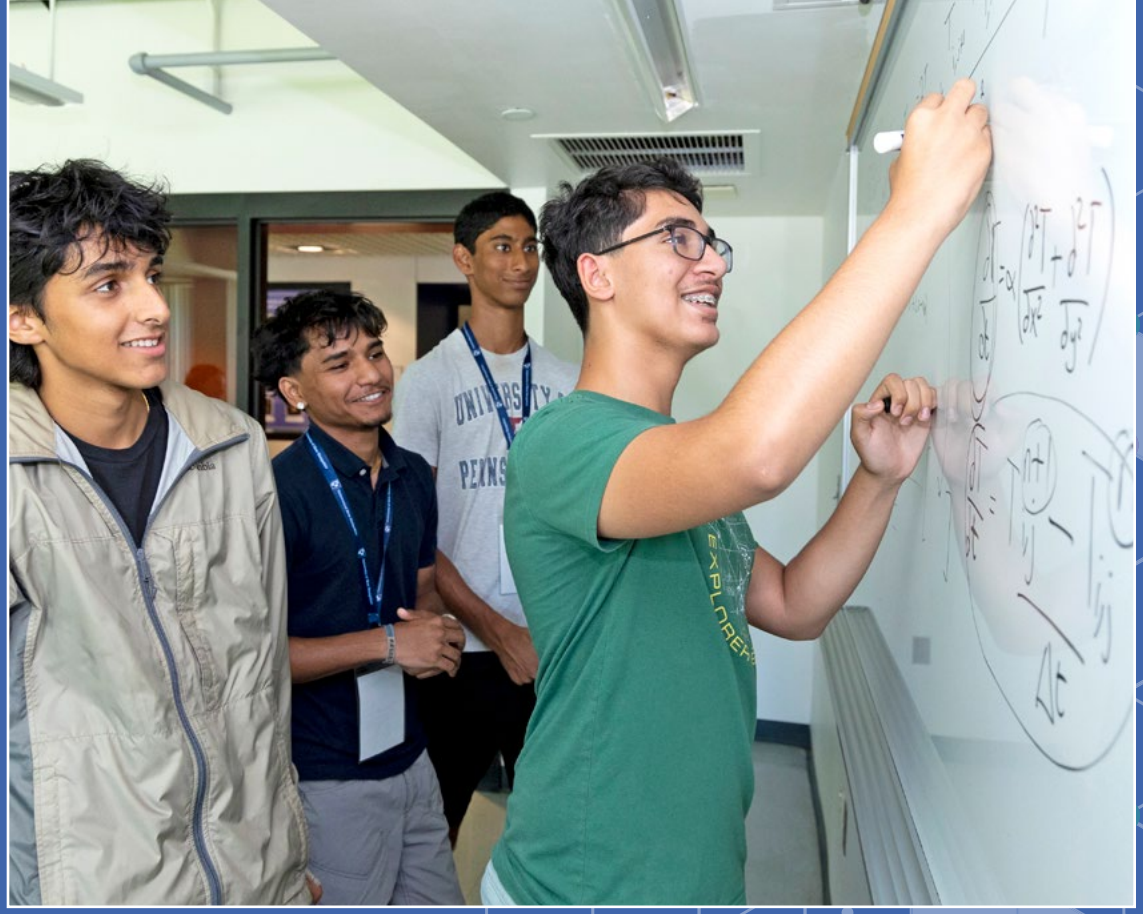
UNH Tech Camp

UNH TECH CAMP
2025 Annual Report

Sparking Creativity and **Innovation**

Broadening **Access** and Diversity

Opening New Doors to **Success**



UNH Tech Camp

UNH Tech Camp was founded in 2007 to inspire middle and high school students through collaborative, hands-on activities that bring science, technology, engineering and mathematics to life.

Offered through the College of Engineering and Physical Sciences, Tech Camp covers a wide range of subject areas—from engineering and regenerative medicine to virtual reality and forensic science—that are explored through a dynamic, project-based curriculum. The emphasis is on problem solving, creative thinking and having fun.

Since its beginning, Tech Camp has fostered a diverse and inclusive community with a goal to make STEM education available to all curious learners regardless of skill level or experience.

