

THE TALCOTT CONTINUUM

WHERE STEM EDUCATION, RESEARCH, & OUTREACH COME TOGETHER



TALCOTT MOUNTAIN

SCIENCE CENTER • ACADEMY • RESEARCH INSTITUTE

Announcing the Talcott Mountain
Research Institute (TMRI)

Pgs. 1-2

Meet Rhea and Raji Doshi: Sister
Inventors Making a Difference

Pg. 6

Announcing the Talcott Mountain Research Institute (TMRI)

Talcott Mountain Science Center & Academy (TMSCA) is proud to announce the launch of the Talcott Mountain Research Institute (TMRI). This new initiative builds on nearly sixty years of inspiring curiosity and advancing STEM education for K-8 learners, expanding our mission into high school and professional research. TMRI will serve as a hub where scientists, engineers, mathematicians, educators, and students come together to explore at the frontiers of knowledge.

A New Chapter on the Mountain

Perched atop Talcott Mountain in Avon, Connecticut, TMRI is a STEM-focused research center—an incubator for bold ideas where discovery and collaboration flourish. TMRI extends the legacy of TMSCA: where the Science Center and Academy ignite young minds through immersive teaching and learning, TMRI propels high school students and STEM professionals into research that drives discovery and sparks new connections across disciplines.



education, the Science Center whets the appetite

“I enjoy cooking and think of our work as a full meal,” says Dr. Jay White, Director of TMRI and Director of Science & Innovation for Talcott Mountain Science Center. “The Academy nourishes with the fundamentals of formal

of public curiosity, and now TMRI offers the rich, sustaining course of research. Taken together, they serve a feast of STEM—an endless banquet where exploration and discovery are always on the menu.”

As the Director of TMRI, Dr. White brings a wealth of experience as an astrophysicist, educator, and global science leader. His career spans more than three decades and six continents, blending research with science education and public outreach.



First Initiative: TMRI Summer Program

One of TMRI's inaugural initiatives will be its Summer Program in July 2026, a four-week, non-residential program of advanced learning and STEM research for select high school students. Participants—rising sophomores, juniors, and seniors—will conduct original research projects under the mentorship of PhD-level faculty in science, mathematics, and engineering. Applications open in early 2026.

Faculty Research Mentors will play a pivotal role in shaping the Summer Program. Each mentor will guide a small group of students through the research process, from lectures and question formulation to methodology, analysis, and presentation of results. These mentors will be practicing scientists, engineers, and mathematicians who combine active research with a passion for teaching and inspiring future STEM leaders.

“I am just so excited by what TMRI will contribute to our work on Talcott Mountain and more broadly to what we humans know about nature,” says Dr. White. “For nearly sixty years, this cool organization has nurtured curiosity and innovation by way of significant, STEM-focused programs. With TMRI, we will carry that legacy forward—extending it into research that unites scholars, students, and educators.”

Future Plans for TMRI

The Summer Program is just the beginning. Over its first few years, TMRI will expand into a dynamic center of research, education, and public engagement. Planned initiatives include:

Institute Postdoctoral Scholars:

Each year, TMRI will host at least one Institute Postdoctoral Scholar. These newly degreed STEM professionals will bring their STEM expertise and commitment to education to TMSCA activities.

“On the Shoulders of Giants” Lectures:

TMRI will host large-scale lectures to connect our community with thought leaders whose work inspires curiosity and shapes the future of STEM.

Summit Salons:

In addition to large gatherings, TMRI will convene small, intimate, discussion-based events led by special guests selected for their notoriety in particular areas of scholarly and popular interest.

Already in the planning stages are the first Summit Salon in spring 2026, the inaugural Summer Program in summer 2026, and a series of collaborative partnerships with regional and national organizations. Throughout 2025, Dr. White and the TMRI and TMSC STEM Advisory Board have been laying the groundwork to ensure these foundational elements are in place and ready to launch.

“TMRI joins Talcott Mountain Science Center and Talcott Mountain Academy as a third pillar in our commitment to unifying STEM education, research, and outreach,” says Jeff Martin, Executive Director of TMSCA. “Through these collective efforts, we can inspire and empower advanced and curious learners of all ages.”



