Training the Next Translational Researchers: The Master of Science in Clinical and Translational Research at the University of Connecticut

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The National Institutes of Health (NIH) envisions Clinical and Translational Science Award (CTSA) recipients using “innovative advanced degree programs” to “foster a new discipline of Clinical and Translational Science,” according to the executive summary of the CTSA Request for Applications (RFA). Five years ago, the University of Connecticut took the NIH’s call for novel graduate programs as an invitation to consider what enhancements to its existing curricula were needed to provide training for future translational researchers. Now, several years after the project was conceived, the University of Connecticut’s program for a Master of Science in Clinical and Translational Research (MSCTR) has achieved a success all its own.

The program’s codirectors, Anne Kenny, MD, and Peter J. Snyder, PhD, have led the effort to develop a meaningful course of study for students who wish to embark on translational research. They have been supported by eager faculty mentor volunteers and a dedicated curriculum committee of 7 to 8 members from both the main university campus in Storrs and the health center campus in Farmington, and coming from several schools of the university. The rigorous program, designed to supplement the university’s existing MD, PhD, PharmD, DDS, and DMD programs rather than serve as a terminal degree, provides methodological and practical training in areas that traditional programs leave out.

At the heart of the program are 3 core courses, each consisting of one weekly 3-hour lecture, that are divided up so that students simultaneously study theory, which will inform their research, and a demanding regimen in biostatistics. The first core course, broadly focused on human-subject issues, provides the foundation on which students can base their research philosophy. The next course concentrates on data management, and the third stresses writing papers and grants. Throughout the core curriculum, students learn about such topics as ethical considerations in biomedical study, Food and Drug Administration and NIH processes and structures, and the phases of drug development, from initial experiments to clinical trials. In addition, students take 9 to 12 credit hours of research under the supervision of a faculty mentor and another 3 to 6 credit hours of electives.

In class, students actively participate in lectures, work on collaborative projects, and give presentations. They work with their chosen faculty mentor to design a course of study and submit formal written rationales for committee approval. Assignments in the core courses provide the seeds for longer-term projects that take the place of a formal master’s thesis: the first is an in-depth literature review of publishable quality, the second a full-blown empirical study or a serious grant application. In order to graduate from the program, a student must then pass an oral exam.

MSCTR candidates will find themselves in an entering class of 6 to 8 students. Dr. Snyder emphasizes that there are no plans to expand the class size, arguing that 8 students in a classroom is the upper limit before “the dynamic changes.”

While sharing a passion for translational research and the teaching of it, Drs. Kenny and Snyder come to the program from different paths. Dr. Snyder, who has worked in clinical practice and the pharmaceutical industry, is professor of clinical neuropsychology and cognitive neuroscience in the psychology department at the university’s graduate school with a joint appointment at the medical school. He earned a dual PhD in clinical neuropsychology and basic neuroscience, so, he says, he has been “straddling the fence dividing clinical and research work from the beginning.” Dr. Kenny, an associate professor at the medical school and practicing gerontologist at the university’s John Dempsey Hospital, performed some research during her premedical training and residency, but the pieces did not fall into place until the timely arrival of a mentor who offered the encouragement she needed to combine clinical work and research.

From these experiences, Drs. Kenny and Snyder have long been convinced that universities could do more to nurture students’ interest in combining basic research and clinical practice. Dr. Kenny points to disturbing trends in the numbers of graduates leaving medical academia: “There are some self-learners who have probably patched together what they needed in terms of training,” she says, but there are many who did not receive the necessary instruction and did not want to pursue a PhD to get it.

That the 2 codirectors came to collaborate on a program for students with translational interests was “a fortuitous accident,” says Dr. Snyder, the result of neither having the time available to assume full directorship. However, their work has been so successful that the curriculum committee has resolved that the program

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In the MSCTR program, students from diverse specialties can discover shared interests. They have even been known to develop collaborative projects independent of class assignments. Without the program, Dr. Snyder argues, the students might “never have met or known they were speaking the same language.”

A classroom that brings together people working in different fields will have challenges. The students may be passionate about the same subjects but have to overcome communication obstacles created by specialist vocabularies. Dr. Snyder speaks of students willing to spend hours on topics to help their classmates understand, even when the specific subject is irrelevant to their own practice.

The program, which will welcome its third entering class in the fall, is still young but has already produced its first contribution to that “next generation of clinical and translational researchers.” Having successfully passed her oral exam and seen her literature review accepted for publication in a respected journal, the program’s first graduate was officially awarded a MSCTR degree at the university’s commencement exercises this past May.

¹ Wiley-Blackwell, Malden, Massachusetts, USA
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