

POLYMER SCIENCE & ENGINEERING

POINTS OF PRIDE

- This year marks the department's 50th academic year.
- PSE is one of the largest academic polymer centers in the world and has graduated more PhDs than any other U.S. polymer program.
- Top-rated in polymers by recent U.S. National Research Council: as high as third in research for Materials Science and Engineering.
- 15-20 PhDs awarded each year—over 600 since the program's inception in 1966.

EDUCATION

- Cross-disciplinary research is integral to PSE, which collaborates with these departments and programs: biology, chemical engineering, chemistry, food science, kinesiology, mechanical & industrial engineering, molecular & cellular biology, physics,

LEADERSHIP & OUTREACH

- Numerous faculty awards, including memberships in the National Academies of Science and Engineering; Presidential Early Career Awards in Science and Engineering; Early Career federal awards; Percy Julien Award; Sloan Research and Humboldt fellowships; APS Dillon Medals and High Physics Prizes; and ACS Awards in Creative Polymer Chemistry and Applied Polymer Science. Most senior faculty members are fellows of one or more of the major professional societies.
- Faculty and students are heavily engaged in professional organizations such as the American Chemical Society, the American Physical Society, the Materials Research Society, the Adhesion Society, the American Institute of Chemical Engineers, and the Society of Plastics Engineers. Faculty members have chaired or co-chaired recent polymer Gordon

- PSE students and faculty members have received all the major national and international polymer awards (see below).
- Projects are currently supported by DOE, FAA, NSF, NIH, EPA, DOD, and other federal agencies as well as 40+ companies.
- Sophisticated instrumentation—many items housed in staff-run shared facilities—worth \$40 million.

- and veterinary & animal sciences.
- Invited world-class scientists present each week in the PSE seminar series.
- Off-campus projects include partnerships with many U.S. and foreign universities and U.S. national labs.

- Research Conferences along with other specialized polymer conferences.
- Recent student awards include NSF graduate fellowships, and DOD NDSEG, DOE SCGF, NEAGEP, Society of Plastics Engineering, National GEM Consortium, Samsung, Covestro, Bayer, Arkema, and Isenberg fellowships, and Gates Millennium Scholars Awards. Students have received numerous best paper/poster awards.
- James Watkins will head UMass Amherst's efforts in its role as lead institution in New England for the U.S. Department of Defense's national Flexible Hybrid Electronics Manufacturing Innovation Institute, a \$75 million federal initiative to create a competitive and sustainable research-to-manufacturing collaboration between U.S. industry and academia to solve problems in advanced manufacturing.

BY THE NUMBERS FY15

Tenure-track faculty	18
Technical Staff	9
Graduate students	110
Postdoctoral fellows	25
Research awards	\$13.5M

RESEARCH AREAS

- Bio-inspired materials
- Electronic polymers/devices
- Energy and green science
- High performance composites
- Nanostructured materials
- Soft materials physics/mechanics
- Synthetic polymer chemistry
- Responsive polymers

RESEARCH FACILITIES

- Electron Microscopy
- Electronic Materials Characterization
- Gel Permeation Chromatography
- Light Scattering
- Cleanroom
- Nuclear Magnetic Resonance
- Photovoltaics
- Rheology and Mechanical Testing
- Surface Analysis
- Thermal Analysis
- X-Ray Diffraction and Scattering