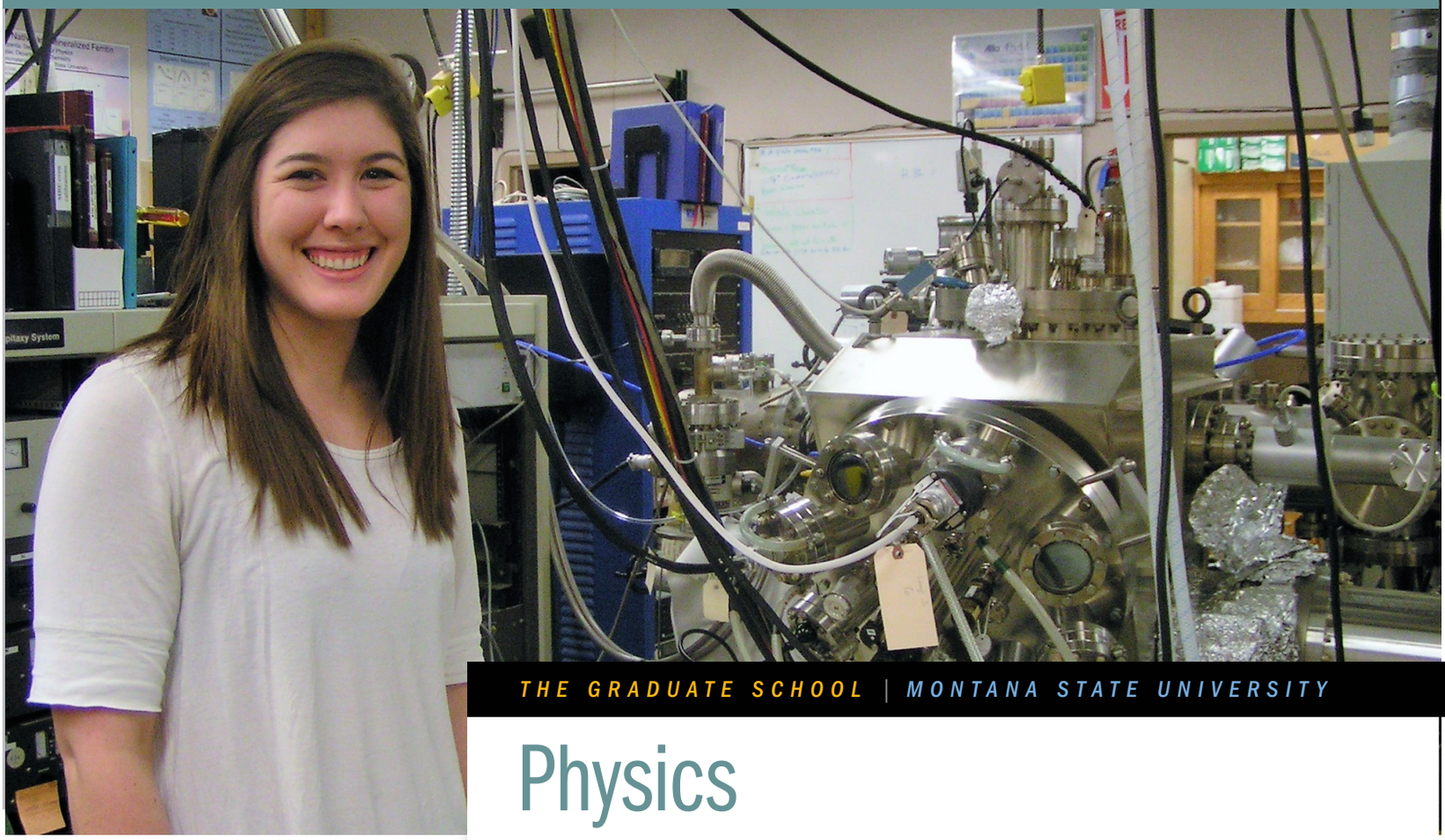

THE GRADUATE SCHOOL | MONTANA STATE UNIVERSITY

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. 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. Located in Barnard Hall, the department houses 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.

