

ANNUAL REPORT

Institute for Clinical Research Education **2015**

Promoting Education and Research in Clinical and Translational Science



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Overview: Institute for Clinical Research Education

Since 2005, the Institute for Clinical Research Education (ICRE) at the University of Pittsburgh has been successfully training a wide range of individuals and supporting their career development in clinical and translational research. These diverse individuals include high school, undergraduate, and graduate students; residents; fellows; and faculty members.

The ICRE is comprised of core faculty members and mentors from each of the six Schools of the Health Sciences—the School of Medicine, the School of Dental Medicine, the School of Health and Rehabilitation Sciences, the School of Nursing, the School of Pharmacy, and the Graduate School of Public Health.

The ICRE is designed to promote the evolution of high-quality clinical and translational researchers across the career pipeline to offer opportunities in clinical and translational studies ranging from doctoral degree programs to career development opportunities.

The ICRE offers the following degree programs:

- Doctor of Philosophy in Clinical and Translational Science
- Master of Science in Clinical Research
- Master of Science in Medical Education

The ICRE offers the following certificate programs:

- Certificate in Clinical Research
- Certificate in Comparative Effectiveness Research (CER)
- Certificate in Medical Education



The ICRE offers the following career development and training programs:

- Career Education and Enhancement for Health Care Research Diversity (CEED) Program
- Career Education and Enhancement for Health Care Research Diversity (CEED II) Program for Medical Students
- Clinical Research Scholars Program (CRSP)
- Clinical Scientist Track (CST)
- Clinical Scientist Training Program (CSTP)
- Courses for undergraduate students
- Expanding National Capacity in PCOR through Training (ENACT)
- International Scholars Track (IST)
- Leaders IN Clinical and Translational Science (LINCS)
- Patient-Centered Outcomes Research (PCOR) Scholars Program
- Predoctoral and Postdoctoral Fellowship in Clinical and Translational Research
- Research Acceleration and Moving Productivity Forward to a K Award (RAMP to K) Program
- Research Education in Advancing Investigative Careers for Housestaff and Fellows (REACH) Program
- Training Early Academic Mentors (TEAM)

In addition, the ICRE works in conjunction with the following activities and initiatives:

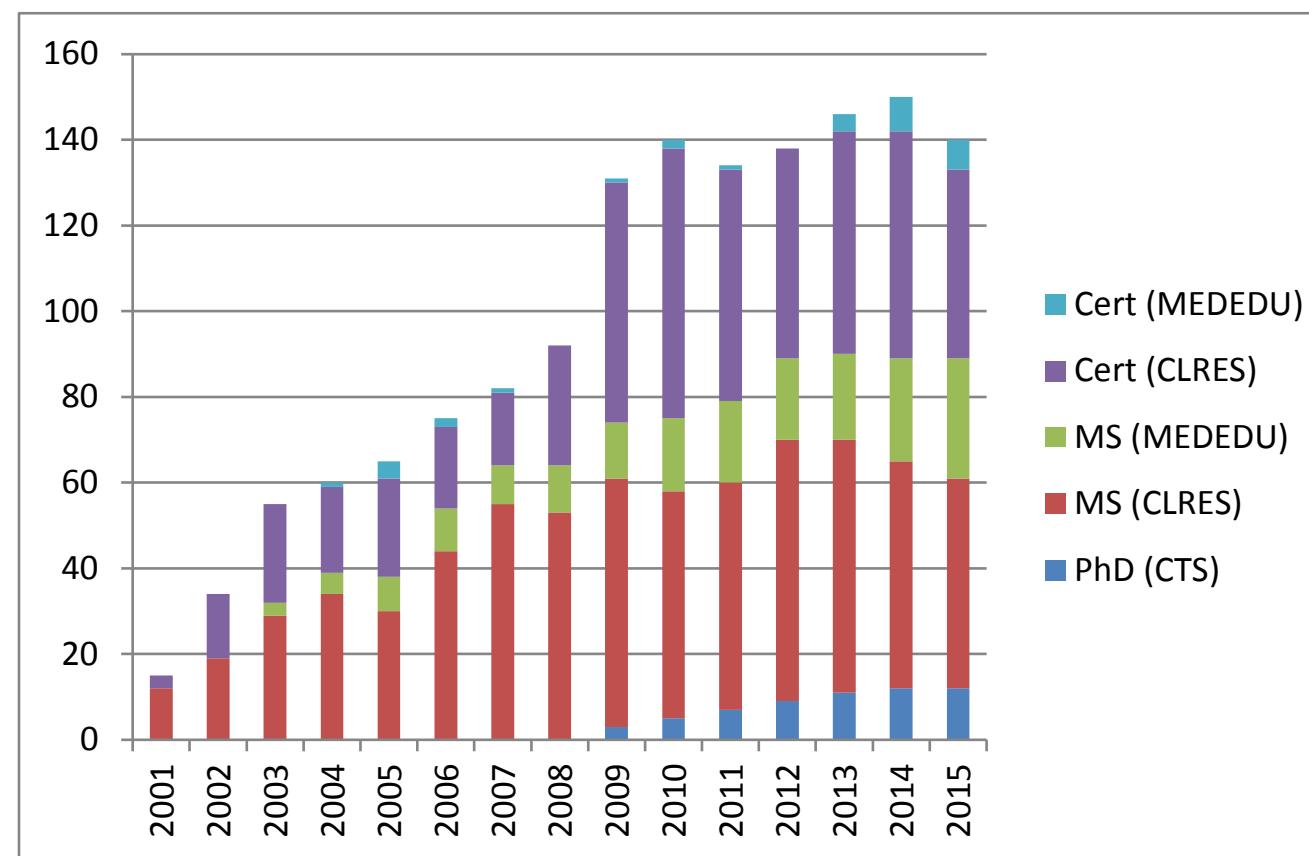
- Comparative effectiveness research
- Competency-based education
- Mentoring
- The Office for Evaluation
- The Office of Lifelong Learning

With funding from the Clinical and Translational Science Institute (CTSI), the ICRE is the home of the Research Education and Career Development Core of the CTSI. With the advent of the Clinical and Translational Science Awards, the ICRE has strategically built upon its existing programs to create a strong educational infrastructure for the CTSI, now in its 9th year.

