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A New REU and RET Paradigm: Bridging Undergraduate Research and K–12 STEM Education

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Introduction

Research Experience for Teachers (RET) programs have traditionally been modeled after Research Experience for Undergraduates (REUs), with K-12 teachers conducting independent research under the guidance of university faculty. While this approach provides teachers with valuable exposure to research, it often results in limited impact on classroom instruction. In many cases, the connection between the summer research experience and classroom practice is informal, short-lived, or left to the discretion of individual teachers.

The RET model presented in this article departs from this traditional model by embedding middle school and high school teachers directly within a highly established REU environment. Rather than operating solely as researchers, RETs collaborate with faculty and REUs to translate cutting-edge sustainable materials research into developmentally appropriate, classroom ready inquiry modules. This integrated approach positions teachers as research translators and curriculum designers, intentionally linking university research to K–12 learning environments.

This integrated RET model was developed and implemented with support from the National Science Foundation (NSF), within the Forest Bioproducts Research Institute (FBRI) at the University of Maine, and later implemented within the Department of Energy (DOE) supported Specialized Materials and Manufacturing Alliance for Resilient Technologies (SM2ART) program in collaboration with Oak Ridge National Laboratory (ORNL). Over a two-decade period, these programs have supported undergraduate research while simultaneously generating inquiry-based instructional materials that are aligned with the Next Generation Science Standards (NGSS) for K-12 science classrooms.

Sustainable materials research involves multiple academic disciplines and aims to employ naturally derived, renewable feedstocks for the development of new material systems for a variety of value-added applications. At the University of Maine, sustainable materials research and education are performed in world-class facilities such as the Advanced Structures and Composites Center (ASCC), the Forest Bioproducts Research Institute (FBRI), several cutting-edge faculty-led research laboratories, as well as in partnership with Oak Ridge National Laboratory.

The integrated RET model occupies a unique position at the intersection of undergraduate research, faculty mentorship, and K–12 education. Undergraduate researchers gain disciplinary research experience through mentored laboratory and fieldwork, while RET participants apply their pedagogical expertise to distill complex scientific and engineering practices into accessible classroom investigations. This translation is particularly impactful at the middle school level, where early exposure to science and engineering practices can influence students' long-term engagement with STEM (Science, Technology, Engineering and Mathematics). Friedman (2007) suggests advanced scientists and engineers manifest after 15 years of sustained training. This training can begin as early as middle school, where some students develop their initial interest in STEM topics, making middle school a critical point for cultivating interest and confidence in science and engineering.

Middle school teachers are uniquely positioned to influence students' long-term engagement with STEM; however, relatively few teachers have direct experience with scientific research (Davidson et al., 2022). As a result, classroom instruction may emphasize content acquisition over inquiry, engineering design, or evidence-based reasoning. Traditional RET programs partially address this gap, but often lack explicit structures for translating research experiences into classroom ready investigations. The integrated RET model described herein directly addresses this limitation by embedding teachers within an active REU research environment and providing sustained mentoring focused on curriculum development and implementation.

This case study examines a long-term RET partnership between the University of Maine and a middle school science teacher through integration of undergraduate research and classroom practice via NGSS aligned curriculum development and faculty mentorship. The FBRI RET program began in 2007 and focused on forest bioproducts, but has since transitioned into the SM2ART program with an emphasis explicitly on sustainable materials. The goals of this partnership have remained steadfast over two decades: (1) translate university research into classroom-ready investigations; (2) engage middle school students through inquiry-based STEM experiences; and (3) build collaborations between university researchers and K–12 educators. This model demonstrates how federally funded undergraduate research programs can extend their broader impacts while strengthening the STEM pipeline at a formative educational stage.

Integrated REU/RET

The University of Maine has several highly successful federally funded REU/RET programs with two of them focused on sustainable materials. Initially supported by the NSF through the FBRI, and more recently by the DOE funded SM2ART initiative in collaboration with ORNL, these programs have provided immersive research experiences for 175 undergraduates, 50% of whom were female and 33% were from underrepresented groups. A distinguishing feature of this work has been the intentional and sustained integration of a RET within the REU program, creating a multi-level research and mentoring ecosystem that connects university research and middle school classrooms via faculty, undergraduate students and middle school teachers.

