## The Raggio Research Center at a Glance

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### STEM After School Experiences (STEMase)

The STEMase project was funded by the Nevada Space Grant Consortium. During the summer of 2014, over 50 first through sixth-grade students from the Sierra Kids Before and After School program, participated in the Engineering Adventures program, developed by the Museum of Science, Boston.

### STEM Break Camps

University STEM Break Camps are a hands-on opportunity for students in grades 6-12 integrating science, technology, engineering, and math (STEM) experiences to extend and enhance classroom learning during school breaks.
Welcome to the annual report for the Raggio Research Center (RRC) for Science, Technology, Engineering, and Mathematics (STEM) Education, housed in the College of Education at the University of Nevada, Reno. This report is an update on our current grants, projects, and collaborations, our dedicated staff, and offered services.

The RRC has had an incredible year and continues to grow in grants, projects and new collaborations. The RRC is associated with over $29 million dollars of grant-related projects. We are partnering with the Extended Studies program STEM Break Camps for 6-12 year-old students in Washoe County School District (WCSD) and taught by UNR faculty and staff. The RRC is also now the northern office for Gathering Genius/The Nevada STEM Coalition. The RRC has organized a 15-person advisory committee for the Center that meets twice a year to help set goals and carry out the vision of expanding STEM education programs and initiatives at UNR, and throughout all of northern Nevada. The new advisory committee recently updated the Raggio Research Center mission statement and goals.

One of the highlights of the RRC is that we were recently awarded an incredibly competitive NSF Innovative Technology Experiences for Students and Teachers (ITEST) grant entitled “Project ReCharge.” Project ReCharge is a collaboration between the University of Nevada, Reno, Envirolution, and the Washoe County School District. The goal of this grant is to educate teachers, middle and high school students on energy basics and energy efficiency through monitoring real-time energy consumption on hand-held devices. Ultimately, students will design plans for conserving energy in their schools and classrooms. This project is the first collaboration of the RRC and a local non-profit, Envirolution, on a large-scale grant. We hope to grow these collaborations throughout northern Nevada.

The RRC is now in the third year of the Northern Nevada English Learning Initiative (NNELI), funded by the U.S. Department of Education, Office of English Language Acquisition (OELA). This program strives to make a difference in STEM education for English Language Learners (ELLs). To date the program has helped 59 pre-service teachers in achieving an ELL endorsement that may be added to their Nevada teaching license; engaged 14 WCSD teachers in ELL and STEM-based courses improving classroom instruction for ELLs; and unique to the NNELI program, has helped 21 paraprofessionals through NNELI-based training to better assist ELLs.

As the RRC grows, we are expanding the services that we provide to UNR and northern Nevada teachers and students. As mentioned earlier, we will carry out the first STEM
Break Camps for 6-12 grade WCSD students in April of 2015. The RRC is working on becoming a training center for the Engineering is Elementary (EiE) program, developed by the Museum of Science in Boston, to offer professional development for teachers specific to this program. The RRC will continue to collaborate on interdisciplinary grants and projects with faculty from the University of Nevada, Reno and the Desert Research Institute (DRI), and to build new partnerships to further the advancement of STEM and STEM education in northern Nevada.

Mission Statement

The Raggio Research Center for STEM Education in the College of Education at the University of Nevada, Reno advances the theory and practice of science, technology, engineering and mathematics (STEM) education through collaborative research, development, instruction, dissemination, leadership and outreach.

Our Goals

1. Conduct cutting edge research on STEM education at the highest level on questions of state and national importance as applied to Nevada’s needs.

2. Recruit and promote STEM education opportunities for all students at all levels in formal and informal educational settings.

3. Actively promote STEM education opportunities for traditionally underrepresented populations as specified by the Next Generation Science Standards as: Economically Disadvantaged, Race and Ethnicity, Students with Disabilities, English Language Learners, Girls/Women, Alternative Education, and Gifted and Talented students.

4. Conduct professional development for better integrated STEM teaching PK-20.

5. Form interdisciplinary research teams of STEM content including university faculty, staff, graduate students, and undergraduate students together with teachers to develop, deliver, and assess/evaluate programs and activities.

6. Serve as an interdisciplinary education center to develop research-rich experiences for pre-service and in-service teachers to deepen and enhance STEM concepts and pedagogy.

