

Learning to Regrow Lost Body Parts

NIH Grant Funds Cutting-edge Programs in Regenerative Medicine at UNH Tech Camp

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This summer, middle and high school students attending [UNH Tech Camp](#) will have the unique opportunity to learn about regrowing lost body parts, freezing and storing cells, 3D bioprinting and molecular visualization – cutting-edge topics you aren't likely to find at many other summer STEM programs.

Thanks to a five-year, [\\$1.2 million](#) grant awarded to UNH Tech Camp by the National Institute of General Medical Sciences of the National Institutes of Health (through its Science Education Partnership Award program), the popular summer youth program

has expanded its already eclectic curriculum to include these and other subjects related to regenerative medicine and biofabrication. The new programs are being offered at no cost to participants and students of all STEM skill levels are welcome to attend.

“The goal is to educate middle and high school students and teachers about regenerative medicine and biofabrication and raise awareness around career opportunities that exist in these emerging industries,” says Carmela Amato-Wierda, associate professor of materials science and faculty director of Tech Camp. “The intention is to cultivate excitement and expertise that will help address future workforce needs in New Hampshire.”

The new week-long programs are part of a broader initiative called [NH CREATES](#) the Future: the NH Collaborative for Regenerative Medicine Education and Training for Engineers and Scientists of the Future, which is intended to build a skilled workforce for New Hampshire’s rapidly growing regenerative medicine and biotech industries. A related professional development program for middle and high school teachers is also being offered this July.

Central to the mission of NH CREATES is establishing a [learning ecosystem](#) to facilitate cross-sector collaboration among middle and high schools, New Hampshire colleges and universities and industry partners. This ecosystem will continue to grow and evolve over time to meet the state’s ever-changing workforce needs, Amato-Wierda adds. The initiative is also in alignment with UNH’s strategic priority to partner and collaborate with New Hampshire businesses and better support the state’s overall economy.

Several programs focused on regenerative medicine and biofabrication were introduced last summer when Tech Camp was held largely online or offsite due to the pandemic. As part of this effort, Krisztina Varga, associate professor of [molecular, cellular](#)

and biomedical sciences, led an in-person project at Dover High School focused on cryopreservation, a means of freezing cells and tissues for future usage.

“Our approach was to bring very complex concepts to life through a variety of hands-on experiments and demonstrations,” says Varga, noting that most of the participants had very little knowledge of cryopreservation and its applications prior to attending. “It was a very collaborative environment with students working side-by-side with teachers in the lab, actively engaged in the learning process. By the end of the week, I think everybody felt energized by the experience and excited to learn more.”

Founded in 2007, Tech Camp offers students in grades 5-12 the opportunity to participate in a wide variety of hands-on activities focused on science, technology, engineering and mathematics. The summer program covers an array of subject areas through a project-based curriculum that emphasizes collaboration and creative thinking. All levels of experience are welcome.

This summer, Tech Camp will run programs during the weeks of July 11-15, July 18-22 and July 25-29, all with day and residential options. Need-based scholarships are also available for programs that require tuition. Applications now being accepted.

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