Pilot program trains biomedical students

BY JACQUELYN VOGHEL | Voghel@PBN.com

LIKE MOST PRIMARILY UNDERGRADUATE institutions, **Rhode Island College** can fly under the radar when it comes to academic biomedical research in the Ocean State.

More than two decades ago, that reputation was warranted: Research at the college was almost entirely faculty-led, said Jamie B. Towle-Weicksel, an associate professor of chemistry and biochemistry at RIC.

But starting in 2001, that began to change.

That year, the **University of Rhode Island** received funding from the National Institutes of Health to launch the Rhode Island IDeA Network of Biomedical Research Excellence, a program supporting biomedical innovation throughout the Ocean State's colleges and universities.

Since then, "RI-INBRE has essentially transformed the research culture here at Rhode Island College," Towle-Weicksel said.

"We have seen an institution where research was primarily carried out by faculty to now where research is an integral part of the student experience," she continued, "especially for those biomedical students."

To date, RIC has received $12.1 million in funding for these initiatives via RI-INBRE, with 305 RIC students and 27 faculty members participating in the program over the years.

Now, RIC is leading the way in developing a new initiative under the long-established program. Following a pilot program last year, RI-INBRE is broadening its offerings with a Workforce Development and Training program, which will officially launch in the next academic year.

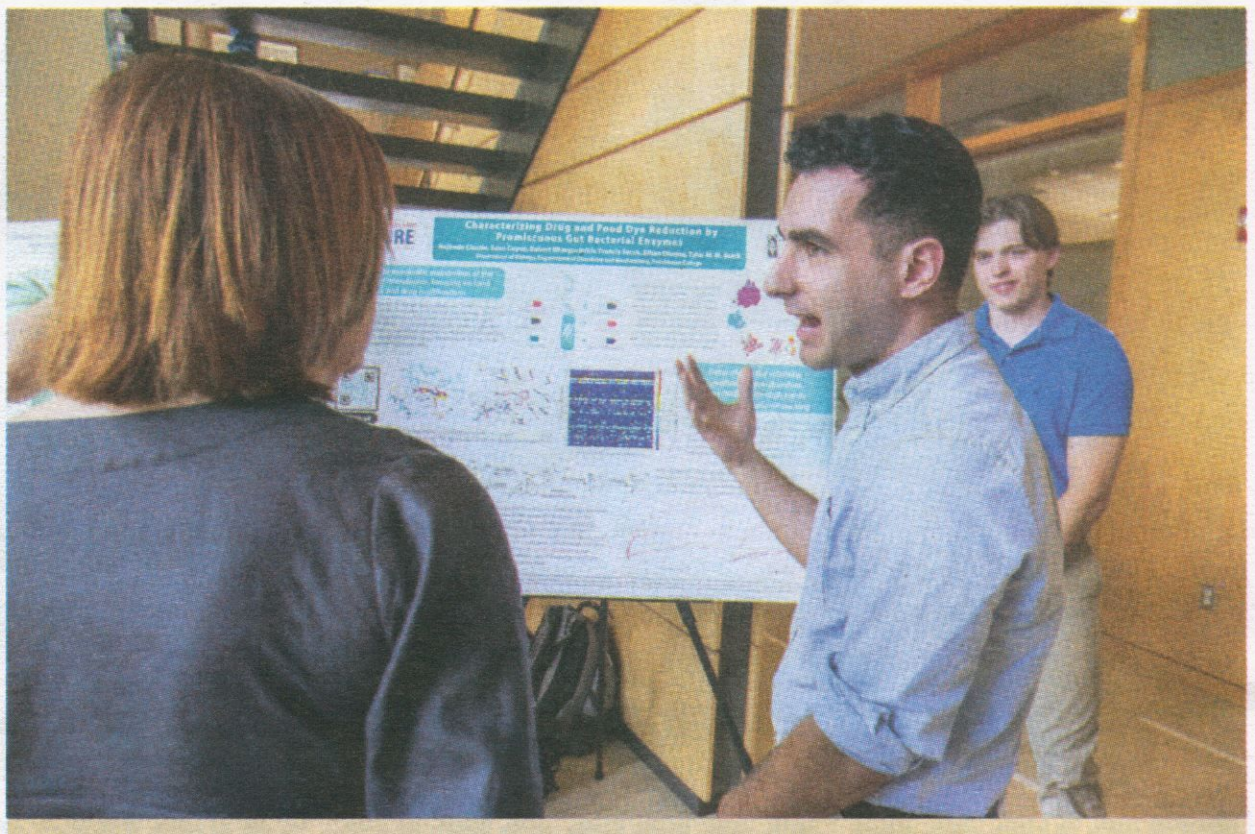
Backed by more than $600,000 in funding from the NIH and Real Jobs Rhode Island for its first year, the program will provide students with short-term, intensive certification opportunities focused on hands-on training in the biomedical sphere.