STEM Advisory Board

Supporting this work is the STEM Advisory Board, formed by Dr. White in January 2025. This group includes scientists, engineers, mathematicians, and creativity experts who advise on everything from innovative teaching practices to national partnerships, ensuring TMRI's growth is both visionary and grounded. Members include:

- Sarah Spence Adams, PhD – Professor of Mathematics and Electrical & Computer Engineering, Olin College of Engineering
- Stephon Alexander, PhD – Professor of Physics, Brown University
- Andre Bormanis, MS – Writer/Producer
- April Burch, PhD – Director of Advanced Math/Sci Research Program, Berkshire School
- Stephen Fantone, PhD – CEO and Founder, Optikos Corporation
- Norman Fortenberry, DSc – former CEO, Great Minds in STEM
- Linda Ivany, PhD – Professor of Earth Sciences, Syracuse University
- Stella Kafka, PhD – former Exec Director and CEO, American Meteorological Society
- Jacob Komar, PhD – CEO, JK Productions
- Katharine Ott, PhD – Professor of Mathematics, Bates College
- Keivan Stassun, PhD – Professor of Astronomy, Vanderbilt University
- Sarah Wojiski, PhD – Director of Education, The Jackson Laboratory

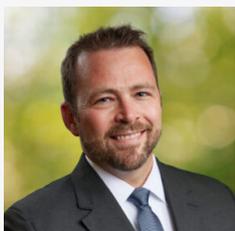


Join Us on This Journey

We invite you to learn more about TMRI by visiting talcottscience.org/research-institute or scanning the QR code. Stay tuned for Summer 2026 program applications opening in January. Contact Dr. Jay White at jwhite@tmisc.org if you have questions about the Summer Program or the Faculty Research Mentorships

Your engagement—whether as a partner, advocate, or mentor—will help TMRI flourish and extend Talcott Mountain's legacy of discovery. Together, with your support, TMRI will continue the tradition of inspiring curiosity, nurturing discovery, and shaping the future of STEM.

A NEW YEAR, A RENEWED MISSION



On the morning of September 2, the buses rumbled up our bumpy mountain road, bringing Talcott Mountain Academy students to their first day of the new school year. More than a few of our students were grinning from ear to ear, and the din of excitement amongst our students was palpable (and, yes, we imagine there was a similar feeling of excitement amongst parents and guardians off the mountain). It is not hyperbole to say that it is with this same excitement that we introduce this newsletter to you.

Through this newsletter, we are thrilled to share with you what has been and is happening on the mountaintop, stories of our alumni accomplishments, and ways in which you can help to support us in our continued efforts. We will share our newsletter with you in the fall, winter, and spring, and we hope you find it both informative and inspiring.

As we introduce this newsletter, I am also pleased to “introduce” to you our new mission statement, approved by the Board of Trustees just last month:

“We are a pioneering STEM institution where education, research, and outreach inspire and empower advanced and curious learners.”

As a community, we spent significant time over the past year thinking about, wrestling with, and ultimately settling on this statement. We feel strongly that it captures the fullness of our one-of-a-kind organization: a Science Center offering immersive STEM learning opportunities and outreach, an Academy that provides comprehensive schooling for advanced learners, and a newly formed Research Institute that will serve as a critical convening point between scientific research and STEM education. Fulfilling our mission is a tall order, and with your ongoing support, we will continue to inspire learners of all ages to be the innovators of tomorrow.

As you read this newsletter, we hope you find something that illuminates just how special this organization truly is. For our alumni, we hope that you will reminisce about the impact Talcott had on you, and we hope you will share those recollections with us. For our current students and families, we hope you will enjoy and be inspired by the stories of our alumni accomplishments. For all of our supporters, we hope you see the impact of your generosity and encouragement.

It’s an exciting time on the mountain. Thank you for the role you play in ensuring ongoing excitement, inspiration, and impact. As the year goes on, we look forward to sharing more exciting news with you, the Talcott family.

Gratefully,

A handwritten signature in black ink, appearing to read 'Jeff Martin'. The signature is fluid and cursive, with a large initial 'J'.

Jeff Martin | Executive Director, Talcott Mountain Science Center & Academy

A Day of Discovery at the 7th Annual BioBlitz

The Talcott Mountain campus was alive with discovery as students, teachers, and volunteers gathered on Friday, September 12, for the Academy's 7th Annual BioBlitz. The daylong event offered an exploration of the rich biodiversity surrounding our mountaintop home.

