HEALTH
UNIVERSITY OF UTAH
Academic Year 2024-25

## Course Name:

### Research & Innovation: How to be an Excellent and Communicative Scientist

**Designed for RUUTE Medical Student Research Students, but open to other medical students' participation in research on campus
**Course Director:** Sarah Franklin, PhD
**Course Coordinator(s):** Kacey Madsen, M.Ed
**Sponsoring Department:** Rural and Underserved Utah Training Experience Program (RUUTE) & Regional Affair
**Department Code:** MDID
**Proposed Course Number:** 6000 level
**Type of Elective:** Research & Lecture

**Number of Credits:** 9 credit option

| Course Work | Hours | Credits |
|---|---|---|
| **Hands-On Learning & Research** | **320 hours** | **8** |
| **Class Sessions, Mentoring Discussions, Class Assignments, Research Poster Creation & Poster Presentation** | **40 hours** | **1** |
| **Total** | **360 hours** | **9 credits** |

**Students participating in less than 8 weeks of research and still participating in the course have the ability to receive credit hours based on the following research completed:

**Number of Credits:** 2-9 credit option

| Course Work | Hours | Credits |
|---|---|---|
| **Hands On-Learning & Research** | **40-320 hours** | **2-8** |
| **Class Sessions, Mentoring Discussions, Class Assignments, Research Poster Creation & Poster Presentation** | **40 Hours** | **1** |
| **Total** | **80-360 hours** | **2-9 credits** |

- As reference:
  - Clinical Courses: 40 Hours of Clinical Duty = 1 Credit
  - Seminar/Didactic: 40 Hours of Student Effort = 1 Credit
  - Research: 40 Hours of Research Time = 1 Credit

**Timing & Frequency**:
8 Weeks
During Intersession 1.4 & 1.5
Calendar Timeframe - June 23, 2025 – September 12, 2025

- 8 Weekly Class Session
- Medical Student Research Forum Presentation

**Prerequisites/Co-requisites:**
Successful completion of all prior MS1 courses (SCoPE, Essentials 1.1, 1.2, 1.3; Doctoring 1.1, 1.2, 1.3, Professional Identity Formation)

**Brief Statement of Rationale:**

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Research & Innovation: How to be an Excellent and Communicative Scientist is an elective course designed to support students participating in funded summer research programs, though it is also open to other medical or graduate students. This Research & Innovation: How to be an Excellent and Communicative Scientist elective provides an opportunity to explore the fundamentals of research and scientific communication, inspiring future physicians and clinician-scientists to discover how patient care, diagnosis, prevention, and treatment of diseases can be improved through biomedical research.

Class session topics will include the responsible and ethical conduct of research, the joys and challenges of medical research, becoming an effective mentee, the appropriate application of biostatistics, and designing models or summary images to communicate research findings. By participating in this course, students will be better equipped to identify, plan, develop, and evaluate community health interventions, particularly in rural and underserved areas.

Throughout the course, students will receive guidance and mentorship from course directors, coordinators, and Md-PhD Students, ensuring a robust learning experience that fosters foundational, experiential, and interdisciplinary growth in varied cultural, geographic, and socioeconomic settings. This experience will be highly valued in your development as healthcare professionals.

## Credit Hours: 2-9

Contact Information

| | | | |
|---|---|---|---|
| Sarah Franklin, PhD | Director | 801-376-9732 | Sarah.Franklin@hsc.utah.edu |
| Kacey Madsen, M.Ed | Manager | 801-455-1443 | Kacey.Madsen@hsc.utah.edu |
| Christopher Brenk | Coordinator | X | Christopher.Brenk@hsc.utah.edu |

Course Information

## Brief Description of Course

Research & Innovation: How to be an Excellent and Communicative Scientist is an elective course designed to support students participating in funded summer research programs, though it is also open to other medical or graduate students. This Research & Innovation: How to be an Excellent and Communicative Scientist elective provides an opportunity to explore the fundamentals of research and scientific communication, inspiring future physicians and clinician-scientists to discover how patient care, diagnosis, prevention, and treatment of diseases can be improved through biomedical research.

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Various assignments will be completed (described below) to draw deeper into the students' experience as a health professional in rural and/or underserved communities and to help them develop their community deliverable/intervention. Student individual research topics will come from their own interest, selection, and collaboration with a research mentor/PI on the University of Utah campus.