7. Develop outreach activities and programs for students of all ages to support knowledge acquisition in the STEM disciplines.

8. Disseminate standards-based and scientifically supported research and information on STEM education.
Jacque Ewing-Taylor- Associate Director; Institutional Grants Coordinator, Division of Research and Innovation

Dr. Ewing-Taylor has lead the grant writing process for every proposal that has funded the center for the past 14 years and manages six current grants and a budget of approximately $7 million. As the Institutional Grants Coordinator, Jacque brings together interdisciplinary research teams to respond to high-profile grant Requests For Proposal (RFPs) and coordinates the support for proposal review.

Rod Case-- Principle Investigator, NNELI

Rod is an Associate Professor of TESOL in the College of Education at the University of Nevada, Reno and he is the principle investigator on the NNELI program. His research interests are in various aspects of inter-language pragmatics and second language acquisition. Rod has been at the University of Nevada, Reno since 2001.

Sandra Prytherch– Project Coordinator, NNELI

Sandra completed her M.A.-TESOL and became project coordinator of the NNELI grant in August, 2012. Sandra worked in psychiatric treatment settings and taught across a number of domains (music, eCommerce, psycho-education, gifted education) since completing a B.S. in Music Therapy from Elizabethtown College in 1981. Sandra and her husband are avid readers and tandem bicyclists. They are joyful parents of one daughter and human companions to one python.

Shawn Pennell– Technology Coordinator

Shawn began at the Raggio Center in 2005 as a Technology in Teacher Education-Nevada (TITE-N) pre-service teacher grant participant. Since then, she has worked at the RRC in a variety of capacities and now serves as technology & paraprofessional coordinator for the NNELI grant. Shawn received her dual degree B.A. in political science and international affairs in 2005. She earned her M.A. at the UNR College of Education in Curriculum, Teaching, and Learning in 2009. Shawn is a woman of faith and the proud wife of David, and proud mother of two amazing kids- William and Esther.
Support Staff

Janice Neal—Accounting Assistant III

Jan began working for the state of Nevada in 1982, serving at Special Children’s Clinic, SIIS, Welfare, Community Connections, and USAC at UNR. She joined the Raggio Research Center team in 2004 as fiscal grant manager. She and her husband, Marvin, are the founders of Sierra Nevada Teen Ranch, the focus of which is the well-being and development of at-risk youth in Washoe County.

Pamela Smith - Administrative Assistant

Pam joined the Raggio Research Center support staff in August, 2013. She graduated from San Diego State University in 1978, earning a B.A. in Journalism. She owned and operated a restaurant in Carson City, NV for 26 years. Pam enjoys working within the dynamics of the university setting and in the middle of the fountain of youth.

Jeffrey Bouchard-Student Worker

Jeffrey started working as a student worker at the Raggio Research Center in the fall of 2012 for the NNELI grant. He is in his third year of study, working toward a degree in Computer Science and Engineering. Jeffrey is also an Eagle Scout in the Boy Scouts of America.

Nick Vienneau-Student Worker

Nick Vienneau joined the RRC staff the fall of 2014. He is working to maintain, expand, and market the Resource Center, making sure that teachers have access to science kits for their classrooms. As a transfer student, he is working towards two degrees: a B.A. in English and a B.S. in Computer Science.
Graduate Research Assistants

Brittney Timmons

Brittney joined the Raggio Research Center team in 2009 as a student worker on the NERDS program. Currently, she is the program coordinator and graduate research assistant for the SCIP program. Brittney graduated with her B.S. in Human Development and Family Studies in May 2013. She is a graduate student in the Human Development and Family Studies Master’s program. Under the advisement of Dr. Bill Evans, Brittney will complete her Master’s degree and graduate in May 2015.

Marti Deyo

Marti began working at the Raggio Research Center for the NNELI grant in February, 2013. She received a B.A. in English from Willamette University in Salem, Oregon and her M.A. in Early Childhood Studies from Boise State University in Boise, Idaho. She is currently in the third year of her Ph.D. program in the Educational Leadership Department. Marti is passionate about traveling, the community, and “getting to know Nevada.” She has traveled to over 70 countries. Marti plans to live and work overseas after graduating in either a teaching or research position.

