GOED
NEVADA GOVERNOR'S OFFICE OF ECONOMIC DEVELOPMENT

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November 01, 2025

The Honorable Joseph Lombardo
Office of the Governor
One Hundred One North Carson Street
Carson City, Nevada 89701

Ms. Diane Thornton, Director
Legislative Counsel Bureau
401 South Carson Street
Carson City, Nevada 89701

Re: Nevada Knowledge Fund Annual Report 2025

Governor Lombardo and Director Thornton:

NRS 231.1595 requires the Executive Director to report annually to the Governor and to the Director of Legislative Counsel Bureau on the progress of the Knowledge Fund. The attached report is for the period covering November 1, 2024, through October 31, 2025.

Sincerely,

Thomas J. Burns
Executive Director
cc:

Ryan Cherry, Governor's Chief of Staff
Tiffany Greenameyer, Director, Governor's Finance Office
Wayne Thorley, Senate Fiscal Analyst
Sarah Coffman, Assembly Fiscal Analyst

Morgan Barlow, Program Analyst, Fiscal Analysis Division
Shayne Powell, Executive Branch Budget Officer, Governor's Finance Office
Angie Mathiesen, Director of Administration, Governor's Office of Economic Development
Karsten Heise, Senior Director Strategic Programs & Innovation, Governor's Office of Economic Development

Annual Report 2025

Nevada Knowledge Fund

November 1, 2024, through October 31, 2025

***Project and activity descriptions below were provided by the universities' semi-annual reports.**

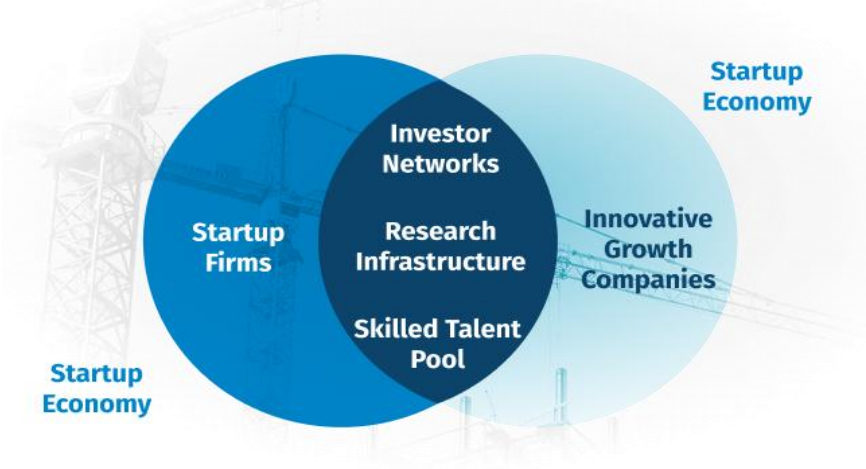
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What the Knowledge Fund does and why it matters

The Nevada Knowledge Fund was enacted during the 2011 Nevada Legislative Session and first funded in fiscal year 2014. It was created to turn research at Nevada's research universities and institutions into market opportunities.

This year's 2025 Nobel Memorial Prize in Economic Sciences was awarded to three economists "*for having explained innovation-driven economic growth"*. The three Nobel laureates demonstrated in their respective works how sustained growth can be achieved based on technological innovation.

Historically, continued economic growth based on technological development has not been the norm. If new ideas do not continue to evolve or lead to the flow of improvements and the introduction of new applications, then discoveries will have no noticeable effects on long-run economic growth. In addition, it is also important to point out that economic growth is not just being understood by calculating gross domestic product (GDP) but rather it leads to improvements in living standards exemplified by the introduction of new medicines and treatments, safer and more efficient transportation, improved access to food, more efficient ways of heating and cooling our homes, improved communications at all levels and much more. Economic growth directly results in elimination of extreme poverty, substantial increase in life expectancy, and dramatical improvement in the material and non-material well-being of most Americans.



Hence, it is vital to have in our state an instrument for the translation of new discoveries into general applications, products, and processes. This will strengthen Nevada's economic growth prospects. Sustained growth at a level of, for example, two percent will double the income over a person's working life.

The Knowledge Fund is *the only* instrument GOED, or any other state agency, has at its disposal to foster an innovation-based economy in Nevada by turning scientific use-inspired research into market opportunities at Nevada's three research institutions in areas GOED has targeted for economic growth. The Knowledge Fund thereby plays a key part in seeking to secure Nevada's competitiveness and continue to generate high paying jobs, increase the rate of new company formation particularly in the high growth category, as well as attracting innovative firms to our state.