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Summary of Course Components:

1. Complete hands-on weekly learning & research
2. Attend weekly class lecture sessions with mentoring discussions and class assignments
3. Research poster creation & presentation at the Medical Student Research Forum

## Course Objectives

As a result of successfully completing the RUUTE Research Program, students will be able to:

1. To demonstrate knowledge in the responsible and ethical conduct of research.
2. To learn from faculty, peers, and near-peers about the joys and struggles of collaborating in team-based science.
3. To be able to write a structured abstract and a short research description that effectively communicate your research question, methods for addressing the question and results.
4. To be able to create a research poster addressing multiple areas of the student's research.
5. Participate in presenting their poster and research findings at the Medical Student Research Forum.

Course Format & Schedule

## Timeline

8 Weeks
During Intersession 1.4 & 1.5
June 23, 2025 – September 12, 2025

- 8 Weekly Class Sessions
- Medical Student Research Forum Presentation

| Weekly Work in Research Lab | Weekly Class Sessions | Weekly Course Assignments |
|---|---|---|
| Students works with their corresponding selected Mentors/PI's to work with their labs for 40 hours a week. | Weeks 1-8 will consist of the following topics:<br>• 2 to 4 Responsible Conduct of Research Sessions<br>• Concepts and Application of Biostatistics<br>• Designing Effective Modal Figures<br>• Faculty/Provider Research Speaker Series Presentations<br>• Research Development & Poster Creations<br>• Additional Research Topic Presentations | Weeks 1-8 will consist of the following assignments:<br>• 8 Weekly Research Reflections Discussions with a response to fellow classmate<br>• Op-Ed Research Proposal<br>• Abstract Submission<br>• Digital Poster Submission<br>• Presenting Research Poster at Medical Student Research Forum<br>• End of Program/Class Feedback Survey<br>• Time Log Signed by Research Lab Member Assuring 40 hours of Work<br>• Attendance 8 Weekly Class Sessions |

Educational and Instructional Modalities

| Modality | Percentage |
|---|---|
| Hands-On Learning & Research | 50% |
| Class Sessions, Mentoring Discussions, Class Assignments, Research Poster Creation & Poster Presentation | 40% |
| Attendance | 10% |

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## Role of the Student in this Course

The Canvas site will outline curricular work and assignments. Each student is responsible for reading and adhering to the course requirements posted on Canvas. Each student is also responsible for submitting work on **time**.

The following describes the expectations for student performance in Research. Students who do not meet these criteria in one or more categories are subject to failing the course and not receiving credit.

**Demonstration of Professionalism & Personal Effort – Student will:**

- Complete and submit all assignments on time.
- Conduct yourself in a manner that reflects positively on the University of Utah
- Provide timely email and/or phone responses to course directors, course coordinators,
- Demonstrate receptiveness to feedback.
- Work independently.
- Faithfully report activities. Will not misrepresent work by reporting activities that were not completed.
- Abstain from engaging in any type of research or formal data collection unless the work is pre-approved by the RUUTE Research team.
- Follow all professional guidelines and expectations outlined in the University of Utah student handbook.

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**Hands-On Learning & Research – Student will:**

- Complete the required minimum of 40 hours contributing to a faculty mentors research project.
- Log weekly hours and submitting verification to canvas course.
- Complete reflections on the role of research in advanced medical practice, and how they envision this contribution will affects the future.

**Class Sessions, Mentoring Discussions, Class Assignments, Research Poster Creation, & Poster Presentation – Students will:**

- Attend weekly class sessions on time & will full active listening and participation.
- Participate in weekly mentoring discussions with assigned mentoring groups during weekly class sessions.
- Complete class assignments of research reflections and additional readings and requirements.
- Using prior knowledge and information taught in weekly lectures create a research poster given under the guidelines of the Medical Student Forum.
- Register for and present your poster at the Medical Student Research Forum.

## Required Textbooks/Readings

None – All required materials will be provided in the Canvas Course

### Assessment & Grading

| Course Assessments | Weight | Must Pass/ Must Complete | Due Date |
|---|---|---|---|
| 8 Weekly Research Reflections Discussions with a response to fellow classmate | | Must Complete | Thursday during regular class time |

| | | | |
|---|---|---|---|
| Op-Ed Research Proposal | | Must Pass | Sunday night at the end of week 6 at 11:59 PM MST |
| Abstract Submission | | Must Pass | Sunday night at end of week 7 at 11:59 PM MST |
| Digital Poster Submission | | Must Pass | Sunday night at end of week 8 at 11:59 PM MST |
| Presenting Research Poster at Medical Student | | Must Pass | Fall following the 1.4 & 1.5 Intersession |
| End of Program/Class Feedback Survey | | Must Pass | Sunday night at end of week 8 at 11:59 PM MST |
| Time Log Signed by Research Lab Member Assuring 40 hours of work | | Must Pass | Sunday night at end of week 8 at 11:59 PM MST |
| Attendance 8 Weekly Class Sessions | | Must Pass | Thursday during regular class time |

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## Grading System

Students will receive a final letter grade of PASS (P) or FAIL (F) for this course:

PASS: A student who successfully completes ALL Must Pass and Must Complete elements for the course will be assigned a grade of PASS. Students are expected to participate and complete all the elective discussions, lectures, and assignments.