"BioBlitz allowed us to step outside the classroom and apply our knowledge through a fun and interactive all day event that taught, exposed, and connected us more to nature and each other," said student Dean.

This year, students tried something new: the iNaturalist app, a citizen science tool that allows users to photograph and identify species while contributing data to real scientific research. Throughout the day, students recorded 433 observations and identified 191 species, uncovering everything from flowers and trees to frogs, spiders, bird feathers, and even snake skins.

"My favorite part of BioBlitz was identifying plants and animals and learning what type they were in a few seconds with iNaturalist," said student Nikhil. "The coolest animal I saw was a dead bird found on the sundial."

BioBlitz is an opportunity to see science in action, ask questions about the natural world, and understand our place within it. Thanks to the energy of our students, the guidance of our teachers, and the support of volunteers, this year's event was a true success. We can't wait to see what discoveries next year will bring!



STAY CURIOUS WITH US!

Visit talcottscience.org/events/ to learn more about upcoming Talcott Mountain Academy programs and events.

Science by the Shore at Hammonasset Beach

Academy students in grades 5 through 8 joined their science teachers, Dr. Z, Mrs. Roberts, and Ms. Marye, for a memorable day of outdoor learning and exploration at Meigs Point in Hammonasset Beach State Park on Friday, September 25.

The adventure began with a hike along the Moraine Trail, where students learned about the geology of Long Island Sound and the natural history of the area. From there, they conducted a hands-on survey of invasive Asian shore crabs in the rocky intertidal section of the beach, catching 374 crabs in just 15 minutes.

"I loved our crab survey! It was so fun to turn over rocks and see the little crabs crawling everywhere. I also liked when we got to swim in the water," said student Brycen.



Students also collected shells for a class project, searching for at least eight different species and two shells showing interactions such as worm burrows or barnacles.

"I thought that collecting the shells was really fun!" said student Audrey.

The day included free exploration at the beach, including swimming, sandcastle-building, and making cyanotype sun prints. A friendly passerby even gifted the students a kite to fly along the shore.

"I liked making the extremely real sand castle with a moat and wall," said student Ansh.

The trip concluded with a visit to the Meigs Point Nature Center, where students explored displays of native animals and reflected on their day.

"The beach trip was an engaging way to interact with the real world and apply the learning concepts we learned in class," said student Sheldon. "Not only did it provide further application for the topic of marine science, but it was also an extremely interactive and entertaining way to do fun activities such as catching the invasive species of *Hemigrapsus sanguineus*, and finding shells for a hands-on learning assignment."



SUPPORT HANDS-ON LEARNING AT TALCOTT!

Make a gift to Talcott Mountain Science Center & Academy to help students experience programs and events like BioBlitz and field trips to Hammonasset Beach. Visit talcottscience.org/donate/ or scan the QR code.



Meet Rhea and Raji Doshi: Sister Inventors Making a Difference

At Talcott Mountain Academy (TMA), students' curiosity and creativity lead to remarkable inventions. Sisters Rhea and Raji Doshi are two of the innovators contributing to this tradition. Rhea, a 2023 TMA graduate now a sophomore at Kingswood Oxford, and Raji, a current 7th grader at TMA, are using their talents in STEM to solve real-world problems.

Rhea Doshi: Advancing Early Diagnosis in Medicine

Rhea is tackling neurodegenerative disorders with her invention NeuroStride™, a gait analysis system consisting of a smart mat embedded with pressure sensors, motion capture, and real-time video analysis. The technology is designed to diagnose patients with a neurodegenerative disorder up to fifteen years earlier than standard methods, offering an affordable, effective, non-invasive, and accessible solution.

"The idea behind NeuroStride™ originated from my two-year internship in my mom's medical practice,"

says Rhea. "She worked with many patients with neurodegeneration, and it was heartbreaking to see their conditions worsen. After conducting research, I discovered that late diagnosis was the primary issue. Early diagnosis of neurodegenerative disorders could save lives and time for so many individuals."

Rhea's efforts have already been recognized with the RTX Inventing Tomorrow award at the National Invention Convention, validating the hard work she put into developing her invention.

