1. General
President: Lawrence Bacow
Dean of Graduate School: Robin Kanarek
Department Chairman: William Oliver
Department Telephone Number: (617) 627-3029
Type of Institution: University
Control: Private
Setting: Suburban
Total Faculty: 666
Total Graduate Faculty: 411
Total Graduate Students: 1,435
Annual Graduate Tuition:
Tuition rates for: 2005-06
(Students accepted with financial support have their tuition waivered)
All Graduate Students: Full-time- $ 32,360
Part-time- $ 3,236/course
Deferred tuition plan: No
Other Fees: $2,035 Health Services Fee & Health Insurance
Term: Semester

2. Number of Faculty in Department
The full-time faculty in the three professorial ranks is 17. The total of full-time and part-time faculty at all ranks is 23.

3. Admission, Financial Aid, and Housing
Address admission inquiries to: Graduate Student Committee,
Physics Department (grasp@tufts.edu)
Graduate application fee required: $60
Application deadline (Fall admission): 2/1 U.S. applicants
1/15 non-U.S. applicants
Admission information: For fall admission in years 2005-06 and 2006-007, 20 students were accepted from 148 applicants.
Admission requirements: For admission to the graduate programs, a Bachelor's degree in physics is required with no minimum undergraduate GPA specified, although strong GPA and recommendations are crucial. The GRE is required and GRE Advanced is strongly recommended. Students from non-English speaking countries are required to demonstrate proficiency in English via the TOEFL exam. Minimum acceptable score for admission is 550 (or 213 CBT).

<table>
<thead>
<tr>
<th>Students Accepted For Degree</th>
<th>FIELDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctorate</td>
<td>Physics</td>
</tr>
<tr>
<td>Masters’s</td>
<td></td>
</tr>
</tbody>
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<td>Masters’s</td>
<td></td>
</tr>
</tbody>
</table>

4. Graduate Degree Requirements
Master of Science: Eight graduate level courses in approved program with grades of B or better; thesis optional; two semesters residence required; no language requirement; no examination requirements.
Doctorate: Eight graduate courses required. The student must demonstrate proficiency in classical physics, quantum mechanics, and in the doctoral field. An oral preliminary exam, dissertation and dissertation exam are required. There is no language requirement.

Special Equipment, Facilities, or Programs: Cooperative research programs are carried out at the Arecibo Laboratory (National Astronomy and Ionospheric Center), Argonne National Laboratory, Brookhaven National Laboratory, Fermi National Accelerator Laboratory (FNAL), European Centre for Particle Physics (CERN), National High Magnetic Field Laboratory, National Radio Astronomy Observatory (Soroco, NM), and the Soudan Underground Laboratory. Students may conduct their thesis research in the Tufts Electromagnetics Lab, in the Department of Electrical Engineering, in the Center for Science and Math Teaching, or in the Wright Center for Science Education. Biomedical research in cooperation with local hospitals is also possible.

Undergraduate preparation assumed: General Physics, Optics, Electromagnetic Theory, Thermodynamics, Mechanics, Modern Physics.

Address financial aid inquiries to: Graduate Student Committee,
Physics Department (grasp@tufts.edu)
GAPSFA application required: No
Financial aid deadline: 2/1 U.S. applicants
1/15 non-U.S. applicants
Loans available: No
Address housing inquiries to: Housing Office (http://asc.tufts.edu/och)
Off-Campus Housing Office: (617) 627-5319
On-campus, single student housing available: Yes
On-campus, married student housing available: No

### Table A  Appointments to Graduate Students, 2005-06

<table>
<thead>
<tr>
<th>Title of Appointee</th>
<th>Appointments</th>
<th>Academic Load</th>
<th>Hours of Service per Week</th>
<th>Stipend for Academic Year ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>First Year</td>
<td>Credit Hours</td>
<td></td>
</tr>
<tr>
<td>Teaching Assistant</td>
<td>13</td>
<td>5</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Research Assistant</td>
<td>9</td>
<td>0</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Burlingame Fellow</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. Personnel Engaged in Separately Budgeted Research, 7/02-6/03

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professorial faculty</td>
<td>23</td>
</tr>
<tr>
<td>Postdoctoral appointments</td>
<td>5</td>
</tr>
<tr>
<td>Graduate students</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>37</td>
</tr>
</tbody>
</table>

6. Separately Budgeted Research Expenditures by Source of Support

<table>
<thead>
<tr>
<th>Source</th>
<th>Departmental Research</th>
<th>Physics-related Research Outside Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal government</td>
<td>$1,500,000</td>
<td>$</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$1,500,000</td>
<td>$</td>
</tr>
</tbody>
</table>

FACULTY

Professors
- Cebe, Peggy, Ph.D., Cornell University, 1984. Experimental condensed matter physics.
- Ford, Lawrence H., Ph.D., Princeton, 1974. General relativity and cosmology; quantum field theory.
- Oliver, William P., Ph.D., California, Berkeley, 1969. Chair of the Department, Experimental particle physics.
- Vilenkin, Alexander, Ph.D., SUNY, Buffalo, 1977. General relativity and cosmology; quantum field theory.

Associate Professor

Assistant Professor
- Gallagher, Hugh, Ph.D., Minnesota, 1996. High energy physics.
- Blanco-Pillado, Jose, Ph.D., Tufts, 2001. Cosmology and quantum field theory.

Visiting Associate Professors
- DiStefano, Rosanne, Ph.D., SUNY-Stony Brook, 1981. Astronomy; astrophysics.

Research Faculty
- Waller, William H., Ph.D., Massachusetts, 1990. Observational astrophysics.

Professors Emeriti

RESEARCH SPECIALTIES AND STAFF

Theoretical
- Condensed Matter. Macroscopic quantum tunneling; phase transitions; magnetism; superconductivity; Mossbauer effect. Gunther.
- Cosmology and General Relativity. Physical processes in the very early universe; cosmic strings; cosmological phase transitions; inflation, quantum gravity; quantum field theory in curved spacetime. Blanco-Pillado, Ford, Olum, Vilenkin. 1 post-doctoral research associate, 1 research assistant, 1 visiting scholar.
- Elementary particles: Quarks and quantum chromodynamics; electroweak theory; high-energy phenomenology. Goldstein.

Experimental
- Condensed Matter. Magnetic properties of solids; high-temperature superconductors; magnetic semiconductors; surface physics; polymers. Cebe, Guertin, Shapira, Tobin, 5 research assistants.
- ElementaryParticles. High energy neutrino physics, search for neutrino oscillations; top quark studies and search for Higgs and supersymmetry particles; heavy quark spectroscopy. Gallagher, Kafka, Mann, Napier, Oliver, Schneps, Sliwa, 3 post-doctoral research associates, 3 research assistants.