To reiterate, an innovation-based economy transforms scientific research into new jobs and businesses, stimulates entrepreneurship, increases access to critical resources and ensures economic prosperity and opportunity for all Nevadans.

Nevada Knowledge Fund – Economic Impact

In October 2025, Prof. emeritus Tom Harris from the University of Nevada, Reno's Department of Economics conducted an Economic Impact analysis of the three universities' sponsored research dollars and other gifts/awards received as a direct result of the Knowledge Fund. The economic impact of the Knowledge Fund was based on estimated by the IMPLAN microcomputer input-output software IMPLAN LLC, 2022. Economic Impact was assessed by estimating jobs created and state tax revenue raised as a result of $40.7 million of cumulative Knowledge Fund investments since its inception.

Total # of Jobs Created	12,386
Total $ State Tax Revenue	$54.35M

Total Jobs created (IMPLAN calculation): 9,033
State tax revenue generated (IMPLAN calculation): $37,087,854

The Economic Impact from such associated venture capital raised by university-affiliated companies further leverages the positive effect of the Knowledge Fund on Nevada's economy and tax revenue.

Total jobs created (IMPLAN calculation): 3,353
State tax revenue generated (IMPLAN calculation): $17,262,473



GOED's Senior Director of Strategic Programs & Innovation Karsten Heise.

Table 1 below shows the impacts of UNR research investment results. From the $390.5 million investment, $357.7 million were estimated to be expended within the state of Nevada. Also, an additional 925 workers were employed by the private sector by economic sectors associated with sponsored research funding at the university. These related activities yielded direct expenditures of $656.0 million in the state and the economic links within the state, the total economic activity from UNR research investments and associated private sector employment was estimated to be $1,169.3 million. With total employment impacts of 7,288 employees, total labor income of $470.9 million, and total value-added impacts of $666.0 million.

Table 1. Employment, Labor Income, Value Added, Economic Output From GOED Investements at the University of Nevada, Reno and Associated Private Sector Employment.

IMPACTS	Employment	Labor Income	Value Added	Output
Direct	4,821	$318,018,846	$368,561,950	$656,033,593
Indirect	1,010	$65,405,286	$122,102,878	$233,769,102
Induced	1,456	$87,463,994	$175,322,085	$279,473,250
Total	7,288	$470,888,126	$665,986,913	$1,169,275,945

Table 2 shows the impacts of UNLV research investment results. From the $39.9 million investment, $36.6 million was estimated to be expended within the state of Nevada. Also, an additional 20 workers were employed by the private sector by economic sectors associated with sponsored research funding at the university. These related activities yielded direct expenditures of $40.0 million in the state and the economic linkages within the state, the total economic activity from UNLV research investments and associated private sector employment was estimated to be $75.0 million. With total employment impacts of 593 employees, total labor income of $36.2 million, and total value-added impacts of $46.8 million.

Table 2. Employment, Labor Income, and Economic Output Impacts from GOED Investments at the University of Nevada, Las Vegas and Associated Private Sector Employment.

IMPACTS	Employment	Labor Income	Value Added	Output
Direct	419	$25,938,038	$26,335,473	$40,010,418
Indirect	64	$3,688,717	$7,021,692	$13,748,877
Induced	110	$6,579,317	$13,406,821	$21,236,226
Total	593	$36,206,073	$46,763,986	$74,995,521

Table 3 shows the impacts of DRI research investment results. From the $65.6 million investment, $60.1 million was estimated to be expended within the state of Nevada. Also, an additional 171 workers were employed by the private sector by economic sectors associated with sponsored research funding at the university. These related activities yielded direct expenditures of $77.1 million in the state and the economic linkages within the state the total economic activity from DRI research investments and associated private sector employment was estimated to be $142.8 million. With total employment impacts of 1,152 employees, total employee compensation of $68.3 million, and total value-added impacts of $89.4 million

Table 3. Employment, Labor Income, Value Added, Economic Output from GOED Investments at DRI and Associated Private Sector Employment

IMPACTS	Employment	Labor Income	Value Added	Output
Direct	826	$48,901,396	$50,796,420	$77,056,759
Indirect	117	$6,898,861	$13,237,847	$25,467,371
Induced	209	$12,535,400	$25,325,537	$40,248,105
Total	1,152	$68,335,658	$89,359,804	$142,772,235

Table 4 shows tax impacts from GOED investments in UNR research and associated private sector employment. Because UNR is a state entity it does not pay sales tax for direct purchases. However, expenditure by NSHE employees do impact state and local tax payments as to sales taxes and other personal state and local taxes. Also, NSHE does not pay for Social Security but pays for Medicare. The model was adjusted to reflect these payments. With these adjustments to the model, total local and county taxes from GOED investments in UNR research are estimated to be $14.3 million, state taxes of $26.3 million and federal taxes of $117.3 million.

