UNLV Applied Innovation Center (AIC)

October 2024

Executive Summary

The Applied Innovation Center (AIC) program, managed by UNLV's Office of Economic Development (OED), was established with the goal of accelerating the translation of early ideas into life changing products, creating small businesses, and attracting and engaging industry for mutually beneficial collaboration. Due to its structure and success, OED has been a focal point for UNLV to engage with the broader economic development and diversification ecosystem within Southern Nevada and worldwide, and therefore meshes well with the goals of the AIC program.

Translational-Commercialization Funding

An infusion of funding to support translation activities has the potential to greatly increase the number of commercially viable innovations readily available for production. This engagement is anticipated to result in increased and expanded engagements with industry including not only technology commercialization, but workforce development, philanthropy, innovation challenges, real-world opportunities for students, and hiring of the workforce of tomorrow.

Lidar Based Navigation - formerly Advanced Mobility (Fraunhofer)

Undergraduate student, Thomas Schotik, joined the lab to support development of the CAV platform.

New research funding received: $491k new this period.

- $465k - NSF REU Site: Smart Cities – Advancing Mobility. August 2024.
- $26.5k - USC, Pacific Southwest Region University Transportation Center (PSR UTC). August 2024.

New sponsored research contracts: 2 this period

- NSF REU Smart Cities
- USC, Pacific SW Region PSR UTC

Fire Retardant Application (Bhowmik)

Next generation fire retardant solution for battery applications, based on UNLV technology (inventor Bhowmik).

One patent application is underway, anticipated submission in late October 2024.

Tissue Perfusion

An award was issued in July 2024 to John Menezes and his team for $25,000 for "Version 2 Prototype Development for AI Tissue Perfusion Monitoring with Thermal, RGB, and Laser Speckle Cameras." They are expected to begin work in September 2024.

Translational Technology Grants

$150,000 will be used through an RFP process for UNLV researchers to apply for funding to advance UNLV owned or controlled intellectual property. Only innovations disclosed to the Office of Economic Development may be considered and the funds must be used to drive the innovation to a minimum viable product for licensing to a company or creation of a start-up company who can commercialize the technology without excessive research or development costs. Awards will be made in the $10,000-$20,000 range.

Two (2) different type of award opportunities were made available via a call for proposals – Proof of Concept (POC) and Product & Service Development (PSD). The opportunity was open to all fields of research in which the proposed project fulfills the goals and funding priorities of the program and which are identifiable to the OED as commercially relevant sports innovations. PSD awards had an additional requirement of having a commercial industry partner provide matching funds.

The following awards were made:

Research Title	Researchers	Type	Amount Awarded	Industry Match	Award Date
The Future of Officiating: Assessing Fan Reactions - An Interdisciplinary Examination of Fan Responses to Artificial	Minkyo Lee	POC	$24,990	NA	7/1/24

Intelligence (AI) versus Human Referee Calls					
Development of Inclusive Algorithms for Estimating Energy Expenditure with Wrist-Worn Wearable Technology Devices	James Navalta	POC	$25,000	NA	7/1/24
Advancing Visual Perception in Sports Through Augmented Reality: An In-Depth Exploration in the Context of Golf Putting	SJ Kim	POC	$25,888	NA	7/1/24
Decision tool-based guidance for returning to physical activity postpartum	Kara Radzak	POC	$24,976	NA	7/1/24
An Adaptable and Cost-Effective Framework for Personalized Healthcare E-Butler in Parkinson's Disease and Rehabilitation Management	Shengjie Zhai	POC	$24,990	NA	7/1/24
Walking gait and balance response to Trampwall exercise and without a semi-conductive beanie recovery protocol	Julia Silvernail	POC	$27,776	NA	7/1/24
BetterBettor	Kasra Ghaharian	PSD	$50,000	$50,000 (pending)	7/1/24
PGA Hope: A Pilot Study Evaluating Programmatic	Brooke Kleven	PSD	$39,899	$39,899 (pending)	7/1/24

Efficacy of Golf for US Military Veterans					
Skill Money Games and the Effects Golf Gaming has on Anxiety, Performance, Sociability and Quality of Life	Chris Cain	PSD	$25,000	Pending	7/1/24
Total			$268,519.00		

Individual project updates will be provided in future reports as work gets underway.

ZeroLabs

Zero Labs and UNLV are forming an innovative partnership to create an accelerator at Black Fire and jointly leverage their resources and expertise to create a venture ecosystem that will give birth to the next generation of private companies in Nevada.

- Development of the startup and early-stage ecosystem; continued launchpad and accelerator programming
- Directing and planning research & analysis; attending and supporting community events and outreach; strategic planning with OED and GOED on ecosystem planning and objectives

SAGE

The Sierra Accelerator for Growth and Entrepreneurship (SAGE) is a statewide program that strengthens the technological competitiveness of Nevada small businesses who are seeking funding from the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs

Cumulative number of tech-based small businesses engaging with SAGE since inception (2020)

General Location	**Total:**
Northern Nevada	**97**
Out of Country	**2**

Outside of Nevada	**13**
Southern Nevada	**48**
Grand Total	**160**

EIR and EFS Programming

EIR

UNLV's Entrepreneur in Residence (EIR) program, funded by the KF, is a cornerstone of the university's efforts to transform groundbreaking inventions into life-changing innovations that drive economic growth and diversification. Managed by the Office of Economic Development (OED), the program focuses on identifying and commercializing university-owned technologies to develop high-tech, market-ready products that enhance lives.

EFS

Five internal UNLV faculty scholars were enlisted for the period of November 1, 2023 through October 31, 2024 (Erdem, Ferrar, Hines, Menezes, and Wang).

Wang

- Introduced the EFS program to engineering students in my ME427/627 Manufacturing Systems class, ME 426/626 Manufacturing processes class, and ME 497/498 Senior Design classes in 2023 and 2024.
- Invited entrepreneurs, such as Stan Goldfarb, talk to engineering students;
- Offered seminars on OpenAI, ChatGPT, and other AI tools 3 times to engineering students on their innovations.
- Invited experts, such as Dr. Robert Rippee, Ms. Sue Wainscott, and Mr. Ryan Rubio, to talk to engineering students twice in the past year.
- Worked with engineering students on entrepreneurial projects with industry.

Erdem

- Led a group of graduate students to attend the Robot Roadshow by Knightscope (at BlackFire) and held a QnA session with the EVP about integrating robotics into the casino and resort industry. [April 2024]

- Served as Co-PI for the project title ‘Piloting the Future: Research driven by drone data and community engagement through virtual platforms’ and submitted notice of intent for NSF MRI Limited Submission 23-519. [May2024]
- Offered guidance to colleagues in the PGM program about the UNLV OED IP and patent process as they sought advice on how to patent a prototype they have developed. [July 2024]
- Held a meeting with Dr. Zach Miles, Sr. Associate VP of Economic Development, to brainstorm ideas for advancing the mission and goals of the Office of Economic Development. [July 2024].
- Provided direction for a colleague who is planning to conduct medical tourism research and reviewed the process for seeking an unsolicited grant. [August 2024]