Dear Friends,

Tech Camp is always a whirlwind of creativity and discovery during its three-week run on the Durham campus each summer, filled with youthful energy and enthusiasm. It's a joy to be part of such a vibrant, curious and collaborative community. My sincere thanks to all the students, families, faculty and partners who helped make it such a success.

This year, we ran 19 projects for middle and high school students and welcomed nearly 200 participants. While most of our campers came from across New England, we also hosted students from California, New York, Texas, North Carolina—and even one from Spain!

Nearly 70% of our campers received financial assistance this year thanks to generous grant and donor funding. In addition to our student programs, we also hosted seven middle and high school STEM educators for our two-week Tech for Teachers Institute, expanding the impact of Tech Camp beyond the summer.

This summer marked the fifth anniversary of two key programs—NH CREATES and the Dinah Whipple STEAM Academy—both of which play an important role in expanding access to new audiences.

NH CREATES is our workforce development initiative focused on regenerative medicine and biofabrication. Supported by funding from the National Institutes of Health (NIH), the program is designed to spark interest in the biosciences while building pathways to careers in the field. All NH CREATES programs are offered free of charge, removing financial barriers for participants. Since its launch, more than 230 students have taken part in these hands-on learning experiences. The associated Tech for Teachers Institute has also welcomed over 40 STEM educators over the past five years.

The Dinah Whipple STEAM Academy—named in honor of the pioneering New Hampshire educator who founded the state's first school for Black children—was created to inspire interest in STEAM education among students of color, who are historically underrepresented in these fields. In addition to engaging students in science and technology, the program also incorporates African American history, offering a more inclusive and interdisciplinary learning experience. Like NH CREATES, Dinah Whipple is offered at no cost to participants. To date, 56 students have taken part in the program.

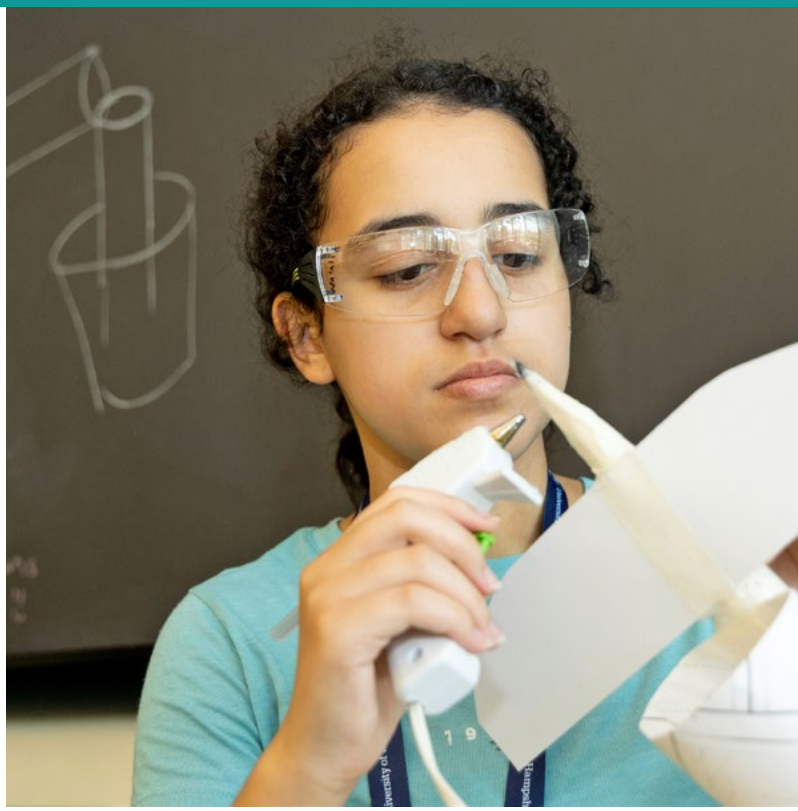
In addition to the NIH, I want to thank all of the generous sponsors and donors listed in this annual report who supported Tech Camp this summer. Your commitment to making STEM education accessible to all curious learners is making a real impact.