Mission and Growth of the ICRE

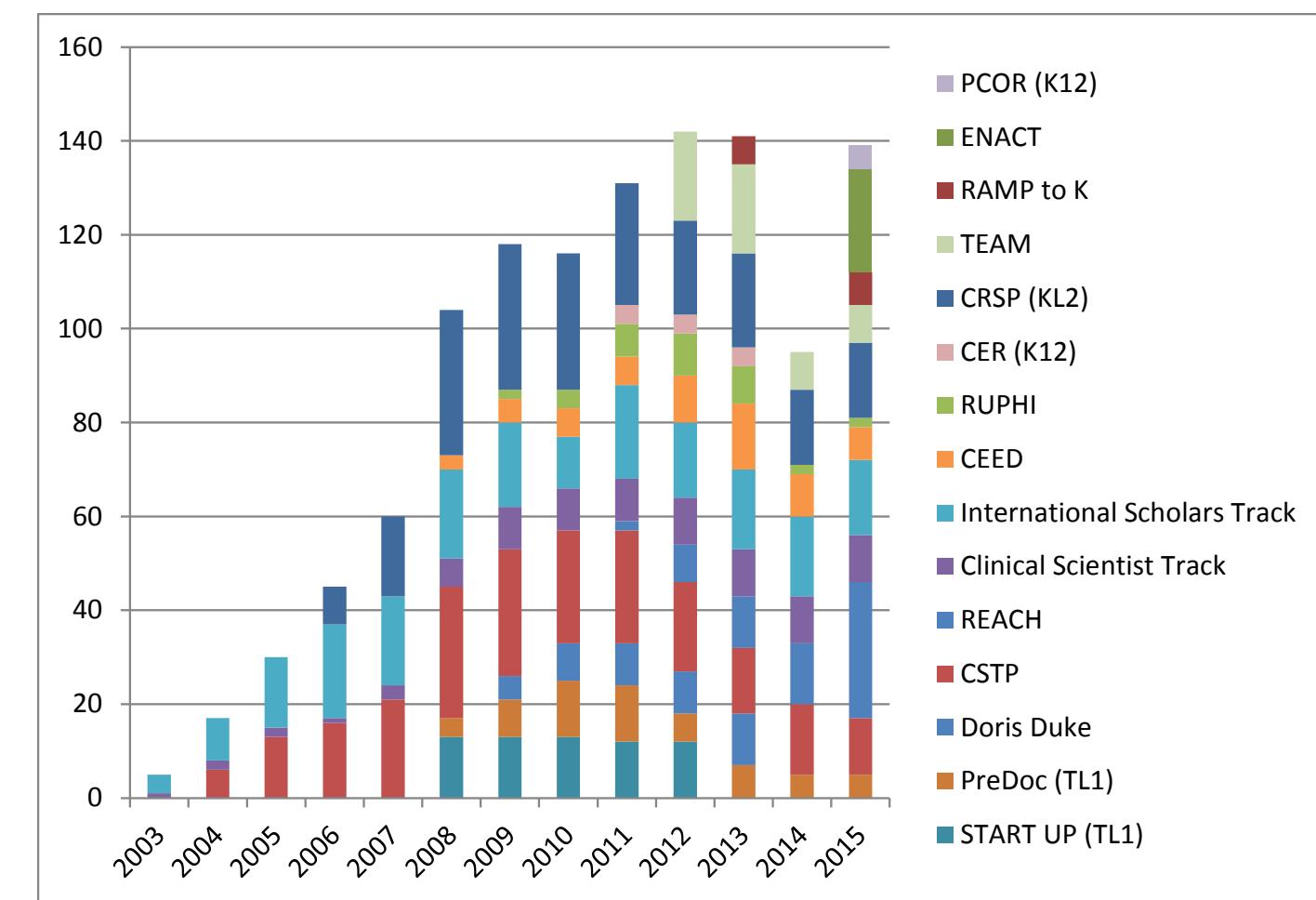
The ICRE's mission is to develop, nurture, and support careers in clinical and translational research. Its vision is to be internationally recognized for expert training of the next generation of clinical and translational scientists who will use their skills to improve public health. Its ultimate goals are to advance the field of clinical and translational science and to help meet the nation's need for researchers and leaders in this field. Over the last 14 years, the ICRE has had considerable growth in its degree and career development programs.

Total ICRE Trainees by Degree Programs



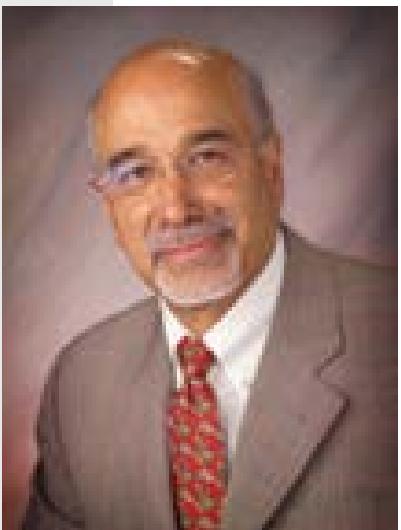
Cert indicates certificate; CLRES, clinical research; CTS, clinical and translational science; MEDEDU, medical education; and MS, master of science.

Total ICRE Trainees by Career Development Programs



CEED indicates Career Education and Enhancement for Health Care Research Diversity; CER (K12), Comparative Effectiveness Research Scholars Program; CRSP, Clinical Research Scholars Program; CSTP, Clinical Scientist Training Program; Doris Duke, Doris Duke Clinical Research Fellowship Program; ISP, International Scholars Program; PreDoc, Predoctoral Fellowship Program in Clinical and Translational Research; REACH, Research Education in Advancing Investigative Careers for Housestaff and Fellows Program; RUPHI, RAND–University of Pittsburgh Scholars Programs; START UP, Short-Term Access to Research Training Program; and TEAM, Training Early Academic Mentors Program.

Message from the ICRE Directors



Wishwa N. Kapoor, MD, MPH **Director, Institute for Clinical Re-** **search Education**

The Institute for Clinical Research Education (ICRE) and the Clinical and Translational Science Institute (CTSI) are dedicated to promoting the career development of clinical and translational scientists at every stage, including medical students, residents, doctoral students, and other graduate students. Together, the ICRE and CTSI have become a part of a major translational enterprise at the University of Pittsburgh. Many special programs have been developed for our trainees to promote growth and advancement, such as the Doris Duke Fellowship for medical students, KL2 CTSI Clinical Research Scholars Program, and two Agency for Healthcare Research and Quality-funded K12 programs—the Comparative Effectiveness Research and the Patient-Centered Outcomes Research (PCOR) scholars programs.

In recent years, we have led a number of new initiatives and have achieved many successes which are of importance at both the institutional and national levels:

- For the past 2 years, we have served more than 400 students and trainees from across the University.
- Since July 1, the ICRE had 12 students in the PhD in Clinical and Translational Science program, 51 students in the Master of Science in Clinical Research program, 46 in the Certificate in Clinical Research program, 28 in the Master of Science in Medical Education program, 8 in the Certificate in Medical Education program, and 238 students total in the ICRE's degree and training programs.
- The PCOR program is a new career development initiative geared toward training junior faculty from the Schools of the Health Sciences.

- We have been involved in leading the national discussion to shape PhD programs in clinical and translational science.
- We have established competencies for clinical and translational science training and are implementing competency-based education.

