULTS: Findings indicated faculty members need faculty development and shared point of care resources to support them with how to not only evaluate, but also teach, the intrinsic roles. Program Directors expressed the need to collaborate and share resources across departments and national specialty programs. Based on our findings, we designed and delivered workshops with companion eBooks to teach and evaluate residents at the point of care (Developing the Professional, Health Advocate and Scholar). CONCLUSIONS: Identifying stakeholder needs is essential for designing effective faculty development. By sharing resources, faculties can prevent 'reinventing the wheel' and collaborate to meet the Colleges' accreditation requirements more efficiently.

Pyorala, E. (2014). "How we developed a role-based portfolio for teachers' professional development." *Med Teach* **36**(9): 765-768.

Faculty development requires practical tools for supporting teachers' professional development. In a modern medical education context, teachers need to adapt to various educational roles. This article describes how a role-based portfolio with a qualitative self-assessment scale was developed. It strives to encourage and support teachers' growth in different educational roles. The portfolio was developed between 2009 and 2012 at the University of Helsinki in dialogue with teachers involved in faculty development. It is based on the role framework presented by Harden and Crosby. Today, it also involves the educational premises of constructive alignment, reflection and a scholarly approach to teaching. The role-based portfolio has led the teachers to discover new educational roles and set goals in their professional development.

Reamy, B. V., et al. (2012). "Who will be the faculty of the future? Results of a 5-year study growing educators using an immersive third postgraduate year (PGY-3) faculty development mini-fellowship." *Med Teach* **34**(6): e459-463.

BACKGROUND: Residency education requires large numbers of skilled teaching faculty. Potential faculty can often be identified during residency training. AIMS: Employ a 4-week immersive faculty development mini-fellowship to enhance the teaching skills of selected PGY-3 residents and study outcomes over 5 years. METHODS: PGY-3 residents were competitively selected and completed the 4-week curriculum to increase skills in precepting, small group teaching, large group teaching, learner feedback/assessment, academic career development, and research. RESULTS: Fifteen residents completed the mini-fellowship over the 5-year study period. The curriculum was rated highly by the residents with mean ratings of curriculum components ranging from 4.5 to 4.9 on a 5-point scale. Eight residents (53%) were selected for faculty positions compared to a usual selection rate of 11%. Compared to new faculty without mini-fellowship completion, program directors rated the residents completing the mini-fellowship as better prepared to perform learner feedback (4.1 vs. 3.0,  $p \leq 0.01$ ) and to understand the conduct of research (3.6 vs. 2.5  $p \leq 0.01$ ). CONCLUSIONS: This study demonstrates short-term success at growing faculty with enhanced teaching skills during residency. While long-term retention in academic medicine cannot be predicted, this program represents one method to mitigate shortages of qualified junior residency faculty.

Rogers, D. A., et al. (2015). "Simulation and Faculty Development." *Surg Clin North Am* **95**(4): 729-737.

As members of the faculty, surgeons take on a variety of roles related to the use of simulation. Surgeons will continue to interact with simulation as learners given the emerging role of simulation in continuing medical education. Surgeons who regularly teach others will also be using simulation because of its unique

properties as an instructional method. Leading a simulation effort requires vision, creativity in resource management, and team leadership skills. Surgeons can use simulation to innovate in surgical patient care and in surgical education.

Roos, M., et al. (2014). "Developing medical educators--a mixed method evaluation of a teaching education program." Med Educ Online **19**: 23868.

**BACKGROUND:** It is well accepted that medical faculty teaching staff require an understanding of educational theory and pedagogical methods for effective medical teaching. The purpose of this study was to evaluate the effectiveness of a 5-day teaching education program. **METHODS:** An open prospective interventional study using quantitative and qualitative instruments was performed, covering all four levels of the Kirkpatrick model: Evaluation of 1) 'Reaction' on a professional and emotional level using standardized questionnaires; 2) 'Learning' applying a multiple choice test; 3) 'Behavior' by self-, peer-, and expert assessment of teaching sessions with semistructured interviews; and 4) 'Results' from student evaluations. **RESULTS:** Our data indicate the success of the educational intervention at all observed levels. 1) Reaction: The participants showed a high acceptance of the instructional content. 2) Learning: There was a significant increase in knowledge ( $P < 0.001$ ) as deduced from a pre-post multiple-choice questionnaire, which was retained at 6 months ( $P < 0.001$ ). 3) Behavior: Peer-, self-, and expert-assessment indicated a transfer of learning into teaching performance. Semistructured interviews reflected a higher level of professionalism in medical teaching by the participants. 4) Results: Teaching performance ratings improved in students' evaluations. **CONCLUSIONS:** Our results demonstrate the success of a 5-day education program in embedding knowledge and skills to improve performance of medical educators. This multimethodological approach, using both qualitative and quantitative measures, may serve as a model to evaluate effectiveness of comparable interventions in other settings.

Rosenbaum, M. E., et al. (2006). "Increasing departmental and college-wide faculty development opportunities through a teaching scholars program." Acad Med **81**(11): 965-968.

The University of Iowa Teaching Scholars Program was initiated in 1999 at the University of Iowa Carver College of Medicine (CCOM) with the overall goal of promoting leadership in faculty development related to teaching skills. Specific goals of this program are (1) to promote the development of a cadre of faculty members who have the skills to implement faculty development within their departments and the CCOM; (2) to increase departmental involvement in faculty development efforts; (3) to increase resources available for dissemination of college-wide faculty development efforts; and (4) to acknowledge the extra effort faculty put into developing their skills and knowledge in medical education and in providing continuing education to their faculty colleagues. All clinical and basic science departments in the CCOM are given the opportunity to have a faculty member participate in the program. Unlike other programs reported in the literature, competitive decisions for program participation are made at the departmental level. The three-year program combines monthly meetings and other activities to train faculty to provide faculty development in teaching skills. Each scholar develops and implements a project to address departmental faculty development needs as well as needs of other departments in the CCOM. To date (2006), 50 faculty members from 19 different departments have participated in the program with an average of 12 scholars per class. The program has resulted in a substantial increase in departmental and college-wide faculty development programming and has had a positive impact on individual scholars' teaching skills and leadership roles.

Rosenthal, S. L. and L. R. Stanberry (2011). "A framework for faculty development." J Pediatr **158**(5): 693-694.e692.

Ryan, M. S., et al. (2013). "Benefits and barriers among volunteer teaching faculty: comparison between those who precept and those who do not in the core pediatrics clerkship." Med Educ Online **18**: 1-7.

**BACKGROUND:** Community-based outpatient experiences are a core component of the clinical years in medical school. Central to the success of this experience is the recruitment and retention of volunteer faculty from the community. Prior studies have identified reasons why some preceptors volunteer their time however, there is a paucity of data comparing those who volunteer from those who do not. **METHODS:** A survey was developed following a review of previous studies addressing perceptions of community-based preceptors. A non-parametric, Mann-Whitney U test was used to compare active preceptors (APs) and inactive preceptors (IPs) and all data were analyzed in SPSS 20.0. **RESULTS:** There was a 28% response rate.

