Tulane SSE Honors Outstanding Faculty Researcher and Showcases Student Research Achievements

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On April 11, the Tulane University School of Science and Engineering held its seventh annual Research Day, recognizing the academic contributions and influential achievements of its faculty and students. Held in the Lavin-Bernick Center for University Life, the gathering commenced with a presentation of the Seventh Annual Outstanding Researcher Award to Dr. Lisa Fauci of the Mathematics department, as well as student awards for exceptional research efforts. A reception and poster session followed, allowing attendees the opportunity view each of this year's undergraduate and graduate student, as well as fellow, project submissions.

Dean Nicholas Altiero outlined the selection criteria for the Outstanding Researcher Award, identifying not only quality of individual study, but also the elevation of both student experiences and university status. The achievement of national and international honors, contribution to publications and journals, and service on scientific committees and boards are all considered during recipient selection.

Laura Levy, Vice President for Research, acknowledged Dr. Fauci, who joined the Tulane faculty in 1986, as a "luminary in her field, nationally recognized", and congratulated her as the second woman to join a "very exclusive club." Also heralding her status as a leader in her field, Gary McPherson, SSE Senior Associate Dean for Research, highlighted Dr. Fauci's unique ability to appeal to non-mathematicians, attracting their interest and investment in computational science.

As Dr. Fauci shared her most recent work in fluid dynamics, she acknowledged that the study reflects decades of ongoing investigation and collaboration. Her research into the association of neural activity and musculature in lampreys led to the development of multi-scale models, valuable to a range of fields – biology, mathematics, physiology, and beyond. Providing an engaging and interesting presentation, Dr. Fauci lauded the importance of cross-disciplinary appreciation, complimenting Tulane SSE for achieving balance between “experiments, computational models, and theory.”

Reflecting the best of this SSE approach, ninety research projects were featured during the poster session, a selection of which received top awards and honorable mentions.

Ling Ling Yang, Fellow in the Department of Cell and Molecular Biology, received the Health Science Research Days Award for Excellence in Research and Presentation: Postdoctoral Fellow for her findings regarding the mediation of the antidepressant effects of ketamine. Her study noted the suppression of NMDA receptors and activation of mTOR, as well as synapse-associated proteins.

In addition, as part of the Health Sciences Research Days, Theresa Phamduy (Biomedical Engineering) received The Dean of School of Science and Engineering Award for Excellence in Research and Presentation by a Graduate Student. Her work focused on the influence of pattern configuration and spacing on the migratory potential of breast cancer cells in co-culture with fibroblasts.

Receiving the like award for Undergraduate achievement, as well as honorable mention from Science and Engineering, Angellica Gordon (Neuroscience) shared her findings on insulin’s promotion of hypoxic vascular injury in insulin resistance. She spoke to a personal interest in the hereditary nature of diabetes, but noted that her studies have also directly benefited from a shared lab experience, as she and her peers work on individual projects that all contribute to a larger research goal. In addition, Angellica expressed her thanks to Dr. Prasad Katakam for acting as her mentor and providing the tools necessary for success.

Daniel Bayless (Psychology) was awarded first place for a graduate student at Science and Engineering Research Day. His research focused on the influence of neonatal testosterone exposure on the impulsivity and sex-associated differences in prepubertal rats. Noting the project’s value, Daniel explained that additional insights

into the nature of impulsivity disorders and addiction have been formulated for ongoing study.

A sophomore, Daniel Coleman (Earth and Environmental Sciences) earned the first place honor amongst the Science and Engineering Undergraduate submissions for his research into the causes and rate of land loss in Barataria Bay. Dr. Alexander Kolker, who oversaw the study, attested to the Daniel’s enthusiasm as a primary reason for his selection for the research project during his freshman year. Measurements of 137Cs (an isotopic byproduct of the upper atmosphere nuclear testing that peaked in 1963) were utilized to determine the sediment’s age-depth relation, leading to the conclusion that erosion, rather than subsidence, was the primary cause of depletion.

These outstanding projects, as well as the others on display, reflected the dedication of the SSE program, as well as its faculty and students, to the development of innovative and important insights. It is this insistence on providing applicable value, as noted by Dr. Fauci, to research and study that makes the school both unique and a true leader in the field of science and engineering.