"Talcott introduced me to numerous new and exciting realms of science and engineering that I had never encountered before," says Rhea. "This became the foundation of my passion for STEM and inspired me to participate in science fairs, invention conventions, and other events. The teachers were all very supportive of my journey, and because of this, I have made significant progress."

For Rhea, the most exciting part of the process was testing her invention. NeuroStride™ went through

a twenty-patient clinical trial, and the AI technology is validated with 97% accuracy. More recently, Rhea received IRB approval to move on to a 500-patient clinical trial.

“It was incredibly rewarding to create my finished product and have others test it out,” says Rhea. “Seeing it work was definitely nice, but also a sign to keep working at it!”

Looking ahead, Rhea plans to pursue a career in biotechnology, continue developing her inventions, and bring them to the market as soon as possible.

Raji Doshi: Making Daily Life Easier for Seniors

Raji’s invention, SMART—Sock Mobilization and Assistance Robotic Technology—makes wearing compression socks easier for seniors and individuals with limited mobility. Inspired by her grandmother’s struggles with arthritis, Raji designed a device that allows users to place their foot in a sock, press a button, and have the sock pulled up automatically via a conveyor belt mechanism.

“Every day, I watched my grandmother struggle as she attempted to put on her compression socks, and when I tried to help her, she became frustrated,” says Raji. “That is when I decided that something had to be done, and after brainstorming and researching, I decided SMART would be the perfect solution.”

Raji’s invention has earned multiple accolades, including first place at a TMA competition, recognition to advance at the regional level, and a provisional patent award at the state level.

“My experience at Talcott was helpful because my mentors were very supportive,” says Raji. “I also appreciated having access to all the materials I needed for the technological aspect of my invention.”

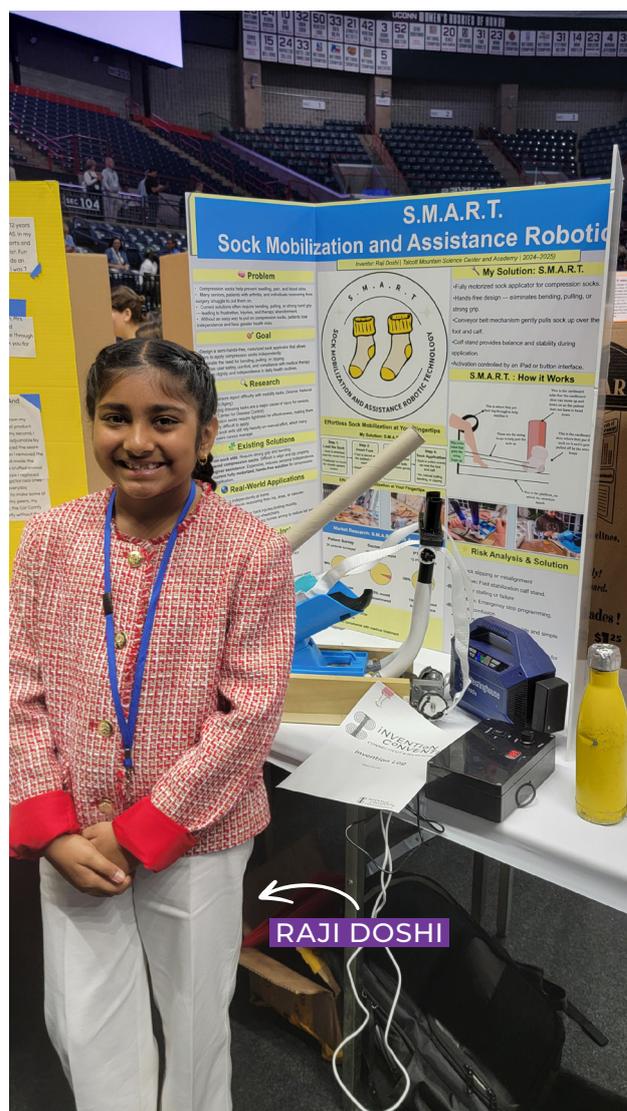
Seeing her invention come to life and work for the first time was especially thrilling. One of the most surprising parts of the process was realizing just how many potential users her invention has.

