

DEPARTMENT OF PHYSICS



Stimulating instruction and research are hallmarks of the Department of Physics at Montana State University, which has been educating creative and productive scientists since 1964. The MSU physics program offers Master of Science and Doctor of Philosophy degrees. The physics faculty, with over 30 members, is committed to maintaining close contact with its more than 60 graduate students and postdoctoral scientists.

DEGREES OFFERED

M.S. IN PHYSICS

PH.D. IN PHYSICS

The MSU physics program offers Master of Science and Doctor of Philosophy degrees. The physics faculty, with over 30 members, is committed to maintaining close contact with its more than 60 graduate students and postdoctoral scientists. As you read our literature, explore our web site and talk to our students, you will discover a faculty recognized worldwide for its research and teaching.

Our research facilities include a new building, the Engineering and Physical Science (EPS) Building, housing state-of-the-art laboratories and equipment. External collaborations bring national

and international experts to the department and open opportunities for research to be conducted at other world-class laboratories around the globe. On-campus interdisciplinary research programs include the departments of Chemistry and Biochemistry, Electrical and Computer Engineering, the Center for Biofilm Engineering and others. Research collaborations with local industries are also actively pursued. Collectively, our research groups foster interactions among the faculty, undergraduate and graduate students, postdocs, visiting scientists and other departments.

Our graduates have an excellent record of finding employment in academia and industry, including high tech companies in the Bozeman area.

DEPARTMENT OF PHYSICS
MONTANA STATE UNIVERSITY

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MONTANA STATE UNIVERSITY
DIVISION OF GRADUATE EDUCATION





RESEARCH OPPORTUNITIES

- Astrophysics
- Biophysics
- Condensed matter
- Gravitational physics
- Lasers, optics, spectroscopy
- Physics education research
- Solar physics
- Space science

M.S. PROGRAM REQUIREMENTS

The Department of Physics grants the Master of Science degree under two options: Plan-A (thesis required) and Plan-B (without thesis).

Plan-A Requirements

1. Coursework: A minimum of 20 credits of acceptable course work is required, which shall include the following:
 - Teaching Seminar
 - Research Introduction Seminar
 - Advanced Classical Mechanics
 - Quantum Mechanics I
 - Electromagnetic Theory I
 - Mathematical Physics
 - Electives
2. Thesis: An acceptable thesis and at least 10 credits of Physics 590 are required.
3. Examinations: A written comprehensive examination is required. A final oral examination is also required, covering the thesis and related areas.



Plan-B Requirements

1. Coursework: A minimum of 30 credits of acceptable course work is required, which shall be distributed as follows:
 - Teaching Seminar
 - Research Introduction Seminar
 - Advanced Classical Mechanics
 - Quantum Mechanics I & II
 - Electromagnetic Theory I & II
 - Mathematical Physics
 - Electives
2. Thesis Requirements: None
3. Examinations: A written comprehensive examination is required.

PH.D. PROGRAM REQUIREMENTS

1. Coursework: A minimum of 40 credits of acceptable course work is required, which shall include the following:
 - Teaching Seminar
 - Research Introduction Seminar
 - Advanced Classical Mechanics
 - Quantum Mechanics I & II
 - Electromagnetic Theory I & II
 - Statistical Mechanics
 - Mathematical Physics
 - Electives - 14 credits
2. Thesis: An acceptable thesis is required. A minimum of 20 credits of Physics 690 is required in addition to the courses listed above.
3. Examinations: A written and oral comprehensive examination is required. A final oral examination is also required, covering the thesis and related areas.

FACULTY

DEPARTMENT HEAD
Richard Smith

PROFESSORS

W. Randall Babbitt - Laser and solid-state physics
 John Carlsten - Laser physics
 Rufus Cone - Laser and solid-state physics
 Greg Francis - Physics education
 Yves Idzerda - Magnetic nanostructures, spin electronics
 Bennett Link - Theoretical astrophysics
 Dana Longcope - Solar physics
 John Neumeier - Condensed matter, oxides
 Aleksander Rebane - Laser physics
 V. Hugo Schmidt (emeritus) - Solid-state physics
 Richard Smith - Surface physics
 Sachiko Tsuruta - Theoretical astrophysics

ASSOCIATE PROFESSORS

Jeffrey Adams - Astronomy, physics education
 Neil Cornish - General relativity, gravitational waves
 Charles Kankelborg - Solar physics, experimental space physics
 Galina Malovichko - Defects in optical materials

ASSISTANT PROFESSORS

Jiong Qiu - Solar physics
 Anton Vorontsov - Condensed matter theory

RESEARCH FACULTY/ADJUNCT FACULTY

Loren Acton - Solar physics
 Recep Avci - Surface and biophysics
 Richard Canfield - Solar physics
 Alan Craig - Laser science and technology
 Mikhail Drobijev - Laser physics
 Ron Hellings - General relativity, gravitational waves
 David Klumpar - Space science
 Bob Leamon - Solar physics
 Piet Martens - Solar physics
 David McKenzie - Solar physics
 Carla Riedel - Experimental nuclear physics
 Shannon Willoughby - Physics education