Kerry Howard

Kerry earned a B.S. in Geology, and a M.A. in Education with a focus on Geoscience education. She taught middle school math and science in California and Nevada for seven years, prior to returning to school at UNR. She will earn a Ph.D. in Geology. Kerry is working on two projects as a research assistant with the Raggio Research Center: Project HEAT, a NASA-funded grant, and the RIETI project, an NSF grant.

Nathan Youmans

Nathan began working for the Raggio Research Center in the fall of 2014 for the NNELI grant. He is currently pursuing his Master of Education in Secondary Social Studies. Nathan has received a Bachelor’s degree from UNLV and Master’s degree from NAU, both in Music Composition/Theory. In 2011 Nathan received the Outstanding Graduate Student Award from the Northern Arizona University School of Music. Nathan and his beautiful wife Rachael, have a dog, 2 cats and a turtle.
The Northern Nevada English Learning Initiative, (NNELI) is a National Professional Development Grant Program fully funded by the Office of English Language Acquisition of the United States Department of Education. The grant was sought by University of Nevada, Reno, College of Education, Associate Professor of TESOL Rod Case, Ph.D., Principal Investigator, along with Co-Investigators, Jacque Ewing-Taylor, Ph.D., and David Crowther, Ph.D., in consortium with the Washoe County School District (WCSD). NNELI was funded in May, 2012 and is expected to continue for five years, with a total grant award of $1,935,167. NNELI’s purpose is to improve instruction to English Learners (ELs) by providing professional development opportunities for pre-service and classroom teachers as well as paraprofessionals in northern Nevada.

NNELI’s purpose is to improve instruction to ELs by providing specific English as a Second Language (ESL) training for undergraduates to procure an ESL endorsement as part of their undergraduate teacher licensure program. NNELI provides both licensed, practicing classroom teachers and pre-service teachers with coursework in Academic Language as well as strategies for working with ELs within science, technology, engineering, and mathematics (STEM) content-based disciplines. NNELI offers paraprofessionals specialized training using multi-modal digital ESL/STEM tools which align with the rest of the NNELI program.

Our focus is on the NNELI community. We continually strive to create new relationships and collaborations to advance the grant goals. Through social media, workshops, classes, networking opportunities, and our advisory board (with members from WCSD, College of Education (COE) Integrated Elementary Teaching Program, COE Secondary Teaching Program, Nevada Department of Education, and COE Student Advising Center), our aim is to contribute to our participants’ community of practice while targeting sustainability and capacity building across participant types and organizations. To learn more about the NNELI program, please visit our website at: http://www.unr.edu/nneli
The Project HEAT (Hot Environments And Temperatures) program provides an educational workshop for Dean’s Future Scholar students entering grades 7 and 8. Project HEAT is funded by the National Aeronautic and Space Administration (NASA) as part of a scientific research project titled, “Desert birds in a warming world: Characterizing thermal stress daily Earth observation data in a complex terrain,” awarded to Dr. Tom Albright (Geography). The educational objective of this program is to increase interest in STEM topics among disadvantaged college-bound youth by engaging them in learner-led, inquiry-based activities integrating micrometeorology, ornithology, and NASA imagery.

Twenty-one Dean’s Future Scholar (DFS) students participated in the first Project HEAT workshop from July 1-July 12, 2014. During the workshop, students interacted with UNR faculty and graduate students, and learned about remote sensing, desert bird adaptations to high temperatures, thermal imaging, and desert environments. Students also learned about methods in micrometeorology, and used specialized temperature sensors to answer inquiry-based research questions developed during the workshop. The ongoing success of the Project HEAT program will be disseminated during an educational session titled, “Scientist Engagement in Education and Public Outreach: Sharing Effective Tools, Resources, and Stories of Success II” at the December 2014 American Geophysical Union conference in San Francisco. The abstract for the presentation titled, “Project HEAT: Temperature as an Organizing Theme for Inquiry-Based Learning in the Environmental Sciences”, is accessible on the web at: http://agu.confex.com/agu/fm14/preliminaryview.cgi/Paper28450.html

Project HEAT group pictured through a FLIR camera (which picks up infrared (heat) signatures). The dark colored (cold) items being held are Otter Pops.
Project ReCharge

The Raggio Research Center for STEM Education was recently awarded a very competitive National Science Foundation (NSF) Innovative Technology Experiences for Students and Teachers (ITEST) grant entitled Project ReCharge.