UMaine Programs

The University of Maine's FBRI REU program initially developed and implemented the integrated REU/RET paradigm. The FBRI program created collaborative research teams composed of faculty mentors from diverse disciplines, REUs, and RETs. Each 10-week program supported approximately 10-14 REU students who engaged in full-time, immersive research experiences and at least one RET from a local middle school.

The program has also expanded its national and international research partnerships. Under NSF support, a long-standing collaboration was established with the University of Concepción's Technological Development Unit (UDT) in Chile, enabling select students to conduct research abroad while others remained at the University of Maine. The program culminated with the entire REU/RET cohort traveling to Chile to share their summer research in an international setting. In addition, all participants toured Chilean forest product facilities, thereby gaining a global perspective on sustainability and materials engineering. More recently, through DOE support, a partnership with ORNL in Tennessee has provided additional research placements, with some participants working at ORNL and others performing their research at the University of Maine.

The overall context for this integrated REU/RET paradigm is grounded in materials science with a focus on sustainability, including forest bioproducts, alternative packaging, composites, 3D printing, and cellulose nanomaterials. Many of these research areas can be straightforwardly translated to the middle school environment due to the fact that they entail use of tangible materials, address societal needs, and provide a direct connection to environmental stewardship. As such, the program provides a natural entry point for middle school students to engage with engineering, experimental design, data analysis, and systems thinking.

Rationale for Integrated REU/RET Paradigm

Traditional RET programs are often modeled after Research Experiences for REUs, which tends to position teachers as short term researchers working under faculty supervision. While these experiences provide valuable exposure to authentic scientific research, they do not consistently emphasize translation of research practices into classroom instruction. As a result, the instructional impact of many RET programs remains limited.

The integrated REU/RET model described in this case study addresses this limitation by embedding middle school teachers directly within an active REU research ecosystem. In this structure, RET participants function as collaborators and curriculum translators rather than parallel research participants. This intentional design recognizes that relatively few middle school teachers have opportunities to engage with cutting-edge research in ways that explicitly support classroom application.

The integrated model also benefits undergraduate researchers. Sustained interaction with an experienced K–12 educator provides undergraduates with opportunities to learn and practice how to communicate complex scientific concepts to non-expert audiences, reflect on the broader relevance of their work, and engage in mentoring. These skills are increasingly essential for STEM professionals and are difficult to cultivate through traditional research experiences alone. The reciprocal nature of these mentoring relationships strengthens both undergraduate learning and curriculum translation.

Collectively, the rationale for the integrated REU/RET paradigm rests on its ability to align undergraduate research, teacher professional development, and K–12 education within a single, sustained mentoring framework. This structure extends the broader impacts of federally funded research, enhances undergraduate learning, and leverages the unique influence of middle school teachers to strengthen the STEM pipeline at a formative stage.

The Integrated REU/RET Framework

Each summer, at least one middle school science teacher participates as an RET alongside a cohort of undergraduate REU participants. The RET is embedded within the full REU program structure and engages in weekly research meetings, and collaborative discussions with faculty mentors, and undergraduate researchers.

In collaboration with principal investigators and REU participants, RETs identify research projects with strong potential for classroom translation. RET's design developmentally appropriate investigations that preserve core scientific and engineering practices while accounting for classroom constraints such as time, equipment availability, and student readiness. Curriculum development is an iterative process that evolves alongside the research itself, with adaptations made as experimental questions and limitations emerge.

Throughout the summer, RETs focus on curriculum design, reflection, and alignment with the NGSS. Initial classroom implementations occur during the following academic year, with consequent refinement via input from faculty mentors prior to publication and dissemination. The resulting instructional materials emphasize inquiry-based learning, engineering design, and data analysis while remaining feasible for middle school laboratory settings. Investigations typically include flexible experimental designs, affordable material options, and opportunities for student choice. Students collect and analyze data using accessible tools such as spreadsheets and synthesize findings through collaborative artifacts (e.g., quad charts), reinforcing core scientific and engineering practices (Vassiliev et al., 2024a; 2024b).

