

patient findings and inform the development of the provider aspect of a communication intervention centered on designing educational materials for women with various health literacy levels within the patient-centered cancer communication process. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Detecting the usefulness of cancer educational materials, as perceived by young women with breast cancer, is foundational to developing communication interventions that improve cancer outcomes. This study will identify how materials can be improved in the critical informational-exchange component of the patient-communication process.

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### **An interactive, online Research Education Hub built with a standard Learning Management System focused of education and career development for students, postdocs, faculty, and research staff**

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**OBJECTIVES/GOALS:** The University of Rochester CTSI Research Education Hub is designed to: 1) connect the local research community with essential internal and external educational resources; 2) create a community of inquiry and collaboration across the translational science workforce pipeline within the university. **METHODS/STUDY POPULATION:** The Research Education Hub (RE-Hub) utilizes the university's widely used Learning Management System (LMS), Blackboard, and accessible to anyone at the university with a BlackBoard account. The RE-Hub greets users with an overview, an introduction of key local faculty experts in relevant research methodologies, and links to institutional research programs and helpdesks. Users are provided with curated educational resources organized by topic areas including, but not limited to, research methodology, statistical analysis, and grantsmanship. Discussion boards were created for users to ask general research questions and to connect with others in the translational research community. **RESULTS/ANTICIPATED RESULTS:** The RE-Hub was designed in Fall 2019 with the purpose of increasing utilization of university resources, including workshops, seminars, methods forums and consultation resources to improve translational science at the university. The RE-Hub was designed to be flexible and responsive to the changing needs of the local research community. User feedback will be used to identify improvements in the organization and content of the RE-Hub. Future improvements will include additional topic areas that span translational competencies, additional materials added to existing topic areas, and facilitation of better collaboration and integration of career development programs and grantsmanship resources. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The Research Education Hub provides the University of Rochester translational science research community with a space to explore educational resources, to interact with colleagues and ask research related questions, and to help develop and/or improve other educational programs at the university.

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### **Are nurses' attitudes toward caring for hospitalized adults with intellectual disabilities associated with nurse and nursing unit characteristics?**

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**OBJECTIVES/GOALS:** (1) Determine nurse (age, education level, years of experience, ID education/training, contact with people with

ID, communication apprehension, beliefs about patient quality of life), and nursing unit (teamwork, staffing and resources, person-centered care) characteristics that are associated with and predictive of nurses' attitudes, positive emotions, and negative emotions toward caring for adults with ID. (2) Explore nurses' perspectives of perceived barriers and facilitators to providing nursing care to hospitalized persons with ID and medical comorbidity, and how nursing care differs when caring for a person with ID. **METHODS/STUDY POPULATION:** This mixed methods nested analysis will employ an internet survey of medical-surgical registered nurses to collect nurses' attitudes and emotions toward caring for hospitalized persons with ID and medical comorbidity, nurse characteristics, and nursing unit characteristics. We intend to recruit 150 medical surgical nurses currently practicing in the United States via email invitation to the membership of the Academy of Medical Surgical Nurses. Purposeful maximum variation sampling will be used to invite a subset of respondents for qualitative, semi-structured telephone interviews to elicit barriers and facilitators to nursing care of persons with ID and how nursing care differs when caring for persons with ID. **RESULTS/ANTICIPATED RESULTS:** We hypothesize that lower nurse education level, fewer years of experience, less ID education/training, lower amount of contact with people with ID, increased communication apprehension, and lower beliefs about the quality of life of persons with ID will be associated with negative nurse attitudes and emotions toward caring for people with ID. Further, we hypothesize that lower levels of nursing unit teamwork, staffing and resources, and person-centered care practices will be associated with negative nurse attitudes and emotions toward caring for people with ID. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The proposed research is an important first step in determining potential nurse and nursing unit factors influencing nurses' attitudes toward caring for people with ID. It will lead to targeted interventions to enhance nursing care quality and reduce hospital-associated healthcare disparities among people hospitalized with intellectual disabilities and medical comorbidities.

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### **Building a Translational Science pipeline: The Indiana CTSI STEM K-12 Program**

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**OBJECTIVES/GOALS:**

- Develop strong network of science teachers interested in promoting scientific research to their students.
- Place students in an immersive summer research internship that, when possible, matches their career interests.
- Expose students to the numerous career paths within the STEM field.