Table 4. Local, State, and Federal Tax Impacts from GOED investments at the University of Nevada, Reno and Associated Private Sector Employment.

IMPACTS	Local & County	State	Federal	Total
Direct	$2,831,884	$7,863,169	$76,305,870	$87,000,922
Indirect	$2,924,305	$6,555,194	$17,311,825	$26,791,324
Induced	$8,524,492	$11,924,507	$23,690,987	$44,139,986
Total	$14,280,681	$26,342,870	$117,308,681	$157,932,232

Table 5 shows tax impacts from GOED investments in UNLV research and associated private sector employment. With model adjustments as to taxes explained earlier, the UNLV tax model was adjusted to reflect these payments. With these adjustments to the model, total local and county taxes from GOED investments in UNLV research and associated private sector employment are estimated to be for local and county taxes $1.9 million, state taxes of $3.9 million and federal taxes of $20.8 million.

Table 5. Local, State, and Federal Tax Impcats from GOED Investments in UNLV Research.

IMPACTS	Local & County	State	Federal	Total
Direct	$70,543	$113,643	$11,878,861	$12,063,048
Indirect	$369,947	$758,853	$2,686,374	$3,815,174
Induced	$1,473,116	$3,027,159	$6,195,207	$10,695,482
Total	$1,913,606	$3,899,655	$20,760,443	$26,573,704

Table 6 shows tax impacts from GOED investments in DRI research and associated private sector employment. With model adjustments as to taxes explained earlier, the DRI tax model was adjusted to reflect these payments. With these adjustments to the model, total local and county taxes from GOED investments in DRI research and associated private sector employment are estimated to be for local and county taxes $3.4 million, state taxes of $6.8 million and federal taxes of $40.2 million.

Table 6. Local, State, and Federal Tax Impcats from GOED Investments in DRI Research.

IMPACTS	Local & County	State	Federal	Total
Direct	$135,861	$218,868	$13,269,045	$13,623,774
Indirect	$685,262	$1,405,642	$22,503,818	$24,594,722
Induced	$2,540,624	$5,220,819	$4,378,042	$6,059,341
Total	$3,361,747	$6,845,329	$40,150,905	$44,277,836

Table 7 shows the impact results for the University of Nevada, Reno. From venture capital raised by affiliated economic sectors, total economic activity in the state of Nevada was estimated to be $560.6 million with total employment impacts of 3,353 employees, total employee compensation of $205.2 million, and total value-added of $342.3 million.

Table 7. Venture Capital Impacts Raised at University of Nevada, Reno from NCAR Affiliated Economic Sectors.

IMPACTS	Employment	Labor Income	Value Added	Output
Direct	2,129	$132,075,817	$202,559,932	$320,649,146
Indirect	500	$31,691,646	$59,276,830	$105,634,829
Induced	723	$41,475,193	$80,475,102	$134,338,291
Total	3,353	$205,242,655	$342,311,863	$560,622,267

Table 8 shows tax impacts from venture capital raised by NCAR affiliated economic sectors at the University of Nevada, Reno. From table 8, approximately $8.4 million in local and county revenues, $17.3 million in state revenues, and federal revenues of $54,6 million were generated by activities of venture capital by University of Nevada, Reno affiliated economic sectors.

Table 8. Local, State, and Federal Tax Impacts at the University of Nevbada, Reno from NCAR Affilated Economic Sectors.