Sincerely,

Carmela Amato-Wierda

Carmela Amato-Wierda, Ph.D.
Associate Professor of Chemistry
Director, UNH Tech Camp

Sparking Curiosity and Building Confidence Through Experiential Learning



The Durham campus was bustling for three weeks this July as 195 middle and high school students immersed themselves in one of Tech Camp's 19 dynamic STEM programs. More than half chose the residential option, gaining the chance to experience university life firsthand. With support from sponsors and donors, over 65 percent of participants attended at no cost—including both tuition and housing. Though rooted in New Hampshire, Tech Camp also attracted students from nine other states, as well as an international participant from Spain, underscoring its wide reach.

As always at Tech Camp, all programs were taught in a collaborative, project-based format, with students engaging in an array of hands-on activities, interactive demonstrations and lab experiments. Research shows that this active learning approach enhances critical thinking and problem-solving skills. At the end of each session, a showcase allowed students to present their individual projects to parents, family and friends.

"I chose to attend UNH Tech Camp for bioinformatics because of my passion for biology and computer science in high school. Participating in the program the summer before my senior year greatly expanded my college search. Not only was UNH Tech Camp an incredibly fun experience, but it also deepened my knowledge and helped me shape my academic goals around my true interests."

– Olivia, Tech Camp Participant

Tech Camp Programs

TechSplorers

TechSplorers is a one-week, co-ed program for students entering grades 5-8. This past summer, two sessions were held, each focusing on a similar set of topics and activities. The goal of the program is to introduce middle school students to a wide variety of STEM subject areas and associated career opportunities. Each session includes professional scientists and engineers serving as projects leaders.

TechVenturers

TechVenturers is a one-week co-ed program for students entering grades 8-10. This past summer, three sessions were held, enabling more experienced students to explore various STEM topics through in-depth, project-based learning. The sessions focused on structural and transportation engineering, computer coding and game design, forensic science, remote-controlled cars and more. The decellularization and planaria projects, part of the NH CREATES initiative, were also offered.

TechLeaders

TechLeaders is a one-week, co-ed program for students entering grades 10-12. Three projects this year were focused on regenerative medicine and biofabrication as part of the NH CREATES workforce development initiative and included some crossover with the TechVenturers program. Projects included bioinformatics, cryopreservation and molecular visualization. Programs focused on data analytics and computer coding were also offered.

NH CREATES Celebrates Five Years of Inspiring Future Innovators

This summer marked the fifth anniversary of NH CREATES, a pioneering workforce development initiative designed to cultivate interest and expertise in the biosciences while also building pathways to future employment opportunities. Funded by a Science Education Partnership Award from the National Institutes of Health, the program is offered at no cost to participants and welcomes all levels of STEM experience.

Over the past several decades, New Hampshire has become a thriving hub for biotech startups specializing in regenerative medicine and biofabrication—the production of living cells, tissues and organs. This emerging industry holds the potential to revolutionize the treatment of complex medical conditions, establishing southern New Hampshire as a national leader in biotech entrepreneurship and innovation.

To help prepare the next generation for careers in this rapidly growing field, NH CREATES was established to address current and future workforce needs in the sector. Over a three-week period, Tech Camp hosted five weeklong NH CREATES programs this summer focused on bioinformatics, cryopreservation, decellularization, molecular visualization and regenerative organisms for 58 middle and high school students. To date, more than 230 students have participated in these cutting-edge offerings.

SEPA SCIENCE EDUCATION PARTNERSHIP AWARD
SUPPORTED BY THE NATIONAL INSTITUTES OF HEALTH

Exploring Regenerative Medicine Through Collaborative, Hands-on Learning

As part of the NH CREATES workforce development initiative, Tech Camp has offered the following innovative programs over the past five years to broaden understanding of regenerative medicine and biofabrication among middle and high school students. All programs are offered at no cost to participants and are open to all STEM experience levels.

