General University Information
President: Marc Johnson
Dean of Graduate School: David Zeh
University website: http://www.unr.edu/
School Type: Public
Setting: Urban
Total Faculty: 2,128
Total Graduate Faculty: 1,049
Total number of Students: 21,046
Total number of Graduate Students: 3,233

Department Information
Department Chair: Prof. Paul Neill, Chair
Department Contact: Jonathan Weinstein, Director of Graduate Studies
Total full-time faculty: 26
Total number of full-time equivalent positions: 16
Full-Time Graduate Students: 40
Female Full-Time Graduate Students: 10
First-Year Graduate Students: 8
Female First-Year Students: 1
Total Post Doctorates: 3

Department Address
University of Nevada
MS 0220
Reno, NV 89557-0220
Phone: (775) 784-6792
Fax: (775) 784-1398
E-mail: physdept@unr.edu
Website: http://www.unr.edu/physics

ADMISSIONS

Address admission inquiries to: Director of Graduate Studies,
Department of Physics, University of Nevada, Reno, NV 89557-0220
Phone: (775) 784-6821
E-mail: jdweinstein@unr.edu
Admissions website: http://www.unr.edu/grad/

Application deadlines
Fall admission:
U.S. students: February 1
Int’l. students: February 1
Spring admission:
U.S. students: November 1
Int’l. students: October 1

Application fee
U.S. students: $60
Int’l. students: $95

Admissions information
For Fall of 2018:
Number of applicants: 30
Number admitted: 14
Number enrolled: 8

Admission requirements
Bachelor’s degree requirements: A Bachelor’s degree or Master’s degree in physics is required.
Minimum undergraduate GPA: 3.0

GRE requirements
The GRE is required.
No minimum score set.

GRE Physics requirements
The GRE Physics is recommended.
No minimum score set.

TOEFL requirements
The TOEFL exam is required for students from non-English-speaking countries.
Minimum accepted TOEFL scores:
PBT score: 550
iBT score: 79
A minimum score of 24 on the speak portion of the iBT is required to guarantee financial support as a teaching assistant.

Other admissions information
Additional requirements: Applicants with degrees in related majors are considered, but may be required to take undergraduate physics courses based on coursework completed and interview.
Undergraduate preparation assumed: Boas, Mathematical Methods in the Physical Sciences; Marion and Thornton, Classical Dynamics; Griffiths, Introduction to Electrodynamics; Griffiths, Introduction to Quantum Mechanics; Hecht, Optics; Kittel, Thermal Physics.

TUITION AND ASSISTANTSHIPS

Teaching Assistants, Research Assistants, and Fellowships
Number of first-year Teaching Assistants: 8
Average stipend per academic year
Teaching Assistant: $19,000
Research Assistant: $22,800
Assistantships are provided for all first-year students. The current Teaching Assistant stipend is $1,900 per month ($1,650 per month for master’s students) for 10 months. No separate application for financial aid is required.

Tuition year 2019–20:
Tuition for in-state residents
Full-time students: $285.75 per credit
Tuition for out-of-state residents
Full-time students: $285.75 per credit
Graduate assistantships include a partial tuition fee waiver.
Deferred tuition plan: No
Health insurance: Yes, $0 (all fees paid by department).
Academic term: Semester

FINANCIAL AID

Loans
Loans are available for U.S. students.
Loans are not available for international students.
GAPSFAS application required: No
FAFSA application required: No


**Nevada**

For further information
Address financial aid inquiries to: Director of Graduate Studies, Department of Physics, University of Nevada, Reno, NV 89557-0220.
Phone: (775) 784-6821
E-mail: jdweinstein@unr.edu

**HOUSING**

Availability of on-campus housing

| Single students: Yes | Married students: Yes |

For further information
Address housing inquiries to: Residential Life, Housing and Food Services, University of Nevada, MS 0060, Reno, NV 89557-0060.
Phone: (775) 784-1113
E-mail: housing@unr.edu
Housing aid website: http://www.unr.edu/housing

**Table A—Faculty, Enrollments, and Degrees Granted**

<table>
<thead>
<tr>
<th>Research Specialty</th>
<th>2018-19 Faculty</th>
<th>Enroll.</th>
<th>Number of Degrees Granted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Master’s</td>
<td>Doctorate</td>
</tr>
<tr>
<td>Astrophysics</td>
<td>1</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Atomic, Molecular, &amp; Optical Physics</td>
<td>5</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Climate/Atmospheric Science</td>
<td>3</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Plasma and Fusion</td>
<td>9</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>19</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Full-time Grad. Stud.</strong></td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>First-year Grad. Stud.</strong></td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

**GRADUATE DEGREE REQUIREMENTS**

Master’s: Plan A requires 30 graduate credits including six thesis credits. Plan B requires 32 graduate course credits. Minimum “B” average is required. There is no language requirement. A final oral examination on thesis work is required under Plan A; a final written and oral examination on coursework is required under Plan B. Twenty-four credits under Plan A and 26 credits under Plan B must be earned in residence.

Doctorate: Forty-eight course credits and 24 dissertation credits are required. Minimum “B” average is required. Written and oral comprehensive examinations and a final oral defense of dissertation are required. A minimum of six semesters beyond the bachelor’s degree in residence are required, including at least two in succession.