We continually strive for excellence in our educational and training programs. We achieve this by implementing new programs that engage our students and facilitate active learning. We create successful clinician scientists by focusing on efforts and methods that will take their research from the bench to the bedside. We also support measures that enable faculty to receive career development grants.

We are grateful to all the core faculty members who created the ICRE programs and who continue to provide outstanding teaching in and leadership of these programs. We are also grateful to Dr. Arthur Levine, whose unconditional and enthusiastic support of the ICRE has contributed substantially to the ICRE's success.

Doris M. Rubio, PhD **Co-Director, Institute for Clinical** **Research Education**



Academic Programs in Clinical Research

Leadership

Galen Switzer, PhD
Director

Georgeanna Robinson, EdD
Assistant Director

PhD Program in Clinical and Translational Science

The PhD Program in Clinical and Translational Science trains investigators to re-think the ways in which basic scientific discoveries are translated to improve health and health care. This rigorous program, intended primarily for clinicians, demonstrates how to conduct high-quality clinical and translational research, and it is a central component of the Clinical and Translational Science Institute Research Education and Career Development Core.

The program's didactic curriculum includes courses in clinical research methods and analytic methods, with advanced requirements in the specific methodologies that students will need to complete their research specialization. Directed, mentored research begins early in the program, allowing students to develop expertise in planning and conducting an independent research project which will become the basis of their dissertation.

As with all of the ICRE programs, the PhD program encourages multidisciplinary work, and faculty and students are expected to span not only departments, but also the Schools of the Health Sciences. Multidisciplinary mentoring is provided, and dissertation committees are required to have representation from two or more disciplines.

Program Committee

- John Horn, PhD
- Wishwa N. Kapoor, MD, MPH
- Doris M. Rubio, PhD
- Richard Steinman, MD, PhD
- Hussein Tawbi, MD, PhD
- Shyam Visweswaran, MD, PhD

Alumni Spotlight



Brian Primack, MD, PhD

Associate Professor of Medicine, Pediatrics, and Clinical and Translational Science
Division of General Internal Medicine
Director, Center for Research on Media, Technology, and Health
Assistant Vice Chancellor for Health and Society
PhD in Clinical and Translational Science

Q: What made you decide to study medicine?

A: I did not always want to be a physician. It was almost completely off my radar. I was a double major in English literature and abstract mathematics. However, while teaching junior high school students and working as a psychologist, I decided to go into medicine in order to be a psychiatrist. But when I got to psychiatry, I realized that what I was really interested was not psychiatry as such, but rather behavioral health. So I went into family practice.

Q: As a researcher, how did you develop your particular research interests?

A: Initially wanted to be a family doctor in a small community somewhere. However, I got bitten by the research bug. I started doing innovative health education in high schools as a volunteer project. Then, ultimately, I started wondering whether it worked, so I started giving out surveys. One thing led to another and suddenly I was a researcher.

Q: Why did you decide to get your PhD in clinical and translational science?

A: I received a K award from the NCI to try to develop my media literacy programming. As part of the K, I had proposed to take a few classes and perhaps get a master's degree. However, the classes were so interesting and the information so important that I just kept taking classes. Before I realized it, I had nearly enough credits for a PhD and an exciting idea for a dissertation.

Q: How has the ICRE impacted your career?

A: Every course I took I have been able to apply. That's what I loved the most about my ICRE training. For example, I took the meta-analysis class and am now on my third meta-analysis. I took the qualitative research course, and that has led to about a dozen qualitative research publications. In addition, I convinced the qualitative research professor to be a co-investigator on one of my projects.

Master of Science and Certificate Programs in Clinical Research

Leadership

Doris M. Rubio, PhD
Director

Initially funded in 1999 under the K30 mechanism of the National Institutes of Health (NIH), the program leading to an MS or certificate in clinical research has become a national model for programs to educate clinical trainees at multiple levels, including junior faculty, fellows, residents, and medical students.

With more than 60 courses currently offered in clinical research, and more under development, the ICRE provides didactic training for students with a wide variety of career goals relating to clinical research. The core curricula of the MS and certificate programs provide basic knowledge and skills which are fundamental to all fields of clinical research. For both programs, the core courses include computer methods in clinical research, clinical research methods, biostatistics, measurement of outcomes, and ethics and responsible conduct of clinical research.

Specialty Track Directors

- **Seo Young Park, PhD**
Clinical Trials Research Track
- **Douglas Lansittel, PhD**
Comparative Effectiveness Research Track
- **Mark Roberts, MD, MPP**
Health Services Research Track
- **Janet S. Lee, MD**
Translational Research Track

The MS core curriculum also includes a course in grant writing in which students learn how to develop a research question into an NIH-style grant proposal. The final product is a completed grant application which follows the PHS-398 application format and has undergone significant peer and faculty review.

MS-seeking students can specialize in the following four tracks to fulfill their remaining credit requirements.

The Clinical Trials Research Track provides training related to the design, performance, and analysis of clinical trials. Students develop a protocol for a study involving human subjects, including statistical analysis, sample size analysis, and data and safety monitoring plans. The students conduct analyses of a trial and report the results based on reporting standards from the medical literature. In addition, the students are introduced to novel designs for controlled trials, such as cluster randomized trials and adaptive designs.

The Health Services Research Track trains students in the effectiveness, cost, and quality of the provision of health care services. Training in research methodology, observational analysis, cost effectiveness, and health care economics provides students in this track with the skills necessary to evaluate the impact of society's health care services and associated costs.

The Comparative Effectiveness Research (CER) Track addresses the emerging need for training in key disciplines within CER, including meta-analysis and systematic review, analysis of electronic records, and decision modeling and cost effectiveness. This track also supports the development of fundamental skills specific to clinical trials and statistical analysis of observational data.

The Translational Research Track focuses on T1 translation and is appropriate for students interested in how discoveries and findings from basic research can be turned into studies pertaining to human subjects. Discoveries in basic sciences—especially the sequencing of the human genome and microbiologic advances—offer extensive opportunities for applications related to new and improved strategies for the prevention, diagnosis, and treatment of diseases.

Alumni Spotlight



Enrico Novelli, MD, MS

**Assistant Professor of Medicine
Division of Hematology / Oncology
Director, Adult Sickle Cell Anemia Program
Associate Director, Hemophilia Center of Western PA
MS in Clinical Research**

Q: How has receiving your MS in clinical research helped your career?

A: The program provided me with useful skills in developing clinical trials, which is what I hope to do in the future. It also helped me to understand the important role that mentorship has played in my career, which is why I'm currently mentoring medical students and residents. It is truly gratifying for me to be able to help students who have little to no research experience grow and develop through each stage of the research process and win awards for their hard work.

Q: What advice do you have for students wishing to pursue an MS in clinical research?

A: I would recommend that future trainees enroll during their residency or fellowship training. My personal experience showed me how difficult it is to juggle clinical and research responsibilities with coursework as an attending physician.

