



### *Twin Cities Campus*

## Biophysical Sciences and Medical Physics Ph.D.

Radiology

### Graduate School

Link to a [list of faculty](#) for this program.

#### **Contact Information:**

University of Minnesota School of Medicine, Department of Radiology, Box 292 UMHC, 420 Delaware Street S.E., Minneapolis, MN 55455 (612-626-0131; fax: 612-626-1951)

Email: [riten001@tc.umn.edu](mailto:riten001@tc.umn.edu)

Website: <http://www.med.umn.edu/radiology/research/physics/home.html>

- Program Type: Doctorate
- Requirements for this program are current for Fall 2019
- Length of program in credits: 36
- This program does not require summer semesters for timely completion.
- Degree: Doctor of Philosophy

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

This interdisciplinary program includes faculty members who have primary appointments in fields such as radiobiology, physics, engineering, computer science, physiology, dentistry, genetics, and biochemistry. Students concentrate in research areas such as molecular biophysics, medical imaging, magnetic resonance imaging and spectroscopy, radiobiology, radiation therapy physics, and mathematical biophysics and computation. A limited number of students prepare for employment as hospital-based medical physicists through a program that includes opportunities for coursework, laboratory work, and directed study to provide experience in areas such as purchase specification, acceptance testing, quality assurance, and radiation safety.

### Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

### Prerequisites for Admission

Other requirements to be completed before admission:

All students should have some familiarity with physical chemistry, intermediate physics, intermediate mathematics, biostatistics, computer programming, biology, physiology, and biochemistry. This may be demonstrated by coursework completed at the undergraduate level or as part of the graduate program; by reading or practical experience; or by informal competency examinations.

#### **Special Application Requirements:**

Three letters of recommendation and scores from the General Test of the GRE are required. Applicants are considered for admission in both semesters.

Applicants must submit their test score(s) from the following:

- GRE

Key to [test abbreviations](#)(GRE).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

### Program Requirements

12 credits are required outside the major.

24 thesis credits are required.

This program may not be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

Ph.D. students take preliminary written exams at the end of the first year of study or as soon as possible after completing the core



UNIVERSITY OF MINNESOTA

Driven to Discover<sup>SM</sup>

course sequence in topics in physics for medicine and biology. An oral preliminary exam focuses on the plan for thesis research and the student's grasp of related information and is taken by the fall of the third year of full-time registration or its equivalent. At least 12 credits are required in a minor or supporting program. Additionally, 24 thesis credits are required.