General University Information
President: Nathan O. Hatch
Dean of Graduate School: Bradley T. Jones, Dean
University website: http://www.wfu.edu/
Setting: Suburban
Total Faculty: 1,700
Total Graduate Faculty: 550
Total number of Students: 8,116
Total number of Graduate Students: 3,014

ADMISSIONS
Admission Contact Information
Address admission inquiries to: Dean of Graduate School, Wake Forest University, 1834 Wake Forest Road Winston-Salem, NC 27109
Phone: (336) 758-5301
E-mail: gradschl@wfu.edu
Admissions website: http://graduate.wfu.edu/admissions/

Application deadlines
Fall admission:
U.S. students: January 15
Int’l. students: January 15
Spring admission:
U.S. students: November 1
Int’l. students: November 1

Application fee
U.S. students: $80
Int’l. students: $80
Typically 10-15 students are admitted, of which about 5-8 enroll.

Admissions information
For Fall of 2018:
Number of applicants: 40
Number admitted: 15
Number enrolled: 10

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

GRE requirements
The GRE is required.
Quantitative score: 160
Verbal score: 150
Analytical score: 3.5
Mean GRE score range (25th–75th percentile): 1200-1370
These minimum values are only guides. Meeting them does not assure admission, not meeting them does not prevent admission. International students have sometimes lower verbal and analytical writing scores.

Subjective GRE requirements
The Subjective GRE is recommended.
Minimum accepted Advanced GRE score: 640
Mean Advanced GRE score range (25th–75th percentile): 660-870
These minimum values are just guides. Meeting them does not assure admission, not meeting them does not prevent admission.

TOEFL requirements
The TOEFL exam is required for students from non-English-speaking countries.
PBT score: 575
iBT score: 79

Other admissions information
Additional requirements: The verbal and analytical GRE scores quoted above are for domestic students. Occasionally, international students with lower verbal and analytical GRE scores may be admitted.
A minimum quantitative GRE score of 700 is required for domestic and international students. Quantitative GRE scores are frequently well above 700.
Undergraduate preparation assumed: Mechanics—Symon, Mechanics; Electricity and Magnetism—Griffiths, Introduction to Electrodynamics; Quantum Mechanics—Gasiorowicz, Quantum Mechanics; Thermodynamics—Kittel and Kroemer, Thermal Physics.

TUITION
Tuition year 2018–19:
Full-time students: $38,650 annual
Part-time students: $19,325 per semester
Usually, all admitted PhD students will receive a full tuition waiver and a stipend. Master’s students will typically receive an 80% tuition waiver.
Credit hours per semester to be considered full-time: 9
Deferred tuition plan: Yes
Health insurance: Yes, variable.

Other academic fees: Health insurance is available for purchase. Students under the age of 26 may be covered by parents’ insurance. Free satellite parking (plus shuttle) is available. Limited $300 near-campus parking and $800 on-campus parking is available.

Academic term: Semester
Number of first-year students who received full tuition waivers: 8
Number of first-year students who received partial tuition waivers: 2

Teaching Assistants, Research Assistants, and Fellowships
Number of first-year:
Teaching Assistants: 8
Fellowship students: 1
Average stipend per academic year
Teaching Assistant: $23,193
Research Assistant: $23,193
Fellowship student: $25,193
Research Assistantships and some Teaching Assistantships may receive a summer bonus for a total stipend up to $25,000.
Physics Excellence Fellows receive an extra stipend of $2,000 annually for five years.

FINANCIAL AID

Application deadlines:
Fall admission:
U.S. students: January 15
Int’l. students: January 15
Spring admission:
U.S. students: November 15
Int’l. students: November 15
Loans
Loans are available for U.S. students.
Loans are not available for international students.
GAPSFAS application required: No
FAFSA application required: No

For further information
Address financial aid inquiries to: Dean of the Graduate School, Wake Forest University, 1834 Wake Forest Road, Winston Salem, NC 27109.
Phone: (336) 758-5301
E-mail: gradschl@wfu.edu
Financial aid website: https://graduate.wfu.edu/cost-financial-aid-reynolda/

HOUSING

Availability of on-campus housing
Single students: No
Married students: No
Childcare Assistance: No

For further information
Address housing inquiries to: Residence Housing, P.O. Box 7749, Wake Forest Univ., Winston-Salem, NC 27109.
Phone: (336) 758-7777
E-mail: housing@wfu.edu
Housing aid website: http://rlh.wfu.edu/

Table A—Faculty, Enrollments, and Degrees Granted

<table>
<thead>
<tr>
<th>Research Specialty</th>
<th>Faculty</th>
<th>Master’s</th>
<th>Doctorate</th>
<th>Master’s</th>
<th>Doctorate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atomic, Molecular, &amp;</td>
<td>2</td>
<td>3</td>
<td>–(1)</td>
<td>1(3)</td>
<td></td>
</tr>
<tr>
<td>Optical Physics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biophysics</td>
<td>6</td>
<td>2</td>
<td>7</td>
<td>1(1)</td>
<td>2(9)</td>
</tr>
<tr>
<td>Condensed Matter Physics</td>
<td>5</td>
<td>1</td>
<td>8</td>
<td>–(1)</td>
<td>–(2)</td>
</tr>
<tr>
<td>Medical, Health Physics</td>
<td>3</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>–(4)</td>
</tr>
<tr>
<td>Nano Science and Technology</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1(1)</td>
<td>2(7)</td>
</tr>
<tr>
<td>Relativity &amp; Gravitation</td>
<td>3</td>
<td>–</td>
<td>4</td>
<td>–</td>
<td>–(1)</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>4</td>
<td>27</td>
<td>–(1)</td>
<td>2(5)</td>
</tr>
<tr>
<td>Full-time Grad. Stud.</td>
<td>–</td>
<td>2</td>
<td>26</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>First-year Grad. Stud.</td>
<td>–</td>
<td>–</td>
<td>6</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