FAIL: A student who fails to achieve a Pass for each Must Pass element or who fails to participate in all Must Complete elements for the course will be assigned a grade of FAIL.

Pass/Fail Rubric

A passing assignment does all of the following:

- Addresses the objectives of the assignment
- Demonstrates knowledge of the subject matter relevant to the assignment
- Reflects accurate understanding of concepts, terminology, and key takeaways
- Develops arguments and/or presents information in a coherent, focused manner
- Includes insightful analysis and reflection
- Integrates appropriate evidence, including examples and experiences, to support assertions and support arguments
- Appropriately cites sources of information where appropriate
- Utilizes clear, accurate spelling and grammar
- Is completed on or by the designated due date

A failing assignment does some or all of the following:

- Fails to address the objectives of the assignment
- Demonstrates weak knowledge of the subject matter relevant to the assignment
- Fails to demonstrate understanding of concepts, terminology, and key takeaways
- Shows incoherent, fragmented development of arguments and/or presentation of information
- Includes little analysis and reflection, relying mainly on summary
- Fails to integrate appropriate evidence, including examples and experiences, to support assertions and support arguments
- Fails to cite sources appropriately where appropriate

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- Does not utilize clear, accurate spelling and grammar
- Is not completed on or by the designated due date

**Student Feedback**
Providing feedback is an important aspect of your professionalism expectation, and helps with our curriculum quality improvement process. Your elective course director or coordinator will inform of you of any course feedback surveys. Surveys must be completed by the due date to demonstrate reliability for the professionalism competency.

**Application**
Due to funding and preceptor availability, this elective opportunity will be an application-based course.

All University of Utah Medical Student have the opportunity to apply to the RUUTE Medical Student Research Program by completing our online application which includes personal essays and additional prompted questions regarding their research project selection and PI/Mentor. All medical students who are interested in participating in research and who are not selected to participate in the RUUTE Medical Student Research program have the in option to still enroll in MD 6001 Research & Innovation: How to be an Excellent and Communicative Scientist. Note that priority will be given to matriculates from Utah, Wyoming, Montana or Idaho or students with strong rural interest or research with strong ties to rural and underserved research

**Standard Policies**
Please refer to the Student Handbook (on the Student Affair's website) for these policies:

**Accommodations**
**Addressing Sexual Misconduct**
**Dress Code**
**Examination and Grading Policies**
**Grade or Score Appeal**
**Professionalism, Roles & Responsibilities**
**Mistreatment**
**Infectious, Environmental and Bloodborne Pathogen Exposures Policy**

**Alternate Name and/or Personal Pronoun**
Class rosters are provided to the instructor with the student's legal name as well as 'Preferred' first name (if previously entered by you in the Student Profile section of your CIS account). While CIS refers to this as merely a preference, we will honor you by referring to you with the name and pronoun that feels best for you in class, on papers, exams, group projects, etc. Please advise us of any name or pronoun changes (and please update CIS) so we can help create a learning environment in which you, your name, and your pronoun will be respected.

**Center for Disability & Access**
The School of Medicine seeks to provide equal access to its programs, services and activities for all medical students. The Center for Disability and Access (CDA) provides accommodations and support for the educational development of medical students with disabilities. Medical students with a documented disability, and students seeking to establish the existence of a disability, that would like to request accommodations are required to meet with the CDA to establish accommodations. The CDA will work closely with eligible students and the Academic Success Program to make arrangements for approved

accommodations. The School of Medicine and CDA maintain a collegial, cooperative, and collaborative relationship to ensure compliance with federal and state regulations for students with disabilities.

Steven Baumann EdD, School of Medicine Senior Director of Academic Success Program, serves as the liaison between the School of Medicine and the CDA.

Contact Information:
Dr. Steven Baumann, Senior Director of Academic Success Program
steven.baumann@hsc.utah.edu

**Safety Statement**
The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.