

Translational Biomedicine, M.S.

The goals of the M.S. program in translational biomedicine are to:

- promote interaction and collaboration among researchers across the spectrum of biomedicine;
- enrich translational vocabulary and an understanding of T1 research (laboratory), T2 research (application to evidence-based practice), T3 research (implementation and dissemination), and T4 research (population studies and policy development) among basic, clinical, and human studies scientists; and
- develop skills in ethical decision making, scientific leadership, team building, networking, and research program management.

Requirements

The Master of Science program in translational biomedicine requires a minimum of 30 s.h. of graduate credit. The plan of study for students in the two-year program is based on their chosen discipline.

The program is designed to teach members of scientific teams how to move biomedical discoveries into clinical applications and beyond. It is tailored for individuals who have completed training in one area of biomedicine and wish to apply their expertise to the T1-T4 research spectrum. The program admits individuals who hold medical or graduate degrees and are employed by the University of Iowa at the faculty ranks of associate professor, assistant professor, instructor, or as fellow physicians or postdoctoral scholars/fellows.

Course work requires authorship of an original manuscript of publishable quality for a peer-reviewed journal or authorship of a grant proposal for a National Institutes of Health (NIS) career award (e.g., K01, K08, K23, R01, R03, R21) or a Veterans Administration Career Award; R03 proposals completed for EPID:6110 Grant Writing for Clinical Investigators do not count toward this requirement. Original research manuscripts must be a minimum of 2,500 words. They must include a structured abstract; an introduction that frames the research question; description of methodology for study design, sampling, data collection strategies and sources, and description of data elements and data analysis; description of study results; and a discussion section that describes the relationship of current findings to prior relevant research, the clinical and policy implications of the findings, and methodological limitations.

The M.S. with a major in translational biomedicine requires the following course work.

| | | |
|----------|-------------------------------------------------------------------------|---|
| TBM:5000 | Translational Biomedical Research | 9 |
| TBM:5001 | Introduction to Translational Biomedicine | 3 |
| TBM:5002 | Critical Thinking and Communication: Study Design and Commercialization | 1 |

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|--------------------|-------------------------------------------------------------------------------------|-----------|
| TBM:5003 | Critical Thinking and Communication: Scientific Writing and Presentation Strategies | 1 |
| TBM:5004 | Critical Thinking and Communication: Career Development and the Funding Process | 1 |
| TBM:5005 | Critical Thinking and Communication: Leadership, Team Science, and Mentoring | 1 |
| BIOS:4120 | Introduction to Biostatistics | 3 |
| EPID:4400 | Epidemiology I: Principles | 3 |
| EPID:6950 | Clinical Research Ethics | 2 |
| Electives | | 6 |
| Total Hours | | 30 |

Admission

The Translational Biomedicine Program welcomes applicants who have diverse educational and scientific backgrounds and varied research interests. Applicants must have a strong interest and background in a health science profession and knowledge of basic sciences and medicine.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Translational biomedicine applicants must:

- have a doctoral-level degree in a biomedical discipline (e.g., M.D., D.O., D.D.S., D.N.P., Ph.D., Pharm.D., D.V.M., or equivalent);
- be employed by the University of Iowa as an associate professor, assistant professor, instructor, a fellow physician, or a postdoctoral scholar/fellow;
- be engaged in scientific research with a University of Iowa mentor who has funding from a peer-reviewed source (e.g. National Institutes of Health, National Science Foundation, another foundation, and so forth);
- hold a bachelor's degree from a regionally accredited American college or university or an equivalent degree from an international institution, as determined by the University of Iowa Office of Admissions;
- have a g.p.a. of at least 3.00 or the international equivalent, as determined by the University of Iowa Office of Admissions; and
- have a Graduate Record Exam (GRE) General Test combined verbal and quantitative score of 300 on the revised test (or 1050 on the old test) and an analytical writing score of 4.0 or above; applicants who already hold a graduate or professional degree may seek a waiver of the GRE requirement.

Applicants whose first language is not English must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL), or they must have a score of at least 7.0, with no subscore lower than 6.0, on the International English Language Testing System (IELTS).

Applicants must submit a curriculum vitae, a statement of research interest and career goals, and three letters of recommendation. One letter must be from the applicant's UI research mentor; the program recommends that the second be a letter of support from the applicant's department chair.

All prospective students, and their mentors, must guarantee that once they are accepted as students in the program, they will be able to devote essentially all of their time over a two-year period to training. For instance, a fellow in the Carver College of Medicine might spend no more than two months each year working on clinical assignments (e.g., two months of inpatient assignments or one month of inpatient assignments and one-half day per week in a clinic).

Academic Plans

Sample Plan of Study

Translational Biomedicine (M.S.)

| Course | Title | Hours |
|--------------------|-------------------------------------------------------------------------------------|-------|
| First Year | | |
| Fall | | |
| TBM:5000 | Translational Biomedical Research | 3 |
| TBM:5001 | Introduction to Translational Biomedicine | 3 |
| TBM:5002 | Critical Thinking and Communication: Study Design and Commercialization | 1 |
| | Hours | 7 |
| Spring | | |
| TBM:5000 | Translational Biomedical Research | 3 |
| TBM:5003 | Critical Thinking and Communication: Scientific Writing and Presentation Strategies | 1 |
| BIOS:4120 | Introduction to Biostatistics | 3 |
| EPID:6950 | Clinical Research Ethics | 2 |
| | Hours | 9 |
| Second Year | | |
| Fall | | |
| TBM:5004 | Critical Thinking and Communication: Career Development and the Funding Process | 1 |
| EPID:4400 | Epidemiology I: Principles | 3 |
| Elective | | 3 |
| | Hours | 7 |
| Spring | | |
| TBM:5000 | Translational Biomedical Research | 3 |
| TBM:5005 | Critical Thinking and Communication: Leadership, Team Science, and Mentoring | 1 |
| Elective | | 3 |
| | Hours | 7 |
| | Total Hours | 30 |