A collaboration between the University of Nevada, Reno, the Washoe County School District (WCSD), and Envirolution, Project ReCharge engages teachers and students to interface with real-time data through innovative energy efficiency technologies and empowers them to make energy-saving recommendations for their schools.

The project strategy involves implementing research-based energy efficiency curriculum in 8th grade mathematics and science classes as well as high school environmental science and Career and Technical Education (CTE) classes. Professional development workshops will support integration of energy and technology into teachers’ core curriculum and create authentic STEM experiences for their students. Project audiences include 30 teachers and 3,000 middle and high schools students from mostly rural, economically disadvantaged and racially diverse communities.

Led by a highly-qualified team consisting of the University of Nevada, Reno’s Raggio Research Center for STEM Education, Envirolution - a nonprofit energy education provider, and the Washoe County School District, Project ReCharge creates real-world, inquiry-based STEM/ICT learning environments. Hands-on lessons empower students to be energy detectives, discovering how building systems and appliances consume energy in their schools. Project ReCharge’s transformative approach goes beyond traditional energy efficiency curriculum by engaging electrical disaggregation technology from Load IQ. Student groups use tablet computers to interact with real-time data, identifying and tracking major electrical loads in their school buildings. Students and teachers then work with Envirolution staff, building control services engineers, and school district facility managers to analyze the data and detail a list of facility and behavioral energy conservation opportunities.

Project ReCharge is designed to have triple bottom-line benefits. Teachers are provided with STEM/ICT resources that result in inspired and career-ready students who, through the course of the program, have identified reductions in school energy expenses and environmental benefits due to energy conservation. The work of these students and teachers have the potential to make a tremendous positive impact that results in modern, efficient, well-lit, and comfortable school buildings that aren’t a drain on school budgets. These results will be disseminated to additional school districts via multiple pathways that include local and regional workshops; national outreach through educational, efficiency, and green schools conferences such as the American Council for an Energy Efficient Economy and Green Schools National Conference; and professional publications.
This program is a professional development opportunity for secondary teachers in northern Nevada that is funded by the National Science Foundation (NSF) as part of a scientific research project, titled “Reconstructing 2500 years of environmental change at the periphery of Rome: Integrating paleoecology and socioeconomic history to understand human response to climate,” awarded to faculty investigators at the University of Nevada, Reno. Two primary goals of this professional development opportunity are: 1) to expose practicing secondary science teachers to ongoing science through inclusion in the research process; and 2) to support teachers from all subject areas in the development and implementation of lessons that will provide ongoing classroom connections to current scientific research.

Two multidisciplinary teams of teachers from North Valleys High School and Kendyl Depoali Middle School in Washoe County School District are participating in this project. A lead teacher from each team traveled to the Rieti Basin, Italy in the summer of 2013 to work with Dr. Scott Mensing (Geography), Dr. Paula Noble (Geological Sciences), and a team of Italian investigators to gather data for the scientific research project. Participating teams of teachers attended two week-long summer institutes in July of 2013 and 2014. During the summer institutes, participating teachers learned about applications of the scientific method and the ongoing operations and current findings of the scientific research project in the Rieti Basin, Italy. Teachers were also supported in the development of subject-area and grade-level appropriate lessons and associated classroom assessment plans designed to provide classroom connections to the current and ongoing scientific research project in the Rieti Basin. Participating teachers will implement their finalized lessons and classroom assessment plans during the 2014-2015 school year. Finalized lessons and classroom assessment plans will be made available to other educators on the Nevada Climate Change Portal.

Additionally, the Rieti Project program has resulted in the development of a successful middle school Project Based Learning (PBL) unit worthy of publication for educators and educational researchers. Learning outcomes of this PBL unit and the Rieti Project will be showcased during an educational session titled, “Educator Professional Development Programs Promoting Authentic Scientific Research Posters” at the December 2014 American Geophysical Union conference in San Francisco. The abstract for the poster titled, “Successful Project Based Learning (PBL) Across Disciplines Geared Towards Middle School: An Example from a Wetlands PBL Unit in Reno, Nevada, USA,” is accessible on the web at: http://agu.confex.com/agu/fm14/preliminaryview.cgi/Paper28450.html
The EPSCoR Nexus grant is funded by the National Science Foundation (NSF) and the five-year project is being conducted through different components across the University of Nevada, Reno (UNR), the University of Nevada, Las Vegas (UNLV), and the Desert Research Institute (DRI).

