

2021 Greenberg Junior Faculty Research Grants

The Greenberg Junior Faculty Grants are internal grant awards intended to promote high-quality scholarship (e.g. research, creative activity) by full-time faculty members who are just beginning their careers. These grants are made possible by a generous gift from **Arnold and Beverly Greenberg**. The following four faculty have been awarded the Greenberg Junior Faculty Research Grant for their research projects during the 2021-2022 academic year:

REIHANEH JAMSHIDI, Assistant Professor of Mechanical Engineering, CETA

Reihaneh will study the mechanical and structural integrity of 3D-printed layered structures which are determined by the inherent properties of individual layers, as well as interfacial interactions. The proposed study aims to develop a model that predicts the overall performance of multilayers under deformation, from the relative properties of the constituent materials. The knowledge obtained from this work will provide a scientific foundation for understanding mechanics of multilayer structure as a whole, in terms of inherent properties of materials making up the layers.

SHIVANGI NANGIA, Assistant Professor of Chemistry, COLLEGE OF ARTS AND SCIENCES

Shivangi's aim is to research the rising crisis of antibiotic resistance and develop antimicrobial peptides to combat it. The simulations and data collection will be performed on a specialized, world's fastest supercomputer for molecular simulations. She will recruit rising sophomore and juniors into the research lab to give them at least two years of research experience. The results of this work will be submitted for a peer review journal as well as for podium presentation at the American Chemical Society (ACS) Spring 2022 Conference. The outcomes of this project will provide the preliminary data for seeking extramural funding from the National Science Foundation.

MARISA WILLIAMSON, Assistant Professor of 4-D Foundations, HARTFORD ART SCHOOL

Marisa's project is to support the expansion and exhibition of a work titled, *Monuments to Escape*, which is a guide to twelve imagined monuments along New England's National Scenic Trail, a 215-mile path that stretches from the mouth of the Connecticut River to the border of Massachusetts and New Hampshire. The monuments memorialize the smaller and more painful histories of everyday people who live(d) and work(ed) in cities and towns across the region, and draw attention to the impossibility of one monument serving all people. Serving as the New England National Scenic Trail Artist-in-Residence, Marisa has collaborated with a multidisciplinary group of artists on this project over the past two years. The latest iteration of the project is a postcard book of twelve proposals, posters, a video, a four-part podcast, and map which were part of the exhibition, *Statues Also Die*, curated by Sarah Fritchey at Real Art Ways. The ultimate goal is to produce and exhibit this monumental iteration of the project at a museum or high-profile gallery in 2022.

XIN YE, Assistant Professor of Physical Therapy, Rehabilitation Sciences, ENHP

Xin's proposes to research the effects of unilateral eccentric exercise combined with electrical stimulation on contralateral muscle functions and performance when it's not feasible to use the traditional resistance exercise to rehabilitate an injured limb that is covered and fixed by an instrument such as a cast for an extended period of time. Limb immobilization accelerates deterioration of muscle flexibility and strength. Xin plans to study a promising alternative of training the contralateral intact limb muscles. Over the past five years, his research has focused on examining the contralateral muscle strength and activation responses following different types of unilateral exercise. This project is the first in the field to examine the combination effects of unilateral eccentric exercise and neuromuscular electrical stimulation on contralateral muscle functions and performance. The research project falls directly in his research expertise of acute neuromuscular responses following resistance exercises. Xin will lead a team of at least five graduate students from the DPT program and two undergraduate students from the Exercise Science program.