Preceptors showed similar demographic characteristics, valued intrinsic over extrinsic benefits, and appreciated Continuing Medical Education (CME)/Maintenance of Certification (MOC) opportunities as the highest extrinsic reward. APs were more likely to also precept at the M1/M2 level and value recognition and faculty development opportunities ( $p < 0.05$ ). IPs denoted time as the most significant barrier and, in comparison to APs, rated financial compensation as more important ( $p < 0.05$ ). CONCLUSIONS: Community preceptors are motivated by intrinsic benefits of teaching. Efforts to recruit should initially focus on promoting awareness of teaching opportunities and offering CME/MOC opportunities. Increasing the pool of preceptors may require financial compensation.

Scarbecz, M., et al. (2011). "Faculty development to improve teaching at a health sciences center: a needs assessment." J Dent Educ **75**(2): 145-159.

There has been increasing interest at health science centers in improving the education of health professionals by offering faculty development activities. In 2007-08, as part of an effort to expand education-related faculty development offerings on campus, the University of Tennessee Health Science Center surveyed faculty members in an effort to identify faculty development activities that would be of interest. Factor analysis of survey data indicated that faculty interests in the areas of teaching and learning can be grouped into six dimensions: development of educational goals and objectives, the use of innovative teaching techniques, clinical teaching, improving traditional teaching skills, addressing teaching challenges, and facilitating participation. There were significant differences in the level of interest in education-related faculty development activities by academic rank and by the college of appointment. Full professors expressed somewhat less interest in faculty development activities than faculty members of lower ranks. Faculty members in the Colleges of Medicine and Dentistry expressed somewhat greater interest in faculty development to improve traditional teaching skills. The policy implications of the survey results are discussed, including the need for faculty development activities that target the needs of specific faculty groups.

Schofield, S. J., et al. (2010). "How we encourage faculty development." Med Teach **32**(11): 883-886.

Most clinicians enjoy teaching medical students, but many have had little training as clinical teachers. The General Medical Council (GMC) in 'Good Medical Practice' states 'if you are involved in teaching you must develop the skills, attitudes and practices of a competent teacher' (GMC 2006). Mclean et al.'s (2008) AMEE guide on faculty development outlines practice points for those responsible for developing their faculty's educational skills. In this article, we look at one health region, Tayside in East Scotland, where the University of Dundee, NHS Education for Scotland (NES) and NHS Tayside are collaborating to implement these practice points. This combined approach has proved to be effective in progressing staff development and recruiting additional clinical colleagues to develop their teaching role.

Schonwetter, D. J., et al. (2015). "Exploring professional development needs of educators in the health sciences professions." J Dent Educ **79**(2): 113-123.

An increasing number of institutions of higher education are clustering their health sciences schools into a common unit. Therefore, it is imperative that the individual faculty development units assume new mandates to meet faculty development needs for stakeholders across these disciplines. Critical to providing current and relevant professional development activities is an awareness of the needs of academicians, including common as well as discipline-specific needs. Hence, the aim of this study was to explore the extent to which factors such as discipline, rank, gender, education, and years as an academician impact on perceived needs for faculty development. In February 2012, a cross-sectional survey of the perceived faculty development needs of academicians in the health sciences unit of a Canadian university was conducted using an online assessment tool. A total of 133 out of 1,409 potential participants completed the survey, for a response rate of 9.4%. The findings revealed more similarities than differences in terms of perceived faculty development needs. In addition, differences were found across all health professions schools and in factors such as discipline, academic rank, education, gender, and years as an academician. These findings suggest that faculty development and educational specialists should understand the shared as well as the unique needs of the individual health sciences schools in planning their professional development services.

Schor, N. F., et al. (2011). "Anticipatory guidance as a principle of faculty development: managing transition and change." Acad Med **86**(10): 1235-1240.

Although one cannot anticipate every individual's unique responses to the transitions and changes that regularly occur in academic medicine, a department-wide faculty development program, based on predictable transition points and supporting faculty at all levels, can minimize such negative responses to change as stress and burnout. In 2007, the authors implemented a new, formal faculty development program in the pediatrics department built on the principle of anticipatory guidance, defined as providing guidance in anticipation of future academic events. The primary components of the program are mentoring committees for individual junior faculty, group leadership development and teaching forums for midlevel faculty, and events that focus on life and career changes for senior faculty. Other department-wide activities augment the program, including review of grant submissions, annual review by a senior faculty committee of the progress of National Institutes of Health mentored research (K-) awardees, women faculty luncheons, and discussions about faculty development at regular faculty meetings. The department's faculty also participate in the University of Rochester Medical Center's active faculty development program. Feedback on the faculty development program has been constructive and mainly positive and will serve to guide the continuing evolution of the program.

Sheets, K. J., et al. (2007). "The Family Medicine Curriculum Resource Project: implications for faculty development." Fam Med **39**(1): 50-52.

Faculty development implications related to implementing the Family Medicine Curriculum Resource (FMCR) Project provide an opportunity to look at the recommendations of the Society of Teachers of Family Medicine's federally funded Faculty Futures Initiative (FFI) and the recent Future of Family Medicine (FFM) project. Implications for faculty development include the importance of the clerkship setting, originally defined in 1991, with new features added in today's practice environment as outlined by the FFM and the changing assumptions in approaching faculty development. Previously, faculty development focused on teaching learners to master current knowledge. Now, faculty must teach learners how to master new competencies throughout their lives; learners need to learn how they and others learn now. Teaching must focus on how to learn in the future as well as what to learn for the present. Competence ("what individuals know or are able to do in terms of knowledge, skills, and attitudes") has become the focus of curriculum development efforts over the last few years and most appropriately serves as the focus of curriculum development in the FMCR Project. Implications for developing teachers and preceptors focus on the skills and circumstances required to teach and evaluate all types (cognitive, metacognitive, and affective) of competence. In the new culture, novel teaching methods will serve as the focus of faculty development in teaching and of educational ("best practices") research.

Sherbino, J., et al. (2014). "Defining the key roles and competencies of the clinician-educator of the 21st century: a national mixed-methods study." Acad Med **89**(5): 783-789.