IMPACTS	Local & County	State	Federal	Total
Direct	$4,413,456	$9,045,664	$34,488,001	$47,947,120
Indirect	$1,521,906	$3,124,299	$8,649,162	$13,295,366
Induced	$2,478,929	$5,092,511	$11,445,098	$19,016,538
Total	$8,414,290	$17,262,473	$54,582,260	$80,259,024

Metrics Table

METRIC	CUMULATIVE TOTAL AS OF OCT. 2025
GOED Funding Provided $	$40,794,034.74
Total $ Amount of Sponsored Research Contracts	$478,131,480
Gifts/Awards Rec'd $ (separate NOT part of sponsored research)	$17,856,615.00
# of Sponsored Research Contracts	1,341
# of Research Grants Awards Received	119
# of Spin-out Companies	27
# of Jobs Created (NOT at university)	1,116
# of Companies Relocating to NV	53
# of Faculty Hired/Rec'd KF Support	173
# of Student Interns at Projects and/or Companies Engaged with Projects	274
# of Patents Filed	252
# of Patents Issued	160
Commercialization Revenue	2,381,000
VC/Investments Received by Affiliated Companies (I)	$345,370,000

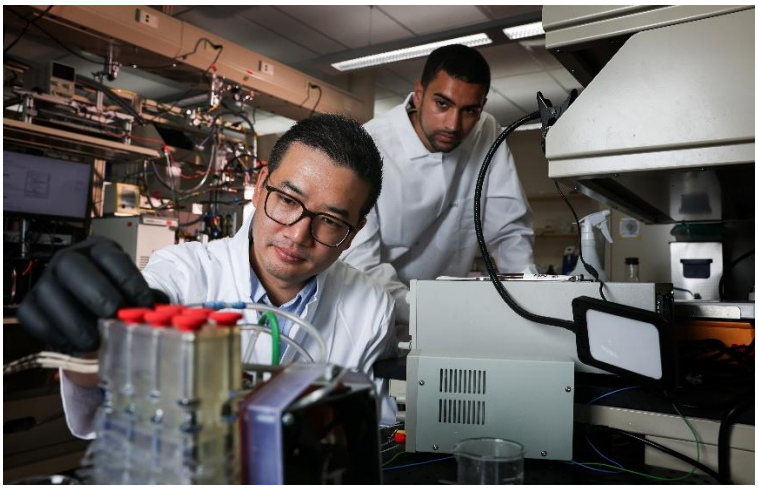
METRIC	DRI	UNLV	UNR	Cumulative Total as of Oct. 2025
GOED Funding Provided $	$13,787,892.14	$17,797,606.00	$9,208,536.60	**$40,794,034.74**
Total $ amount of sponsored research contracts	$61,594,330.50	$32,257,149.00	$384,280,000.00	**$478,131,480**
Gifts/Awards Rec'd $ (separate NOT part of sponsored research)	$3,994,000.00	$7,687,615.00	$6,175,000.00	**$17,856,615.00**
# of Sponsored Research Contracts	14	15	1312	**1,341**
# of research grants awards received	2	53	64	**119**
# of spin-out companies	4	5	18	**27**
# of jobs created (NOT at university)	171	20	925	**1,116**
# of companies relocating to NV	20	7	26	**53**
# of faculty hired/ rec'd KF support	135	14	24	**173**
# of student interns at projects and/ or companies engaged with projects	SEE ABOVE	134	140	**274**
# of patents filed	14	89	149	**252**
# of patents issued	3	22	135	**160**
Commercialization Revenue	-	2,381,000	0	**2,381,000**
VC/Investments Received by Affiliated Companies (I)	-	-	$345,370,000	**$345,370,000**

Highlighted updates from university spinout companies

WAVR

This spinout company from UNLV has developed atmospheric water harvesting systems capable of producing water at high volume and efficiency, even at relative humidity levels as low as 10%, addressing water stress in arid regions such as Southern Nevada. The startup can deliver these benefits at a much higher yield than its competitors and at a fraction of the cost.

WAVR became the first startup to launch with the backing of the *NSF Futures Engine in the Southwest*, one of the largest NSF Engines in the country spanning Arizona, Utah and Nevada. The Futures Engine is focusing on catalyzing air, energy, and water technologies for economic development in the southwestern U.S. Over the past year, the company was able to build on this initial success by attracting further research and development grant funding support from WaterStart as well as venture capital investments as part of its $4M seed round from Las Vegas based Desert Forge Ventures and GOED's state-sponsored venture capital program Battle Born Ventures operating under the auspices of Nevada's SSBCI Program "Battle Born Growth".



Spinout company from UNLV, WAVR.

