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### E-learning for best practices in social and behavioral research: A multisite pilot evaluation

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**OBJECTIVES/SPECIFIC AIMS:** To evaluate the NIH-sponsored Best Practices for Social and Behavioral Research e-learning course. **METHODS/STUDY POPULATION:** Four universities partnered in a pilot study to evaluate this new course. Outcomes from 294 participants completing the course included efficient progress through the training, perceived relevance of the course to current work, level of engagement with the course material, intent to work differently as a result of the course, and downloading digital resources. **RESULTS/ANTICIPATED RESULTS:** Participants rated the course as relevant and engaging (6.4 and 5.8 on a 7-point Likert scale) and 96% of respondents said they would recommend the course to colleagues. Qualitative analysis of participant testimonials suggested that most respondents had a readiness to change in the way they worked as a result of the course. Overall, results suggest participants completed the course efficiently, perceived outcomes positively and worked differently after the training. **DISCUSSION/SIGNIFICANCE OF IMPACT:** These results will inform new guidelines for future participants (e.g., average time to complete, expectations for knowledge checks in the training). Future studies should include larger samples and closer coordination and communication between study sites.

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### Evaluating the impact of a K-award on clinical and translational research

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**OBJECTIVES/SPECIFIC AIMS:** Identify the impact of the provision of clinical and translational research training awards on investigators' pursuit of clinical and translational research careers. **METHODS/STUDY POPULATION:** Propensity score matching and qualitative analysis/investigators receiving MICHR's KL2 research training awards. **RESULTS/ANTICIPATED RESULTS:** While the evaluations of the impact of this service have shown participants find them to be valuable it is expected that participation in the workshop may be more beneficial to investigators with certain types of prior research experiences and who utilize more CTSA research support. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Because this evaluation of a research service incorporate data representing investigator's receipt of different CTSA resources, the findings can be used to inform the ongoing coordination of these services in ways that optimize their impact on the production of clinical and translational research. There is an enduring need for evaluations of CTSA programs to account for investigators' use of different constellations of research services in order to identify what combinations of services over time are most effective at fostering successful clinical and translational research careers.

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### Evaluation of a clinical investigation curriculum: Post-graduate outcomes

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**OBJECTIVES/SPECIFIC AIMS:** Many CTSA programs have implemented curricula leading to clinical investigation master's degrees. Evaluation of long-term outcomes for graduates can support curriculum improvement. **METHODS/STUDY POPULATION:** We evaluated graduates 1–3 years post completion of an MS in Clinical Investigation at the University of Utah. We administered the 12-item Clinical Research Appraisal Inventory (CRAI-12) describing confidence in ability to perform research tasks; we derived 6 CRAI sub-scales. Additional questionnaire items assessed current engagement in research, including percent of effort devoted to research and level of involvement in research projects using specific research methods. **RESULTS/ANTICIPATED RESULTS:** Graduates reported high

confidence for the CRAI domain of reporting, interpreting, and presenting (on a scale of 0–20, mean  $17.9 \pm SD 1.9$ ) and the domain of conceptualizing and collaborating ( $16.5 \pm 2.2$ ) on research projects; confidence was somewhat lower in the domains of planning ( $14.6 \pm 3.3$ ) and funding ( $14.9 \pm 2.8$ ) projects. Graduates' estimated current professional effort devoted to research had a median of 32%, interquartile range (IQR) 20%–70%; among graduates with clinical responsibilities, median effort devoted to research was 23%, IQR 15%–45%. In total, 74% of graduates reported moderate or high involvement in research using existing large databases, 46% reported moderate or high involvement in comparative effectiveness research, and 54% reported moderate or high involvement in quality improvement. **DISCUSSION/SIGNIFICANCE OF IMPACT:** A majority of clinical investigation graduates remain engaged in research but most are able to devote less than one-third of professional effort to research. Evaluation of clinical investigation graduates who have moved into their research careers can inform program directors about domains of research expertise and methodological areas that may merit additional emphasis in the curriculum.

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### Evaluation of the current status of urologic training programs in the delivery of transgender care

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**OBJECTIVES/SPECIFIC AIMS:** Transgender individuals remain an underserved population with a unique set of healthcare needs. Given the recent increase in demand for gender affirmation surgery, there is a need to train urologists in the various aspects of surgical management of transgender patients. It is unclear how many urologic residency programs are participating in transgender care. In this study, we sought to determine the current status of urologic training programs in the delivery of transgender care and the sentiments regarding the current and future need to train urologists. **METHODS/STUDY POPULATION:** Between June and August 2017, a 22 item cross-sectional survey was emailed to all 138 program directors (PDs) as listed by the ACGME. Participation was voluntary and responses were anonymous. Statistical analysis was performed using SAS version 9.4. **RESULTS/ANTICIPATED RESULTS:** In total, 48 PDs completed the survey (36% of US PDs) and 1 declined to participate. All AUA regions had at least 25% representation, except the Western region (13%). In total, 42% of urology programs that responded participate in institutional transgender health programs; 76% of PDs believe there is a current or future need to train urology residents in the surgical care of transgender patients. PDs were significantly more likely to endorse a need for transgender training if their institution has a transgender health program (95% vs. 58%,  $p < 0.005$ ). Similarly, expressed interest in transgender care by trainees was associated with increased belief among PDs in the need for transgender training (95% vs. 58%,  $p < 0.005$ ). There was also an association between the presence of a transgender health program and trainee interest in transgender care (64% vs. 33%,  $p = 0.04$ ). Need for resident training in the following procedures was cited most often by PDs: complicated catheter placement (91%), orchiectomy (89%), urethral fistula repair (82%), penile/testicle prosthesis insertion (77%), phalloplasty (69%), vaginoplasty (66%), and metoidioplasty/urethral lengthening (54%). Despite the overall consensus that residents should be trained in transgender care, 83% of PDs responded that urologic transgender surgery should be trained in fellowship rather. **DISCUSSION/SIGNIFICANCE OF IMPACT:** There is an increased demand for surgeons competent in providing gender affirmation surgery. The majority of urology residency PDs believe in the need to train residents in the surgical care of transgender patients. A formalized curriculum for the urologic management of transgender patients should be instituted across residency programs to ensure adequate exposure and competency.

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### Expanding our educational reach: Development of a massive open online course (MOOC)

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**OBJECTIVES/SPECIFIC AIMS:** Translational Science 101 aims to: (1) Orient the public to the field of clinical and translational science; (2) Provide a brief overview of each phase of translation (T0–T4); (3) Provide real-world examples of clinical and translational researchers and research projects that have directly impacted patients; (4) Provide learners with information on how they can become involved in clinical and translational science through many different avenues (study volunteer, student, faculty member, or study coordinator). **METHODS/STUDY POPULATION:** The primary audience for Translational