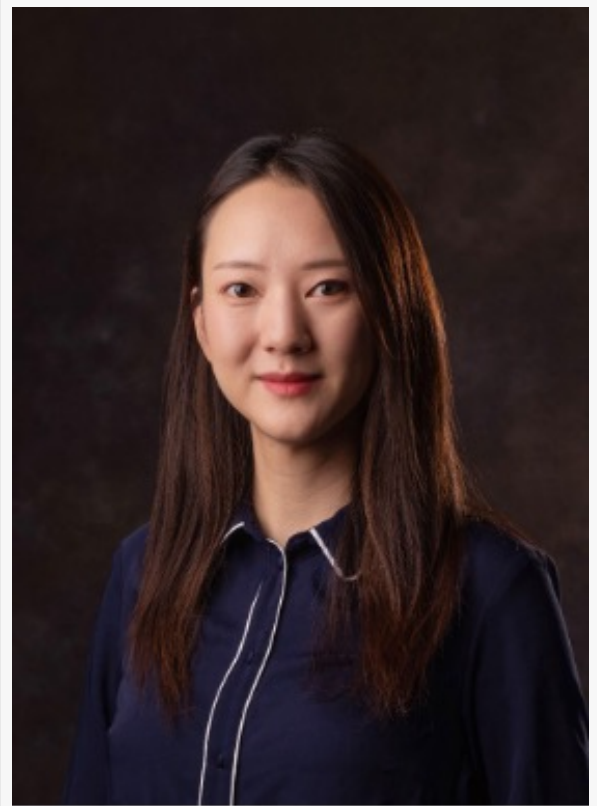


Dr. Gloria Zhang Chosen for Selective ASCEND2.0 Program to Advance Breakthrough Cystic Fibrosis Diagnostic Technology

Assistant Professor at NMSU selected to participate in the competitive I-RED, ASCEND2.0 cohort funded by the NIH-National Institute of General Medical Sciences

LAS CRUCES, NM, UNITED STATES, December 13, 2024 /EINPresswire.com/ -- Dr. Gloria Zhang, Assistant Professor in the Department of Civil Engineering at [New Mexico State University](#), has been selected to participate in the highly selective I-RED, [ASCEND2.0](#) 2024-2025 cohort. Funded by the National Institutes of Health (NIH) National Institute of General Medical Sciences (NIGMS) project, the ASCEND2.0 program is designed to accelerate the commercialization of biomedical innovations by equipping researchers with entrepreneurial skills and resources to transform their discoveries into impactful healthcare solutions through the I-RED West Program.

Dr. Zhang's research spans the development of next-generation multifunctional materials and structural systems with applications in sensing, monitoring, energy harvesting, actuation, and 3D-printed smart materials. Her expertise extends to machine-learning-driven frameworks for material discoveries, positioning her as a leader in innovative engineering research.



Dr. Gloria Zhang

New Mexico State College of Business Associate Dean of Research and Graduate Programs Carlo A. Mora-Monge stated, "We recently started collaborating with the [New Mexico Start-Up Factory](#) (NMSUF) to educate business students and the community about access to capital opportunities. The NIH, I-RED, ASCEND2.0 program, jointly operated by the NMSUF, UNM Anderson School of Management, and UNM Health Science Center, supports university researchers like Dr. Zhang in transitioning their technology from the lab to the market. We are thrilled to see this program taking place at NMSU".

Introducing EcoCFTrack: A Revolution in Cystic Fibrosis Diagnosis

Dr. Zhang's ASCEND2.0 project centers on EcoCFTrack, a groundbreaking digital healthcare device designed to address the limitations of current diagnostic and monitoring practices for cystic fibrosis (CF). Traditional CF diagnostic methods are often costly, time-consuming, and inadequate for continuous monitoring or tracking treatment effectiveness. EcoCFTrack leverages advanced sensing technology, battery-free onboard computing, and wireless communication to overcome these challenges.

