DEPARTMENT RANKING
- 1st among public universities on the East Coast;
- 4th among all public universities
- 13th among all physics departments nationally
(2003 U.S. News & World Report)

SIZE: One of the largest physics research programs in the U.S.

FACTS 2005-2006

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Steve Rolston—Associate Chair,
Facilities and Personnel
Gregory Sullivan—Associate Chair,
Graduate Education
Douglas Roberts—Associate Chair,
Undergraduate Education

FACULTY
- 84 Tenure-track and tenured faculty
- 60 Full Professors (includes 8 Distinguished Univ. Professors; 2 Distinguished Univ. Fellows; 2 Univ. Sys. Of MD Regents Professors)
- 1 Named Chair: Alford Ward Chair of Semiconductor Physics
- 6 Associate Professors
- 6 Assistant Professors
- 2 Chancellors Emeritus
- 1 President Emeritus (UM)
- 19 Research Scientists
- 62 Research Associates
- 70 Faculty Research Assistants
- 6 Slawsky Tutoring Clinic Staff

STUDENTS
- 225 Undergraduate Majors
- 215 Graduate Students
- 20 Graduate Fellows
- 48 Entering Undergraduate Students in 2006
- Average SAT for Fall 2006 incoming freshmen:
  Math - 720
  Verbal - 670
- 138 Graduate Research Assistants
- 43 Teaching Assistants
- 1 : 18 ratio of faculty to undergraduate majors

FACULTY AWARDS & HONORS
- Boltzmann Medal
- COSPAR Medal
- Buckley Prize-Condensed Matter
- Dirac Medal
- ___ Distinguished Scholar-Teachers
- Goeppert-Mayer Award
- Guthrie Medal & Prize (UK)
- Heinemann Prize-Mathematical Physics
- Hirschfelder Prize
- Humboldt Prize
- Irving Langmuir Prize
- Lenin Prize (USSR)
- Maxwell Prize in Plasma Physics
- Meggers Award
- Millikan Medal
- Nobel Prize
- Onsager Prize in Statistical Physics
- Simon Memorial Prize
- Szilard Award
- Tate Medal
- Wetherill Medal
- Wolf Prize
- World Science for Peace Prize
- APS Fellows
- American Academy of Arts & Science Fellows
- American Association for the Advancement of Science Fellows
- American Association for the Advancement of Science Fellows
- A VS Fellows
- AGU Fellows
- Cottrell Scholars Fellowship
- Guggenheim Fellowships
- IEEE Fellows
- NY (PIY)’s
- Presidential Early Career Award
- Packard Fellow
- Sloan Fellows
- National Academy of Science Members
- New York Academy of Science Members
- Washington Academy of Science Fellows
- Members of the Royal Society

GRADUATE EDUCATION & RESEARCH PROGRAMS

Experimental Groups (15):
- Astro-Metrology (AM)
- Atomic Molecular & Optical (AMO)
- Center for Superconductivity Research (CSR)
- Condensed Matter (CME)
- Cosmic Ray Physics (CRP)
- Gravitation Experiment (GRE)
- High Energy Physics with Accelerators (HEP)
- Non Linear Dynamics & Chaos (NLDC)
- Nuclear Physics (NPE)
- Particle Astrophysics (PA)
- Physics Education Research Group (PERG)
- Quantum Electronics: Relativity & Quantum Mechanics (QE)
- Space Physics (SP)
- Spintronics & Spin Quantum Computing (SSQC)
- Superconducting Quantum Computing (SQC)

Theoretical Groups (11):
- Atomic Molecular & Optical (AMO)
- Condensed Matter (CMT)
- Dynamical Systems & Accelerator Theory (DSAT)
- Elementary Particles (EP)
- Gravitation Theory (GT)
- Non Linear Dynamics & Chaos (NLDC)
- Plasma Physics (PPT)
- Theoretical Quarks, Hadrons & Nuclei (TQHN)
- Quantum Coherency & Information (QCI)
- Spintronics & Spin Quantum Computing (SSQC)

Other UM Research Involvements:
- Charged Particle Beam Research (CPB)
- Chemical Physics (CP)
- Institute for Physics Science & Technology (IPST)
- Institute for Research in Electronics & Applied Physics (IREAP)
- Institute for Systems Research (ISR)
- Institute for Advanced Computer Studies (UMAICS)
- Mathematical Physics (MP)
BUDGET & FUNDING

- FY '02 State Budget
  $10.8 M
- FY '02 Externally Funded Research Expenditures
  $20 M
- Total FY '02 Budget
  $30.8 M

UNDERGRADUATE PROGRAMS

- B.S. degree in traditional physics provides career skills or preparation for graduate study. Interdisciplinary tracks including meteorology and education
- Honors Program in Physics
- Physical Sciences Program
- Undergraduate Research Opportunities Program (UROP) provides hands-on research experience for undergraduates
- Slawsky Tutoring Clinic
- Society of Physics Students—very active chapter of national society

OUTREACH PROGRAMS

- Physics is Phun (since 1982). A public lecture-demonstration series; 4 programs per year, each offered on 3 consecutive days.
- Traveling Physics is Phun Van presents program to schools & organizations in the region
- Annual Physics Olympics. Competition involves 35-40 teams from high schools in Maryland, Northern Virginia, & Washington, D.C.
- AAPT Physics Olympiad training. UM has served as the training site for 10 years
- Physics Summer Outreach Program for Middle School Girls. A two-week program offered on campus for 14 years.
- MRSEC Outreach: adopted Kettering Middle School; offers Research Experiences for Undergraduates program; industrial outreach; exchange program with Osaka Univ.; Summer Girls Program.