Certificate in Comparative Effectiveness Research: Overview

The Certificate in Comparative Effectiveness Research (CER) Program is a multidisciplinary, comprehensive, and individualized training program designed for individuals who would like to obtain additional, specialized training in CER.

The program offers a total of 35 credits in CER methodology, but to receive the certificate in CER, trainees must complete 15 credits of coursework. Trainees are required to take the CER core curriculum, consisting of 13 credits, and they select the remaining 2 credits from 16 elective courses.

The maximum time allowed by the University to complete a certificate program is 4 years. However, most trainees complete the requirements for the certificate in CER during 1-2 years of graduate study.



Leadership

**Douglas P. Lansittel,
PhD
Director**

Academic Programs in Medical Education

Master of Science and Certificate Programs in Medical Education

The Master of Science in Medical Education and the Certificate in Medical Education programs are designed to train future master educators in medicine. The programs provide students, who are usually fellows or faculty aiming to become clinician-educators, with didactic material and precepted teaching experiences that enhance their skills in classroom and clinical instruction, curriculum development, professional leadership, medical education, and medical administration.

Students work closely with faculty advisors and mentors throughout the program and have more than 25 courses to choose from.

The MS is granted upon completion of a tightly integrated curriculum with three components:

- Coursework plus observed teaching activities focusing on adult learning, classroom and clinical teaching skills, curriculum development, innovation in medical education, professional development, and medical administration
- Additional courses to provide trainees with fundamental research skills
- A curriculum design or mentored research project

Students in the MS program complete a minimum of 30 credits of work —19 of those credits are from required courses and 11 are from a list of at least 15 elective courses.

Students in the certificate program complete 15 credits, all of which are electives.

Leadership

Rosanne Granieri,
MD
Director

Alumni Spotlight



Carla Spagnoletti, MD, MS

**Associate Professor of Medicine
Director, Academic Clinician-Educator Scholars (ACES) Fellowship
Division of General Internal Medicine
MS in Medical Education**

Q: What made you decide to study medicine?

A: For the majority of my childhood, I told people that I wanted to be a pathologist. I think I liked the idea of solving mysteries. My dad is a retired detective, so maybe that's where the idea came from. My interest in solving mysteries is eventually what led me to internal medicine.

Q: Why did you decide to get your MS in medical education?

A: I loved primary care but also loved the idea of practicing in an environment where there was a continuous exchange of ideas and a priority placed on practicing up-to-date and cutting edge medicine. My decision to want to practice medicine in an academic environment is what initially led to me to pursue the general internal medicine fellowship and master's degree.

Q: How has the ICRE impacted your career?

A: My time spent in the ICRE allowed me to further hone my teaching skills and opened my eyes to the scholarly aspect of a clinician-educator's profession. It prepared me for all aspects of an academic faculty position. I learned how to conduct independent research projects, lead teams, and obtain funding for my research endeavors, as well as how to teach in different settings to different learner levels and to evaluate and improve curricula. My fellowship and MS truly set my career on the right path.

Career Development Programs

Clinical Research Scholars Program

Leadership

**Wishwa N. Kapoor,
MD, MPH
Director**

**Doris M. Rubio,
PhD
Co-Director**

The Clinical Research Scholars Program (CRSP) is a multidisciplinary career development program that is supported by the Clinical and Translational Science Award through the KL2 mechanism. The program prepares scientists from a broad range of disciplines, specialties, and subspecialties for independent careers in clinical or translational research. CRSP brings together the collaborative efforts of the University of Pittsburgh's Schools of the Health Sciences, multidisciplinary research centers, and the extensive clinical entities that compose the University of Pittsburgh Medical Center.

CRSP scholars engage in diverse types of multidisciplinary clinical research including:

- clinical trials
- community-oriented research
- epidemiologic studies
- health services research
- translational research

Every scholar has the opportunity to pursue educational offerings pertaining to research ethics and regulations, best practices in clinical research, multidisciplinary teamwork, and management and leadership skills. Scholars also have the option of pursuing an MS in clinical research.

The program offers 75% protected time and salary support for up to five years. It also covers tuition, pilot research funds, travel funds, and consultative support for research development.

Each CRSP scholar has a mentoring team of at least two faculty members from different disciplines that pertain to the scholar's research. Scholars meet with their primary mentors on a weekly basis. The program also requires that the entire mentoring team meet as a group at least once a month to provide the scholar with multidisciplinary feedback and to facilitate open communication. This model has proved effective in helping scholars pursue research which moves along the continuum from basic research to community-based research, thereby furthering the national goal of using biomedical advances to improve public health.

The CRSP Multidisciplinary Advisory Committee includes senior faculty representatives from throughout the University of Pittsburgh's Schools of the Health Sciences. The committee assists in the selection of CRSP scholars, provides guidance and direction for the scholars, monitors the program, and recommends program changes to meet the scholars' needs. Committee members attend scholars' progress reports, affording them a close association and in-depth knowledge of the scholars and their research. This enables the members to offer alternative perspectives on the scholars' work and to make introductions across disciplines when necessary.

Multidisciplinary Advisory Committee

- Wishwa N. Kapoor, MD, MPH
- Jennifer Brach, PhD, PT
- Michael J. Fine, MD, MSc
- Gerald G. Gebhart, PhD
- Leslie Hoffman, RN, PhD
- Seo Young Park, PhD
- Samuel M. Poloyac, PharmD, PhD
- Mark S. Roberts, MD, MPP
- Doris M. Rubio, PhD
- Jonathan Yabes, PhD

Alumni Spotlight



Steven Little, PhD

**Chairman, Department of Chemical and Petroleum Engineering
Associate Professor, Departments of Chemical and Petroleum Engineering, Bioengineering, Immunology, and Ophthalmology
McGowan Institute for Regenerative Medicine
Clinical Research Scholars Program**

Q: Describe your experience as a CRSP scholar.

A: Being part of the K award program was really great because, as an engineer, it's been invaluable to understand the translation process, to understand what clinicians deal with on a day-to-day basis, how clinical trials work ... and to understand the culture of medicine and clinicians, which is a very different culture than the culture of engineers. That has been fantastic, and looking back, I think the leadership of the program took a risk on me since I was a little different, and I did not quite realize the extent of what I would learn in the program

Q: How has CRSP been beneficial?

A: The program was a very important source of inspiration early in my career. The community helped me solve problems and has allowed me to energize others. Because the support I received at the ICRE was so invaluable, one way I return the generosity is through mentoring others, something I find greatly rewarding. Encouraging young adults to get excited and passionate about something is the key to effective mentoring, and I'm grateful that I can encourage my mentees to go out and solve their own research questions and possibly exceed my own achievements.

Patient-Centered Outcomes Research (PCOR) K12 Scholars Program

The Patient-Centered Outcomes Research (PCOR) K12 Scholars Program is a multidisciplinary, comprehensive, individualized career development K12 program funded by the Agency for Healthcare Research and Quality.

