



# Applied Research Collaborative

---

UNLV Office of Economic Development  
UNLV Center for Business Research

PIs: Bo Bernhard and Andrew Woods

Semi-Annual Progress Report

Reporting Period: September 1, 2021 to February 28,  
2022

April 30, 2022

## Table of Contents

Project Purpose .....	3
Project Status/Major Accomplishments .....	4
Commercialization and Partnering with Industry.....	6
Grants and Outside Funding.....	6
Intellectual Property .....	6
Programmatic and Project Changes.....	6
Looking Forward.....	6
Performance Metrics .....	8
Budget .....	9

## Project Purpose

Following GOED's well-developed applied research center concept, the Applied Research Collaborative (ARC) takes advantage of the best practices established in the state's research institutions (in collaboration with GOED) via a new program at the University of Nevada, Las Vegas (UNLV). The ARC mission is to support university-based, best-in-class applied research that enhances the global competitiveness of Nevada's industries by leveraging the physical and intellectual assets of UNLV. Ultimately, this new program helps GOED touch all geographies and industries in the state, via a central and public access points for companies to access the range of technical services, researchers, testing and research capabilities, advanced tools, government services, and methodologies available across NSHE.

Modeled in collaboration with the Nevada Center for Applied Research (NCAR), ARC boasts a mission to help entrepreneurs and established businesses to:

- Establish collaborative relationships between business and academic leaders to promote innovation, research programs, and scientific studies to address real-world and marketplace problems.
- Connect industry partners with governmental agencies to promote pilot programs, research initiatives, and other collaborations.
- Facilitate access to cutting-edge research labs, sophisticated instrumentation, and equipment.
- Build interdisciplinary teams of faculty, scientists, postdoctoral students, and grad students to work on ongoing or one-off projects.
- Provide access to an entrepreneurs' support network that includes incubation, acceleration, and business mentoring from experienced professionals and executives and the Small Business Development Center (SBDC).
- Provide co-working space for Nevada's university communities and local startups, leveraging world-class facilities including the \$35M Harry Reid Research and Technology Park, Black Fire Innovation Hub, and the UNLV Incubator powered by the Hughes Center.

Specifically, the ARC will focus on four core disciplines – in projects highlighted in the next section:

- New Generation Hospitality, Entertainment, Tourism, and Gaming Services and Solutions
- Sports Research and Innovation Services and Solutions
- Energy and Superconducting Services and Solutions
- Transportation and Mobility

## Project Status/Major Accomplishments

During this first reporting period, the project was in “launch phase,” which means that several key project components were established. Specifically, UNLV’s Office of Economic Development (OED) and Center for Business Research (CBER) achieved the following milestones:

1. [Opened the UNLV Incubator at the Hughes Center](#), in partnership with [The Blackstone Group](#), an American investment management company based in New York City. The Incubator recently welcomed its fourth cohort, including successful teams from the President’s Innovation Challenge (see below).
  - a. Core disciplines supported: all
2. The project’s home facilities at Black Fire Innovation [opened a new tech accelerator \(XCo\) on the ground floor](#), focusing on advancing tech companies and providing services for startups in order to “help Nevada become a leading national technology powerhouse.”
  - a. Core disciplines supported: all
3. Launched a partnership with Sightline Payments, [Southern Nevada’s first-ever fintech unicorn](#). Funded in part by Vegas Golden Knights owner Bill Foley (a longtime Fidelity executive focused on the fintech space), Sightline is supporting UNLV research on societal and consumer shifts to a cashless economy. Sightline is moving its global headquarters to the second floor of UNLV’s Black Fire Innovation facility at the Harry Reid Research and Technology Park.
  - a. Core disciplines supported: New Generation Hospitality, Entertainment, Tourism, and Gaming Services and Solutions; Sports Research and Innovation Services and Solutions
4. Launched a partnership with Geocomply, [Vancouver’s third ever tech unicorn](#), which is also moving to the second floor of UNLV’s Black Fire Innovation facility at the Harry Reid Tech Park (giving the floor a rare combination – unprecedented in Southern Nevada – of hosting two tech unicorns). Geocomply is a cybersecurity and geofencing technology company whose fortunes have risen dramatically with the technology needs of companies (such as Netflix) that require geofencing technology to determine subscription rates and/or policy implications. Among Geocomply’s institutional investors are The Blackstone Group. Geocomply is an educational and research partner of UNLV, whose co-founders (Anna Sainsbury and David Briggs) are frequent lecturers in UNLV tech and innovation courses.
  - a. Core disciplines supported: New Generation Hospitality, Entertainment, Tourism, and Gaming Services and Solutions; Sports Research and Innovation Services and Solutions
5. Entered into advanced discussions to bring [JP Morgan Chase](#) to Las Vegas with its first-ever local office, which would also be located on the second floor. JP Morgan Chase is the world’s largest bank, and has financed and provided advising for numerous technology companies at the UNLV Tech Park (including Sightline and Geocomply).
  - a. Core disciplines supported: all
6. Launched a facility at the Tech Park with [Nevada Contractors Board](#), a primary supporter of [UNLV’s Solar Decathlon](#). The Solar Decathlon is an award-winning energy project at the UNLV College of Engineering and UNLV School of Architecture that culminates in an international competition that challenges collegiate teams to design, build and operate solar- powered houses that are energy-efficient, affordable and attractive.
  - a. Core disciplines supported: Energy and Superconducting Services and Solutions;
  - b. Transportation and Mobility (via transportation infrastructure projects emerging from federal government)
7. Received an internal grant to build out the Black Fire Innovation Kitchen, negotiating with [AWS](#) (to provide “internet of things” connectivity to its appliances and technologies) and [Hard Rock Café](#) (global brand with 185 cafes in 74 countries).
  - a. Core discipline supported: New Generation Hospitality, Entertainment, Tourism, and

