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SUSTAINABLE NANOTECHNOLOGY EDUCATION ADDRESSING GLOBAL PROBLEMS AT THE NANOSCALE

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Abstract: Sustainable nanotechnology is an interdisciplinary field with the potential to address global issues with broad impact ranging from science, technology and environment to economics, education, and society. By introducing sustainable nanotechnology to students at all levels, K through post-graduate, we have the potential to engage and educate a STEM literate workforce that is prepared to tackle society's most challenging problems. The NSF funded Materials Research Science and Engineering Center (MRSEC) at Yale/Southern Connecticut State University employed interdisciplinary science as a vehicle for recruitment, retention, and education while leveraging strong intra and cross-institutional partnerships to beneficially impact participants at all levels with diverse backgrounds. Program implementation was informed by evaluation and NSF funding was leveraged to garner support from a variety of sources including university, state, and private. The NSF MRSEC inspired Werth Industry Academic Fellowship program within the Connecticut State Colleges and Universities Center for Nanotechnology will be showcased demonstrating how a tiered approach to mentorship with industry participation effectively integrates sustainable nanotechnology. The collaborative nature encourages synergy, fostering the formation of professional and mentor relationships and has trained, mentored, and provided internship opportunities directly to more than 50 students and to an additional over 100 students via complementary programming.

***Bio*:** Dr. Christine Broadbridge, professor of physics and Executive Director of Research and Innovation at Southern Connecticut State University (SCSU) received her M.S. and Ph.D. in engineering from Brown University, where she conducted research in the fields of materials science, physics, and nanotechnology. She has served as principal investigator or co-principal investigator on over 12 National Science Foundation (NSF) projects and as researcher on over a dozen others, including grants from NASA, Brookhaven National Laboratory, and the U.S. Department of Energy. Broadbridge participated in the establishment and is currently education

director for the Center for Research on Interface Structures and Phenomena (CRISP) at Yale and SCSU and is a Yale Visiting Fellow in Applied Physics. She is the founding Director of the Connecticut State Colleges and Universities Center for Nanotechnology (CSCU-CNT), the SCSU Office for STEM Research and Innovation (STEM-RI) as well as the BioScience Academic and Career Pathway Initiative (BioPath). Dr. Broadbridge is a member of the Connecticut Academy of Arts and Sciences, and a member of Sigma Pi Sigma and Tau Beta Pi (national honor societies for physics and engineering respectively) and she recently completed a two-year team as President for the CT Academy of Science and Engineering (CASE).