- **Bioinformatics Project**
- **Bioprinting Project**
- **Cryopreservation Project**
- **Decellularization Project**
- **Molecular Dynamics Project**
- **Planaria Project**

Manchester CREATES Builds on Success in Year Two

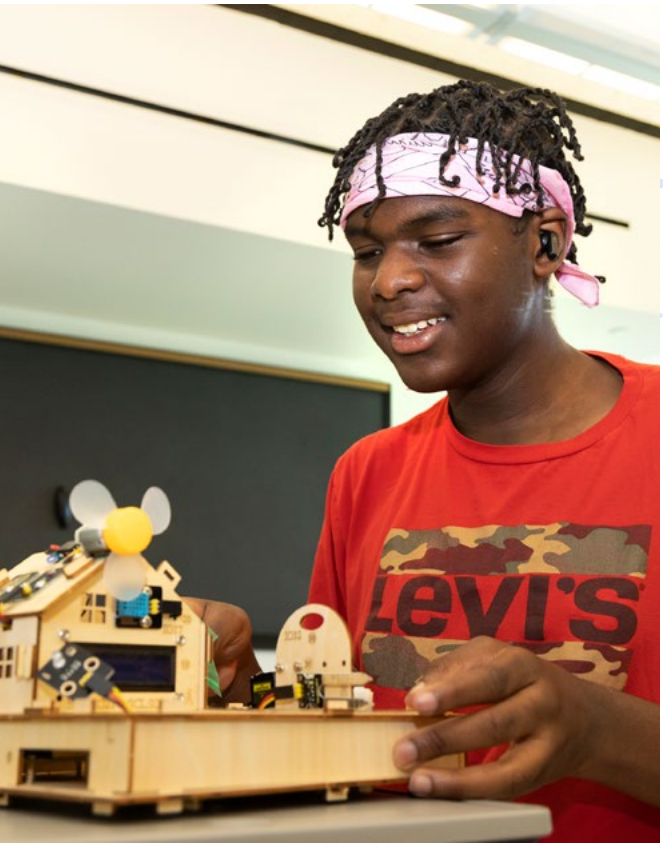
This past summer marked the second year of Manchester Tech Camp and by all accounts, it was a big success! Part of the broader Manchester CREATES workforce development initiative launched two years ago, these STEM programs are funded by a Build Back Better Regional Challenge grant awarded to the City of Manchester by the U.S. Economic Development Administration in 2022.

A total of six weeklong programs were offered this year exploring topics ranging from human anatomy and microscopy to animatronics and computer coding—all taught through collaborative, hands-on activities. A total of 38 students participated, attending at no cost thanks to grant funding.

In the Manchester Tech for Teachers Institute, seven teachers from the Manchester School District attended. During the two-week professional development program, these educators explored topics related to regenerative medicine and biofabrication and connected with industry experts involved in real-world research related to the biosciences. By the end of the program, each had developed a project-based learning unit to implement in their classrooms this coming school year. They will receive supplies and ongoing support from UNH.

Expanding Career Pathways for Underrepresented Students

The Dinah Whipple STEAM Academy celebrated its fifth anniversary this summer, welcoming 27 students—including 13 first-time participants—for a week of hands-on learning. The program introduces students to science, technology, engineering, the arts and mathematics (STEAM), while also introducing topics related to the Black experience. Since its launch, 56 students have participated, with many returning for multiple summers.



This summer, the Junior Explorers cohort (grades 5–7) explored biological and physical sciences, while returning students in grades 8–12 selected from three tracks: Microbes and Fermentation, Sustainable Infrastructure or Smart Tech & Weather Wonders. All programs were led by members of the UNH chapter of the National Society of Black Engineers, serving as both teachers and role models.

The Dinah Whipple STEAM Academy is designed to create a supportive environment where students from all backgrounds—including students of color, who have historically been underrepresented in STEM fields—can explore educational opportunities and discover career pathways in science and technology.

In addition to the weeklong summer program, participants in the Dinah Whipple STEAM Academy reconnect several times during the academic year for field trips, meeting STEM professionals and learning firsthand about employment opportunities.

Dinah Whipple, the namesake of this program, was a pioneering figure in New Hampshire history, best known for founding the state's first school for Black children in Portsmouth circa 1806. A formerly enslaved New Hampshire native, she became an advocate for education and an inspiration to future generations.