Gaming Services and Solutions

8. Organized Sports Summit in partnership with [UFC](#) (event hosted after reporting period at UFC HQ), and catalyzed innovative new research across the disciplinary spectrum and across campus (see separate Knowledge Fund report for Sports Research and Innovation Initiative). Project attracted post-Knowledge Fund financial investment from UNLV's Office of the President.
  - a. Core disciplines supported: Sports Research and Innovation Services and Solutions
9. Signed agreement for our first standalone "big tech" facility, with [T-Mobile](#), to partner with UNLV programs in telecommunications, 5G and 6G technology, engineering, computer science, and women-in-tech innovation, becoming our first "marquee building" at the UNLV Tech Park.
  - a. Core disciplines supported: all
10. Selected in competitive process to submit [\\$10M grant](#) in concert with [a Southern Nevada coalition for the Build Back Better Regional Challenge](#) to secure the "Briova Building" at the Harry Reid Research and Technology Park. We seek to transform this existing facility into a biomedical, advanced manufacturing, wet lab, and possibly even fine arts facility – in a manner consistent with the approach of UNR's NCAR facility.
  - a. Core disciplines supported: all
11. Submitted \$20M proposal for ARPA funds in support of Dr. Ashkan Salamat's energy supercenter, [The Nevada Extreme Conditions Lab](#) (NEXCL), with potential re-location of business-facing applications to the UNLV Harry Reid Research and Technology Park. NEXCL is a multidisciplinary group at UNLV that explores fundamental experimental, computational, and engineering problems of materials under high pressure – culminating in a [Nature cover story on the ground-breaking achievement of room temperature superconducting](#). Known as the "holy grail of physics," this achievement was highlighted in Governor Sisolak's State of the State address and featured worldwide in major coverage in outlets like *TIME*, *BBC*, *The New York Times*, *Science*, and *Physics World*. This project represents one of Nevada's best opportunities to diversify the economy in becoming an energy hub.
  - a. Core disciplines supported: Energy and Superconducting Services and Solutions
12. Worked with Clark County on a new "Southern Nevada Tech District," a first-ever initiative to be anchored by corporate partner [Switch Communications](#) and the UNLV Harry Reid Research and Technology Park. To this end, the facility became the "tech buzz building" for events like blockchain nights, special events, board meetings, and corporate and C-suite gatherings for the American Gaming Association, AGEM, G2E, Nutanix, and LG.
  - a. Core disciplines supported: all
13. Launched the first-ever [UNLV President's Innovation Challenge](#) with up to \$50,000 in Knowledge Fund-ARC-commercialization support. This event, modeled after similar innovation challenges at UNLV President Keith Whitfield's former home, Duke University (home to Research Triangle Park), featured nine student teams tasked with solving the state's most pressing economic problem: economic diversity.
  - a. Core disciplines supported: all
14. Submitted proposal for federal funding for the SWITCH-to-Tech-Park dark fiber project, which would "light up" the Tech Park with the fastest and most robust internet service available. Mechanism: Clark County's ARPA funds.
  - a. Core disciplines supported: all
15. Hosted four "[Brews and Economic Views](#)" public events which were attended by over 200 individuals on topics ranging from biotechnology to water tech and the lithium-ion battery economy.
  - a. Core disciplines supported: all
16. CBER built partnerships in a variety of industries with the goal of advancing collaborations between the University and private sector in several emerging economic sectors: healthcare, manufacturing, clean energy economy, esports, medical tourism, cannabis, arts and entertainment.
  - a. Core disciplines supported: all

17. Expanded CBER and ARC support team by 4 (Program Manager, 2 undergraduate researchers, and 1 graduate student researcher) in the past 6 months with further positions (AVP of Innovation and Partnerships, Director of Commercialization, Director of Communications, Director of Events, Project Manager, Faculty Expert, and three Graduate Assistants) forthcoming.
18. During this time period, added dozens of new corporate partners, and now boast nearly 90 companies in the UNLV Tech Park overall. In total, these companies are worth more than \$1.2 trillion – and many of these entities lacked a Nevada footprint before these facilities opened.

## Commercialization and Partnering with Industry

See items 1, 2, 3, 4, 5, 7, 8, 9, 12, 14, 17, and 18 above for descriptions.