The device functions as a nanogenerator, harvesting energy while amplifying signals based on chloride concentrations in sweat—a key biomarker for CF. This self-powered, customizable, and affordable device provides real-time monitoring capabilities through an onboard data logger and cloud computing integration. By offering rapid diagnosis and ongoing treatment tracking, EcoCFTrack is poised to revolutionize CF management.



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*NMSU College of Business
Associate Dean Carlo A. Mora-
Monge*

ASCEND2.0: Accelerating Innovation and Commercialization

Participation in the ASCEND2.0 program provides Dr. Zhang and her team with critical mentorship, resources, and networking opportunities to advance EcoCFTrack toward commercialization. The program offers training in business development, marketing, and intellectual property management while connecting researchers with investors, venture capitalists, and healthcare professionals.

These resources will enable the finalization of EcoCFTrack's product design, integration of a compact wireless voltage data logger, and experimental validation of the system.

The device will record voltage data, securely connect to a cloud platform, and undergo rigorous testing to ensure reliability and effectiveness.



NMSU Engineering Logo

Broad Impact on CF Management

EcoCFTrack addresses significant gaps in CF management by providing real-time health data, reducing diagnostic delays, and supporting continuous care. This innovative device not only enhances diagnostic efficiency but also empowers patients and healthcare providers to make informed decisions, improving treatment outcomes and lowering healthcare costs.

“EcoCFTrack’s ability to provide real-time data on patients’ health status positions it as a game-changing tool in CF management, reducing diagnostic delays, improving treatment outcomes, and lowering healthcare costs. This innovative solution not only enhances diagnostic efficiency but also supports continuous care, empowering both healthcare providers and patients to better manage CF,” said Dr. Zhang.

PhD students Roshira Premedasa and Pouya Almasi, who are key contributors to the project, added: “Moving forward, we will focus on finalizing the product, enhancing data acquisition, and integrating a compact wireless voltage data logger into the sensor system. The proposed EcoCFTrack transforms CF management through rapid diagnosis, long-term condition monitoring, and activity tracking.”

For more information about Dr. Gloria Zhang’s research, please contact:

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About the ASCEND2.0 Program

ASCEND2.0, (the grant 5UT2GM148080), funded by the National Institutes of Health (NIH), is an initiative designed to accelerate the commercialization of biomedical innovations by equipping researchers with entrepreneurial skills and strategies for bringing their discoveries to market. The primary goal of this award and the IDeA Regional Entrepreneurship Development (I-RED) program is to support small business concerns in IDeA regions to develop educational products that promote entrepreneurship in underserved states through local academic institutions. Educational efforts utilizing these products are expected to build biomedical researchers’ and students’ entrepreneurial skills that are crucially needed to translate scientific discoveries and innovative technologies into commercial products to the benefit of the public and the patient. I-RED was designed by NIGMS for IDeA states.

The IDeA program focuses on building research capacity in states with historically low levels of NIH funding. It supports advancements in basic, clinical, and translational research, alongside faculty development and infrastructure enhancements. By strengthening institutional capabilities in biomedical research, ASCEND2.0 enhances the competitiveness of investigators in securing research funding while enabling clinical and translational research to address the needs of medically underserved communities.

IDeA-Eligible States

The program is open to institutions in the following states and territories: Alaska, Arkansas, Delaware, Hawaii, Idaho, Kansas, Kentucky, Louisiana, Maine, Mississippi, Montana, Nebraska,

Nevada, New Hampshire, New Mexico, North Dakota, Oklahoma, Rhode Island, South Carolina, South Dakota, Vermont, West Virginia, Wyoming, and Puerto Rico.

ASCEND2.0 plays a pivotal role in empowering biomedical researchers to transform their innovations into impactful healthcare solutions, fostering excellence in underserved regions.

*Disclaimer: Research reported in this publication was supported by the National Institute of General Medical Sciences of the National Institutes of Health under Award Number UT2GM148080. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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