Understanding the nexus— or linkages— among solar energy development, limited water resources, and fragile environments is key to achieving benefits from solar energy in Nevada. Over the course of the five-year grant, the EPSCoR Nexus project will create a center of research excellence on solar energy conversion to electricity within the context of minimizing its negative impacts on water usage and the environment.

Through EPSCoR Nexus, Nevada will develop innovative approaches to Cyber Infrastructure (CI) and science, technology, engineering, and mathematics (STEM) education, engage stakeholders, and build its workforce while diversifying its economy. Advanced CI capabilities will enable interdisciplinary research as well as education and outreach. Through a life-cycle approach, workforce and education development activities will build and sustain research capacity and Nevada’s economic growth by (1) developing trained manpower at graduate, undergraduate, and community college levels that will supply needs of the solar power industry, environmental agencies, and the water industry; (2) developing and expanding a STEM teacher workforce; (3) enhancing education and public understanding of solar, water, and energy that will lead to development of a sustainable STEM workforce; (4) establishing a sustainable social network for learning; (5) exposing and involving rural counties, K-12, and underrepresented communities to STEM topics and cutting-edge research; and (6) increasing participation in STEM education through peer-directed content and mentors.

The SCIP program (STEM Career Investigation Program) and NERDS program (Nevada Educators Really Doing Solar), are EPSCoR Nexus programs. These successful programs are highlighted on the following two pages. Visit our website at: http://www.unr.edu/epscor
The NERDS (Nevada Educators Really Doing Solar) program is a year-long program at the Raggio Research Center, funded by the EPSCoR Nexus grant. The program combines a focus on professional development in science teaching with research in science education. The participants of the program are educators from the state of Nevada. The teachers are asked to participate in the research by completing questionnaires and surveys throughout the process. The NERDS program is dedicated to helping teachers develop their teaching skills in the subjects of science, solar, and energy through the process of inquiry.

Every NERDS course is designed to lead teachers, step by step, from "expert"-designed investigations to student-centered investigations through an active process of participation. Eight Nevada educators were accepted into the NERDS 2014 program. Two teams of four educators were created for the NERDS process. A pre-session at the university in May 2014 introduced teachers to the NERDS model and allowed time for preliminary research data to be collected. Additionally, the pre-session prepared participants to go into the field. Dr. Jennifer Hollander and Dr. Jeffrey Baguley from the Biology Department at the university provided participants with a content lecture containing information on the environment the participants would conduct their summer research. Moreover, the pre-session provided the teachers with information on inquiry and teachers completed a solar energy lesson that they could replicate in their classrooms.

The field experience portion of the course takes teachers away from familiar ecosystems near their hometown into unfamiliar territory where they must start their learning from scratch, similar to what their students experience every time a new concept is taught. NERDS 2014 offered teachers the chance to investigate the solar energy, water, and environment nexus of the northern Sierra in Graeagle, California from July 21-26, 2014. Two teams of teachers learned skills such as orienteering, sampling methods, and using keys to identify organisms, which support the science inquiry process. Additionally, on the first day in the field, Dr. Baguley provided the teachers with an aquatic biology lecture. Throughout the week, in small groups, teachers planned and carried out investigations in the field and communicated their results to the larger group. Upon returning home, teachers planned and carried out a lesson plan incorporating all of the skills and information they learned in the field, which is aligned with the Next Generation Science Standards.
The STEM Career Investigation Program (SCIP), part of the Nexus grant, concluded its first year for high school sophomores, juniors, and seniors in Nevada. The goal of SCIP is to provide students with opportunities to observe research and career presentations by scientists and engineers in a wide array of specialties in order to understand how the STEM disciplines are integrated. In addition, the presentations outlined possibilities for students’ future career paths. Speakers from the University of Nevada, Reno and a speaker from the Desert Research Institute (DRI), presented their current research projects to the students and discussed future job possibilities for someone with their degree and area of specialization.

SCIP’s seminar series ran from February 11 to March 18, 2014. There were six sessions each occurring Tuesday evenings from 5:30-7:30 p.m. Forty-one students from ten different high schools in Washoe County School District signed up for the SCIP sessions with 32 students attending regularly. Of the 32 regular participants, 24 were female and 8 were male.