By embedding RETs within the REU structure, curriculum translation becomes an intentional, supported component of the research experience rather than a peripheral outcome. This framework fosters reciprocal mentoring, strengthens undergraduate learning, and extends the broader impacts of federally funded research into middle school classrooms in sustainable and scalable ways.

RET Role & Responsibility

The integrated REU/RET model relies on clearly defined but flexible roles among participants. Faculty mentors provide research guidance, provide scientific expertise, and support both undergraduate and teacher participants in navigating the research process. Undergraduate researchers serve as counterpart mentors, collaborating with the RET in both the laboratory and curriculum design phases. Graduate students contribute technical expertise and logistical support, further enriching the mentoring dynamics.

The RET functions simultaneously as a learner and an expert practitioner. While gaining new content knowledge and research experience, the teacher brings deep pedagogical expertise and an understanding of middle school learners to the research team. This dual role strengthens the quality of curriculum development and enhances undergraduate student appreciation of effective science communication and education.

NGSS Alignment

A central goal of the integrated REU/RET program is the development of instructional materials that authentically reflect the three dimensions of the NGSS: Science and Engineering Practices, Crosscutting Concepts, and Disciplinary Core Ideas across physical science, life science, earth and space science, and engineering. All middle school investigations start with various NGSS standards in mind. Because these investigations model authentic scientific research, science and engineering practices such as asking questions, carrying out investigations, and engaging in argument from evidence, are readily accomplished, as are Crosscutting Concepts, such as recognizing patterns, cause and effect, and/or structure and function.

Research derived classroom investigations emphasize engineering design, iterative testing, data analysis, and evidence-based conclusions. Middle school students are asked to work with real constraints, evaluate tradeoffs, and justify solutions, all of which are hallmarks of engineering practice. By grounding classroom learning in current research questions and materials, these modules help middle school students see science and engineering as dynamic, relevant, and connected to current world challenges.

Evidence of Impact
The impacts of the integrated REU/RET model described in this case study are multifaceted, longitudinal, and distributed across multiple stakeholder groups, including middle school students, teachers, undergraduate researchers, and university faculty. Unlike short-term professional development or isolated outreach efforts, this program has produced sustained outcomes over nearly two decades by embedding curriculum translation and mentoring within federally funded undergraduate research programs.

At the K–12 level, the most immediate and far-reaching impacts are observed among middle school students who participate in classroom investigations derived directly from university research. The inquiry-based modules, which have been developed by the REU/RET program, emphasize authentic scientific and engineering practices, including problem identification, experimental design, data analysis, and evidence-based reasoning. Topics such as sustainable materials, alternative packaging, wood composites, and antimicrobial testing of natural extracts are rarely encountered in traditional middle school curricula yet are well suited to developmentally appropriate, hands-on investigations (Vassiliev et al., 2010; 2013; 2024a; 2024b).

An early example of documented impact occurred during the 2009–2010 academic year, when the FBRI partnered with the University of Maine Middle School Collaborative to implement RET-developed curricula modules across three Maine middle schools (Bangor, Belfast, and Old Town). Five teachers participated, and 288 middle school students engaged in inquiry-based lessons aligned with ongoing university research. Pre- and post- assessment data demonstrated measurable gains in students' understanding of science and engineering practices, data interpretation, and application of core ideas (Table 1). These results illustrate the capacity of the integrated REU/RET model to translate university research into meaningful learning outcomes at scale. This collaboration also fostered a shared mentoring culture in which REUs, faculty, and teachers functioned as a connected learning community rather than isolated stakeholders (Vassiliev et al., 2010).

Table 1. *Number of Students, Content Questions, Percentage of Improvement on Post Assessments and Percentage of Significant Improvement in Each Content Area*

Content Area	(N) Number of Students	Number of Questions	% Improvement	Questions with Significant Improvement [a]
Wood Composites	44	5	80%	60%
Plant Extracts	150	5	100%	80%
Tree Measurements	32	5	100%	100%
Tree Information	62	5	100%	80%
TOTAL	**288**	**20**	**95%**	**80%**

[a] Statistical significance was determined in the original 2010 analyses using paired sample *t*-tests with $\alpha = 0.10$.