EXTERNAL RELATIONS

United States

- American Center for Physics. Relocated to College Park, adjacent to UM, in November '93. Cooperative activities.
- American Association of Physics Teachers (AAPT)
- American Institute of Physics
- American Physical Society (APS). (UM Physics Professor, Dr. Robert Park, is Executive Director of the APS Office of Public Affairs)
- American Association of Physicists in Medicine (AAPM)
- Thomas Jefferson National Accelerator Facility (formerly CEBAF/SURA). Participant in multi-university experiments
- Fermi National Accelerator Laboratory. Participant in D0 and E665 experiments.
- NASA & UM East-West Space Science Center. Space Station collaboration NASA Goddard Space Flight Center collaborations:
  - Laboratory for Astronomy and Solar Physics
  - Laboratory for High Energy Astrophysics
  - Naval Research Laboratory (NRL)
  - Cooperative Program in Plasma Physics
  - National Institute of Standards and Technology (NIST) collaborations
  - Physics Laboratory (Electron and Optical Physics Division; Radiometric Physics Division)
  - Materials Science and Engineering Laboratory (Reactor Radiation Division)
  - National Institutes of Health (NIH). Biophysics of fellowships
  - Neocera, Inc.-graduate of UM incubator program-spin-off company of Center for Superconductivity Research; manufactures thin-film hardware and related technologies
  - Southeastern Universities Research Association (SURA). SURA Fellowships
  - Stanford Linear Accelerator Center (SLAC) Participant in BABAR experiment at the B-Factor

International

- Center for European Nuclear Research (CERN, Geneva). Participate in OPAL and CMS experiments
- National Central University, Taiwan. Collaborative exchange agreement with UM Physics Dept.
- Nuclear Science Center, New Delhi, India. Participate in experiments on ion-beam effects on superconductors. University of Bremen, Germany.

FACILITIES

- 8 Shop Facilities
- Mechanical Development
- Electronic Development
- Engineering and Design
- Technical Illustration
- Print Shop
- Student Shop
- Raw Materials Stores
- Physical Stores
- Largest Lecture-Demo Facility in the United States — over 1,500 demonstrations, (seats 500). With World Wide Web access:
  http://www.physics.umd.edu/deptinfo/facilities/lecdem

AFFILIATED CENTERS

- Center for Superconductivity Research
- East-West Space Science Center
- NSF Materials Research Science & Engineering Center
- Condensed Matter Theory Center
- Center for Particle & String Theory
- Center for Scientific Computation & Mathematical Modeling
- Institute for Physical Science & Technology
- Institute for Research in Electronics & Applied Physics (IREAP)
- Institute for Systems Research
- Institute for Advanced Computer Studies
- Maryland Center for Integrated Nano Science & Engineering
- Materials Research Science & Engineering Center
FACULTY
2005–2006

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Douglas Roberts– Associate Chair
Undergraduate Education

Research Groups– Abbreviation Key

AM– Astro Meteorology
AMO– Atomic Molecular & Optical Physics
CSR– Center for Superconductivity Research
CPB– Charged Particle Beam Research
CP– Chemical Physics
CME– Condensed Matter– Experimental
CMT– condensed Matter– Theoretical
DSAT– Dynamical Systems & Accelerators Theory
EWC– East-West Space Science Center
EP– Elementary Particles
GRE– General Relativity– Experimental
GRT– General Relativity– Theoretical
HEP– High Energy Physics with Accelerators
IPST– Institute for Research in Electronics & Applied Physics
IREAP- Institute for Systems Research
MP– Mathematical Physics
MRSEC– Materials Research Science & Engineering Center (NSF)
NLDC– Non Linear Dynamics & Chaos
NPE– Nuclear Physics
PA– Particle Astrophysics
PPE– Plasma Physics– Experimental
PPT– Plasma Physics– Theoretical
QE– Quantum Electricity: Relativity & Quantum Mechanics
TQHN– Theoretical Quarks, Hadron & Nuclei
SP– Space Physics

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Superconductivity-electromagnetic properties, proximity effect; near-field microwave microscopy; experimental chaos. (CSR, MRSEC)
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Weeks, John D.,

Wellstood, Frederick C., Professor, affiliated with Center for Superconductivity Research; Associate Chair, Undergrad. Education., Physics Dept. Ph.D., Univ. of California, Berkeley, 1988, Superconductivity–High Tc (YBCO; superconducting quantum interference devices; magnetic microscopy; Coulomb blockade electrometers. (CSR, MRSEC) 301.405.5958 well@squid.umd.edu

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Yakovenko, Victor M., Associate Professor. Ph.D., Landau Inst. For Theoretical Physics, Moscow, 1987. Associated Member–Landau Institute. Condensed matter theory; organic and high-Tc superconductors; the quantum Hall effect; effects of high magnetic fields. (CMT, CSR) 301.405.6151 yakovenko@physics.umd.edu

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