Raytheon Co. has committed $3 million with options to increase its funding to $5 million throughout the next 10 years to establish a new research facility in partnership with UMass Lowell.

The Raytheon-UMass Lowell Research Institute (RURI) will feature state-of-the-art laboratories and classrooms that will serve as a launching pad for collaboration and learning among UMass Lowell faculty and students and Raytheon employees to benefit both organizations in the pursuit of federal research funding. It will also provide students access to campus research projects and employment opportunities at Raytheon.

"The creation of RURI presents a tangible opportunity to advance the research and the learning of technologies under development for students and employees alike and will inspire future engineers and drive innovation," says Dan Crowley, president of Raytheon’s Integrated Defense Systems business.

"We look forward to bringing the expertise of our top-notch faculty together with researchers from Raytheon. This new partnership is just one example of how UMass Lowell is leading the way in collaborating with industry to power innovation and the economy in Massachusetts and beyond," says UMass Lowell Chancellor Marty Meehan.

Initial research will focus on future technologies for radar and communication systems with possible expansion into other areas. The institute will leverage UMass Lowell’s strengths in printed electronics and nanotechnology, which align with Raytheon’s strategic technology needs including high-frequency printed conformal antennas, carbon-based transistors and photonic devices.
Learning with Purpose

Math major John Romano won the top research award at a national conference for his work with five Lowell High School students. As part of UMass Lowell’s UTeach program, Romano taught the students how to research, develop, build and market a medical device—a smartphone case that could house bio-metric sensors, such as heart rate, blood pressure and temperature.

Judges at the 8th Annual UTeach Conference in Austin named Romano the winner for his poster presentation “M2D2, UTeach, Lowell High School Experience.”

UTeach prepares students to become teachers while earning degrees in science, technology, engineering and mathematics. Romano’s internship was a collaboration with the Massachusetts Medical Device Development Center and Lowell High School.

“The UTeach program is absolutely amazing and the reason I came to UMass Lowell,” says Romano. “This program allows future teachers to get hands-on practice in the classroom right away and provides a lot of internship opportunities.

University Researchers Awarded Technology Development Grants

Funding for Studies in Ultrasound Imaging, Cancer Diagnosis, Elastomeric Sealant

Coronary artery disease is the leading cause of death in America, claiming the lives of about 600,000 people each year. The disease results in the narrowing of small vessels supplying blood and oxygen to the heart, leading to blockage and, possibly, heart attack.

Electrical and computer engineering Assoc. Prof. Xingwei Wang and her research team are developing a new, compact ultrasound imaging system that can help evaluate and diagnose patients with coronary artery disease and reduce the cost of treatment.

Sammy Shina Recognized for Lead-Free Electronics Research

TURI Presents Champion Awards at State House

Prof. Sammy Shina has been working to get the lead out of electronics since 1999. He founded the New England Lead-Free Electronics Consortium, a group of about 30 electronics companies, that has worked together to find safer alternatives to lead used on circuit boards.

For his leadership, inspiration and determination, the Toxics Use Reduction Institute (TURI), state Sen. Marc Pacheco, Commissioner of the Massachusetts Department of Environmental Protection David Cash and state legislators recently recognized Shina as the “Academic Champion of Toxics Use Reduction” at a Massachusetts State House ceremony.

“As part of the Consortium, companies were able to participate in a neutral and safe environment at the university, where competitors, suppliers and customers collaborated together, even if they battled against each other in the marketplace,” said Shina at the awards ceremony.

Lead, used in solder paste and board surface component finishes, can cause acute and chronic health issues. The Consortium members banded together and contributed time, resources, materials and expertise to find safer solutions that worked.

State Sen. Karen Spilka presents Prof. Sammy Shina, second from right, the Academic Champion of Toxics Use Reduction Award, joined by Greg Morose, left, and Director of TURI Prof. Mike Ellenbecker.

“Our goal is to develop the first all-optical-fiber ultrasound imaging transducer with automatic steering function that could see deeper into the heart tissues with higher resolution,” says Wang.

Wang is one of three university researchers awarded this year’s Commercial Ventures and Intellectual Property (CVIP) Technology Development Fund by the UMass President’s Office. The annual grants, established in 2004, assist faculty researchers from across all five UMass campuses in accelerating the commercialization of their cutting-edge discoveries and inventions.

Wang’s fellow CVIP grant recipients at UMass Lowell are Assoc. Prof. Anna Yaroslavsky in physics and Prof. Rudolf Faust in chemistry. Yaroslavsky was selected for her efforts in developing an innovative breast cancer imaging technique using polarized light, while Faust was chosen for his work on creating an elastomeric sealant for industry. Each researcher receives $25,000 in funding.

