

# Undergraduate Research Experiences

## Director

- Tawny L .B. Tibbits

**Website:** <https://our.research.uiowa.edu/>

Undergraduate research experiences (URES) courses enhance research and creative scholarship experiences for undergraduate students. These courses are administered through the Office of Undergraduate Research (OUR), which seeks to provide a broad range of research and professional development opportunities for undergraduates and their mentors.

## URES Independent Study Courses

Undergraduate research experiences independent study courses provide opportunities for students to earn academic credit or transcript recognition for their research/creative scholarship involvement. These courses are intended to promote recognition of ongoing research participation. They are available to all undergraduates in any academic session other than the winter session.

Collegiate and department-based research courses also may be available. Students are encouraged to consult their mentors or academic advisors regarding which option is most suited to their circumstances.

## First-Year Seminars

First-Year Seminars (FYS) designated as research-focused are offered through undergraduate research experiences. Research-focused FYS introduce students to research in an instructor's field. These courses often involve visits to research sites, hands-on projects, and exposure to disciplinary-based research. These are typically 10-week courses that meet for 75 minutes per week. An optional poster session is held during the last week of the course for students to display what they have learned during the semester.

## Summer Research Programs

Many University of Iowa summer research programs enroll students for 0 s.h. in courses that provide transcript recognition of participation in the program. These are available to both current University of Iowa students and students who visit from other institutions to develop their research skills; see Summer Research Experiences for Undergraduates in the catalog for more information.

## Courses

### Undergraduate Research Experiences Courses

#### URES:1000 First-Year Seminar 1 s.h.

Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities); research focus allows students to actively discover new information with guidance from instructor, pursue research in small groups, learn the "how to" of a field, and share their findings; no prior research knowledge or experience required. Requirements: first- or second-semester standing.

#### URES:2200 Discover Research 1 s.h.

Introduction to research at the University of Iowa; exploration of life as a researcher through a mixture of lecture, faculty and student guest speakers, and virtual lab tours; process of finding and contacting potential research mentors, interviewing for research positions, and making the most out of a research experience; for first-year undergraduates.

#### URES:3001 Introduction to Translational Research 0-3 s.h.

Array of scientific studies translated into clinical solutions, creative ideas balanced with practical strategies for implementation at bedside, and expansive number of career opportunities becoming available in translational sciences; opportunity to learn how translational research is conceived and developed; interpreting student research in a translational paradigm; survey of translational biomedicine research program covering the scope of interdisciplinary teams and breadth of T1 to T4 research applications. Requirements: enrollment in clinical and translational science certificate program, and engagement in mentored research activity. Recommendations: successful completion of EPID:4400 highly recommended.

#### URES:3002 Practicum in Clinical and Translational Science 0-3 s.h.

How research experience translates into clinical practice; translational impact of independent research; summary of research accomplishments; outline of a translational paper that is mutually acceptable to student, preceptor, and faculty; submission of paper and completion of poster presentation describing research project and translational application of research. Prerequisites: URES:3001. Requirements: enrollment in clinical and translational science certificate program.

#### URES:3100 Undergraduate Research Ambassador 0-1 s.h.

Promotion of undergraduate research from all disciplines within campus community; hosting various on-campus events, leading workshops, and presenting at student organization meetings and in class; leadership and public speaking; regular meetings with the Office of Undergraduate Research staff.

#### URES:3991 Undergraduate Research and Creative Projects 0 s.h.

Independent research or pursuit of a creative project under mentorship of a faculty supervisor.

#### URES:3992 Undergraduate Research and Creative Projects 0 s.h.

Independent research or pursuit of a creative project under mentorship of a faculty supervisor.

**URES:3993 Undergraduate Research and Creative Projects 1-4 s.h.**

Independent research or pursuit of a creative project under mentorship of a faculty supervisor.

**URES:3994 Undergraduate Research and Creative Projects 1-4 s.h.**

Independent research or pursuit of a creative project under mentorship of a faculty supervisor.

**URES:3995 Independent Creative Research by Undergraduates Summer Internship 0 s.h.**

Recognition of undergraduates involved in scholarly efforts of UI faculty and research staff; work on specific research and/or creative projects under selected mentors; funded annually by the Office of Undergraduate Research (OUR) through a competitive application process. Requirements: selection as ICRU fellow.