The PCOR Scholars Program was designed to provide:

- training in comparative effectiveness research (CER) and PCOR
- multidisciplinary mentoring
- career guidance
- experiences in the conduct of CER and PCOR projects

Scholars work closely with stakeholder groups from conceptualization of research to dissemination and implementation of results at the practice and community levels. The ultimate goal is an efficient transition to career independence.

The program provides scholars with two or three years of support, including partial salary, tuition, and pilot research funds. During that time, scholars are prepared to seek independent funding with another career development award or other mechanism (e.g., an R01 grant).

The program also offers scholars the opportunity to prepare research proposals in partnership with one or more community organizations, including local health care providers or health plans, county health care departments and agencies, and social service organizations.

Leadership

**Wishwa N. Kapoor, MD, MPH
Director**

**Sally C. Morton, PhD
Co-Director**

Career Education and Enhancement for Health Care Research Diversity (CEED) Program

The Career Education and Enhancement for Health Care Research Diversity (CEED) Program is a career development fellowship for people with underrepresented backgrounds in academic medicine or the health sciences such as individuals who are African American, Hispanic, Native American, Alaskan Native, Native Hawaiian, or Pacific Island populations, and individuals with disabilities.

Leadership

Kaleab Abebe, PhD
Co-Director

**Natalia Morone, MD,
MS**
Co-Director

This program is designed to support medical students, postdoctoral fellows, and faculty by providing them with the early mentoring and training needed for successful research careers. CEED participants are trained in leadership and management skills, grant writing, and other skills that will help them receive competitive career development awards. The CEED Program aims to promote a strong supply of well-qualified investigators to carry out basic science, clinical, and translational research in the health sciences.

The CEED Program has evolved into a competitive, comprehensive, year-long professional and research development program that incorporates a target cohort of fellows, post-doctoral trainees, and junior faculty. CEED's unique program has four components - monthly meetings, mentoring, coursework, and networking.

Did you Know?

In 2014, CEED was named the co-winner of the 2014 Chancellor's Affirmative Action Award. Also, in August of 2014, CEED Program leadership (Drs. Kaleab Abebe & Natalia Morone) were featured in the Newsmakers section of the *Pittsburgh Tribune Review*.

Alumni Spotlight



Judith Morgan, PhD

Assistant Professor of Psychiatry
Department of Psychiatry
CEED Scholar

Q: What drew you to the Career Education and Enhancement for Health Care Research Diversity (CEED) Program?

A: I wanted to gain more professional development training and be a part of a strong network of researchers and scientists within the University.

Q: How has the CEED program impacted your career?

A: I met with CEED directors, Natalia and Kaleab, and other CEED fellows on a monthly basis. These small group seminars created an atmosphere to bounce ideas off of others, share common experiences, and see my work through a new lens. CEED fellows come from various disciplines, so presenting my work to the group gave me new perspectives on my research that I had not considered previously. Also, through these small groups, we received expert advice on conflict management, negotiation, presentation skills, and grant writing. I also took a course offered through ICRE on Effective Medical Writing and Presentation Skills that has helped me disseminate my research in a clear and effective manner.

Clinical Scientist Track (CST) and International Scholars Track (IST)

Leadership

Kathleen McTigue, MD, MPH, MS
Director, Clinical Scientist Track

Peter Bulova, MD
Director, International Scholars Track

The Clinical Scientist Track and the International Scholars Track are special tracks offered through the Internal Medicine Residency Program at the University of Pittsburgh. During these three-year training programs, scholars complete clinical training in internal medicine, initiate a research project under the close supervision and guidance of experienced mentors, and develop the skills necessary to function as leaders in academic medicine and clinical investigation and as agents of change in their home institutions and internationally. All scholars have the option to enroll in the REACH Program for didactic training in clinical research, present one or more abstracts at regional or national meetings, and prepare at least one manuscript for publication in a peer-reviewed journal.

Program graduates are eligible to sit for the American Board of Internal Medicine Certification Examination. Many graduates have obtained competitive fellowship positions in leading programs throughout the United States.

Predoctoral and Postdoctoral Fellowship Program in Clinical and Translational Research (CTSI TL1 Program)

The Predoctoral Fellowship Program in Clinical and Translational Research was designed to encourage and support University of Pittsburgh students who wish to pursue a career in multidisciplinary clinical and translational research. The goal of the program is to enhance and support multidisciplinary research training for doctoral students and medical students who are conducting research as part of an advanced degree program or training program.

The fellowship requires trainees to have a multidisciplinary mentoring team. It encourages them to think beyond their individual project about the scope of their work along a translational spectrum. The fellowship provides a stipend, tuition, travel funds, and research support for one year. Fellows can be from any graduate department within the university as long as they are engaged in clinical research or translational research.

Leadership

Galen Switzer, PhD
Director

Georgeanna Robinson, EdD
Assistant Director



Clinical Scientist Training Program

The Clinical Scientist Training Program (CSTP) is for medical students interested in a clinical research career. Students who have demonstrated an interest in clinical research pursue a fifth year of training to gain further experience in a mentored research project. During their research year, students take courses in clinical research methods, continue with mentored research, and participate in a longitudinal seminar through which they both learn and practice clinical and translational research skills.

After successful completion of the fellowship year, the students receive a CSTP merit scholarship, funded by the dean of the School of Medicine, for their final year of medical school. By providing formal research training in the final year of medical school, the CSTP seeks to increase the number of medical school graduates who choose research careers.



Leadership

**Amber Barnato, MD,
MPH, MS
Director**

Research Acceleration and Moving Productivity Forward to a K Award: The RAMP to K Program

The RAMP to K Program is designed to facilitate the timely research career development of junior faculty in the health sciences. During the course of 11 months, RAMP to K scholars develop research and career plans, identify a mentoring team that is relevant to those plans, and attend monthly seminars in which established investigators provide guidance in grant preparation, professional development, and the successful navigation of the academic environment and culture. RAMP scholars also present their research during the program's monthly meetings.

By the end of the year, RAMP scholars have a complete proposal for a competitive external career development award, and the proposal will have undergone mock review by their peers and the program's advisory group. Scholars are expected to submit their career development award proposal to the appropriate funding agency during the June application cycle.



Leadership

**Lauren Matukaitis
Broyles, PhD, RN
Co-Director**

**Georgeanna Robinson,
EdD
Co-Director**

Research Education in Advancing Investigative Careers for Housestaff and Fellows (REACH) Program

Leadership

Wishwa N. Kapoor,
MD, MPH
Director

Doris M. Rubio, PhD
Co-Director

The Research Education in Advancing Investigative Careers for Housestaff and Fellows (REACH) Program is an intensive eight-week program designed to teach fundamental skills of clinical research to physicians in UPMC-affiliated residency and fellowship programs. The aim of the REACH Program is to provide high-quality instruction to medical professionals who are interested in gaining a better understanding of clinical research or are interested in participating in clinical research studies as an active member of a research team.