With this venture capital backing WAVR is able to accelerate commercial pilot deployments to meet demand across industrial, agricultural, and municipal markets. WAVR's systems can integrate with manufacturing plants and data centers whose operations produce excess heat, which further enhances efficiency and drives down cost of water produced. In many of these cases, the price of WAVR-water approaches municipal water rates, creating an economically viable and environmentally sustainable alternative. Since launching in May 2024, WAVR has booked over $1 million in revenue and initiated multiple commercial pilot projects in the U.S., positioning the company as a frontrunner in the emerging atmospheric water harvesting sector.

Sacromatrix

The Knowledge Funds seeks to improve the processes of accelerating technological inventions from laboratory-to-market within our research universities. Particularly in the medical and biotechnological field, this is a long and drawn-out process, and promising results should be celebrated.

Sarcomatrix Therapeutics, a spinout from UNR's Medical School, is a biopharmaceutical company that focuses on developing oral therapies for Duchenne muscular dystrophy (DMD) and related

neuromuscular disorders like sarcopenia and cachexia. Duchenne muscular dystrophy is a rare, progressive neuromuscular disease characterized by muscle degeneration and weakness, with onset typically in early childhood. Despite advances in care, there remains a significant need for durable, accessible therapies. The company's approach targets the underlying mechanisms of muscle degeneration, with the goal of delivering a mutation-agnostic treatment that preserves and restore muscle function across diverse patient populations. Sarcomatrix has secured early-stage venture capital investment funding including a co-investment from Nevada's state-sponsored venture capital program.

NSF Engines

The Knowledge Fund has been pivotal in Nevada's success in landing **three** National Science Foundation (NSF) Innovation Engine opportunities. In short, the Knowledge Fund has been instrumental in Nevada being competitive for these large federal program opportunities.

NSF Futures Engine in the Southwest

In 2023, UNR-led Recharge Nevada Initiative was granted a Development Award and was subsequently selected as one of 71 from a total of 300 applicants to submit a full application. Unfortunately, the concept did not advance further into the semi-final round. DRI, as part of the UC Davis-led Futures for Food Engine, did progress into the semi-final round of 29, but the project proposal was not selected by the NSF for advancement. However, UNLV and DRI are members of the Arizona State University (ASU) led "*Futures Engine in the Southwest*" (formerly Southwest Sustainability Innovation Engine, (SWSIE), which was selected in 2023 as one of the first-ever NSF Regional Innovation Engines, awarding 10 teams spanning 18 states of which 9 active Engines remain in operation.

The Futures Engine after submitting its strategic plan for the next (three-year) phase is now under review by the NSF for further funding with NSF site visits planned for November 2025.

The Futures Engine is the Southwest's flagship innovation platform, dedicated to accelerating the deployment of deep-tech solutions in energy, water, and air systems. Built in response to regional infrastructure strain and national competitiveness imperatives, the Engine unites Arizona, Nevada, and Utah in a coordinated effort to translate research, build workforce pipelines, and activate public-private partnerships. The Engine's mission is to ensure that economic growth is no longer constrained by energy, water, or air challenges. Its structure connects use-inspired research, workforce innovation, and real-world testing with a governance model that includes universities, state agencies, industry, and community stakeholders.

This isn't a grant program; it is a *strategic operating system* designed for durable, place-based innovation. The Southwest's unique combination of rapid industrialization, extreme climate, and renewable resource potential makes it an ideal proving ground for applied technologies. The Engine activates testbeds and pilot-scale deployments in real-world contexts, bridging the gap between lab-scale innovation and scalable, infrastructure-ready solutions.

In its first 18 months, the Futures Engine transitioned from planning to execution, demonstrating that

a tri-state, multi-sector innovation model can produce tangible outcomes. Earlier programs focused on catalyzing co-invested research, building regional workforce infrastructure, and activating a diverse network of partners. These initial efforts laid the groundwork for durable system changes and proved the model's ability to deliver high-leverage results at speed and scale.

Active Knowledge Fund Projects

Applied Innovation Collaboration – UNLV

Project Inception: July 2023 (October 2021, Applied Research Collaborative)
Total Funds Awarded (all years): $5,988,898.51
Project Status: Current Project
Contract End Date: June 30, 2027

The Applied Innovation Center ("AIC") is led and managed by and maximizes the university's programming and services to drive mutually beneficial collaborations with industry. AIC's activities result in the commercialization of innovative products and services, training of the next generation workers in Nevada, establishment and support of hi-tech start-ups, and conducting applied research and translation activities with established industries resulting in economic development and diversification in Nevada.