“Every time I create or invent something, the most exhilarating moment is always the ‘aha’ moment,” says Raji. “For an inventor, that is the moment when you can finally complete your project and see it help people. It is amazing what you can do when you are

creative; it makes me want to keep inventing!” Going forward, Raji plans to fully motorize the system, add a sock removal feature, and test it with seniors to enhance safety and comfort. She hopes SMART will one day be used in hospitals, nursing homes, physical therapy centers, and homes to help users retain dignity and independence.

A Shared Journey in STEM

Rhea and Raji Doshi are examples of how curiosity, creativity, and determination can lead to inventions that make a real difference. Through their experiences at Talcott, they developed not only technical skills but also the confidence to pursue ambitious ideas and solve meaningful problems. From helping seniors maintain independence to detecting neurodegenerative disorders years earlier, the Doshi sisters are using their talents to improve lives, showing that innovation and compassion go hand in hand.



STUDENT ACHIEVEMENTS 2024-2025

Talcott Mountain Academy students participated in the Science Fair and History Day during the 2024-2025 school year, earning recognition for their innovative projects and research.

SCIENCE FAIR 2025

Kwabena Addai-Boateng

The impact of 3D-printed low-cost quadrupedal robots using swarm mechanics on highway litter cleaning services

- Stanley Black & Decker Applied Technology Awards — Middle School Finalist - Medallion
- Infosys Foundation Computer Science Awards — Middle School Finalist - Medallion

Konstantinos (Dean) Raptis

The Use of Short-form Media and its Correlation With Working Memory Functions in Adults

- Alexion Biotechnology Awards — 2nd Place Biotechnology 7th grade, \$150 & trophy

Arya Samat

Pupation Behaviors in Manduca sexta: Substrate Choices and Pupation Success

- Connecticut Association of Conservation and Inland Wetlands Commissions Environmental Sciences Awards — 2nd Place, Middle School, \$150 & Trophy

HISTORY DAY 2025

Kwabena Addai-Boateng

Big Tobacco on Trial School

- Documentary — Honorable Mention

Raji Doshi

Women in Flight: Legacy of Dreams School

- Documentary — 3rd Place

Sheldon Hsiao

Miranda Rights: Its Controversial Impact on Law Enforcement and the United States School

- Individual Performance — 1st Place

Konstantinos (Dean) Raptis

Broken Trust: The Many Rights and Responsibilities Violated in the Tuskegee Experiment School

- Website — 2nd Place

Congratulations to all of our students for their hard work and outstanding achievements!

ALUMNI SPOTLIGHT: CLASS OF 2025

Talcott Mountain Academy is proud to recognize the Class of 2025. As they take their next steps in education, we're excited to share where our graduates are continuing their journeys in high school.

Kwabena Addai-Boateng

High School: International Baccalaureate Academy

Huntington Beckett

High School: Glastonbury High School

Oliver Fitzgerald

High School: Kingswood Oxford School

Arya Samat

High School: Hotchkiss School

Jane Xue

High School: Watkinson School



SHARE YOUR TALCOTT STORY!

Talcott Mountain Academy alumni, we want to hear from you! Scan the QR code and fill out our form to let us know what you're up to now and share your favorite memories from your time at TMA.



SUPPORT TALCOTT MOUNTAIN SCIENCE CENTER & ACADEMY

Your generosity helps Talcott continue to inspire learners of all ages. Gifts to the Science Center, Academy, and Research Institute support hands-on STEM programs, outdoor exploration, and innovative learning opportunities for students in grades K-12. Every contribution helps fuel curiosity, creativity, and discovery on the mountaintop.

Make a gift today! Visit talcottscience.org/donate/ or scan the QR code.

Talcott Mountain Science Center & Academy
860-677-0035
324 Montevideo Rd, Avon, CT 06001

www.talcottscience.org



UPCOMING EVENTS

Admissions & Enrollment Open House – Saturday, November 8

Discover what makes Talcott Mountain Academy a unique learning environment for advanced and curious students. Meet teachers, explore the campus, and learn about our programs.

Curious Minds Workshop – Saturday, November 15

This exciting new program, a collaboration between the Science Center and Academy, offers immersive learning experiences for 2nd-6th graders in the community. A perfect opportunity for young learners to ignite their curiosity.

Learn more and register at talcottscience.org



TALCOTT MOUNTAIN

SCIENCE CENTER • ACADEMY • RESEARCH INSTITUTE