The intensive nature of the program is designed to align with residency schedules. Participation requires sponsorship from the trainee's clinical department, with a guarantee of at least 75% protected time for the two months necessary to complete the training.

RAND–University of Pittsburgh Scholars Program

The RAND–University of Pittsburgh Scholars Program was a highly successful two-year postdoctoral fellowship opportunities for individuals seeking to pursue careers in health services research, health policy, or comparative effectiveness research. The program ,which recently ended, was sponsored by the RAND–University of Pittsburgh Health Institute (RUPHI), supported by a T32 training grant from the Agency for Healthcare Research and Quality, and housed jointly within the University of Pittsburgh Center for Research on Health Care and RAND Health in Pittsburgh.

Scholars took a two-semester grant-writing course, a course in medical writing and presentation skills, and a course in the ethics of research. They had the option to take elective courses offered within the ICRC, opting to earn an MS or certificate in clinical research.

Scholars were aligned with ongoing health research projects with investigators from the University of Pittsburgh or the RAND Corporation offices in Pittsburgh, Santa Monica, and Washington, DC. This gave the scholars valuable research experience with a team of distinguished researchers from a variety of disciplines on projects that match their skills and interests. The projects were national, regional, or local in scope and involved various levels and types of stakeholders, as appropriate. The principal investigators of the projects served as formal mentors to the scholars.

Did you Know?

The program also offered scholars the opportunity to prepare research proposals in partnership with one or more community organizations, including local health care providers or health plans, county health care departments and agencies, and social service organizations.

The Expanding National Capacity in PCOR through Training (ENACT) Program

The Expanding National Capacity in PCOR through Training (ENACT) Program is funded by the Agency for Healthcare Research and Quality. This program aims to train investigators from minority-serving institutions in patient-centered outcomes research (PCOR).

The ENACT Program forms collaborative partnerships with minority-serving institutions (Charles R. Drew University of Medicine and Science, Howard University, Meharry Medical College, Morehouse School of Medicine, University of Hawaii at Mānoa, and University of Puerto Rico Medical Science Campus), provides basic advanced and experiential training in PCOR methods, sponsors a one-year fellowship to immerse fellows in multidisciplinary PCOR, facilitates and supports networking and mentoring relationships for investigators completing the training, and enhances long-term PCOR infrastructure at partnering institutions by developing a leadership circle with former ENACT fellows.

Leadership

Doug Lansittel, PhD
Director

Wishwa N. Kapoor, MD, MPH
Co-Director

Sally C. Morton, PhD
Co-Director



Comparative Effectiveness Research (CER) Scholars Program

The Comparative Effectiveness Research (CER) Scholars Program was a multidisciplinary, comprehensive, and individualized career development program funded by the Agency for Healthcare Research and Quality through the K12 mechanism.

The main objectives of the CER Scholars Program were to:

- Provide substantial training which encompasses a broad spectrum of CER methodologies, concepts, and research tools to scholars with varying levels of previous research experience
- Immerse scholars in multidisciplinary research programs and provide training in leadership, management, and team building, thereby fostering effective cross-disciplinary collaboration and team-oriented approaches to CER
- Provide scholars with multidisciplinary mentoring, career guidance, and experiences in the conduct of CER projects from conceptualization to completion
- Guide scholars in the development and submission of competitive grant applications and help them secure research funding to enable their success as independent CER investigators

The program provided scholars with 3 years of 75% protected time in which to conduct research. It also provided partial salary support, tuition, and pilot research funds.

External Advisory Board

- Eric Bass, MD, MPH
- Said Ibrahim, MD, MPH
- Melony Sorbero, MD, MPH

Internal Research Council

- Amber Barnato, MD, MS, MPH
- Michael Fine, MD, MSc
- Joseph Hanlon, PharmD, MS
- Wishwa N. Kapoor, MD, MPH
- Doug Lansittel, PhD
- Sally Morton, PhD
- Mark Roberts, MD, MPP
- Doris M. Rubio, PhD
- Stephen Wisniewski, PhD

Leadership

Wishwa N. Kapoor, MD, MPH
Director

Leaders IN Clinical and Translational Science (LINCS)

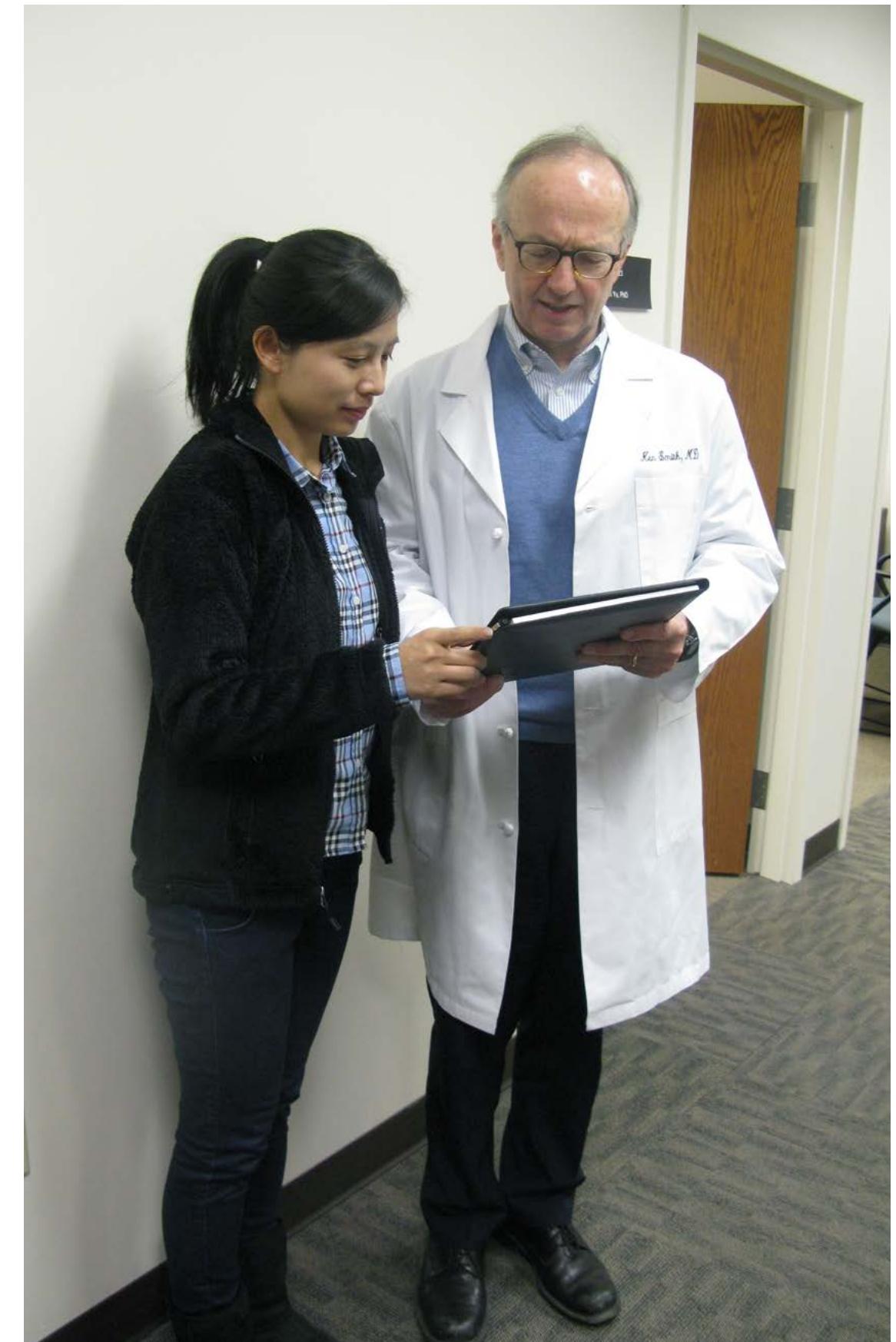
The Leaders IN Clinical and Translational Science (LINCS) Program for residents is an innovative program combining a doctoral degree in clinical and translational science with a medicine residency and subspecialty fellowship training. The program is designed to prepare outstanding medical residents for a career in academic medicine and clinical and translational research.

