



## Rhode Island news

# State looks to capitalize on URI research

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Rakesh Tiwari, left, a post-doctorate fellow, and Hitesh K. Agarwal, a graduate student, conduct research at URI's Centralized Research Core Facility.

The Providence Journal Gretchen Ertl

The University of Rhode Island has hundreds of professors, research scientists, staff and graduate students toiling over research projects — some of which could be turned into lucrative inventions, with the right guidance and investment.

A plant geneticist on the Kingston campus is developing a genetically modified prairie switchgrass that could one day be used as a source of ethanol, to help reduce U.S. dependence on foreign oil.

Another researcher is seeking financing to find ways to reduce computer energy use, which could extend the battery life of cars and personal computers, saving energy and therefore money.

The problem, according to education and business leaders, is that Rhode Island has not done enough to capitalize on URI's research and its vital role in creating good, high-paying jobs.

A new effort announced today highlights the importance of URI in producing scientists, engineers, pharmacists

and entrepreneurs who can contribute to the state's economy: the appointment of nine members to the University of Rhode Island Commission for Innovation and Research.

The nine-member commission will be chaired by former state Supreme Court Justice Robert G. Flanders Jr. The commission will assess URI's strengths and weaknesses in research and development over the coming year, and make recommendations to lawmakers about how to commercialize inventions and discoveries. The group will also offer advice on how the university can help produce a more science and technology-oriented work force.

"This is really an all-star cast of outstanding individuals, regionally, nationally and internationally," Flanders said. Among the commission members are a noted oceanographer, nanotechnology pioneer, software engineer, hospital president, and business and economic leaders.

"All the states are realizing there is a vital link between academic research and the local economy," Flanders said. "With ever-shrinking public funds to back these research efforts, it is important to partner with industry. So all of us are going to be looking at how to make sure that whatever good ideas come out of the research laboratories, we can maximize their commercial potential."

RHODE ISLAND HAS some catching up to do.

A recent report by the Rhode Island Science and Technology Advisory Council found that URI is losing future scientists and engineers — precisely the highly skilled people needed to fuel the new "innovation" economy taking root in leading states, such as Massachusetts, Connecticut and California.

Between 1995 and 2002, the council said, Rhode Island's science and engineering graduate student population shrank by 6 percent, with most of the losses coming from URI.

While URI is spending more on research and development than it has in the past, a key to attracting top students and faculty, it lags behind other states, the council found.

The five-campus University of Massachusetts system recently announced its professors and researchers generated \$41.4 million last year from the commercialization of intellectual property — an increase of \$13 million over the previous year.

In contrast, URI's efforts to market research have been, until now, fragmented and understaffed. State laws, which have since been changed, discouraged public-private partnerships that have proved lucrative in Massachusetts. The URI Research Office has brought in \$600,000 to \$1 million a year for the past 10 years.

Political and education leaders say that research and innovation are central to the state's economic competitiveness, and that Rhode Island needs to do more to build on its existing strengths in ocean sciences, biotechnology and pharmacy, and expand more aggressively into other areas, such as bioengineering.

"We can use all these ventures to stimulate jobs, and good, high-paying jobs that keep highly educated people in Rhode Island," said Jack Warner, Rhode Island's commissioner for higher education. "When you create jobs that rely on intellectual capital that helps the Rhode Island economy."

Rhode Island's economy needs the help.

Rhode Island graduates fewer students from high school than the national average and fewer students from college than the Northeast average. Fewer of its workers are in key sectors than other New England states: business, finance, computers, mathematics, and sciences.

These factors are reflected in Rhode Island's median income, which at \$46,199 a year lags those in Massachusetts, \$52,345, and in Connecticut, \$55,970. The national average is \$44,473.

Recognizing these issues, the state has moved to improve science and math education in public schools, better

train science and math teachers, and work with business leaders to address their work-force needs.

In addition, lawmakers approved a proposal in June to establish a research foundation at URI that will help faculty and researchers market their work and create spinoff companies. Peter Alfonso, URI's vice president for research and economic development who will sit on the commission, is in charge of an ambitious proposal to build a research and technology park in the north quadrant of the Kingston campus.

URI currently brings in \$60 million a year in research grants. URI President Robert L. Carothers has said he hopes URI will receive \$100 million a year by 2010.

"What [the commission] signals is that the research issue is not only a priority for the university, but also for the state," Warner said.

Alfonso said the work of the commission dovetails with his work at the university.

"This is an opportune time to initiate the URI research commission," Alfonso said. "The URI Research Foundation and our aims to build a research and technology park — all of that will require some guidance and some financial investments from the state. So I expect [the commission] will take even further the steps the state has taken so far to enhance research and economic development."

THE CREATION OF THE commission was recommended last year by the Rhode Island Science and Technology Council, and passed by the General Assembly. Flanders said the commission will convene next month, and will hold several public meetings throughout the year before delivering a report to lawmakers next September.

In addition to Flanders and Alfonso, the commission members are:

- Lord Alec Broers, a former research scientist at IBM and a pioneer in nanotechnology, who served as head of the engineering department and as vice chancellor of Cambridge University. Broers has a summer home in Jamestown.
- Constance Howes, president and chief executive officer of Women & Infants Hospital.
- Carol Grant, a former executive at Textron and Verizon, who most recently was Providence Mayor David N. Cicilline's chief of operations.
- Oceanographer Margaret Leinen, former dean of URI's Graduate School of Oceanography, now chief science officer of Climos, a San Francisco company dedicated to reducing greenhouse gases.
- Saul Kaplan, executive director of the Rhode Island Economic Development Corporation.
- David Hibbitt, engineer and chairman of Hibbitt, Karlsson & Sorensen (now software company Abaqus), located in Providence.
- James Coleman, vice provost for research at Rice University.

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