"The idea is that you could do these [courses] kind of a la carte and take a variety," Towle-Weicksel said, with options ranging from data analysis to cell culture.

And while traditional courses place greater emphasis on academic theory, the workforce program's condensed, lab-focused learning "gives almost an edge over anyone who has just had [training] in a classroom setting," she added.

These modules are currently intended to supplement matriculated students' studies during the summer, Towle-Weicksel said, but could eventually expand to other members of the community.

RI-INBRE was developed largely to provide this support for smaller, undergraduate-focused institutions like RIC, said Bongsup Cho, a professor in URI's College of Pharmacy and director of RI-INBRE.



FROM THE GUT: University of Rhode Island student Sean Coyne, a researcher in the Rhode Island IDeA Network of Biomedical Research Excellence program, describes his team's research on gut bacterial enzymes.
COURTESY UNIVERSITY OF RHODE ISLAND/MICHAEL SALERNO

Since its launch in 2001, the program has maintained a focus on three core objectives, Cho said.

For research institutions like URI and **Brown University**, these goals may seem commonplace. The NIH-funded program supports junior faculty members with seed funding and research; student training initiatives, with an emphasis on undergraduates; and access to instrumentation and facilities that foster innovative research.

RI-INBRE supports primarily undergraduate institutions not just through direct funding but through facilitating shared resources with research-intensive institutions, Cho said, particularly member institutions Brown University and the University of Rhode Island.

In addition to RIC, URI and Brown, membership includes **Bryant University**, **Johnson & Wales University**, **Providence College**, **Roger Williams University**, **Salve Regina University** and the **Community College of Rhode Island**.

Commonly, these colleges and universities "did not have a research staff to support junior faculty" prior to RI-INBRE, Cho said.

"Now, all of these institutions have at least one, two or more full-time research staff [members] to help faculty and students write research and grants," he said.

Koty Sharp, associate professor of biology, marine biology and environmental science at RWU, says she was able to establish her own research program with RI-INBRE funding, with a tangible impact on student training. Seven years after launching that program, more than 25 undergraduates have completed the program.

This faculty funding "allows us to mentor students in designing and executing research projects" said Sharp, who has received a total of $600,000 in RI-INBRE funding toward her lab. "It trains the students with lab and research skills that are applicable to a wide variety of careers after they graduate."

While Sharp's research, which focuses on temperate coral in Narragansett Bay, may not immediately seem associated with biomedical research, this area has tangible implications on health, she says.

"In our ocean state, when we talk about human health, that has to include ocean health," she said.

Sharp hasn't worked directly through the workforce initiative yet but said she's excited for the program's potential in preparing students for a variety of careers based in science, technology, engineering and math.

The program has so far brought $81 million to Rhode Island biomedical research initiatives, according to URI, with an application for another $22 million over the next five years under consideration by the NIH.

In addition to the workforce initiative, RI-INBRE has expanded in recent years to include biomanufacturing and bioengineering modules.

As of this year, RI-INBRE has supported 218 faculty members at member institutions, trained 2,210 students and funded 802 research projects, according to URI data. ■

'It trains the students with lab and research skills that are applicable to a **wide variety of careers.**'

KOTY SHARP, Roger Williams University
associate professor of biology, marine biology and environmental science