The first session, students were introduced to the career of marine biology and research conducted in Antarctica. Dr. Fritsen from DRI, brought in a range of supplemental materials to show the students the equipment he worked with while doing his research. The second SCIP session featured Dr. Richard Kelley from the Computer Science and Engineering Department at UNR. Dr. Kelley, a roboticist, showed the students the advances in robotics that he has been working on at the university. The third session presenter was Dr. Jennifer Hollander from the Biology Department at UNR. Dr. Hollander explained her research with ephedra and also discussed her work as the head of the Human Anatomy and Physiology dissection team and lecturer for the Human Anatomy class on campus. Dr. Scott Mensing from the UNR Geography Department was the fourth speaker for SCIP. Dr. Mensing discussed his research with mud and brought mud cores for the students to analyze. Additionally, Dr. Mensing used microscopes and pollen slides to engage the students in his research and every day work. The fifth session speaker was Dr. Danny Taylor from Mining Engineering at UNR. Dr. Taylor showed students videos of mines and brought two Mining Engineering students with him to interact with the participants. The final speaker was Dr. Michael Leverington from the UNR Computer Science and Engineering Department who spoke about pursuing an education and dreams.

The research findings reflected that the participants were able to operationalize their career knowledge to some degree during the seminar series. Additionally, the findings were significant in regard to participants’ willingness to pursue STEM degrees after participating in SCIP.
CLASSP (Cyber Learning Activities to Scaffold STEM Practices)

A state-wide project, CLASSP is an EPSCoR Track 3 grant funded by the National Science Foundation (NSF), addressing the overarching question: how can innovative, cyber-enabled instructional methods transform science, technology, engineering and mathematics (STEM) education and increase opportunities for underrepresented populations?

A cyber-learning infrastructure (CI) methodology will be developed, implemented, and tested to elevate STEM learning opportunities and success for minority students in urban areas in Nevada through existing partnerships with GearUp middle schools in Reno and Las Vegas. A high proportion of Hispanic students marks GearUp in Nevada and although Hispanics account for approximately 27% of Nevada’s overall population, they represent only 3-5% of the STEM workforce.

SETIF (State Education Technology Implementation Fund)

Faculty from the University of Nevada, Reno (UNR) and the University of Nevada, Las Vegas (UNLV) will conduct the evaluation of the State Educational Technology Implementation Fund (SETIF) projects, as awarded to the successful applicant school districts. The overarching goal of the Commission on Educational Technology (CET) and the Nevada Department of Education (NDOE), is to gather findings on the needs of each school district relating to educational technology. The grant funds provide for an evaluation of up to 12 separate and distinct projects and goals.
STEMase (STEM After School Experiences)

The STEMase project was funded by the Nevada Space Grant Consortium Informal and After School Experiences Competition. The STEMase program partnered with the Sierra Kids Before and After School program to implement the Engineering Adventures program, developed by the Museum of Science, Boston. Four undergraduate students at UNR who work with the Sierra Kids Before and After School program were trained in the use of the program which was administered for one month during the summer of 2014 to three different groups of students. Several of the undergraduate students are also pre-service teachers. Three of five units developed in the Engineering Adventures program were used in this study: the Engineering Earthquakes Resistant Buildings program, the Engineering Air Drop Packages program, and the Engineering Rockets and Rovers program.

Over 50 first through sixth-grade students, representing three groups; one from Peavine, and two from Double Diamond Elementary Schools, participated.

STEM Break Camps

University STEM Break Camps are a hands-on opportunity for students in grades 6-12 integrating science, technology, engineering and math (STEM) experiences to extend and enhance classroom learning during school breaks. This program is a partnership between Extended Studies, as an evolution of the popular Kids’ U Summer program, and the Raggio Research Center of the College of Education. Featuring instructors that are content experts from colleges across campus and university-trained educators, and hands-on activities designed to deepen students’ interest and understanding of STEM, these camps provide an opportunity for students to gain exposure to exciting current research in STEM fields in an active and immersive environment.

About the Raggio Research Center

The Raggio Research Center (RRC) for Science, Technology, Engineering and Mathematics (STEM) Education was created in the College of Education, University of Nevada, Reno, in 1997 as an educational outreach and training facility for primarily STEM fields.

To learn more about how the Raggio Research Center can support your proposed research and/or outreach projects, please visit our website. For further information on how to join our list of donors and become a supporter of the Raggio Research Center programs, please contact: David T. Crowther, Executive Director.

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