PURPOSE: To determine a consensus definition of a clinician-educator and the related domains of competence. METHOD: During September 2010 to March 2011, the authors conducted a two-phase mixed-methods national study in Canada using (1) focus groups of deans of medicine and directors of medical education centers to define the attributes, domains of competence, and core competencies of clinician-educators using a grounded theory analysis, and (2) a survey of 1,130 deans, academic chairs, and residency program directors to validate the focus group results. RESULTS: The 22 focus group participants described being active in clinical practice, applying theory to practice, and engaging in education scholarship-but not holding a particular administrative position-as essential attributes of clinician-educators. Program directors accounted for 68% of the 350 survey respondents, academic chairs for 19%, and deans for 13% (response rate: 31%). Among respondents, 85% endorsed the need for physicians with advanced training in medical education to serve as educational consultants. Domains of clinician-educator competence endorsed by >85% of respondents as important or very important were assessment, communication, curriculum development, education theory, leadership, scholarship, and teaching. With regard to training requirements, 55% endorsed a master's degree in education as effective preparation, whereas 39% considered faculty development programs effective. CONCLUSIONS: On the basis of this study's findings, the authors defined a clinician-educator as a clinician active in health professional practice who applies theory to education

practice, engages in education scholarship, and serves as a consultant to other health professionals on education issues.

Sherbino, J., et al. (2010). "A national clinician-educator program: a model of an effective community of practice." Med Educ Online **15**.

BACKGROUND: The increasing complexity of medical training often requires faculty members with educational expertise to address issues of curriculum design, instructional methods, assessment, program evaluation, faculty development, and educational scholarship, among others. DISCUSSION: In 2007, The Royal College of Physicians & Surgeons of Canada responded to this need by establishing the first national clinician-educator program. We define a clinician-educator and describe the development of the program. Adopting a construct from the business community, we use a community of practice framework to describe the benefits (with examples) of this program and challenges in developing it. The benefits of the clinician-educator program include: improved educational problem solving, recognition of educational needs and development of new projects, enhanced personal educational expertise, maintenance of professional satisfaction and retention of group members, a positive influence within the Royal College, and a positive influence within other Canadian academic institutions. SUMMARY: Our described experience of a social reorganization - a community of practice - suggests that the organizational and educational benefits of a national clinician-educator program are not theoretical, but real.

Shields, H. M., et al. (2007). "A faculty development program to train tutors to be discussion leaders rather than facilitators." Acad Med **82**(5): 486-492.

PURPOSE: During 2003, 2004, and 2005, the role of 70 tutors was changed from that of facilitator to discussion leader, in a preclinical PBL learning course, Gastrointestinal Pathophysiology, by use of three key business school teaching strategies: questions, summaries, and schematics. The purpose of this study was to learn what difference this new approach made. METHOD: During each of the three study years, 171 (2003), 167 (2004), and 170 (2005) students were given Likert-scale attitudinal questionnaires to rate whether their tutors encouraged student direction of the tutorials and whether the summaries and closure schematics benefited their learning. Students' overall course evaluations and mean USMLE scores were quantitatively analyzed, pre- and postintervention. A variety of statistical tests were used to assess the statistical significance of means at the confidence level of .05. RESULTS: In the third year of the program, student ratings indicated that their tutors were significantly better at encouraging student direction of the tutorials than in the first year ( $P < .05$ ). The students reported that the tutorial made a more important contribution to their learning ( $P < .05$ ), and the course objectives were better stated ( $P = .038$ ) and better met ( $P = .007$ ). Overall satisfaction with the course also improved significantly ( $P = .006$ ). Part I gastrointestinal system mean scores of the USMLE showed a statistically significant increase in 2005 compared with 2001 or 2002. CONCLUSIONS: The tutor as a discussion leader who questions, summarizes, and uses schematics to illustrate concepts had a significant and positive impact on learning in tutorials, achieving course objectives, improving overall course satisfaction, and increasing a standardized national exam's mean score.

Simpson, D., et al. (2006). "Fifteen years of aligning faculty development with primary care clinician-educator roles and academic advancement at the Medical College of Wisconsin." Acad Med **81**(11): 945-953.

Starting in 1991, the Medical College of Wisconsin's (MCW) primary care-focused faculty development programs have continuously evolved in order to sustain tight alignment among faculty members' needs, institutional priorities, and academic reward structures. Informed by literature on the essential competencies associated with academic success and using educational methods demonstrated to achieve targeted objectives, MCW's initial 1.5-day per month comprehensive faculty development programs prepared faculty as clinician-researchers, leaders, and educators. As institutional priorities and faculty roles shifted, a half-day per month advanced education program was added, and the comprehensive faculty development program transitioned to its current half-day per month program. Using a modular approach, this program focuses exclusively on clinician-educator competencies in curriculum, teaching, leadership, evaluation, and learner assessment. Instructional methods combine interactive, face-to-face sessions modeling a range of instructional strategies with between-session assignments now supported through an e-learning platform. All participants complete a required project, which addresses a divisional or departmental need, meets standards associated with scholarship, and is submitted to a peer-reviewed forum. To date, over 115 faculty

members have enrolled in MCW's faculty development programs. Program evaluation over the 15-year span has served to guide program revision and to provide clear evidence of program impact. A longitudinal evaluation of comprehensive program graduates from 1993 to 1999 showed that 88% of graduates' educational projects were implemented and sustained more than one year after program completion. Since 2001, each participant, on average, attributes more than two peer-reviewed presentations and one peer-reviewed publication to program participation. Based on 15 years of evaluation data, five tenets associated with program success are outlined.

Sorinola, O. O. and J. Thistlethwaite (2013). "A systematic review of faculty development activities in family medicine." Med Teach **35**(7): e1309-1318.

BACKGROUND: Faculty development (FD) has been defined as a planned programme to prepare institutions and faculty members for their roles in the areas of teaching, research, administration and career management. However, there are few generalisable evaluations of FD activities available to help family medicine FD planners to choose the most effective training strategies. AIM: To assess the evidence for the effectiveness of family medicine FD activities. METHOD: Six electronic databases were searched from 1980 to 2010 and included all articles on FD interventions in family medicine. Hand searching was also undertaken. RESULTS: A total of 4520 articles were identified, 46 fulfilled the search criteria and were reviewed across three domains: (a) Context, i.e. setting, participation and funding. (b) Content/Process, i.e. theoretical framework, focus of intervention/learning outcomes, types of FD intervention and instructional methods. (c) Evaluation using Freeth et al's adaptation of Kirkpatrick's outcome levels. CONCLUSION: FD activities appear highly valued by the participants, leading to changes in learning and behaviour. Changes in organisational practice and student learning were not frequently reported. The continued success of family medicine FD will depend on the contextual approach/collegial support, adaptability of the programmes, robust evaluation and adequate funding in terms of resources and time.

Srinivasan, M., et al. (2011). ""Teaching as a Competency": competencies for medical educators." Acad Med **86**(10): 1211-1220.

