Clinical and Translational Science

Coordinator
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Undergraduate certificate: clinical and translational science

Translational science focuses on applying biomedical discoveries to health care. It requires team-based interdisciplinary approaches to move research-generated discoveries into clinical trials and to facilitate the adoption of best practices in clinical and community settings. Investigators in translational science understand principles involved in foundational research and how such research relates to epidemiology, behavioral medicine, and patient-oriented research.

Opportunities for training in translational science are available through graduate and professional study in medicine, public health, nursing, dentistry, pharmacy, and other allied health professions, including biostatistics, behavioral medicine, clinical pharmacology, and epidemiology.

The certificate program in clinical and translational science provides undergraduates with opportunities to connect their research activities to translational science and to begin training in the discipline.

The Certificate in Clinical and Translational Science is presented by the Institute for Clinical and Translational Science and Iowa Biosciences Academy; it is administered by University College.

Undergraduate Program of Study
• Certificate in Clinical and Translational Science

Certificate
The Certificate in Clinical and Translational Science requires 16 s.h. of credit. Students must complete all course work for the certificate within three years of entering the program.

Admission to the certificate program is selective. Applicants must fulfill the following requirements by the end of the semester in which they apply:

- have a cumulative g.p.a. of at least 3.00;
- have earned a minimum of 45 s.h. of college-level credit;
- have been engaged in mentored scientific research at the University of Iowa;
- have completed one of these: BIOL:1411 Foundations of Biology or BIOL:1141 Introductory Animal Biology; and
- have completed one of these: MATH:1380 Calculus and Matrix Algebra for Business or MATH:1460 Calculus for the Biological Sciences or MATH:1550 Engineering Mathematics I: Single Variable Calculus or MATH:1850 Calculus I.

Work for the certificate includes core courses and electives. Students must maintain a g.p.a. of at least 3.00 in the certificate’s core courses.

The Certificate in Clinical and Translational Science requires the following course work.

CORE COURSES
All of these (10 s.h.):
- EPID:4400 Epidemiology I: Principles 3 s.h.
- STAT:3510 Biostatistics (or an equivalent course) 3 s.h.
- TBM:3001 Introduction to Translational Research (must take EPID:4400 before or at the same time as this course) 2 s.h.
- TBM:3002 Practicum in Clinical and Translational Science (capstone course; must take TBM:3001 before this course) 2 s.h.

ELECTIVES
Students must earn a total of 6 s.h. in courses chosen from the following lists.

Creative Writing
CNW:3664 Writing About Science 3 s.h.

Life Sciences
- BIOC:3110 Biochemistry 3 s.h.
- BIOC:3120 Biochemistry and Molecular Biology I 3 s.h.
- BIOC:3130 Biochemistry and Molecular Biology II 3 s.h.
- BIOL:2254 Endocrinology 3 s.h.
- BIOL:2723 Cell Biology 3 s.h.
- BIOL:2753 Introduction to Neurobiology 3 s.h.
- BIOL:3233 Introduction to Developmental Biology 3 s.h.
- BIOL:3253 Neurobiology 4 s.h.
- BIOL:3713 Molecular Genetics 4 s.h.
- BIOL:4213 Bioinformatics 4 s.h.
- BIOL:4333 Genes and Development 3 s.h.
- BIOL:4753 Developmental Neurobiology 3 s.h.
- MICR:2157 General Microbiology 5 s.h.
- MICR:3147 Survey of Immunology 3 s.h.

Global Health
- GHS:3010 Identifying and Developing a Global Health Project (when subtitle is Research Design in Global Health) 2-3 s.h.
- GHS:3102 Medical Anthropology 3 s.h.
- GHS:3720 Global Health Seminar 3 s.h.
- GHS:4111 Geography of Health 3 s.h.
- GHS:4600 Global Health and Human Rights 2-3 s.h.

Health and Human Physiology
- ACB:3110 Principles of Human Anatomy 3 s.h.
- HHP:1100 Human Anatomy 3 s.h.
- HHP:1300 Fundamentals of Human Physiology 3 s.h.
- HHP:2130 Human Development Through the Life Span 3 s.h.
- HHP:2200 Physical Activity and Health 3 s.h.
- HHP:2310 Nutrition and Health 3 s.h.
Clinical and Translational Science

HHP:3020 Nutrition for Health, Fitness, and Sport 3 s.h.
HHP:3500 Human Physiology 3 s.h.
HHP:3850 Promoting Health Globally 3 s.h.
NURS:1030 Human Development and Behavior 3 s.h.

Psychological and Brain Sciences

PSY:2301 Introduction to Clinical Psychology 3 s.h.
PSY:2401 Introduction to Developmental Science 3 s.h.
PSY:2501 Introduction to Social Psychology 3 s.h.
PSY:2601 Introduction to Cognitive Psychology 3 s.h.
PSY:2701 Biological Psychology 4 s.h.
PSY:3010 Health Psychology 3 s.h.

Public Health

CBH:4105 Introduction to Health Promotion and Disease Prevention 3 s.h.
CBH:5215 Community Preventive Programs and Services 3 s.h.
HMP:4000 Introduction to the U.S. Health Care System 3 s.h.
MPH:2099 Fundamentals of Public Health 3 s.h.
OEH:3210 Health, Work, and the Environment 3 s.h.
OEH:4210 International Health 3 s.h.
OEH:4240 Global Environmental Health 3 s.h.

Application

Interested students should apply on the certificate program's student application system. Applications are accepted on a rolling basis and are reviewed by the Certificate in Clinical and Translational Science Steering Committee. Students will receive an email after an admissions decision has been made. Please consult the Certificate in Clinical and Translational Science website for more information. Applications should include the following:

- A description of the student's undergraduate research (maximum of 1000 words), including the approximate number of hours per week the student spends conducting the research and the name and e-mail address of the student's research mentor;
- A personal statement outlining the student's professional and career goals;
- A copy of the student's grade report from ISIS; and
- A letter of recommendation from the student's research mentor.