Call for Faculty Research Mentors

TMRI Scholars Summer Research Program | 2027

June 28 – July 23, 2027 | Avon, Connecticut

Perched atop Talcott Mountain in Avon, Connecticut, the Talcott Mountain Research Institute (TMRI) is an emerging center for scientific research, interdisciplinary collaboration, and advanced STEM learning. An incubator for bold ideas and intellectual exploration, TMRI brings together scientists, educators, and students to investigate compelling questions, develop new approaches to discovery, and nurture the curiosity that drives scientific progress.

TMRI works alongside the Talcott Mountain Science Center (TMSC) and Talcott Mountain Academy (TMA), two longstanding educational institutions whose complementary missions come together in the Talcott Mountain Science Center & Academy (TMSCA). Building upon a nearly sixty-year tradition of inspiring curiosity and advancing STEM education, TMRI extends the intellectual reach of Talcott Mountain into original research and advanced scientific inquiry. Where TMSC and TMA cultivate curiosity and scientific understanding through innovative educational experiences, TMRI creates opportunities for emerging and established researchers to investigate questions at the frontiers of knowledge. With expanding research partnerships and significant new investments in scientific facilities and infrastructure, TMRI is developing a distinctive environment in which research, mentorship, and discovery reinforce one another.

In summer 2026, TMRI launched its inaugural summer research program for a select cohort of talented and intellectually curious high school students. Building on that successful first year, the Institute now invites applications for Faculty Research Mentors for the 2027 TMRI Scholars Summer Research Program, June 28 through July 23, 2027.

The Summer Research Program is the flagship experience of TMRI Scholars, an emerging community of young researchers whose engagement with scientific inquiry can extend well beyond their summer on Talcott Mountain. Over four intensive weeks, Scholars work alongside accomplished scientists, mathematicians, and engineers to explore advanced disciplinary concepts, engage with scientific literature, formulate original research questions, and pursue meaningful investigations of their own. Through close collaboration with Faculty Research Mentors, including participation in ongoing research at university laboratories and other professional research settings, students experience not simply what scientists know, but how scientific knowledge is created, challenged, and advanced.

Faculty Research Mentors

TMRI seeks accomplished and enthusiastic STEM professionals to serve as Faculty Research Mentors (FRMs) for its 2027 Summer Research Program.

Each Faculty Research Mentor will guide a small group of highly motivated high school students, generally rising sophomores through seniors, through an intensive experience in scientific inquiry and original research. Mentors introduce students to foundational concepts, contemporary questions, and research methodologies within their disciplines while helping them develop and pursue research projects appropriate to their interests, abilities, and the program's four-week duration.

A distinctive feature of the TMRI Scholars experience is the opportunity for students to undertake authentic research within the established research environments of their mentors. TMRI particularly seeks Faculty Research Mentors who can welcome Scholars into their active research programs, including laboratories at nearby colleges and universities. Working within these settings, Scholars may engage with ongoing investigations, encounter professional research practices and instrumentation, and contribute to projects connected to their mentors' scholarly work. For disciplines in which research is primarily computational, theoretical, observational, or otherwise conducted outside traditional laboratories, equivalent access to active research environments is equally welcome.

The Faculty Research Mentor role is both intellectually substantive and deeply collaborative. Beyond guiding individual research projects, mentors participate in a shared academic environment that encourages discussion across disciplines, critical engagement with scientific literature, and thoughtful scientific communication.

This opportunity is particularly well suited to scientists, engineers, and mathematicians who enjoy working with emerging scholars and are eager to inspire the next generation of researchers. It also offers Faculty Research Mentors an opportunity to develop their own approaches to teaching, research leadership, and mentorship while becoming affiliated with a growing scientific institution.

Research Disciplines

TMRI welcomes Faculty Research Mentor applications across a broad range of STEM disciplines, including:

- Astronomy, Astrophysics, and Planetary Science
- Atmospheric and Environmental Sciences
- Biology, including Theoretical and Computational Biology
- Biomedical Science and Engineering
- Chemistry
- Computer Science and Data Science
- Engineering
- Geoscience
- Mathematics and Applied Mathematics
- Physics
- Interdisciplinary research that spans disciplines

The suitability of a proposed research area will be determined primarily by its capacity to support meaningful, achievable investigations for advanced high school students within the four-week program. Priority will be given to mentors who can integrate Scholars into established research activities and provide access to appropriate facilities, instrumentation, computational resources, and supervision without substantial additional program expenditures.

Responsibilities

Faculty Research Mentors will:

- Serve as primary research mentors for small groups of no more than four high school Scholars.
- Deliver content lectures and lead discussions introducing essential concepts, contemporary developments, methodological approaches, and compelling unanswered questions within their research disciplines.