Most medical faculty receive little or no training about how to be effective teachers, even when they assume major educational leadership roles. To identify the competencies required of an effective teacher in medical education, the authors developed a comprehensive conceptual model. After conducting a literature search, the authors met at a two-day conference (2006) with 16 medical and nonmedical educators from 10 different U.S. and Canadian organizations and developed an initial draft of the "Teaching as a Competency" conceptual model. Conference participants used the physician competencies (from the Accreditation Council for Graduate Medical Education [ACGME]) and the roles (from the Royal College's Canadian Medical Education Directives for Specialists [CanMEDS]) to define critical skills for medical educators. The authors then refined this initial framework through national/regional conference presentations (2007, 2008), an additional literature review, and expert input. Four core values grounded this framework: learner engagement, learner-centeredness, adaptability, and self-reflection. The authors identified six core competencies, based on the ACGME competencies framework: medical (or content) knowledge; learner-centeredness; interpersonal and communication skills; professionalism and role modeling; practice-based reflection; and systems-based practice. They also included four specialized competencies for educators with additional programmatic roles: program design/implementation, evaluation/scholarship, leadership, and mentorship. The authors then cross-referenced the competencies with educator roles, drawing from CanMEDS, to recognize role-specific skills. The authors have explored their framework's strengths, limitations, and applications, which include targeted faculty development, evaluation, and resource allocation. The Teaching as a Competency framework promotes a culture of effective teaching and learning.

Steinert, Y. (2010). "Faculty development: from workshops to communities of practice." Med Teach **32**(5): 425-428.

Steinert, Y., et al. (2008). "Developing successful workshops: a workshop for educators." Med Teach **30**(3): 328-330. BACKGROUND: Many educators have had little or no preparation in the design, delivery or evaluation of workshops. METHODS: This faculty development intervention consisted of a faculty development workshop on Developing Successful Workshops; a workbook to guide independent study; and peer consultations. Program evaluation included immediate and delayed post-workshop evaluations, tracking of site-specific

activities, and assessment of self-perceived efficacy. RESULTS: Participants found the workshop very useful, highlighting the assessment of learner needs, goal-setting, "matching" of objectives to content and methods, and use of a structured framework as most beneficial. Nine months after the intervention, seven of eleven participants had conducted a workshop in their own settings. Self-assessment of skills in workshop design also increased. CONCLUSION: A workshop on Developing Successful Workshops can help participants to understand the principles of workshop design and delivery.

Steinert, Y., et al. (2010). "The Osler Fellowship: an apprenticeship for medical educators." Acad Med **85**(7): 1242-1249. PURPOSE: As part of a renewed focus on the physician as healer and professional at McGill University, faculty members were recruited to teach in a four-year, longitudinal doctoring course called Physician Apprenticeship. The goal of this study was to examine the impact of this experience and the accompanying faculty development program on the teachers, known as Osler Fellows. METHOD: An interviewer conducted semistructured interviews with 23 clinicians to understand their experiences as Osler Fellows and ascertain their views on how the workshop-based faculty development program, designed to mirror student experiences, differed from other professional development activities. RESULTS: The notion of connection and reconnection with the profession emerged as a major theme, consisting of four subthemes: the joy of working with students, the desire to make a difference, the process of reflection and renewal, and the building of community. Distinctive aspects of the faculty development program included the value of a common purpose, content that corresponded with core values, a sense of continuity, peer mentorship, and the emergence of a community of practice. Teachers also reported a sense of honor in being associated with Osler's name and a feeling of privilege in accompanying students on their journeys of discovery. CONCLUSIONS: Participating in the Osler Fellowship, an example of situated and work-based learning, resulted in a sense of connection with students, medical education, core professional values, and colleagues. As medical educators continue to develop longitudinal mentoring programs, the authors hope that these findings will offer insights on faculty development, recruitment, and renewal.

Steinert, Y., et al. (2007). "Faculty development as an instrument of change: a case study on teaching professionalism." Acad Med **82**(11): 1057-1064.

Faculty development includes those activities that are designed to renew or assist faculty in their different roles. As such, it encompasses a wide variety of interventions to help individual faculty members improve their skills. However, it can also be used as a tool to engage faculty in the process of institutional change. The Faculty of Medicine at McGill University determined that such a change was necessary to effectively teach and evaluate professionalism at the undergraduate level, and a faculty development program on professionalism helped to bring about the desired curricular change. The authors describe that program to illustrate how faculty development can serve as a useful instrument in the process of change. The ongoing program, established in 1997, consists of medical education rounds and "think tanks" to promote faculty consensus and buy-in, and diverse faculty-wide and departmental workshops to convey core content, examine teaching and evaluation strategies, and promote reflection and self-awareness. To analyze the approach used and the results achieved, the authors applied a well-known model by J.P. Kotter for implementing change that consists of the following phases: establishing a sense of urgency, forming a powerful guiding coalition, creating a vision, communicating the vision, empowering others to act on the vision, generating short-term wins, consolidating gains and producing more change, and anchoring new approaches in the culture. The authors hope that their school's experience will be useful to others who seek institutional change via faculty development.

Steinert, Y., et al. (2010). "Faculty development: if you build it, they will come." Med Educ **44**(9): 900-907.

OBJECTIVES: The goals of this study were three-fold: to explore the reasons why some clinical teachers regularly attend centralised faculty development activities; to compare their responses with those of colleagues who do not attend, and to learn how we can make faculty development programmes more pertinent to teachers' needs. METHODS: In 2008-2009, we conducted focus groups with 23 clinical teachers who had participated in faculty development activities on a regular basis in order to ascertain their perceptions of faculty development, reasons for participation, and perceived barriers against involvement. Thematic analysis and research team consensus guided the data interpretation. RESULTS: Reasons for regular participation included the perceptions that: faculty development enables personal and professional growth;

learning and self-improvement are valued; workshop topics are viewed as relevant to teachers' needs; the opportunity to network with colleagues is appreciated, and initial positive experiences promote ongoing involvement. Barriers against participation mirrored those cited by non-attendees in an earlier study (e.g. volume of work, lack of time, logistical factors), but did not prevent participation. Suggestions for increasing participation included introducing a 'buddy system' for junior faculty members, an orientation workshop for new staff, and increased role-modelling and mentorship. CONCLUSIONS: The conceptualisation of faculty development as a means to achieve specific objectives and the desire for relevant programming that addresses current needs (i.e., expectancies), together with an appreciation of learning, self-improvement and networking with colleagues (i.e., values), were highlighted as reasons for participation by regular attendees. Medical educators should consider these 'lessons learned' in the design and delivery of faculty development offerings. They should also continue to explore the notion of faculty development as a social practice and the application of motivational theories that include expectancy-value constructs to personal and professional development.

Steinert, Y., et al. (2006). "A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8." *Med Teach* 28(6): 497-526.