Beyond content knowledge gains, student engagement shifted in sustained ways. Participation in research-inspired classroom investigations prepared middle school students for extended independent inquiry, including science fairs and invention convention projects. Students who experienced RET developed curricula and sustained mentoring achieved notable success at the Maine State Science and Engineering Fair (Table 2) and the Maine State Invention Convention. Multiple students advanced to the National Invention competitions with three earning patents for their inventions. These outcomes reflect the effectiveness of the integrated model in supporting authentic research experiences and high-level student achievement at the middle school level.

Table 2. *Middle School Student Awards for RET-Based Projects at the Maine Middle School Science and Engineering Fair (2021 – 2025)*

Year	Project Titles and Awards
2025	• ***The Five Second Rule: Fact or fiction?*** Life Science, 1st Place • ***An Investigation into Bio-plastics.*** Physical Science, 1st Place
2024	• ***What is the Difference in Chemicals in Well and Public Water in the State of Maine?*** Grand Prize winner • ***Effects of Caffeine on* Lumbricus terrestris*.*** Grand Prize winner
2023	• ***Do the Biodegradable IV bag and Intravenous Bag Leak into Medicine?*** Grand Prize Winner • ***Hydroponics and Mangos.*** Animal & Life Science, 3rd Place • ***Can Mushrooms be an Effective Antibacterial Agent Due to Causing Apoptosis?*** Biological & Biomedical Science, 3rd Place
2022	• ***How Does Aromatherapy Affect* Daphnia*?*** Grand Prize Winner • ***How Does Water Quality Compare between the East and West Sides of Sears Island Maine?*** Environmental Science, 2nd Place
2021	• ***Can Tardigrades Survive a High-Altitude Balloon Flight?*** 2nd Place • ***Nanocellulose and Sawdust Particle Boards.*** Lemmelson Young Inventor's Award

Collectively, these findings demonstrate that the integrated REU/RET framework produces durable educational impacts by aligning undergraduate research, teacher professional development, and classroom implementation within a sustained mentoring structure. Subsequent sections examine the specific impacts of this model on teachers, undergraduate researchers, and university faculty.

Teacher Impacts

Teacher participants in the REU/RET program have been primarily public middle school teachers, supplemented with an occasional public high school teacher. One teacher (the lead author) has been a continuous participant for the entire two decades of the program, thereby providing continuity and informed evolution. For participating teachers, the integrated REU/RET program represents a transformative professional development experience rooted in sustained immersion in cutting-edge research. Unlike traditional professional development workshops or short-term research placements, RET participants are embedded within active university research environments, engaging directly in experimental design, data collection, and analysis alongside faculty mentors and undergraduate researchers. This immersive experience strengthens teachers' disciplinary knowledge, confidence with science and engineering practices, and capacity to mentor middle school students in authentic research experiences. Scholarly dissemination of RET-developed curricula provides further evidence of teacher impact. Instructional modules and program outcomes have been published in peer-reviewed journals, including Science Activities, Science Scope, and the Journal of Gifted Education and Creativity (Vassiliev et al., 2013; 2015; 2020; 2024a; 2024b). In addition, this work has been presented at both regional and national venues such as the NSF EEC Grantees Conferences, NSF RET poster sessions, and National Science Teachers Association (NSTA) conferences (2010 & 2026). These dissemination efforts extend the reach of RET-developed materials well beyond individual classrooms, contributing to broader conversations about undergraduate research mentoring and K–12 STEM education.

RET participation has also supported the emergence of teacher leadership at the state and national level. Lead author Vassiliev has received extensive recognition and awards for the work described in the current article including recognition associated with the NSTA STEM Challenge, selection as a National STEM Scholar, and a national grand prize award for environmentally focused curriculum innovation. RET involvement further led to participation in federal advisory panels, including a 2020 roundtable discussion convened by the Office of the Under Secretary of Defense. Collectively, these outcomes illustrate how sustained research immersion can position teachers as leaders, mentors, and advocates for authentic STEM learning.

REU Impact

Undergraduate participants in the REU program benefit substantially from the intentional integration of RETs within the research environment. Working alongside an experienced K–12 educator requires REU students to articulate complex scientific concepts clearly, reflect on experimental design decisions, and consider the broader societal relevance of their work. These interactions strengthen communication, abstraction, and mentoring skills that are essential for future careers in research, education, and industry. In addition, where possible, REU participants have interacted directly with middle school students via participation as invention convention judges, ME Bioscience presenters, or science fair mentors. However, since the REU/RET program occurs over the summer, and the majority of the participants are from remote locations in the US, such opportunities during the academic year are limited.