- Guide each Scholar in identifying a meaningful research question and designing an achievable project that can produce substantive results within the four-week program.
- Whenever feasible, provide opportunities for Scholars to conduct research within the mentor's established laboratory, research group, or professional research environment, including facilities at regional colleges and universities.
- Arrange appropriate access, supervision, and research activities at off-campus facilities, in coordination with TMRI and the host institution.
- Provide instruction and mentorship in research design, investigative methods, data collection, quantitative and qualitative analysis as appropriate, and interpretation of findings.
- Encourage scientific reasoning, creativity, intellectual independence, and an appreciation for uncertainty as an essential feature of research.
- Participate with the Faculty Research Mentor team in cohort-wide academic activities, including Journal Club, interdisciplinary discussions, and research progress sessions.
- Support Scholars in preparing and delivering weekly research updates and presenting their findings at the concluding Scholars' Summer Research Symposium.
- Collaborate with fellow mentors to create a rigorous, welcoming, and intellectually supportive research environment.
- Participate in scheduled virtual faculty planning sessions and introductory meetings with Scholars before the program begins.
- Assist with supervision during program-related field trips, research visits, and social activities as needed.

Nature of Commitment

Program duration: Four weeks, June 28 through July 23, 2027.

Anticipated Daily Schedule: The program will ordinarily follow the schedule below, with morning academic activities on Talcott Mountain and afternoon research conducted on campus or at participating research facilities. Specific times and activities may vary to accommodate research requirements, transportation, and special program events.

Time	Activity
08:45am – 09:00am	Transport to Mountain
09:00am – 10:30am	Faculty-led discussions, Journal Club, interdisciplinary work
10:30am – 11:30am	Lunch and social time
11:30am – 12:00pm	Transition/Transport
12:00pm – 04:00pm	Research, individual meetings, collaborative investigations
Friday mornings	Research progress discussions and presentations
Final Friday, July 23	Scholars' Summer Research Symposium

Faculty Research Mentors will participate in morning academic activities at the Talcott Mountain campus and provide or coordinate direct research mentorship throughout the afternoon. Following the morning program, Scholars will transition to their respective research locations, including college/university laboratories, research facilities, or other approved settings. This schedule is designed to balance the intellectual community of the full cohort with sustained engagement in authentic research.

Prior to the program: Faculty Research Mentors will participate in virtual planning meetings, including coordinated academic preparation and introductory sessions with the incoming Scholars.

Compensation: An $8,000 stipend for full-time, daily participation during the four-week program.

Benefits: Limited program-related meals and transportation may be provided. No additional employee benefits are offered.

Institutional affiliation: Faculty Research Mentors will receive a formal research affiliation with the Talcott Mountain Research Institute for their period of appointment.

Travel: Mentors must be able to travel regularly to the Talcott Mountain campus in Avon, Connecticut. Research activities may also require travel to participating colleges, universities, or other research facilities in the region.

Qualifications

Successful candidates will possess:

- A PhD degree in a STEM discipline or advanced doctoral standing (ABD), with relevant research experience.
- Active engagement in scientific, mathematical, engineering, computational, or STEM education research.
- Demonstrated experience mentoring, teaching, or supervising high school or undergraduate students in research or advanced academic settings.
- The ability to translate sophisticated disciplinary concepts and research methodologies into accessible, intellectually challenging experiences for talented high school students.
- An established research program, or active participation in a research group, capable of supporting meaningful student investigations. Particularly desirable is the ability to provide supervised access to an active laboratory or comparable professional research environment.
- Strong interpersonal, organizational, and scientific communication skills.
- A commitment to collaborative mentorship and to fostering curiosity, creativity, intellectual independence, and scientific integrity.
- The ability to successfully complete an organization-sanctioned, fingerprint-based background check.
- A valid driver's license, where required for assigned program activities.
- An enthusiasm for research and a joy for work with and mentoring of students.

TMRI welcomes candidates working in experimental, observational, computational, theoretical, and interdisciplinary research. Of particular interest are applicants who can integrate student investigations into their existing research programs while developing projects that are both intellectually substantive and achievable within the four-week summer experience.

To Apply

Qualified candidates interested in being considered for appointment as a Faculty Research Mentor for the 2027 TMRI Scholars Summer Research Program should submit the following materials by email: (1) cover letter describing their interest in the appointment, relevant mentoring experience, and research background; (2) current curriculum vitae or résumé; and (3) full contact information for three professional references.

In their cover letters, applicants are encouraged to share their experience mentoring student researchers and describe how their own research interests might offer meaningful opportunities for advanced high school Scholars. We particularly welcome a brief discussion of potential research projects and opportunities for students to participate in the applicant's established laboratory or research environment.

Applications should be directed to: Dr. Jay White, TMRI's Director at jwhite@tmsc.org. For full consideration, applications should arrive by Wednesday, November 18. Those selected will be notified by mid-December 2026. No telephone inquiries.