BACKGROUND: Preparing healthcare professionals for teaching is regarded as essential to enhancing teaching effectiveness. Although many reports describe various faculty development interventions, there is a paucity of research demonstrating their effectiveness. OBJECTIVE: To synthesize the existing evidence that addresses the question: "What are the effects of faculty development interventions on the knowledge, attitudes and skills of teachers in medical education, and on the institutions in which they work?" METHODS: The search, covering the period 1980-2002, included three databases (Medline, ERIC and EMBASE) and used the keywords: staff development; in-service training; medical faculty; faculty training/development; continuing medical education. Manual searches were also conducted. Articles with a focus on faculty development to improve teaching effectiveness, targeting basic and clinical scientists, were reviewed. All study designs that included outcome data beyond participant satisfaction were accepted. From an initial 2777 abstracts, 53 papers met the review criteria. Data were extracted by six coders, using the standardized BEME coding sheet, adapted for our use. Two reviewers coded each study and coding differences were resolved through discussion. Data were synthesized using Kirkpatrick's four levels of educational outcomes. Findings were grouped by type of intervention and described according to levels of outcome. In addition, 8 high-quality studies were analysed in a 'focused picture'. RESULTS: The majority of the interventions targeted practicing clinicians. All of the reports focused on teaching improvement and the interventions included workshops, seminar series, short courses, longitudinal programs and 'other interventions'. The study designs included 6 randomized controlled trials and 47 quasi-experimental studies, of which 31 used a pre-test-post-test design. KEY POINTS: Despite methodological limitations, the faculty development literature tends to support the following outcomes: Overall satisfaction with faculty development programs was high. Participants consistently found programs acceptable, useful and relevant to their objectives. Participants reported positive changes in attitudes toward faculty development and teaching. Participants reported increased knowledge of educational principles and gains in teaching skills. Where formal tests of knowledge were used, significant gains were shown. Changes in teaching behavior were consistently reported by participants and were also detected by students. Changes in organizational practice and student learning were not frequently investigated. However, reported changes included greater educational involvement and establishment of collegiate networks. Key features of effective faculty development contributing to effectiveness included the use of experiential learning, provision of feedback, effective peer and colleague relationships, well-designed interventions following principles of teaching and learning, and the use of a diversity of educational methods within single interventions. Methodological issues: More rigorous designs and a greater use of qualitative and mixed methods are needed to capture the complexity of the interventions. Newer methods of performance-based assessment, utilizing diverse data sources, should be explored, and reliable and valid outcome measures should be developed. The maintenance of change over time should also be considered, as should process-oriented studies comparing different faculty development strategies. CONCLUSIONS: Faculty development activities appear highly valued by participants, who also report changes in learning and behavior. Notwithstanding the methodological limitations in the literature, certain program characteristics appear to be consistently associated with effectiveness. Further research to explore these associations and document outcomes, at the individual and organizational level, is required.

Steinert, Y. and K. V. Mann (2006). "Faculty development: principles and practices." *J Vet Med Educ* **33**(3): 317-324. Instructors in the health professions today must acquire knowledge and competencies that go beyond disciplinary expertise. It is now generally accepted that educational training as a teacher is essential to a faculty member's effectiveness as an educator. The educational challenges across the health professions share many similarities. In this article, we draw on the medical education literature and focus on faculty development designed to enhance teaching effectiveness. We first address commonly included faculty development topics, including instructional improvement, organizational development, the development of professional academic skills, and the teaching of specific content areas. We then review a variety of educational approaches and formats that are described in the literature. Included in this discussion are commonly used workshops, seminars, short courses, and fellowships, as well as longitudinal programs, peer coaching, mentorship, self-directed learning, and computer-aided instruction. We also briefly explore learning at work and in communities of practice, and we discuss several frequently encountered challenges in designing and implementing faculty development activities, including motivating colleagues and assessing program effectiveness. We conclude the discussion by presenting a set of guidelines for the design of effective faculty development programs.

Steinert, Y., et al. (2009). "Faculty development: a 'field of dreams'?" *Med Educ* **43**(1): 42-49. OBJECTIVES: Participants in faculty development workshops often comment that 'those who need faculty development the most attend the least'. The goals of this study were to explore the reasons why some clinical teachers do not participate in centralised faculty development activities and to learn how we can make faculty development programmes more relevant to teachers' needs. METHODS: In 2006, we conducted focus groups with 16 clinical teachers, who had not participated in faculty development activities, to ascertain their perceptions of faculty development, reasons for non-participation and perceived barriers to involvement. Content analysis and team consensus guided the data interpretation. RESULTS: Focus group participants were aware of faculty development offerings and valued the goals of these activities. Important reasons for non-participation emerged: clinical reality, which included volume of work and lack of (protected) time; logistical issues, such as timing and the central location of organised activities; a perceived lack of financial reward and recognition for teaching, and a perceived lack of direction from, and connection to, the university. CONCLUSIONS: Clinical reality and logistical issues appeared to be greater deterrents to participation than faculty development goals, content or strategies. Moreover, when asked to discuss faculty development, teachers referred to their development as faculty members in the broadest sense, which included personal and career development. They also expressed the desire for clear guidance from the university, financial rewards and recognition for teaching, and a sense of 'belonging'. Faculty development programmes should try to address these organisational issues as well as teachers' personal and professional needs.

Steinert, Y., et al. (2012). "Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME Guide No. 19." *Med Teach* **34**(6): 483-503. BACKGROUND: Due to the increasing complexity of medical education and practice, the preparation of healthcare professionals for leadership roles and responsibilities has become increasingly important. To date, the literature on faculty development designed to promote leadership in medical education has not been reviewed in a systematic fashion. AIM: The objective of this review is to synthesize the existing evidence that addresses the following question: 'What are the effects of faculty development interventions designed to improve leadership abilities on the knowledge, attitudes, and skills of faculty members in medicine and on the institutions in which they work?' METHODS: SEARCH STRATEGY: The search, which covered the period 1980-2009, included six databases (Medline, EMBASE, CINAHL, Web of Science, ERIC, and ABI/Inform) and used the following keywords: faculty development; in-service training; doctor; medic; physician; faculty; leadership; management; administration; executive; and change agent. Hand searches were also conducted, and expert recommendations were solicited. INCLUSION AND EXCLUSION CRITERIA: Articles with a focus on faculty development to improve leadership, targeting basic science and clinical faculty members, were reviewed. All study designs that included outcome data beyond participant satisfaction were examined. From an initial 687 unique records, 48 articles met the review criteria in three broad categories: (1) reports in which leadership was the primary focus of the intervention; (2) reports in which leadership was a component of a