## METHODS/STUDY POPULATION:

- The program recruits socio-economically disadvantaged students and provides them a stipend, and also accepts students who can participate unpaid.
- Local school teachers are engaged in a summer fellowship to learn biotechnologies and research. In Spring these teachers help recruit students and during the subsequent Fall help students with college and scholarship applications.
- Students are placed in a variety of laboratories within the Schools of Medicine, Science, Dentistry, Public Health, Informatics, Health and Human Sciences, Engineering and Technology, especially in biomedical engineering. Students are also placed in industry laboratories such as Eli Lilly and the Indiana Bioscience Research Institute.
- Long-term program follow-up is done through post-internship surveys to assess impact on graduate and professional school admission.

## RESULTS/ANTICIPATED RESULTS:

- Since the Indiana CTSI was established in 2008, 872 students have participated in the summer internship.
- 71% of past interns are underrepresented minorities in science or classified as disadvantaged by NIH criteria.
- 17% of students interned during grade 10, 72% during grade 11, and 11% during grade 12.
- 21% of students engage in the program for more than one year.
- 100% of past interns are currently enrolled in or have graduated college.
- Over 60% of those with a bachelors degree proceed to graduate and professional schools and over 80% stay in STEM related fields. These rates are equal for interns from underrepresented minorities or those classified as disadvantaged by NIH criteria.

## DISCUSSION/SIGNIFICANCE OF IMPACT:

- Students engaged in the Indiana CTSI STEM program are progressing through the translational science pipeline based on their graduating from college and remaining in the STEM field.

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### Comprehensive training and support for Research Professionals at the University of Minnesota

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OBJECTIVES/GOALS: Coordinating research studies is multifaceted and requires a foundational level of research knowledge, skills and abilities in order to contribute to high-quality, ethical research projects that adhere to local and federal regulations as well as Good Clinical Practice. Oftentimes, coordinators who are new to research or new to an institution have trouble navigating the research landscape. Departments within the University of Minnesota have limited resources to devote to developing robust training programs above and beyond protocol or department-specific training. Therefore,

UMN's CTSI created a comprehensive training and support program for research professionals at the University of Minnesota. METHODS/STUDY POPULATION: CTSI employs several strategies to provide a comprehensive training program for the University of Minnesota Research Workforce. The offerings are based on the The Joint Task Force for Clinical Trial Competency (JTF). In addition to training programs, valuable resources, materials, and connections are provided to trainees.

- An Onboarding process for new coordinators that includes a welcome email upon hire that provides resources as well an opportunity to meet face-to-face to get their questions answered about where to start with research training.
- Foundations for Research professionals, two week (20 hour) training program, provides a foundational level of knowledge to new coordinators via in-person and online training modules.
- Informed Consent 1 & 2 provides in-person training on the informed consent including the process, documentation, and ethical issues around consenting vulnerable populations.
- Over 40 on-line research training modules that coordinators can take at anytime.
- An active list serv that connects >600 research professionals with training updates and opportunities.
- Bi-weekly seminar series that provides a forum to share current regulations, best practices, resources, and guidelines pertaining to clinical research at the University.
- An online training "Roadmap" tool that customizes individual research training plans, and includes an inventory of training available.

## RESULTS/ANTICIPATED RESULTS:

- 218 research professionals participated in our Foundations blended training program with 191 completing (88% completion rate) the entire training. A comprehensive assessment based on national competencies is completed by all participants at Baseline and Post training. Baseline scores average at 75% and Post scores average at 82% (7% increase). Satisfaction is measured and participants are overall satisfied with the training, 4 out of 5 on a Likert Scale.
- 353 research professionals have participated in our Informed Consent Session 1 & 2 in-person training. Satisfaction is measured and participants are overall satisfied with the training, 4.5 out of 5 on a Likert Scale.
- Over 190 research professionals have utilized our research on-line training modules.
- Training participants have been from 27 different departments across the University.
- The Clinical Research Professional Development Seminar Series has offered over 87 seminars with 4907 total attendees. These seminars are offered in-person and live stream.

DISCUSSION/SIGNIFICANCE OF IMPACT: Establishing a comprehensive training program at the University has streamlined the training that research professionals receive across departments. It also ensures that all coordinators have access to research training, a network of other research professionals, resources, and continuing education opportunities.