Established in 2013, UNLV's Office of Economic Development ("OED") has leveraged several resources and programs to build a foundationally-sound organizational structure to support innovation and engagement with industry and is now a focal point for UNLV to engage with the broader economic development and diversification ecosystem within Southern Nevada and across the world.



Image of Zach Miles, UNLV

UNLV's OED is positioned strategically to deploy AIC assets to successfully accomplish the outcomes anticipated from AIC. Such assets include for example the UNLV Harry Reid Research and Technology Park, UNLV Sports Innovation Initiative, Black Fire Innovation, Small Business Development Center (SBDC), RebelForge, Technology Commercialization Office, and UNLV Incubator (powered by Hughes Center).

The Applied Innovation Center builds upon OED's success through increasing the number of personnel dedicated to innovation and industry engagement activities and supporting commercially viable hi-tech projects, ideally through collaboration with industry. To achieve these outcomes and management, AIC is:

- Establishing collaborative relationships between academic and business leaders to promote innovation, research programs, and startups to address real-world and marketplace problems.
- Fostering public private research opportunities between academia, private industry, and venture capital to test and commercialize brand new technologies and companies in prioritized disciplines.
- Connecting industry partners with governmental agencies to promote pilot programs, research initiatives, and other collaborations.
- Providing translational funding to advance inventions disclosed to UNLV's Office of Economic Development.
- Providing matching funding with industry, to be deployed internally at UNLV (and under subcontracts with third parties) to advance hi-tech innovations.
- Facilitating access to cutting-edge research labs, incubators, and accelerators across Southern Nevada in a way that develops and diversifies the economy while providing students and faculty with real-world access to data, expertise, and startup support.
- Building interdisciplinary teams of faculty, and scientists to solve industry problems, including those in priority science areas.
- Providing access to an innovation-ecosystem that includes incubation, acceleration, and business mentoring at UNLV. This also comprises main initiatives such as ZeroLabs, an Entrepreneur in Residence Program (EIR), and a university Entrepreneurial Faculty Scholars Program (EFS).

Highlights for the Reporting Period

Translational-Commercialization Funding

Developing inventions from a research laboratory setting to a state of market viability is a long and grueling process, often termed as "valley of death". During that time research and development grants are vital (aka "non-dilutive funding"). UNLV has furthered the following technologies in the reporting period:

- Lidar Based Navigation: Autonomous vehicle platform with advanced sensors to connect infrastructure sensing through vehicle-to-everything (V2X) communication.
- Fire Retardant Application: Next generation fire retardant solution for battery applications, based on UNLV technology. This also resulted in a new patent application.
- Tissue Perfusion: "Version 2 Prototype Development for AI Tissue Perfusion Monitoring with Thermal, RGB, and Laser Speckle Cameras."
- As part of this project element, Calls for Proposals were issued for Proof of Concept (POC) and Product & Service Development (PSD). Only innovations disclosed to the Office of Economic Development were being considered and the grant 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.

This approach has resulted in 14 invention disclosures, 5 patents filed, and $258,952 in corporate matching dollars to date.

ZeroLabs



Image of ZeroLabs Cohort, 2025

At GOED's direction ZeroLabs and UNLV formed an innovative partnership to create an accelerator at Black Fire Innovation and jointly leveraged their resources and expertise to create a venture ecosystem that will give birth to the next generation of private companies in Nevada.

ZeroLabs focuses at an often-neglected segment of the development timeline of a startup, that is at the earliest phase – *the launch phase* (ZeroLabs's Launchpad).

To date, 67 companies across 4 cohorts have participated with nearly $3M raised post Launchpad. UNLV companies represented 30% (21) of the total.

About 40% of the companies have completed fundraising are preparing to raise or are actively raising within 12 months of finishing a program. Participating companies had a total of 40 employees in the state (if those companies follow a standard path of progression typical for high growth startups, employment can surpass 300 within two years).

Entrepreneur in Residence Program (EIR)

UNLV's Entrepreneur in Residence (EIR) program was created at GOED's request and has been supported by the Knowledge Fund ever since. It forms a cornerstone of the university's efforts to transform groundbreaking inventions into life-changing innovations that drive economic growth and

diversification. It focuses on identifying and commercializing university-owned technologies to develop high-tech, market-ready products that enhance lives.

Smart Lane Safety Systems, Quantum Copper, and WAVR are all direct results from the EIR program.

