The Department of Rehabilitation Science and Technology

Advanced Rehabilitation Research Training (NIDDR 84.133P-1)
Career Advancement for Engineers in the Science of Rehabilitation (CAESOR)

Dan Ding, PhD
Rory Cooper, PhD

The objective of the CAESOR program is to increase the number of rigorously trained, extramurally competitive, and scientifically productive engineering researchers in the field of rehabilitation science and engineering.

Eligibility: Individuals from basic engineering disciplines interested in gaining research training/experience in an area relevant to rehabilitation are eligible to apply for support. Trainees are expected to work with a member of one of the training program faculty (See attached list). Trainees should be prepared to make a two-year commitment to research training and fulfill each of the requirements of the traineeship. There is no limitation on U.S. citizenship or permanent residency.

Criteria: The criteria used in selection are: (a) having a Ph.D. or equivalent professional degree in basic engineering disciplines including mechanical, electrical, computer, industrial, and biomedical engineering at the time of application to the program; (b) not being or having been a Principal Investigator on any research grant award in rehabilitation. (c) evidence of creativity and motivation as exhibited by information gathered in the personal interview, letters of recommendation, research experience, and written statements prepared by the applicant; (d) the suitability of the interests of the applicant to the training environment; and (e) the long-term objectives of the applicant.

Amount and Duration of Awards: Trainees will receive a stipend starting at $36,000/year including health insurance, a $500 travel allowance, a $2,000 research allowance, and reimbursement of up to $1,500 for tuition expenses. Awards are made for one year but are renewable for a second year as long as (a) funds are available, and (b) good progress has been made during the first year as evident by completion of the training requirements and recommendation from the primary mentor.

Application Materials:
1. A curriculum vitae
2. A statement prepared by the applicant indicating (1) the relationship between their interests and training to rehabilitation research; (2) long-term career objectives; (3) previous experience working with individuals with disabilities (if any).
3. A letter of nomination from the faculty sponsor (from the attached list) including a brief statement of the proposed research project.
4. Two letters of recommendation from those familiar with the applicant's past accomplishments and potential.
5. Personal interview (via telephone).

Applications should be submitted to:
Dr. Dan Ding
Training Grant Director
Forbes Tower 5044
Dept. of Rehabilitation Science and Technology
University of Pittsburgh, Pittsburgh, PA 15260
dad5@pitt.edu

For information contact:
Mary Goldberg
Education & Outreach Coordinator
mrh35@pitt.edu

Name	Rank	Appointment	Research Interest
Rory Cooper (Engineer)	Distinguished Professor Chair of Dept. of RST Director of VA Center of Excellence on WARE Co-Director of NSF QoLT ERC	RST, BioE, Mechanical Eng.	Assistive technology, rehabilitation Engineering
Dan Ding (Engineer)	Assistant Professor	RST, BioE	Assistive device instrumentation, wearable computing
David Brienza (Engineer)	Professor Director of NIDRR RERC on Telerehabilitation Director of NIDRR RERC on SCI	RST, BioE	Pressure ulcers, tissue biomechanics
Rich Simpson (Engineer)	Associate Professor	RST, BioE	Computer access, rehab robotics, human-machine interaction
Alicia Koontz (Engineer)	Associate Professor	RST, BioE	Rehab biomechanics, injury prevention
Michael Boninger (Clinical)	Professor Interim Chair of Dept of PM&R Director of Pittsburgh SCI Model Systems Interim Director of UPMC Institute for Rehabilitation Research	PM&R, RST, BioE	Spinal Cord Injury; assistive technology; wheelchair biomechanics
Brad Dicianno (Clinical)	Assistant Professor Associated Medical Director of WARE Medical Director of the Center for Assistive Technology	PM&R, RST	Movement disorder and motor control
Doug Weber (Engineer)	Assistant Professor	PM&R, BioE	Neuromuscular control and rehabilitation, functional electrical stimulation
Mike McCue (Psychosocial)	Associate Professor Co-Director of NIDRR RERC on Telerehab	RST	Clinical neuropsychology, cognitive rehabilitation, telerehabilitation
Mike Pramuka (Psychosocial)	Assistant Professor	RST	Cognitive rehabilitation, dementia, healthy aging
Kate Seelman (Psychosocial)	Professor Associate Dean of Disability Programs Research Director of NSF QoLT ERC	RST	Public policy, disability studies, Technology adoption

Training Requirements

Advanced Rehabilitation Research Training Program (NIDRR 84.133P-1)

The following are guidelines, requirements, and recommended activities for support on the above referenced training grant. Although the list of requirements may appear rather lengthy, it is not meant to add an undue burden to trainees or to detract from the trainee's ability to pursue their research interests. Indeed, we believe that these requirements will contribute positively to the training experience, and better prepare the trainee for a research career.