Other Degrees: Master’s and Ph.D. programs in atmospheric sciences are offered in association with the Desert Research Institute, in courses and research topics in atmospheric physics. A Ph.D. program in chemical physics is offered in association with the Chemistry Department.

Thesis: Thesis may be written in absentia.

**SPECIAL EQUIPMENT, FACILITIES, OR PROGRAMS**

2-TW Z-pinch pulsed-power device for plasma/X-ray physics and two 100 TW class lasers at the Nevada Terawatt Facility. Cryogenic atomic physics laboratory, and ion atomic physics laboratory.

Well-equipped atmospheric physics laboratories on campus and at the Desert Research Institute.

Multiple computing clusters optimized for atomic physics and plasma physics/HED calculations.

**Table B—Separately Budgeted Research Expenditures by Source of Support**

<table>
<thead>
<tr>
<th>Source of Support</th>
<th>Departmental Research</th>
<th>Physics-related Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal government</td>
<td>$4,224,550</td>
<td></td>
</tr>
<tr>
<td>State/local government</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-profit organizations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business and industry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$4,224,550</td>
<td></td>
</tr>
</tbody>
</table>

**FACULTY**

Professor


Bauer, Bruno, Ph.D., University of California, Los Angeles, 1992. *Plasma and Fusion*. Experimental research involving high-power lasers, Z-pinches linear and nonlinear plasma waves, and instabilities.

Derevianko, Andrei, Ph.D., Auburn University, 1996. *Atomic, Molecular, & Optical Physics, Theoretical Physics*. Theoretical and molecular physics; many-body methods; tests of fundamental symmetries; cold atoms; atomic clocks; dark matter searches.

Mancini, Roberto C., Ph.D., University of Buenos Aires, 1983. *Plasma and Fusion, Theoretical Physics*. Atomic and radiation physics of high-energy-density plasmas; stark-broadened line shapes; radiation transport; X-ray spectroscopy of plasmas; multi-objective spectroscopic data analysis.

Neill, Paul A., Ph.D., Queen’s University, Belfast, 1984. Alignment and orientation studies in electron atom collisions; ionization and charge transfer in ion-atom collisions.

Associate Professor

Sawada, Hiroshi, Ph.D., University of Rochester, 2008. *Plasma and Fusion*. High Energy Density Plasma (HEDP) physics, and short pulse laser-solid interaction and fast electron transport relevant to laser fusion schemes such as Inertial Confinement Fusion (ICF) and Fast Ignition (FI).

Weinstein, Jonathan, Ph.D., Harvard University, 2002. *Atomic, Molecular, & Optical Physics*. Experimental research involving cryogenically cooled atoms and molecules.

Assistant Professor


Research Professor


Research Associate Professor

Research Assistant Professor

Lecturer
Bach, Bernhard, Ph.D., College of William and Mary, 1995. Design and fabrication of optical systems and physics education research.

Bennum, David, Ph.D., University of Nevada, Reno, 1973. Physics and other Science Education. Observational investigation of superplanets and applications of astronomy research to education.


DEPARTMENTAL RESEARCH SPECIALTIES AND STAFF

Theoretical
Atomic, Molecular, & Optical Physics. Precision calculations of atomic structure for tests of the Standard Model; research to improve the accuracy of atomic clocks; calculations and models of atomic interactions and spectroscopy in dense plasma environments; quantum computing; physics of ultracold degenerate gases. Cold gases, collision physics, quantum coherence. Derevianko, Safronova, Tscherbul.

Plasma and Fusion. The fields of Plasma Physics and High Energy Density Science are some of the department's core strengths, with active research in experiment, theory, and modeling. Research groups are carrying out theoretical, computational, experimental and applied investigations into many physical systems under extremes of pressure, temperature, and density. Research areas include studies of the formation and time evolution of plasmas, and investigations of conditions ranging from the physics of the upper atmosphere to extreme pressures and temperatures found in astrophysical events. Mancini, Safronova.

Experimental
Astronomy. Multiwavelength space- and ground-based observations to study a wide variety of phenomena related to accreting black holes, over the full range of black hole masses and accretion rates (from quiescent to super-Eddington). Bennum, Plotkin, Rodríguez.

Atmospheric Physics. Gas particle conversion; laboratory studies of nucleation and growth of particulates; cloud condensation nuclei; aerosol removal by scavenging; trace elements in snow; atmospheric remote sensing. Arnott, Holmes.

Atomic, Molecular, & Optical Physics. Cold atomic and molecular collisions; laser cooling and trapping of atoms; quantum information science; photoionization and electron-impact ionization and fragmentation of atomic and molecular ions; collisional and photodetachment of negative ions; optomechanics and quantum precision sensors; hybrid quantum systems and quantum computing. Covington, Neill, Weinstein, Williams.

Plasma and Fusion. The Physics Department has a number of distinctive research facilities that enhance the research activities in plasma physics and high-energy density science, including a 2 TW Z-pinch accelerator, a 100 TW, 350 femtosecond laser, and a ninety-six node cluster computer. In addition to these rich on-campus resources, additional research is done through collaborations at national research facilities such as the Rochester’s Laboratory for Laser Energetics, Sandia National Laboratory, and Livermore National Laboratory. Bauer, Covington, Ivanov, Kantsyrev, Mancini, Sawada, White.

View additional information about this department at www.gradschoolshopper.com. Check out the “Why Choose Us?” section, find out more about the department's culture and get links to social media networks.