RESEARCH OPPORTUNITIES

- Astrophysics
- **Atomic, molecular, and optical physics**
- Condensed matter **physics**
- Gravitational physics
- **Observational astrophysics**
- Physics education research
- Solar physics
- **Space science**

continued

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264 **Barnard Hall**
P.O. Box 173840
Bozeman, MT 59717-3840
Phone: 406-994-3614
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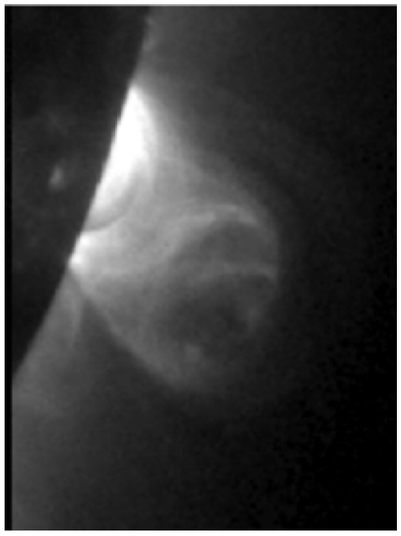
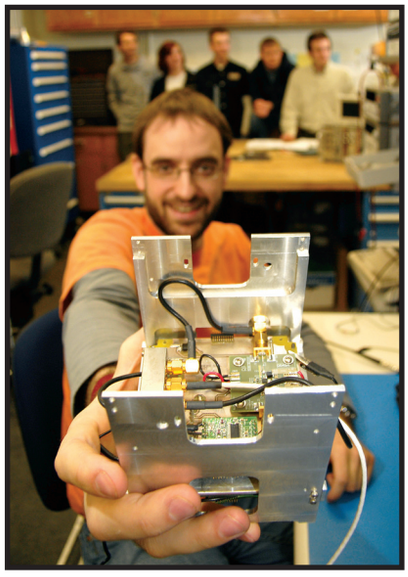
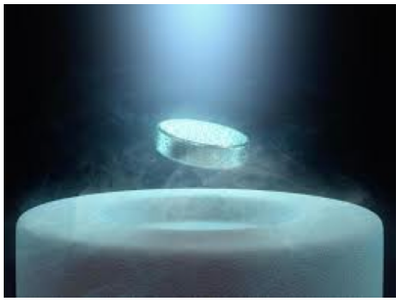
Email: **jarrett@montana.edu**
Web: www.physics.montana.edu

MONTANA STATE UNIVERSITY | The GRADUATE SCHOOL







Physics, continued

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
Yves Idzerda

Professors
W. Randall Babbitt - *Laser and solid-state physics*
Rufus Cone - *Laser and solid-state physics*
Neil Cornish - *General relativity, gravitational waves*
Greg Francis - *Physics education*
Yves Idzerda - *Magnetic nanostructures, spin electronics*
Charles Kankelborg - *Solar physics experimental space physics*
Bennett Link - *Theoretical astrophysics*
Dana Longcope - *Solar physics*
John Neumeier - *Condensed matter, oxides*
Aleksander Rebane - *Laser physics*
V. Hugo Schmidt (emeritus) - *Solid-state physics*

Associate Professors
Galina Malovichko - *Defects in optical materials*
Jiong Qiu - *Solar physics*
Anton Vorontsov - *Condensed matter theory*
Nico Yunes - *cosmology, relativity, and gravitation*

Assistant Professors
John Sample - *Space science*
Shannon Willoughby - *Physics education*

Research Faculty/Adjunct Faculty
Loren Acton - *Solar physics*
Recep Avci - *Surface and biophysics*
Richard Canfield - *Solar physics*
Nick Childs – *Cond. Matter physics*Angela
Des Jardins – *Space science*
David Klumpar - *Space science*
Paul Rugheimer - *Solid state physics*
Carla Riedel - *Experimental nuclear physics*