broader focus on educational development; and (3) reports in which leadership was a component of a broader focus on academic career development. DATA EXTRACTION: Data were extracted by three coders using the standardized Best Evidence Medical Education coding sheet adapted for our use. One reviewer coded all of the articles, and two reviewers each coded half of the dataset. Coding differences were resolved through discussion. DATA SYNTHESIS: Data were synthesized using Kirkpatrick's four levels of educational outcomes. Findings were grouped by intervention type and level of outcome. RESULTS: Forty-eight articles described 41 studies of 35 different interventions. The majority of the interventions targeted clinical faculty members and included workshops, short courses, fellowships, and other longitudinal programs. The majority of studies were quantitative in nature, though five studies used a qualitative design, and 12 studies used mixed methods. All quantitative studies were quasi-experimental and most employed a single group design; only two studies had a comparison group. Qualitative study designs were typically not specified. The majority of evaluation data, primarily collected post-intervention, consisted of participants' responses to questionnaires and interviews. KEY POINTS AND SUMMARY OF OUTCOMES: Despite methodological limitations, the faculty development literature tends to support the following outcomes: blacksquare, square, filled High satisfaction with faculty development programs. Participants consistently found programs to be useful and of both personal and professional benefit. They also valued the practical relevance and applicability of the instructional methods used. blacksquare, square, filled A change in attitudes toward organizational contexts and leadership roles. Participants reported positive changes in attitudes toward their own organizations as well as their leadership capabilities. Some reported an increased awareness of--and commitment to--their institution's vision and challenges, whereas others reported greater self-awareness of personal strengths and limitations, increased motivation, and confidence in their leadership roles. A greater sense of community and appreciation of the benefits of networking were also identified. blacksquare, square, filled Gains in knowledge and skills. Participants reported increased knowledge of leadership concepts, principles, and strategies (e.g., leadership styles and strategic planning), gains in specific leadership skills (e.g., personal effectiveness and conflict resolution), and increased awareness of leadership roles in academic settings. blacksquare, square, filled Changes in leadership behavior. Self-perceived changes in leadership behavior were consistently reported and included a change in leadership styles, the application of new skills to the workplace (e.g., departmental reorganization and team building), the adoption of new leadership roles and responsibilities, and the creation of new collaborations and networks. Observed changes primarily suggested new leadership positions. blacksquare, square, filled Limited changes in organizational practice. Although not frequently examined, changes in organizational practice included the implementation of specific educational innovations, an increased emphasis on educational scholarship, and the establishment of collegial networks. blacksquare, square, filled Key features of faculty development. Features contributing to positive outcomes included the use of: multiple instructional methods within single interventions; experiential learning and reflective practice; individual and group projects; peer support and the development of communities of practice; mentorship; and institutional support. blacksquare, square, filled Avenues for future development: Moving forward, faculty development programs should: ground their work in a theoretical framework; articulate their definition of leadership; consider the role of context; explore the value of extended programs and follow-up sessions; and promote the use of alternative practices including narrative approaches, peer coaching, and team development. METHODOLOGICAL ISSUES: More rigorous and diverse research designs are needed to capture the complexity of interventions in this area. Varied methods of assessment, utilizing multiple data sources to tap changes at the interpersonal and organizational level should be explored, as should the maintenance of change over time. Process-oriented studies, comparing different faculty development strategies and clarifying the process of change through faculty development, should also become a priority. CONCLUSION: Participants value leadership development activities and report changes in attitudes, knowledge, skills and behavior. Moreover, despite methodological limitations, certain program characteristics seem to be associated with positive outcomes. Further research is required to explore these associations and document changes at both the individual and organizational level.

Stratos, G. A., et al. (2006). "Faculty development in end-of-life care: evaluation of a national train-the-trainer program." *Acad Med* **81**(11): 1000-1007.

To address serious deficiencies in physician training in end-of-life care, the authors developed and disseminated a faculty development curriculum. The overall goals of this curriculum were to enhance

physician competence in end-of-life care, foster a commitment to improving care for the dying, and improve teaching related to end-of-life care. The authors provide descriptions of the curriculum and the train-the-trainer programs (2000-2002) that successfully prepared 17 medical faculty as in-house end-of-life care faculty developers at institutions nationwide. They also report on a study of the effects of the 16-hour, end-of-life care curriculum delivered by trained facilitators to 62 faculty and residents at their home sites. Program evaluation showed that the home-site seminars enhanced the knowledge, skills, and attitudes of participating faculty and residents. When project evaluation concluded in 2003, trained facilitators had disseminated the 16-hour curriculum as well as modified versions of the curriculum to approximately 3,400 medical teachers. An adapted version of the curriculum is available on the Internet for use in health professions education. The importance of this type of faculty development effort was confirmed by the positive impact of the 16-hour curriculum on participants' knowledge, skills, and attitudes related to end-of-life care, the high ratings of the program's educational and clinical relevance, and the finding that, on average, more than 50% of the material was new to them.

Sullivan, A. M., et al. (2006). "Creating enduring change: demonstrating the long-term impact of a faculty development program in palliative care." *J Gen Intern Med* **21**(9): 907-914.

BACKGROUND: Improved educational and evaluation methods are needed in continuing professional development programs. OBJECTIVE: To evaluate the long-term impact of a faculty development program in palliative care education and practice. DESIGN: Longitudinal self-report surveys administered from April 2000 to April 2005. PARTICIPANTS: Physician and nurse educators from North America and Europe. All program graduates (n = 156) were invited to participate. INTERVENTION: Two-week program offered annually (2000 to 2003) with 2 on-site sessions and 6-month distance-learning period. Learner-centered training addressed teaching methods, clinical skill development, and organizational and professional development. MEASURES: Self-administered survey items assessing behaviors and attitudes related to palliative care teaching, clinical care, and organizational and professional development at pre-, postprogram, and long-term (6, 12, or 18 months) follow-up. RESULTS: Response rates: 96% (n = 149) preprogram, 73% (n = 114) follow-up. Participants reported increases in: time spent in palliative care practice (38% preprogram, 47% follow-up, P < .01); use of learner-centered teaching approaches (sum of 8 approaches used "a lot": preprogram 0.7 +/- 1.1, follow-up 3.1 +/- 2.0, P < .0001); and palliative care topics taught (sum of 11 topics taught "a lot": preprogram 1.6 +/- 2.0, follow-up 4.9 +/- 2.9, P < .0001). Reported clinical practices in psychosocial dimensions of care improved (e.g., assessed psychosocial needs of patient who most recently died: 68% preprogram, 85% follow-up, P = .01). Nearly all (90%) reported launching palliative care initiatives, and attributed their success to program participation. Respondents reported major improvements in confidence, commitment to palliative care, and enthusiasm for teaching. Eighty-two percent reported the experience as "transformative." CONCLUSIONS: This evidence of enduring change provides support for the potential of this educational model to have measurable impact on practices and professional development of physician and nurse educators.

Sutkin, G., et al. (2008). "What makes a good clinical teacher in medicine? A review of the literature." *Acad Med* **83**(5): 452-466.