Learning with Purpose
Raising Expectations: Partnership Helps Make College Affordable

Micro-scholarships Provide Financial Support, Broader Horizons

Under a new program underway this fall, high school students can earn micro-scholarships toward UMass Lowell for their progress and accomplishments, starting as early as ninth grade. Students can earn micro-scholarships for a broad range of achievements each semester, such as getting perfect attendance, becoming a club leader, improving their GPA, visiting UMass Lowell’s campus, or completing certain courses.

In addition to reducing the cost of college, the program provides students with specific goals to better prepare for a rigorous college education.

UMass Lowell is making the program available through a partnership with Raise.me, an education technology company focused on rethinking how students access financial aid. Raise.me has received funding support from organizations such as the Bill and Melinda Gates Foundation, University of Pennsylvania’s Graduate School of Education and Facebook.

“The Raise.me platform was developed because most scholarships and grants are awarded too late to affect students’ college ambitions or application decisions. As a result, many talented students, especially those from lower-income backgrounds, don’t apply to more selective colleges where they might receive attractive aid packages because they are intimidated by the list price. By giving students the ability to accrue scholarships starting in ninth grade, the program encourages students’ personal development while showing them how to become a more competitive applicant for any college.”

Healthy and Online: Course Wins Blackboard Catalyst Award

Award Recognizes Outstanding Online Course on Promoting Health Lifestyles

UMass Lowell’s online course called Promoting Healthy Lifestyles among Students was named a winner of a Blackboard Catalyst Award as an Exemplary Course, which recognizes faculty and course designers from schools, colleges and universities around the world who develop exciting and innovative courses that represent the very best in technology and learning.

The course, offered by the Graduate School of Education, examines application of nutrition concepts relevant to elementary and middle school children and how the concepts can be practically integrated into the classroom.

Part of the annual Blackboard Catalyst Awards program since 2000, the Blackboard Exemplary Course Award highlights technologically rich, engaging, well-designed courses that showcase best practices. More than 200 entries were evaluated in a rigorous peer-review process by more than 300 faculty and instructional designers. Submissions were judged on course design, interaction and collaboration, assessment and learner support.

“The UMass Lowell has long been at the forefront of providing quality online programs. The university’s leadership team cares deeply about course quality and has always supported my efforts to improve my teaching. I’m honored my peers have recognized this work with a Blackboard Catalyst Award, which encourages us to continue to find new and meaningful ways to engage learners,” says Carolyn Siccama, who teaches the course.

Co-op Scholars Spend Summer Working, Learning

Program Offers Research, Work Opportunities

Mechanical engineering major Jaclyn Solimine spent her summer applying principles she learned in freshman courses to investigate the use of acoustics to detect wind turbine damage. Problems with turbine blades can impact performance, so early detection of damage is key to reliability.

Working with a faculty mentor, Solimine researched techniques for detecting damage, conducted experiments and documented her progress. In the process, she learned about engineering and research methods and got her first hands-on professional experience, all before starting her sophomore year.

“It was a great opportunity to learn and I got to meet a lot of graduate students and professors,” says Solimine, one of 104 rising sophomores who participated in this summer’s Co-op Scholar program, which places high-achieving students in jobs both on and off campus.

The students, who were offered spots in the program before they started their freshman year, earned money while getting professional experience in their chosen disciplines. Students worked in teams or individually. They researched topics ranging from the packaging materials of soldiers’ rations to the use of robots in treating autism.

The Co-op Scholar program was launched in 2011 with a small pilot group of engineering students, and has since grown to include students in all schools.
Revamped Campus Greets Record Enrollment of Students

It was the first wave and it was awesome. Over Labor Day weekend, students—all 4,000 of them who live in the university’s ten residential halls—moved back to campus, lugging clothes, books and electronic gear into their rooms.

When classes began Sept. 3, all 17,000 students—a record enrollment—were on campus, ready to tackle the new academic year. For the first time, UMass Lowell has more than 10,000 undergraduate students.

At convocation on Sept. 2, Deanne Bell, host of PBS’ award-winning children’s show “Design Squad,” gave the keynote address at the official welcome for freshmen at the Tsongas Center. Johnny Earle, the entrepreneur behind the Johnny Cupcakes apparel brand, also addressed new students.

UMass Lowell’s new fight song, “River Hawk Pride,” was introduced at convocation and sung with gusto by students, faculty and staff.

Students returned to a campus continuing to undergo a stunning transformation. Construction on the $95 million University Crossing student hub is complete, residence halls are refreshed, classrooms renovated, a new stop for shuttle bus service installed on North Campus, and ground broken on the new home for the Manning School of Business.