Leadership

**Wishwa N. Kapoor, MD,
MPH**
Director

Residents who have research experience and want a rigorous, advanced training program which enhances their capabilities of conducting independent, high-quality clinical and translational research can pursue the American Board of Internal Medicine Research Pathway Residency (short track) in combination with a PhD conferred by the School of Medicine.

Residents in the LINCS Program are eligible for stipends and tuition provided through training grants in subspecialty divisions through the University of Pittsburgh's Clinical and Translational Science Institute or through individual National Research Service Awards.



Training Early Academic Mentors (TEAM) Program

Training Early Academic Mentors (TEAM) is a one-year program offered by the ICRE. It is designed to increase the knowledge, skills, and practices of mentoring among new mentors. The TEAM Program is open to individuals who are at the assistant or associate professor level at the University of Pittsburgh, who currently serve as research mentors, and who are committed to participating in all TEAM Program activities.

Leadership

Amber Barnato, MD, MS
Co-Director

Georgeanna Robinson, EdD
Co-Director

Through the course of the year, participants learn from panels of experienced mentors, the literature on mentoring, their peers, and exercises around a variety of mentoring-related topics. By the end of the TEAM Program, participants have a “toolkit” of mentoring documents that help articulate and clarify their mentoring styles and expectations. The program covers how to avoid or overcome common mentoring challenges and mistakes, and how to work with mentees to form a productive and comfortable professional relationship.



Alumni Spotlight



Valire Carr Copeland, PhD, MPH

Associate Dean of Academic Affairs
Associate Director, Public Health Social Work
Training Program
Faculty Affiliate, Center for Minority Health
School of Social Work

Q: Why were you interested in TEAM?

A: I noticed that there was a significant need to get junior faculty involved in mentoring doctoral students. However, I was aware that nobody trained faculty how to mentor, and junior faculty, in particular, needed some socialization into their roles and their expectations regarding mentoring.

Q: How has TEAM been beneficial?

A: Despite my long mentoring experience, the TEAM program taught me a lot. I've learned more about myself personally and as a mentor, how to improve my mentoring, and how to bring more structure to the mentoring process. I feel that, ideally, everyone would learn the principles of effective mentoring before actually becoming a mentor, but I recognize that mentoring can also be something people grow into. Even after mentors learn effective mentoring techniques, working in mentoring teams—and the power differentials that can present—delivers a new set of challenges, which I continue to learn about from my colleagues in the TEAM program.

Instructor Spotlight



Joyce Chang, PhD, MS

**Professor in Medicine, Biostatistics and Clinical and Translational Science
Institute for Clinical Research Education
Division of General Internal Medicine**

Q: How long have you been mentoring students at the ICRE?

A: Since 1999 when I started teaching at the Clinical Research Training Program (CRTP), which was the predecessor of the current ICRE. I redeveloped the summer biostatistics core course and developed several biostatistics modules currently offered by the ICRE; many students who took my classes later consulted me for statistical issues in their research. For the past 15 years, I have also served as a PhD dissertation advisor or a master's thesis advisor and have been on dissertation and thesis committees for students from the Graduate School of Public Health and other graduate schools in health sciences.

Q: What are your favorite things about mentoring and teaching?

A: To me, one of the benefits in teaching is that I learn something new every time I teach a subject. Also, my mentees' research sometimes leads me to areas where I did not explore before. Through advising my mentees, I can enjoy discussions of novel research ideas and expand my knowledge in biostatistics. It is also fulfilling to see that through my input, my students and mentees grow intellectually from being beginners in biostatistics to being able to use cutting-edge biostatistical methods for their own research.

Q: What advice do you have for students?

A: For personal development, I suggest that students keep up-to-date, be open minded, always go to the basics, and use common sense. Another important development is to network with colleagues, regardless of whether they are local or not.

Mentor Spotlight



Michael L. Boninger, MD

**Endowed Chair and Professor
Department of Physical Medicine & Rehabilitation**

Q: At what point in your career did you realize that you wanted to teach and mentor students?

A: My first NIH grant was a K award, and I had to list my mentor in the application. Working in a research lab, I realized the importance of mentoring the students. Over time I realized that mentoring became the favorite part of my job. It enabled close relationships. It was about helping people—something that initially drew me to medicine—and it added to the impact I could have on the field.

Q: How long have you been mentoring students?

A: I've been mentoring for around 20 years in general and in the ICRE since it was formed.

Q: What is your favorite part about mentoring?

A: It's a job where you get thanked a lot. The people you mentor are so appreciative and it seems so natural. It is about giving advice and helping. Who wouldn't love doing that?

Q: What advice do you have for students?

A: One of my favorite quotes is from Vince Lombardi. "If you aren't fired with enthusiasm, you will be fired with enthusiasm." Be enthusiastic about what you do.

Other ICRE Activities and Initiatives

Mentoring

The ICRE emphasizes the importance of mentoring because we believe it is key for developing and sustaining a satisfying professional career. Mentoring enables each of us to grow, learn, transform, and accomplish goals in education or in basic, clinical, and translational research. Whether you are a senior educator, world-renowned investigator, or in the early stages of your professional training, mentoring helps build a dynamic community while ensuring the success of each individual as he or she achieves personal and professional career goals.