A core expectation of REU participants is to serve as peer mentors to RETs during the summer program. Undergraduate researchers collaborate with teachers during laboratory and field research activities and contribute to the translation of research projects into middle school investigations. This mentoring role reinforces undergraduates' understanding of the research process while highlighting the importance of adaptability and audience awareness when communicating science to non-expert learners. Mentoring emerges as a central mechanism through which the integrated REU/RET model amplifies undergraduate learning. Alumni survey responses indicate that multi-level mentoring—spanning faculty mentors, graduate students, and RET teachers—was foundational to both technical and professional development. Participants report benefits extending beyond research skills to include increased scientific confidence, career clarity, and exposure to diverse STEM pathways. One former REU participant characterized the experience as "life-changing," crediting the mentoring structure with shaping a professional trajectory that later led to the creation of an international advanced-materials startup (University of Maine REU/RET Program alumni survey).

Collectively, these findings demonstrate that embedding RETs within REU programs enhances undergraduate research experiences by integrating communication, mentoring, and broader impact considerations into the core research process.

Faculty Impact

At the university level, the integrated REU/RET model strengthens the broader impacts and sustainability of federally funded research programs by extending research influence beyond the university setting. Faculty mentors benefit from sustained partnerships with K–12 educators who are well positioned to translate complex research into meaningful educational experiences for younger learners. These collaborations enhance the visibility and societal relevance of university research while supporting institutional goals related to outreach, workforce development, and STEM literacy.

The inclusion of RET participants enriches the mentoring framework within REU programs by fostering continuity and reflection across educational levels. Faculty mentors engage simultaneously with undergraduate researchers and K–12 educators, creating opportunities for reciprocal learning and sustained collaboration. This multi-level mentoring structure supports undergraduate development while enabling faculty to observe how research practices are adapted for classroom implementation, strengthening the alignment between research, education, and broader impacts. The longevity of the integrated REU/RET model itself serves as evidence of its value to faculty and institutions.

Why the Integrated REU/RET Model Works & Implications

The sustained success of the integrated REU/RET model described in this case study can be attributed to a set of interrelated design principles that distinguish it from more conventional undergraduate research or teacher research experiences. Central among these principles is the positioning of middle school teachers as research translators and curriculum designers rather than short-term, parallel research participants. By embedding RETs within an active REU environment, the model ensures that engagement with cutting-edge research results in meaningful, classroom-ready instructional materials without sacrificing disciplinary rigor.

A second defining feature of the model is its emphasis on reciprocal, multi-level mentoring. Knowledge exchange occurs bidirectionally: teachers gain access to emerging research, laboratory practices, and disciplinary ways of thinking, while undergraduate researchers develop essential communication, abstraction, and mentoring skills through sustained collaboration with experienced educators. Faculty mentors benefit from this structure by engaging in mentoring relationships that span educational levels and reinforce broader-impact goals. This reciprocal mentoring framework creates a positive feedback loop in which undergraduate research experiences are enriched while research impacts extend downstream into K–12 classrooms.

Alignment with the Next Generation of Science Standards further contributes to the effectiveness and scalability of the model. Rather than treating NGSS as an external constraint, the program leverages its three-dimensional framework to guide curriculum translation in ways that preserve authentic scientific and engineering practices. Research-derived classroom investigations emphasize problem solving under constraints, data driven decision making, and iterative design; core features shared by both professional research and robust middle school instruction. This alignment enables teachers to implement high-quality inquiry experiences while meeting accountability requirements, increasing the likelihood of sustained classroom adoption.

Several implications emerge for institutions seeking to strengthen the broader educational impacts of undergraduate research programs. First, RET integration should be treated as a core programmatic element rather than an auxiliary outreach activity. When teachers are embedded within REU programs and supported in curriculum translation, undergraduate research experiences are enhanced while research impacts are extended to hundreds of K–12 students over time. Second, middle school teachers represent a particularly powerful leverage point for STEM pipeline development, as early exposure to authentic science and engineering practices can influence long-term educational trajectories. Finally, curriculum translation requires intentional support, including structured time, mentoring, and alignment with educational standards, to ensure that research experiences result in durable classroom outcomes.