REQUIREMENTS

A. Advisory Committee

Each trainee will have an advisory committee consisting of a primary/research mentor, a clinical mentor, and a peer mentor. The primary mentors will supervise the day-to-day activities of the trainees and oversee their performance with coursework and research projects. The clinical mentors will provide clinical guidance relevant to the trainees' research projects and oversee their performance in clinical settings. The peer mentors will assist the primary mentors in supervising the trainees and serve as role models. The trainee should meet with his/her advisory committee at least once every six months and a brief report of progress should be sent from the advising committee to the training office.

B. Research Training

Trainees are expected to spend the majority of their time (minimum 75% research effort) in research. A research plan should be developed in conjunction with the advisory committee and send it to the training office within the first three months. The plan should describe a training experience that allows the trainee to acquire knowledge in an area of relevance to rehabilitation research and that expands the trainee's knowledge and ability to translate user needs into new design and development of assistive devices, therapies, and interventions. Required research outputs include

1. **Critical reading:** Trainees should obtain explicit training in critical reading of the research literature in their area of interest through participation in the AT "journal club".
2. **Oral presentation of research results:** Trainees should give at least one public research presentation each year preferably at a national conference.
3. **Journal publication:** Trainees should submit at least one full journal paper with the trainee and mentor as authors by the mid of year two.
4. **Individual grant application:** Trainees must prepare a formal career award grant application and submit to the training office at the end of the first year of support. The application can be in a format ready to submit to a government agency such as NIH, NIDRR (Switzer Fellowship), DOD, and NSF, or a foundation such as the Paralyzed Veterans of America (PVA).

Trainees are also encouraged to seek out other small grant programs and apply for support. The training office may be contacted for assistance in identifying appropriate funding opportunities.

C. Course Work

Approximately 10% of the participants' time will be spent on didactics. Each trainee is expected to work closely with his/her primary mentor to develop the most appropriate array of coursework as needed to complement the individual trainee's needs in terms of relevance to a specific line of research and integration into the trainee's overall training experience. A course plan should be sent to the training office within the first three months. Courses that are typically not covered in engineering curricula such as understanding of medical and social aspects of disabilities, assessment of users' needs, research design and statistics, measurement of outcomes, and ethical and regulatory principles regarding human subject research are recommended.

D. Mentored Clinical Experience

Each trainee will be required to work in a relevant clinical setting for a minimum of one day every two weeks. The clinical mentor will convey to the trainee the basic principles underlying a clinical decision, including the concept of multiple options, cost factors, confidentiality, humane treatment, and informed consent. In many ways, we view the clinical mentor as a preceptor. The trainees will also be introduced to visit and interact with various clinical groups, to attend ward and ground rounds, and to work with the consumer groups and disabled veterans service groups in the area.

ADDITIONAL RECOMMENDED TRAINING ACTIVITIES:

A. Events and lecture series: Trainees are strongly encouraged to network with peers and senior investigators. There are various local and national venues which provide excellent opportunities for networking. The University has an active postdoc association, http://www.uppda.pitt.edu/, this association helps to facilitate a positive postdoc experience by providing various training and career development resources and also sponsoring networking events such as their annual Data & Dine Symposium. Another local event which trainees will be encouraged to participate in is the Brubaker Lecture Series at the School of Health and Rehabilitation Sciences, the Annual Institute for Rehabilitation and Research (IRR) Research Day, and other outstanding lecture series at the University of Pittsburgh Health Sciences Web site (http://www.health.pitt.edu/).

B. Professional development*:* Trainees are strongly encouraged to attend the monthly "survival skills" workshops series. Workshop topics include (1) selecting research questions, (2) writing research articles, (3) oral and poster presentations, (4) teaching, and (5) grantsmanship. Additional professional development seminars/workshops are offered through various University offices throughout the year. The training office will forward notices as they are received.

C. Community Practicum Experience: Trainees are strongly encouraged to interact with disability groups and community based organizations relevant to their fields of interest through a practicum experience. The exposure to real problems in real world contexts will help them understand the nature of problems facing people with disabilities, and learn systematic mapping of the viewpoints of different stakeholders, their experiences, and requirements to technology development.

EVALUATION AND FOLLOW-UP:

Trainees must submit a brief research plan and course plan to the training office within the first three months. Trainees also should submit a progress report to the training office two months prior to the end of their appointment period in order to be considered for a second year of support, and at the end of their training experience. In addition, the trainee's advising committee should also provide a letter detailing the trainee's progress and accomplishments to the training office every six month.

For the purpose of the preparation of reports to NIDRR, trainees will be requested to provide additional progress information (usually as simple as forwarding an updated CV) from time to time for a period of up to 10 years after the end of their traineeship. Thus, former trainees as asked to keep the training grant office informed of their contact information.

For further information about any of these guidelines and requirements, please contact Mary Goldberg, Education & Outreach Coordinator at mrh35@pitt.edu or 412-954-5287.