

EXECUTIVE SUMMARY OF PHYSICS DEPARTMENT ANNUAL REPORT 2000-2001

The Department has thirty-six tenure-track faculty, four research faculty, two lecturers, four EPA professional/visiting faculty, ten SPA staff, sixteen postdoctoral researchers, and 177 undergraduate majors and graduate students. On campus, we are #1 in competitive federal research funding (\$4.6M in 99-00), #2 in the NC State library's author database, and #7 in credit hours taught (22,723). We have fourteen members of the NC State Academy of Outstanding Teachers, including four alumni distinguished undergraduate professors, two alumni distinguished graduate professors, and seventeen fellows of the American Physical Society. The Department was the PAMS nominee for the NC State Departmental Teaching Award for 2001. We awarded 9 BA, 13 BS, 5 MS and 6 PhD degrees. We published 212 papers in journals, and gave 309 presentations at meetings, seminars and colloquia. Our introductory physics program ranked eighth largest out of 762 in the American Institute of Physics 1999 enrollment report (R394.6). Students are positive about the instruction: 79.6% responded yes to "I would recommend this instructor to other students". On campus, 20,000 students used Webassign.

Research highlights include: a Science paper on control of current flow in a carbon nanotube (**Marco Buongiorno-Nardelli** *et al*); a nationally reported review of middle school science texts (**John Hubisz**); an analysis of cell phone fade due to multi path distortion (**Hans Hallen**) and a new technique – gradient field Raman spectroscopy - for imaging the nanoscale environment (**Hans Hallen**). In faculty recognitions, **David Haase** and **Stephen Reynolds** were elected fellows of the American Physical Society. **John Hubisz** was elected President of the American Association of Physics Teachers. **Harald Ade** won the K.F.J. Heinrich award of the Microbeam Analysis Society. **Worth Seagondollar** (emeritus) was the recipient of the Francis Slack service award of the Southeastern Section of APS. **David Aspnes** was elected a trustee of the American Vacuum Society. **Chris Gould** was elected to the National Council of the Society of Physics Students. **Robert Nemanich** was named an Alumni Distinguished Graduate Professor.

David Wood served as President of the NC State chapter of Society of Physics Students and was elected to the national SPS executive committee. The SPS chapter (**John Blondin** adviser) received a Marsh White service award for its outreach work. **Amanda Sabourov**, **David Wood** and **Michael McDuffie** were winners of the three physical sciences awards at the NC State Sigma Xi research symposium. **David Wood** was the winner of the 2001 McCormick prize for undergraduate research. **Paul Tanner** and **Alex Mayer** were recipients of awards for outstanding undergraduate teaching/tutoring and **Ramsey Hourani**, **Anne McElroy** and **Jeanne Morse** were named outstanding graduate student teaching assistants. **Kristy Dyer** received an NSF postdoctoral fellowship in astronomy. **Martin Dewitt** was awarded a one-year SURA fellowship. **Willyetta Brown**, **James Burnette** and **Michael Taylor** were recognized with campus-wide awards from ACAAGS. **Cecilia Upchurch** was winner of the 2001 PAMS SPA award for excellence. **Becky Savage** completed the 2001 NC State Pathways program.

In support of initiatives in the compact plan and the strategic plan, we hired three assistant professors for fall 01: **Marco Buongiorno-Nardelli**, **Gail McLaughlin** and **Dean Lee**. We continue to explore a senior hire in nanoscale material physics, a senior hire- joint with Oak Ridge National Laboratory - in neutron science at the Spallation Neutron Source, and senior hires in physics education research. The percentage of women faculty in the department is now 12%, approximately double the national average for PhD-granting institutions.