Inspiring the Next Generation of Students Starts with Teacher Development

Over two immersive weeks, the Tech for Teachers Institute brought together middle and high school STEM educators to explore emerging technologies—this year with a focus on regenerative medicine—while strengthening their classroom skills through project-based learning. This innovative, paid professional development program welcomed seven educators from across New Hampshire this summer.

Collaborating with fellow educators, UNH faculty, graduate students, industry professionals and subject-matter experts, Tech for Teachers participants designed projects to implement in their classrooms this school year.

As part of the broader NH CREATES workforce development initiative at UNH funded by a Science Education Partnership Award from the National Institutes of Health, Tech for Teachers equips educators with both in-depth knowledge and ready-to-use classroom resources. Open to both school teams and individual participants, Tech for Teachers offers a $1,500 award upon completion, CEUs, classroom supplies and ongoing support from UNH faculty and graduate students.

Participants

Brian Eibert — Nute Middle/High School, Milton
Mary Evilsizer — Spaulding High School, Rochester
Anna Furlone — Great Bay Charter School, Exeter
Tina Goyetch — Pinkerton Academy, Derry
Mary Kate Hartwell — Pennichuck Middle School, Nashua
Kathryn Kreatz — Pinkerton Academy, Derry
April Wallace — Pittsburg School, Pittsburg

Jessica Carcerano–Wheeler Named NH Tech Alliance Tech Educator of the Year

Jessica Carcerano-Wheeler, a 7th grade STEAM teacher at Cooperative Middle School in Stratham, was named Tech Educator of the Year by the New Hampshire Tech Alliance. Honored at an award ceremony held on May 28, Carcerano-Wheeler was recognized, in part, for her innovative curriculum focused on regenerative medicine and 3D bioprinting—developed when she was a participant in the Tech for Teachers Institute in 2024.

The classroom unit Carcerano-Wheeler created while attending the UNH summer program, “What Do Star Wars, Cheeseburgers and 3D Bioprinting Have in Common?” brings complex bioscience concepts to life through hands-on, collaborative activities. Students in her class explored the connections between Luke Skywalker’s bionic arm, 3D-printed cheeseburgers and cutting-edge organ bioprinting.

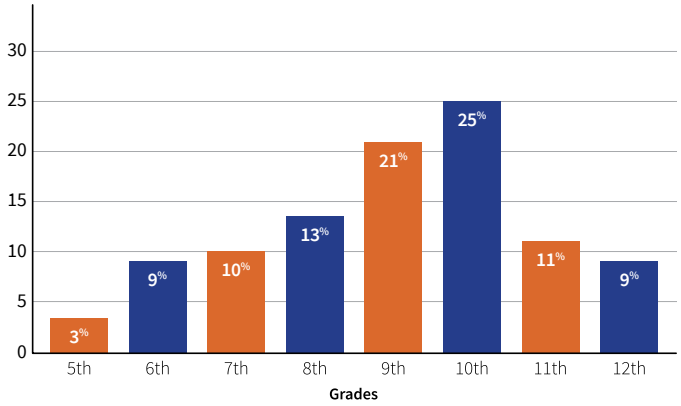
Using cardboard, wooden spools and towels, students built mock 3D printers and experimented with cake frosting as “bioprinting” material—creating (and eating) frosting hearts, lungs and other “organs.” The project combined creativity, engineering and scientific discovery in a way that made advanced biotechnology accessible and fun for middle school learners.

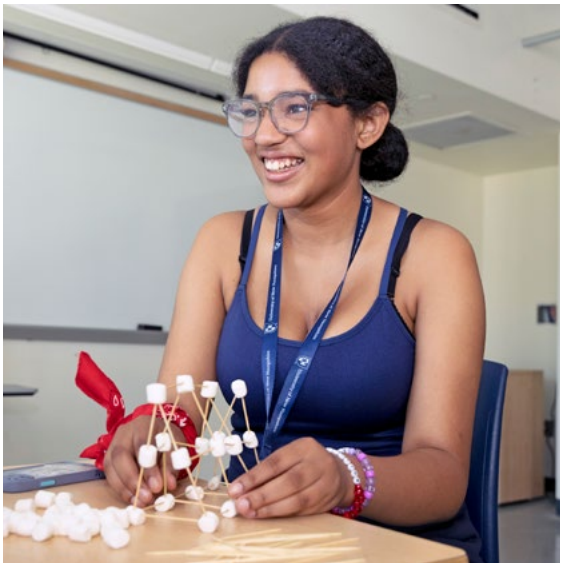
SEPA SCIENCE EDUCATION PARTNERSHIP AWARD
SUPPORTED BY THE NATIONAL INSTITUTES OF HEALTH