Scholars, fellows, and trainees in ICRE programs are mentored by accomplished investigators who are actively involved in clinical or translational research, have research funding from the National Institutes of Health or other federal institutions, have established track records of mentoring and training researchers, and are committed to the career development of trainees. The following are the main components of the mentoring program:

- Mentor Selection – The ICRE program directors, with assistance from other faculty members and program committees, will help select mentors for ICRE trainees, where necessary, after meeting individually with the trainees and assessing their career goals and interests.
- ICRE Mentoring Network – The ICRE has developed a database of about 400 mentors who work in various disciplines throughout the University of Pittsburgh and have experience serving as mentors within the ICRE. Searchable by study field and a variety of demographic variables, this database is intended to facilitate the creation of mentor-mentee relationships, particularly for new faculty, fellows, residents, and students.
- Mentor and Mentee Contracts – The ICRE mentors provide written commitments to meet regularly with the trainees throughout the duration of the training program, to help design their research plans, to discuss research progress, and to develop solutions to problems that may arise. The ICRE promotes the use of learner-centered contracts which allow trainees to focus on the research areas of greatest interest to them and to create educational objectives consistent with these interests. The contracts serve as a formal mechanism for ensuring that meaningful feedback is given and that progress is being made in achieving the educational objectives.
- Mentee Training – The mentee program includes the Mentoring Matters Workshop, a half-day training session which provides a clear understanding of the purpose of mentoring, delineates the expectations of trainees, and positions trainees to make the most of their work with their mentors. The session facilitates an understanding of the roles and responsibilities of the mentee and mentor.

- Making the Most of Mentoring – Aimed at trainees of all levels, the one-credit course entitled “Making the Most of Mentoring” is designed to provide a basis for understanding the mentor-mentee relationship and to provide strategies to enhance this relationship and make it a rewarding experience both for mentees and for mentors. Topics include communication and negotiation, the use of mentoring contracts, providing and accepting feedback, evaluating the mentoring relationship, solving problems, and meeting challenges.
- Ongoing Support and Evaluation of the Mentoring Relationship – The leaders of each training program monitor the mentoring relationships and provide the support needed to accomplish the program goals. Through an early evaluation process, they determine if a mentoring relationship is not working. If there are problems with the relationship, the program directors collaborate with the mentors and trainees to solve problems and develop alternatives.
- Mentoring Resources – Additional information about mentoring is available at <http://www.icre.pitt.edu/mentoring>.



The Office for Evaluation

The Office for Evaluation helps faculty members develop evaluation components for their training programs. It provides grant development consultation, tracking systems, and infrastructure for conducting the evaluation of trainees. It also has specialized resources to help investigators who are preparing training grant proposals.

Leadership

Doris M. Rubio, PhD
Director

The Research on Careers Committee is housed within the Office for Evaluation and focuses on the evaluation of the career development and success of trainees. The committee has created a sophisticated mechanism and rigorous follow-up structure to track the progress of trainees and scholars, and members publish articles on career success metrics. The committee developed a theoretical model for the career pipeline of trainees and scholars, and this model is of great interest to the larger community involved in clinical and translational science training.

Publications

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15. Primack BA, Colditz JB, Cohen E, Switzer GE, Robinson G, Seltzer DL, Rubio DM, Kapoor WN. Measurement of Social Capital among Clinical Research Trainees. *Clin Transl Sci.* 2014;7(1):33-37.
16. Rubio DM, Robinson GF, Gilliam VA, Primack BA, Switzer GE, Seltzer DL, Kapoor WN. Characterization of investigators' approach to translational research: a qualitative study. *Clin Transl Sci.* 2014;7(6):441-446. Epub ahead of print July 25, 2014.

Competency-Based Education

Competency-based education (CBE) places emphasis on the performance and demonstration of learning, as well as the integration of knowledge, skills, and attitudes. The competencies in a CBE framework are observable and measurable, and they specifically outline what learners should know and be able to do upon completion of study.

With funding from the American Recovery and Reinvestment Act of 2009, the ICRE developed a competency framework for the PhD in Clinical and Translational Science Program, for each of the tracks in the MS in Clinical Research Program, and for the Certificate in Clinical Research Program. In each case, the aim of the framework was to ensure that ICRE graduates acquire and can demonstrate an integration of the skills, knowledge, and professionalism necessary to become effective and successful leaders in clinical research.

By mapping the competencies covered in the clinical research courses, the ICRE afforded its program leaders and course directors the opportunity to detect gaps in pedagogical offerings and to fill these gaps by creating new courses or by adding materials or sessions to current courses.

To facilitate the inclusion of competencies in course creation and revision, the ICRE developed a Web-based syllabus creator tool for course directors and faculty members to list the competencies addressed in each of their course sessions. The inclusion of competencies in syllabi prompts the faculty and students to become more aware of the intended results of courses and thereby helps them align their instructional and learning goals toward achieving competence.

The ICRE also compiled information about teaching techniques and assessment rubrics able to support CBE and made this information available to all faculty members within the ICRE. The ICRE now encourages all course instructors to:

- Create tools that help students integrate and use what they have learned.
- Provide many performance opportunities in class
- Offer multiple practical opportunities to acquire the same knowledge and practice the same skills
- Include oral communication instruction and practice opportunities.
- Design opportunities for management and leadership instruction and practice opportunities

The ICRE aims to integrate competencies into the culture of clinical research education. For this to happen, the competency feedback loop is closed by the introduction of evaluations that formatively assess competence.



In 2013, the CBE group introduced a formative evaluation of students in the Masters in Clinical Research Program at the midway point in their degree, called the Comprehensive Competency Review (CCR). This written and oral milestone determines in which domains students are already competent and in which domains students need additional work to reach competency at the end of the MS degree. Together, students and the CCR committee ensure that students have the necessary plans in place to become competent in all domains by the time of thesis defense.

MS students undergo a summative assessment of competence for their theses defense. Students lacking competence in multiple areas are required to receive further training and improve their all-around competence before graduating.

Finally, the CBE group has piloted and will be introducing in the 2014/2015 academic year, the standardized syllabus format, which includes learning objectives and competencies for each class period of all ICRE classes. Many syllabi for required Course have already added this; the CBE group is continuing to work with ICRE faculty to add this component to all ICRE courses.

The Office of Lifelong Learning

Leadership

Doris M. Rubio, PhD
Director

The Office of Lifelong Learning provides continued educational benefits, mentoring, and information about grant opportunities to alumni of ICRE programs. It also offers alumni the opportunity to gain access to past and current course materials, including video-casts of lectures, and to take advantage of networking opportunities with other alumni and faculty. Membership is free and available to alumni of the ICRE.

In addition, the office publishes semi-annual newsletters to keep alumni abreast of ICRE events, notable activities of current and former students or trainees, and developments in clinical and translational science. Newsletters are distributed to current and alumni students and trainees, as well as ICRE faculty and staff.



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