PURPOSE: The authors perform a review of the literature pertinent to the question, "What makes a good clinical teacher in medicine?" METHOD: After framing the question, based on discussions of their own experiences with clinical teachers, the authors performed a search of the literature pertinent to the question, "What are the qualities of a good clinical teacher in medicine?" Between July and December, 2006, they reviewed titles from Index Medicus (1909-1966), PubMed (1966 to the present), PubMed Related Articles, and referenced articles. The initial selections were chosen by scanning pre-1966 Index Medicus title lists and post-1966 abstracts. Chosen articles were then read in their entirety, and those which described specific characteristics of clinical teachers were selected for inclusion. Qualitative analysis was used to identify themes. RESULTS: From 4,914 titles, 68 articles were selected for analysis-26 published before 1966, and 42 published after 1966. Four hundred eighty descriptors were identified and grouped into 49 themes, which were clustered into three main categories: physician, teacher, and human characteristics. Echoing the authors' intuitive descriptions, noncognitive characteristics dominated the descriptions and themes. CONCLUSIONS: Excellent clinical teaching, although multifactorial, transcends ordinary teaching and is characterized by inspiring, supporting, actively involving, and communicating with students. Faculty

development programs and future research should focus on development of the noncognitive attributes of clinical teachers, as well as the knowledge and skills associated with effective teaching.

Swanwick, T. (2008). "See one, do one, then what? Faculty development in postgraduate medical education." Postgrad Med J **84**(993): 339-343.

Interest in the development of medical educators working in the postgraduate sector is running high. Driven by three interlinked trends--the professionalization of medical education, increasing accountability, and the pursuit of educational excellence--there is a growing need for high quality and sustained faculty development programmes across the network of education providers. Postgraduate medical education has a number of unique features that set it apart from undergraduate medicine, to which faculty development programmes need to cater. The key issue for the future will be how to engage the service in the business of education. Widespread cultural change is required and this will require effective and sympathetic leadership from postgraduate training institutions, hospitals and health authorities.

Ten Cate, O., et al. (2014). "Faculty development through international exchange: the IMEX initiative." Med Teach **36**(7): 591-595.

BACKGROUND: Faculty development is often local and international experiences are usually limited to conferences and courses. In 2006, five schools across the globe decided to enhance international faculty experiences through an exciting new collaboration: the International Medical Educators Exchange (IMEX) initiative. METHOD: Twice a year, one of the five schools in the Netherlands, Canada, Sweden and the UK organizes a week of faculty development activities for experienced medical educators from each school, including group discussions, short presentations, observations and active engagement in local education, one-on-one meetings with local faculty members, and many opportunities for in-depth discussion. We administered a survey to evaluate the impact of this international exchange. RESULTS: By August 2013, 31 IMEX scholars had attended at least one of the 14 site visits held; most of them (29) had attended 3-5 site visits. Responding IMEX alumni (55%, N = 16) felt that their experiences impacted their personal competence and international orientation, and to some extent their career, their daily work and their institution. Most features of the IMEX program were valued as highly important and highly successful. DISCUSSION: IMEX has established itself as an important additional faculty development opportunity for those medical educators who wish to develop and pursue a career in education.

Thorndyke, L. E., et al. (2006). "Empowering junior faculty: Penn State's faculty development and mentoring program." Acad Med **81**(7): 668-673.

Empowerment of faculty is essential for academic success. The Junior Faculty Development Program (JFDP), sponsored by the Office of Professional Development of the Penn State College of Medicine, was established in 2003 with the goal of promoting the development and advancement of junior faculty so they can achieve success in their academic careers. The program consists of two components: a curriculum in research, education, clinical practice, and career development, and an individual project completed under the guidance of a senior faculty mentor. The curriculum provides faculty with knowledge, skills, and resources. Mentoring provides relationships and support. Together, these elements combine to empower junior faculty to better manage their careers. The effectiveness of the program has been demonstrated by several measures: participants evaluated the program highly, demonstrated increases in their perceptions of their own abilities, and completed tasks important to the advancement of their careers. Participants stated they were better prepared to advance their academic careers and that the individual projects would contribute to their career advancement. On the basis of this experience, the authors suggest that faculty development programs should empower faculty so that they can more effectively chart a successful career in academic medicine. This report describes an empowerment model, and the design, implementation, and evaluation of the Junior Faculty Development Program in 2003-04 and 2004-05. The authors offer this program as a model for the benefit of other institutions and for one of their most valuable assets: junior faculty.

Trowbridge, R. L., et al. (2011). "A systematic review of the use and effectiveness of the Objective Structured Teaching Encounter." Med Teach **33**(11): 893-903.

BACKGROUND: The Objective Structured Teaching Encounter (OSTE) has been proposed as a means of promoting and assessing the teaching skills of medical faculty. AIMS: To describe the uses of the OSTE and

the evidence supporting its effectiveness. METHOD: MEDLINE (January 1966 through February 2010) was searched for English-language studies detailing the use of an OSTE for any educational purpose. Reference lists from relevant review articles and identified studies were also searched. Of the 354 papers initially identified, 22 were included in the review. RESULTS: The OSTE has been used to assess and improve teaching performance and to assess the impact of other means of faculty development. Although qualitative results have been generally positive, there is little quantitative data to support using the OSTE as a means of improving teaching performance. There is moderate evidence suggesting the OSTE is a reliable and valid means of assessing teaching, although few ratings instruments have been adequately studied. CONCLUSIONS: The OSTE is a promising innovation with potential application to assessing and promoting the teaching skills of medical faculty. Further study is required to determine the most effective OSTE design.

van Roermund, T. C., et al. (2011). "Teachers' ideas versus experts' descriptions of 'the good teacher' in postgraduate medical education: implications for implementation. A qualitative study." *BMC Med Educ* **11**: 42.

BACKGROUND: When innovations are introduced in medical education, teachers often have to adapt to a new concept of what being a good teacher includes. These new concepts do not necessarily match medical teachers' own, often strong beliefs about what it means to be a good teacher. Recently, a new competency-based description of the good teacher was developed and introduced in all the Departments of Postgraduate Medical Education for Family Physicians in the Netherlands. We compared the views reflected in the new description with the views of teachers who were required to adopt the new framework. METHODS: Qualitative study. We interviewed teachers in two Departments of Postgraduate Medical Education for Family Physicians in the Netherlands. The transcripts of the interviews were analysed independently by two researchers, who coded and categorised relevant fragments until consensus was reached on six themes. We investigated to what extent these themes matched the new description. RESULTS: Comparing the teachers' views with the concepts described in the new competency-based framework is like looking into two mirrors that reflect clearly dissimilar images. At least two of the themes we found are important in relation to the implementation of new educational methods: the teachers' identification and organisational culture. The latter plays an important role in the development of teachers' ideas about good teaching. CONCLUSIONS: The main finding of this study is the key role played by the teachers' feelings regarding their professional identity and by the local teaching culture in shaping teachers' views and expectations regarding their work. This suggests that in implementing a new teaching framework and in faculty development programmes, careful attention should be paid to teachers' existing identification model and the culture that fostered it.

van Wyk, J. and M. McLean (2007). "Maximizing the value of feedback for individual facilitator and faculty development in a problem-based learning curriculum." *Med Teach* **29**(1): e26-31.

