Clinical and Translational Science

Department Website: http://chess.uchicago.edu/CCTS

The Committee on Clinical and Translational Science (CCTS) is a freestanding academic unit housed within the Biological Sciences Division. Our mission is to enhance multidisciplinary training in clinical and translational science at the University of Chicago. We seek to offer high-quality curriculum and mentorship to a new generation of researchers who will synthesize social and biological science to significantly advance medical science and practice.

With joint input from the Center for Health and the Social Sciences (http://chess.bsd.uchicago.edu) (CHeSS) and the Institute for Translational Medicine (http://itm.uchicago.edu), the CCTS mobilizes faculty from across the University to enhance course offerings in clinical and translational science. While most courses offered in CCTS are designed for graduate-level trainees, postdoctoral fellows, and junior faculty, there are also specific courses designed for undergraduate students interested in health and social sciences. For more information contact Kelsey Bogue, Committee Administrator, at kbogue@bsd.uchicago.edu.

Current areas of concentration include:

- Comparative Effectiveness Research
- Translational Informatics
- Health Services Research
- Quality and Safety
- Clinical Research
- Community-Based Research
- Global Health
- Pharmacogenomics

Below is a list of undergraduate courses that have been offered in the past. Refer to the CCTS section of the CHeSS website at http://chess.uchicago.edu/CCTS for current course offerings and prerequisites for each course.
Examples of Previously Offered Undergraduate Courses

CCTS 21002. The Making of the “Good Physician” 100 Units.
This multi-disciplinary course draws insights from medicine, sociology, moral psychology, philosophy, ethics, and theology to explore contemporary answers to the age-old question: “How does one become a good physician?” Students will engage relevant literature from across these disciplines to address issues of the goals of medicine, medical professionalism, the doctor-patient relationship, vocation, and calling, the role of religion in medicine, and character development in medical education. The course will first introduce the widespread dissatisfaction and sense of malaise in the profession of medicine along with subsequent calls for a renewed pursuit of clinical excellence in today’s complex health care system. It will then survey the resurgence of a philosophical discipline (virtue ethics) that has begun to shape contemporary debate regarding what types of “excellences” are needed for a good medical practice dominated by medical science and technology. Students will examine empirical studies in three dominant research areas: First, students will examine recent research in the field of moral psychology that is shaping contemporary views regarding moral and professional formation and identity. Second, students will examine studies from the literature on vocation and work motivation, focusing particularly on the construct of calling and its application to the pursuit of clinical excellence in medicine. Finally, students will examine traditional religious accounts (from Judaism
Instructor(s): J. Yoon Terms Offered: Spring. Course not offered every year
Prerequisite(s): Completed SOSC sequence

CCTS 21003. Topics in Clinical Research. 100 Units.
This course provides an overview of clinical research subject matter from the history and ethics of clinical research to the types and practice of contemporary clinical research. How does clinical research differ from other research traditions? What is special about clinical research? What types of questions can be answered by clinical research (what questions not)? What types of ethical oversight over the responsible conduct of research have arisen over the years? We will learn how to read and critique clinical research, survey the major types of clinical research designs, and the differences between hypothesis generation and hypothesis testing. Finally, we provide an overview of the mechanics of developing and implementing clinical research, including grant writing, regulatory issues, and quality assurance. Along the way, we will be teaching core statistical concepts including prevalence, risk ratios, and sensitivity and validation techniques. The objectives are for students to obtain an understanding of how and why to perform clinical research and to do so in an ethical and responsible manner.
Instructor(s): Valerie Press Terms Offered: Spring
Prerequisite(s): Completed general education requirement in the social sciences
Equivalent Course(s): BIOS 29327
EXAMPLES OF PREVIOUSLY OFFERED CO-UNDERGRADUATE/GRADUATE COURSES

CCTS 31300. Infectious Disease Epidemiology; Networks and Modeling. 100 Units.
No description available.
Instructor(s): M. David, J. Schneider Terms Offered: Spring 2015
Prerequisite(s): PBHS 30700 or PBHS 30900 or introductory epidemiology or consent of instructor.
Equivalent Course(s): PBHS 31300, BIOS 25419, MEDC 31300

CCTS 40006. Pharmacogenomics: Discovery and Implementation. 100 Units.
Pharmacogenomics is aimed at advancing our knowledge of the genetic basis for variable drug response. Advances in genetic knowledge gained through sequencing have been applied to drug response, and identifying heritable genetic variants that predict response and toxicity is an area of great interest to researchers. The ultimate goal is to identify clinically significant variations to predict the right choice and dose of medications for individuals—"personalizing medicine." The study of pharmacogenomics is complicated by the fact that response and toxicity are multigenic traits and are often confounded by nongenetic factors (e.g., age, co-morbidities, drug-drug interactions, environment, diet). Using knowledge of an individual's DNA sequence as an integral determinant of drug therapy has not yet become standard clinical practice; however, several genetics-guided recommendations for physicians have been developed and are highlighted. The ethics and economics of pharmacogenomics are also discussed.
Instructor(s): R. S. Huang, B. Stranger Terms Offered: Spring
Prerequisite(s): BIOS 20186 and 20187 and consent of Instructor.
Equivalent Course(s): CABI 47510, BIOS 25310

CCTS 43100. Topics in Global Health. 100 Units.
This course is a continuation of Introduction to Global Health (CCTS 43000). It is designed to address specific medical issues of global significance including maternal and child health, communicable and non-communicable diseases, and emerging diseases; the course will also address the impact of population growth, migration, environmental decay, and humanitarian disasters on health. Finally, the course will discuss research and career opportunities within the field of global health.
Instructor(s): C. S. Olopade Terms Offered: Winter
Prerequisite(s): This course does not meet the requirements for the Biological Sciences major.
Equivalent Course(s): BIOS 29279