## Grants and Outside Funding

Secured outside funding for interdisciplinary research that translates back to knowledge fund priorities with engineering, economics, and hospitality on topics such as battery technology, complete streets, responsible gaming, and economic education in public schools. Projects include:

Name of Project	Amount	Interdisciplinary Partner	Funder
Complete Streets Corridor Evaluation	\$40,000	Engineering	Clark County
Clean Energy Symposium	\$30,000	Engineering/ Business/ and Public Policy	Governor’s Office of Economic Development
Responsible Gaming AI Technology Survey	\$63,629	International Gaming Institute	Aristocrat Gaming
Home Electrification Study	\$90,000	Economics	Latin Chamber of Commerce
Economics Micro credential for Public School Teachers	\$50,000	Education	Engelstad Foundation

## Intellectual Property

For intellectual property projects in support of core discipline “New Generation Hospitality, Entertainment, Tourism, and Gaming Services and Solutions,” see report filed on “Global Gaming Capital Initiative” Knowledge Fund project (UNLV International Gaming Institute). The IGI’s innovation initiatives provided the foundation for the relationship with Caesars, our founding corporate partner at the Tech Park, and now the Tech Park provides an unrivaled showcase capacity for university intellectual property not previously possible UNLV campus facilities – in a manner that supports our intellectual property efforts.

## Programmatic and Project Changes

None to report.

## Looking Forward

In our next report, we look forward to describing the “Silicon Vegas” event that will highlight the Knowledge Fund’s support in bringing our “dual unicorns” to the UNLV Research and Technology Park (anticipated event: August 1, 2022). We also will provide updates on the funding proposals outlined in items 10, 11, 14, and 15 above. In addition, the next report will highlight the filling out of our team (see item 18 above), provide updates on the groundbreaking and ribbon-cutting for the T-Mobile and Briova buildings, respectively, and report on the Sports Summit recently hosted at the UFC headquarters.

## **Performance Metrics**

---

As this report represents a “launch update,” and as the project evolves, we provide suggested performance Metrics for future reports below:

**Research Grants Applied For (\$/#)**

**Research Grants Received (\$/#)**

**SBIR/STTR Grants Applied/Received (#/\$) (related to SAGE)**

**Gifts/Donations (\$)**

**Commercial Sponsored Research \$**

**# of new engagements (thinking just company contacts, not formal agreements. Can list names or just a count)**

**# of commercial partners**

**# Startups Generated (from Incubator or other)**

**# of student cohorts supported**

**# of student cohorts “graduated”**

**# of students participating in incubator program**

**# of prototypes developed (incubator)**

**# of coaching or mentoring hours provided to cohorts**

**# of Patents Filed**

**# of Patents Issued**

**# of License Agreements executed**

**\$ Commercialization Revenue**

**# of Companies locating to Park (either physical presence or other)**

**# of Companies locating to NV**

**\$ Revenue generated by those businesses**

**# of jobs/created/saved (outside UNLV)**

**# of events or workshops hosted**

**Sq footage of newly developed facilities (labs or new buildings at park)**

**# of new tenants signed, or list the names**

**Faculty Hired or Retained (#)**

**Students Hired/Retained (#)**



# Budget



My Award Budget to Actuals by Ledger  
Account - FIN - CR (NSHE)

Company: University of Nevada, Las Vegas

Period: FY 2022 - 09 March

Worktags: Grant: GR14240 UNLV Applied Research Collaborative (ARC)

Ledger Account Summary	Original Budget	Budget Amendments	Current Budget	Current Period Actuals	LTD Actuals	Obligations	Commitments	Actuals + Obligations + Commitments	Remaining Budget	Percent Remaining
<b>Direct Expenses</b>										
Personnel Expenses	\$1,076,668.00	0.00	\$1,076,668.00	0.00	0.00	0.00	0.00	0.00	\$1,076,668.00	100.00%
Professional Salary	\$730,000.00	0.00	\$730,000.00	0.00	0.00	0.00	0.00	0.00	\$730,000.00	100.00%
Graduate Salary	\$112,000.00	0.00	\$112,000.00	0.00	0.00	0.00	0.00	0.00	\$112,000.00	100.00%
Fringe Benefit Expense	\$234,668.00	0.00	\$234,668.00	0.00	0.00	0.00	0.00	0.00	\$234,668.00	100.00%
Other Direct Expenses	\$510,000.00	0.00	\$510,000.00	0.00	0.00	0.00	0.00	0.00	\$510,000.00	100.00%
Sub-Awards	\$450,000.00	0.00	\$450,000.00	0.00	0.00	0.00	0.00	0.00	\$450,000.00	100.00%
Tuition and Fees Expense	\$60,000.00	0.00	\$60,000.00	0.00	0.00	0.00	0.00	0.00	\$60,000.00	100.00%
Total Direct Expenses	\$1,586,668.00	0.00	\$1,586,668.00	0.00	0.00	0.00	0.00	0.00	\$1,586,668.00	100.00%
Facilities and Administration Expense	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
<b>Total Direct &amp; Indirect</b>	<b>\$1,586,668.00</b>	<b>0.00</b>	<b>\$1,586,668.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>\$1,586,668.00</b>	<b>100.00%</b>