GRADUATE DEGREE REQUIREMENTS

Master’s: Thirty semester hours of graduate credit; of those, at least 24 credits must be classes or seminars, and 6 credits can be research. Twelve credits hours must be at the 700 level. Courses must include Phys 711, 712, 741 (Math Methods & Classical Mechanics, Electrodynamics, Quantum Mechanics-I). Participation at the departmental seminar is required. Minimum of 12 months full-time in residence. An oral defense of the thesis and a 3.0 average on courses are required.

Doctorate: Courses must include Physics 711, 712, 741, 742, and 770 (Math Methods & Classical Mechanics, Electrodynamics, Quantum Mechanics-I and -II, Statistical Physics) and three more elective courses at the 600 or 700 level (of which one must be in Physics). A written General Exam at the level of material normally covered in the first year of graduate study serves as the preliminary examination. Within 18 months of completing the preliminary examination, the students submits to her/his advisory committee and defends orally a dissertation research plan. An oral defense of the dissertation, and a 3.0 average on courses are required.

Thesis: Thesis may be written in absentia.

SPECIAL EQUIPMENT, FACILITIES, OR PROGRAMS

Wake Forest is among the top 10% of tier-1 national doctoral universities (US News and World Report), despite its small size. We take pride in being able to provide the personal attention of a liberal arts college and having significant resources that are usually associated with a large research university.

The research in our department is focused on the following areas: experimental and computational biophysics; atomic, molecular and optical physics; experimental and computational condensed matter physics; computational and theoretical relativity and gravitation; medical and health physics; and nanophysics. All research laboratories contain state-of-the-art instrumentation; computational physicists have access to the large deacon cluster.

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 Outside Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal government</td>
<td>$1,040,442.05</td>
<td>$310,860.16</td>
</tr>
<tr>
<td>State/local government</td>
<td>$11,902.2</td>
<td></td>
</tr>
<tr>
<td>Non-profit organizations</td>
<td>$20,219.29</td>
<td></td>
</tr>
<tr>
<td>Business and industry</td>
<td>$252,736.96</td>
<td>$294,188.81</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$1,325,300.5</td>
<td>$605,048.97</td>
</tr>
</tbody>
</table>

Table C—Separately Budgeted Research Expenditures by Research Specialty

<table>
<thead>
<tr>
<th>Research Specialty</th>
<th>No. of Grants</th>
<th>Expenditures ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biophysics</td>
<td>6</td>
<td>$534,733.65</td>
</tr>
<tr>
<td>Condensed Matter Physics</td>
<td>14</td>
<td>$879,532.92</td>
</tr>
<tr>
<td>Nano Science and Technology</td>
<td>3</td>
<td>$466,114.68</td>
</tr>
<tr>
<td>Optics</td>
<td>1</td>
<td>$23,115.86</td>
</tr>
<tr>
<td>Relativity &amp; Gravitation</td>
<td>1</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>$1,929,354.47</td>
</tr>
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</table>

FACULTY

Chair Professor
Kim-Shapiro, Daniel, Ph.D., University of California, Berkeley, 1993. Director, Translational Science Center. Biophysics. Un-
understanding how blood flow is regulated, particularly by nitric oxide, nitrite and other nitrogen oxides. Various forms of spectroscopy, using light (including polarized light) to learn about biological structure and function.

**Professor**


Bonin, Keith D., Ph.D., University of Maryland, 1984. Department Chair. *Atomic, Molecular, & Optical Physics, Biophysics, Nano Science and Technology, Optics*. Atomic physics; nanophysics; biophysics; optics.


**Associate Professor**


**Emeritus**


**Research Professor**


**Research Associate Professor**

Basu, Swati, Ph.D., University of Illinois at Urbana-Champaign, 1994. Understanding how blood flow is regulated, particularly by nitric oxide, nitrite and other nitrogen oxides. Various forms of spectroscopy, using light (including polarized light) to learn about biological structure and function. (Works in the lab of Prof. Kim-Shapiro). *Biophysics*. Prof. Basu is working in Prof. Kim-Shapiro’s group.


**Teaching Associate Professor**


**Adjunct Professor**


**Adjunct Assistant Professor**


**DEPARTMENTAL RESEARCH SPECIALTIES AND STAFF**

**Theoretical**


**Experimental**


Energy Sources & Environment. The Center is engaged in a broad range of projects from the development of medical technologies, to green energy technologies, to the understanding of the environmental and ethical implications of such nano-based technologies, material design and synthesis, carbon nanotubes, metal nanoparticles, quantum dots, polymers, cage structures, solar cells, biofuels, batteries, high-efficiency organic transistors, new lighting systems, antibiotic resistance, wound healing, tissue regeneration. Carroll, Jurchescu.


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.