Conclusion

This case study demonstrates the educational value of intentionally integrating Research Experiences for Teachers within undergraduate research programs. By embedding middle school teachers as active research translators and curriculum designers, the integrated REU/RET model bridges the gap between cutting-edge materials research and classroom practice in ways that benefit learners across educational levels.

Over a two-decade period, implementation of this model has supported student inquiry, strengthened teacher professional practice, enhanced undergraduate mentoring and communication skills, and extended the broader impacts of federally funded research well beyond university laboratories. Middle school students have engaged in inquiry-based investigations grounded in real research questions; teachers have emerged as curriculum innovators and STEM leaders; undergraduate researchers have developed mentoring and communication competencies essential for future careers; and faculty have benefited from sustained partnerships that amplify the societal relevance of their work.

Importantly, this case study illustrates how early exposure to science and engineering practices, facilitated by middle school teachers embedded in research environments, can contribute to a stronger and more inclusive STEM pipeline. The success and longevity of the integrated REU/RET framework suggests that its impact is not tied to a single funding agency or disciplinary focus, but rather to a scalable structure that aligns research, mentoring, and K-12 to higher education.

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References

Davidson, S. G., Jaber, L. Z., & Southerland, S. A. (2022). Cultivating Science Teachers' Understandings of Science as a Discipline. *Science & Education*, *31*(3), 657–683. https://doi.org/10.1007/s11191021002761

Friedman, T. L. (2007). *The World Is Flat: Brief History of the twenty-first Century* (3rd ed.). Picador.

Vassiliev, T. (2010). March 18-21). Bring Cutting-edge Reach to the Middle School Classroom. National Science Teachers Association National Conference. Philadelphia, PA.

Vassiliev, T. N., Gardner, D. J., & Neivandt, D. J. (2024). A middle school investigation into developing environmentally friendly packaging. *Science Activities*, *61*(3), 152–161. https://doi.org/10.1080/00368121.2024.2345062

Vassiliev, T., Bernhardt, P., & Neivandt, D. J. (2013). Innovation Composite Research Modeled in the Middle School Classroom. *Science Scope*, *37*(1), 42–53.

Vassiliev, T., Gardner, D. J., & Neivandt, D. J. (2020). Commentary: How STEM Teachers Can Immerse Themselves in the Three Rs Over the Summer: Rejuvenate, Replenish, and Reenergize. *Science Scope*, *43*(7), 8–11. https://doi.org/10.1080/08872376.2020.12291325

Vassiliev, T., Gardner, D., & Neivandt, D. J. (2024). A gifted and talented middle school material science investigation: Utilizing engineering practices to develop sustainable and benign particleboard. *Journal of Gifted Education and Creativity*, *11*(3), 107–123. https://doi.org/10.5281/zenodo.13756806

Vassiliev, T., & Neivandt, D. J. (2015). Let Them Eat Cake ...OE-Cake! *Science Scope*, *038*(8), 60–71. https://doi.org/10.2505/4/ss15_038_08_60

Vassiliev, T., Bernhardt, P., Littlefield, K., Hayes, E., Campbell, J., & Neivandt, D. J. (2010). Middle School Collaborative: Using REAL Data, Poster Presentation. National Summer Conference Integrating Science and Mathematics Education Research into Teaching. University of Maine. Orono, ME,

Vassiliev, T., Gardner, D. J., and Neivandt, D. J. (2022). RET Developed Inquires to Level Up Middle School Engineering Practices. 2022 NSF EEC Grantees Conference, Washington D.C.

Vassiliev, T., Gardner, D.J. & Neivandt, D. J.. (2023). RETs Make Science & Engineering Practices Germane to Middle School Students. NSF RET Virtual Poster

Vassiliev, T., Gardner, D. J., Neivandt, D, J. & Packard, C. (2017). The Multifaceted Impacts Created by NSF's Engineering REU/RET Program at the University of Maine. NSF EEC Grantees Conference, Washington D.C.