Tech Camp by the Numbers

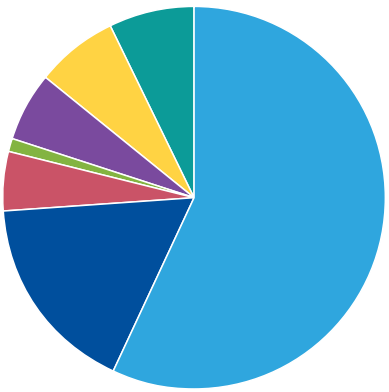
195	Registered campers
65+	Instructional staff
19	Programs
55%	Residential campers
65%	Received Financial Aid

Tech Camp Total Enrollment by School Grade





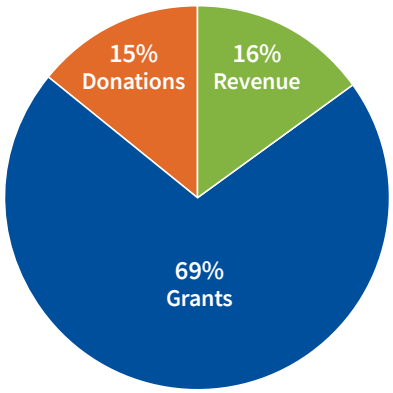
Tech Camp Racial-Ethnic Demographics



- White 57%
- Asian 17%
- Black/African American 5%
- Middle Eastern 1%
- Prefer Not to Answer 6%
- Multi-racial 7%
- Other 7%

7% of respondents also self-identified as Hispanic or Latino, Latina or Latinx.

Tech Camp Funding



Tech Camp Faculty and Staff

Leadership Team

Carmela Amato-Wierda
Tech Camp, Director
NH CREATES, Principal Investigator

Amy Booth
Tech Camp, Assistant Director
NH CREATES, Project Director

Shannon McCracken-Barber
Manchester Tech Camp, Director
Manchester CREATES, Project Director

Shawn Gygax
Camp Manager, Durham

Joe Green
Residential Life Director

Faculty Project Leaders

David Benedetto
University of New Hampshire

Pei Geng
University of New Hampshire

Jason Simon
University of New Hampshire

Matthew Young
New England College

Faculty Project Advisors

Jason Pellettieri
Keene State College

W. Kelley Thomas
University of New Hampshire

Krisztina Varga
University of New Hampshire

Project Instructors

Tomi Ademola
Frederick Adom
Stella Ansah
Danika Ashness
Olivia Beauchamp
Admas Berisso
Ivy Brooks
Logan Brown
Leandra Bryant
Bridget Buckley
Adeniran Coker
Andrea Frey
Lawrence Gordon
Felicia Green
Dan Heath
Matthew Johnson
Yuri Kwon
Hannah Miller
Lisa Nash
Peter Okereke
Ben Ramsey
Denise Rock-O'Hara
Haley Royce
Kristin Sellitto
Joseph Sevigny
Stephen Simpson
Cassandra Stone
Patrick Strobel
Engin Taze
Brandon Tench
Tiffany Thompson
Matthew Thompson
John Wilderman

Camp Counselors

Alex Alfieri
Aidan Bell
Allie Bell
Owen Bell
Zora Brady
Emma Burr
Ariyana Greene
Garrett Hunter
Alexander Marchant
Yury Ovchinnikov
Diya Sridharan
Ari Starr
Ria Talwar
Gloria Tawalujan
Rowan Young

Our Donors and Supporters

We are grateful to all of the donors and sponsors who contributed to Tech Camp this year for their commitment to making our programs accessible to all curious learners. Their generous contributions enable us to expand access to STEM education, ensuring that more students can benefit from our programs, regardless of their financial circumstances.