**URES:3996 Research Fellow 0 s.h.**

Involvement in scholarly efforts of UI faculty and research staff; students work on specific research and/or creative projects under selected mentors; funded by various strategic initiatives through competitive application processes. Requirements: selection by department or faculty mentor.

**URES:4000 Independent Creative Research by Undergraduates Fellowship 0-1 s.h.**

Recognition of undergraduates involved in scholarly efforts of UI faculty and research staff; work on specific research and/or creative projects under selected mentors; funded annually by the Office of Undergraduate Research (OUR) through a competitive application process. Requirements: selection as OUR fellow.

**URES:4100 Undergraduate Research Ambassador Leadership 1 s.h.**

Work with professional staff in the undergraduate research office to develop and provide outreach and events for undergraduate researchers on campus; hold recruitment events to engage K-12 students in discovery through research and creative efforts. Prerequisites: URES:3100. Requirements: be selected by the Office of the Undergraduate Research staff to serve in this role.

**URES:4110 Computational Bioengineering Summer Research Experience for Undergraduates 0 s.h.**

Immersive research experience focused on fundamental concepts of computational bioengineering and application of concepts to solve challenging biomedical problems; work on mentored research projects and showcase research at a university-wide presentation opportunity.

**URES:4120 Research Experience for Undergraduates: Computing for Health and Well-Being 0 s.h.**

Research experience in using computer science methods to study and solve current problems in health, well-being, and health care systems; work on mentored research projects and showcase research at a UI presentation opportunity.

**URES:4130 Research Experience for Undergraduates in Microbiology 0 s.h.****URES:4140 Research Experiences for Undergraduates in Evolutionary Biology 0 s.h.**

Intensive hands-on experience in a research lab; students create digital exhibits in collaboration with the UI Museum of Natural History and present their research at a university-wide poster presentation.

**URES:4150 Undergraduate Medical Scientist Training Program Research 0 s.h.****URES:4170 Research Experience for Undergraduates in Nanoscience and Nanotechnology 0 s.h.****URES:4180 Edge of Space Academy 0 s.h.**

Summer research experience centered around space-based instrumentation for observing Earth and space; students build small instrument payloads that are integrated onto drone and high-altitude aerial platforms to take measurements of the Earth below and the atmosphere and space environment above; hands-on experience for students who have an interest in Earth, atmospheric, solar, and space science. Requirements: application and acceptance to program.

**URES:4220 University of Iowa Premed Student Summer Research Internship 0 s.h.**

Immersive medical research experience with focus on gathering, analyzing, and interpreting health data; writing a manuscript for publication.

**URES:4240 Fostering Undergraduate Talent: Uniting Research and Education (FUTURE) in Biomedicine 0 s.h.**

Mentored research experience to create new discoveries in biomedicine; preparation to pursue careers in science and clinical practice; translation of current knowledge into new educational materials; discussions, conferences, workshops, training sessions, lectures; university-wide presentation opportunity and a FUTURE in biomedicine symposium.

**URES:4260 Cancer Summer Undergraduate Research 0 s.h.**

Holden Comprehensive Cancer Center faculty-mentored cancer biology research; cancer research education; lectures and seminars; oral poster presentation experience; career counseling; extended mentoring.

**URES:4270 Undergrad Research Experiences Radiation Biology 0 s.h.**

Faculty-mentored research focused on radiation therapy, redox biology, cancer biology, traditional and medical physics, engineering, medical imaging, and immunology.

**URES:4280 Data-Driven Weather Intelligence and Agricultural Community Resilience Summer Program 0 s.h.**

Advance knowledge in weather prediction, local weather intelligence, and resilience in agricultural communities; understand climate science and rural resilience; explore emerging technologies. Topics include weather intelligence, community resilience, sensor deployment, unmanned aerial vehicles (UAVs), and AI applications.

**URES:4290 Undergraduate Research Experience in Heavy Element Chemistry arr.**

Faculty-mentored intensive hands-on experience in a research lab focused on inorganic chemistry, radiochemistry, and quantum information science.

**URES:4500 Summer Policy Research Institute 1 s.h.**

Exposure and enhancement of fluency with policy research through mentored, team-based experience; students choose between two tracks depending on their experience level.