BACKGROUND: Recruiting and retaining facilitators in problem-based learning requires considerable staff development. Providing meaningful feedback to individual facilitators should contribute to improved management of the tutorial group. AIM: To ascertain the value ascribed by facilitators to feedback they received (based on student input) regarding their performance in the small group tutorial in a new problem-based learning curriculum. METHODS: Thirty-seven facilitators from a purposive sample, selected for their facilitation experience during the 2001-2003 period, completed a comprehensive survey regarding their experiences. The aspect currently being reported deals with the perceived usefulness of the feedback they received from students and from Faculty following the evaluation of their participation in the small group tutorial. Data are reported for medically qualified and non-medically qualified facilitators. RESULTS: Both clinical (50%) but more notably the non-clinical (70%) facilitators found the feedback (individual facilitator and general report) useful. Facilitators generally preferred the qualitative comments provided by students in the open-ended section of the evaluation to the Likert scale items. Student comments were valued for the specific direction they offered facilitators to reflect and improve on their management of the small group. For this feedback to be more useful, however, facilitators believed that it needed to be completed by more students who took time to critically engage with the criteria and reflect more honestly on their experiences. In addition, facilitators requested for feedback reports to be made available sooner such that they could improve their facilitation skills for the next group of students. CONCLUSIONS: Both qualitative and quantitative feedback are important for facilitator development and training. While quantitative feedback is important for summative purposes (e.g. quality assurance and promotion), individual student comments

provide more formative feedback, allowing facilitators to reflect on and improve their management of the small group. In order for the feedback to be valid, the majority of students had to participate. Facilitators should receive feedback in time to allow them to modify their activities for the new group.

Warman, S., et al. (2015). "Faculty Development for a New Curriculum: Implementing a Strategy for Veterinary Teachers within the Wider University Context." *J Vet Med Educ* **42**(4): 346-352.

Faculty development in veterinary education is receiving increasing attention internationally and is considered of particular importance during periods of organizational or curricular change. This report outlines a faculty development strategy developed since October 2012 at the University of Bristol Veterinary School, in parallel with the development and implementation of a new curriculum. The aim of the strategy is to deliver accessible, contextual faculty development workshops for clinical and non-clinical staff involved in veterinary student training, thereby equipping staff with the skills and support to deliver high-quality teaching in a modern curriculum. In October 2014, these workshops became embedded within the new University of Bristol Continuing Professional Development scheme, Cultivating Research and Teaching Excellence. This scheme ensures that staff have a clear and structured route to achieving formal recognition of their teaching practice as well as access to a wide range of resources to further their overall professional development. The key challenges and constraints are discussed.

Williams, B. C., et al. (2008). "Successful implementation of a faculty development program in geriatrics for non-primary care physician educators." *Gerontol Geriatr Educ* **28**(3): 5-27.

A four-year faculty development program to enhance geriatrics learning among house officers in seven surgical and related disciplines and five medical subspecialties at a large academic institution resulted in changes in attitudes and knowledge of faculty participants, expanded curricula and teaching activities in geriatrics, and enhanced and altered career trajectories of faculty participants. The program centered on problem-oriented longitudinal small group seminars with concurrent application of new skills. Key success factors included securing the active support of institutional leaders, focus on career development, examining presumptions regarding professional scope, protected time for faculty participants, and provision of teaching and evaluation resources for individualized application by faculty.

Williams, B. C., et al. (2007). "Faculty development for the 21st century: lessons from the Society of General Internal Medicine-Hartford Collaborative Centers for the Care of Older Adults." *J Am Geriatr Soc* **55**(6): 941-947.

In this review of a recent set of faculty development initiatives to promote geriatrics teaching by general internists, nontraditional strategies to promote sustained change were identified, included enrolling a limited number of "star" faculty, creating ongoing working relationships between faculty, and developing projects for clinical or education program improvement. External funding, although limited, garnered administration support and was associated with changes in individual career trajectories. Activities to enfranchise top leadership were felt essential to sustain change. Traditional faculty development programs for clinician educators are periodic, seminar-based interventions to enhance teaching and clinical skills. In 2003/04 the Collaborative Centers for Research and Education in the Care of Older Adults were funded by the John A. Hartford Foundation and administered by the Society of General Internal Medicine. Ten academic medical centers received individual grants of \$91,000, with required cost sharing, to develop collaborations between general internists and geriatricians to create sustained change in geriatrics clinical teaching and learning. Through written and structured telephone surveys, activities designed to foster sustainability at funded sites were identified, and the activities and perceived effects of funding at the 10 funded sites were compared with those of the 11 highest-ranking unfunded sites. The experience of the Collaborative Centers supports the conclusion that modest, targeted funding can provide the credibility and legitimacy crucial for clinician educators to allocate time and energy in new directions. Key success factors likely include high intensity and duration, integration into career trajectories, integration into clinical programs, and activities to enfranchise institutional leadership.

Windish, D. M., et al. (2007). "A ten-month program in curriculum development for medical educators: 16 years of experience." *J Gen Intern Med* **22**(5): 655-661.

BACKGROUND: Despite increased demand for new curricula in medical education, most academic medical centers have few faculty with training in curriculum development. OBJECTIVE: To describe and evaluate a

longitudinal mentored faculty development program in curriculum development. DESIGN: A 10-month curriculum development program operating one half-day per week of each academic year from 1987 through 2003. The program was designed to provide participants with the knowledge, attitudes, skills, and experience to design, implement, evaluate, and disseminate curricula in medical education using a 6-step model. PARTICIPANTS: One-hundred thirty-eight faculty and fellows from Johns Hopkins and other institutions and 63 matched nonparticipants. MEASUREMENTS: Pre- and post-surveys from participants and nonparticipants assessed skills in curriculum development, implementation, and evaluation, as well as enjoyment in curriculum development and evaluation. Participants rated program quality, educational methods, and facilitation in a post-program survey. RESULTS: Sixty-four curricula were produced addressing gaps in undergraduate, graduate, or postgraduate medical education. At least 54 curricula (84%) were implemented. Participant self-reported skills in curricular development, implementation, and evaluation improved from baseline ( $p < .0001$ ), whereas no improvement occurred in the comparison group. In multivariable analyses, participants rated their skills and enjoyment at the end of the program significantly higher than nonparticipants (all  $p < .05$ ). Eighty percent of participants felt that they would use the 6-step model again, and 80% would recommend the program highly to others. CONCLUSIONS: This model for training in curriculum development has long-term sustainability and is associated with participant satisfaction, improvement in self-rated skills, and implementation of curricula on important topics.