Donors

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UNH National Society of Black Engineers*
UNHM STEM-MoBILE*
WTS (Women's Transportation Seminar)*

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National Institutes of Health/Science Education Partnership Award
National Science Foundation

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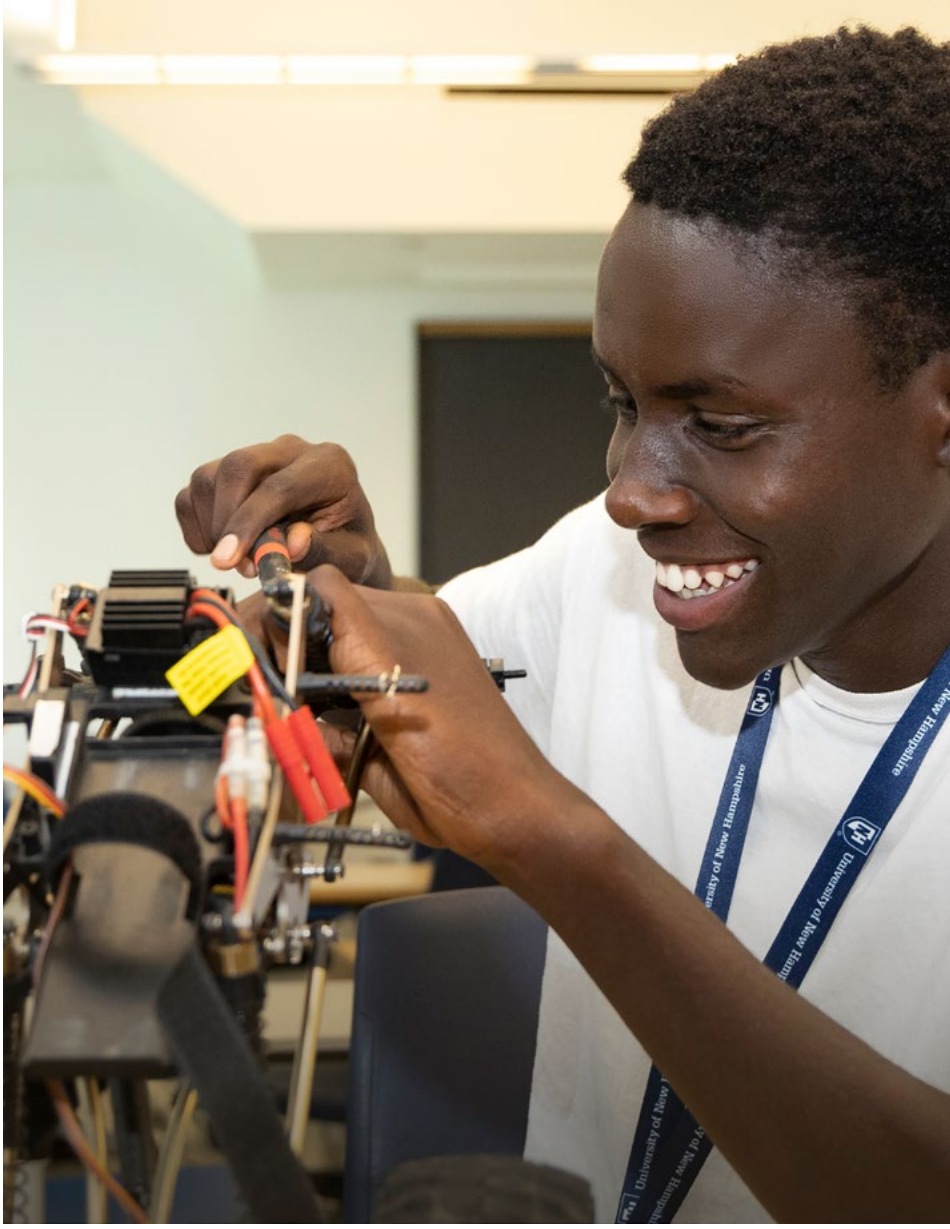

For more information on Tech Camp, please visit ceps.unh.edu/outreach/tech-camp or contact Carmela Amato-Wierda at carmela.amato-wierda@unh.edu.