During the reporting period, WAVR became the first startup to launch with the backing of the *NSF Futures Engine in the Southwest*. It attracted further research and development grant funding support from WaterStart as well as venture capital investments as part of its $4M seed round from Las Vegas based Desert Forge Ventures and GOED's state-sponsored venture capital program. . Quantum Copper has conducted further technology development validation at UNLV labs and continued to refine its product development.

Faculty Scholars Program

UNLV faculty scholars assisted with introducing the EFS program to students via classroom interactions; provided guidance to colleagues about the UNLV-OED patent process; invited entrepreneurs to provide presentations to students; offered seminars on innovative technologies; and worked with industry collaborators.

Anchoring a Commercialization Ecosystem for Environmental Technologies and Know-How – DRI

Project Inception: October 2021
Total Funds Awarded (all years): $2,939,402.74
Project Status: Current Project
Contract End Date: June 30, 2027

For the next biennium, this project will build on the outcomes achieved over the last four years when DRI has utilized Knowledge Fund resources to jump-start a commercialization support system ("Commercialization Fellowship") to leverage the intellectual capital within the DRI research sphere and create additional technical and economic value for the state.

Going forward, this project will ensure that the commercialization fellowship pipeline remains full, with new researchers and ideas entering the pipeline, some earlier efforts moving along to the next stage, and some efforts graduating to the next stage such as higher levels of outside investment, licensing agreements, or new startups.

Significant changes in the state and national landscape over the last several years have also resulted in some new as well as continuing opportunities in certain strategic areas. These include critical minerals, energy, geospatial analysis tools, and AI applications. Over the prior biennium, Knowledge Fund resources were also used at DRI to target opportunities in these areas of topical and strategic interest. DRI continues this approach and intends to leverage other funds from federal and other sources to reduce investment risk. In addition to traditional programs such as SBIR/STTR, the NSF-funded Futures Engine is likely to be a key source of those external funds as that project has significant subject matter overlap and emphasis on private sector involvement.

The Knowledge Fund project is based on two trusts: i. a commercialization fellowship component and ii. targeted opportunities that align with DRI's expertise.

Commercialization Fellowship

The goal of this component is to: 1) identify concepts, research products, and available skillsets with potential for translation to the marketplace, 2) stoke an ethos of viewing technology transfer and commercialization as a valuable societal contribution, 3) enable cogitation of the development of nascent ideas into potential products or services, 4) and provide the expertise to support intellectual property development, external partnerships, and licensing and other agreements. This has been accomplished through a combination of formal training of would-be developers of such ideas, active advising and encouragement, and technical support (legal, engineering, market research, etc.). Success for the commercialization fellowship is judged by how well promising ideas for commercialization are captured by the process and how effective the fellowship is in identifying ideas and concepts that should be moved on to subsequent stages of development.

A number of faculty who joined the commercialization fellowship in the FY22-23 biennium have succeeded in developing several new patent applications, licensing agreements and industry partnerships. In the FY24- FY25 biennium DRI funded about 25 new seed projects designed to give a new cohort of faculty a chance to develop ideas with commercialization potential.

Targeted Opportunities

The goal of this second component is to initiate efforts to identify and pursue targeted research and development activities in areas of strategic alignment with DRI's expertise.
Examples that were pursued include:

- *Partnering with or learning from financial institutions* (banks, insurance companies, investment firms) to identify ways that DRI's expertise in climate change modeling can inform risk-based decisions.

- *Exploring complex and competing resource utilization needs* including water, energy, tribal lands, and transportation as a purveyor of professional services or through licensing IP to external entities.

- *Sustainability and resilience products and services*. DRI is expert in developing non-standardized, research-grade products that inform climate adaptation planning, which are amenable to transition to spin-off companies.

- *Developing tools and services for water resource management* that may include decision support tools, remote usage monitoring and dynamic allocation readjustment in response to changing inputs.

This component actively engages with the NSF Innovation Engine, the *"NSF Futures Engines in the Southwest*", both benefiting from and strengthening the Engine.

Highlights for the Reporting Period

Commercialization Fellowships

- Development of a Virtual Outdoor Experience (VOE) technology that allows experiencing Nevada's rich cultural and natural resources through a 360-degree immersive imagery to construct story maps enriched with a virtual docent and other accessibility features. A business plan has been developed and additional funding sought. Branding and artwork IP is in the process of being trademarked.
- Development of aerodynamic lenses used in scientific and industrial settings in which small particles are sorted. This has led to the submission of a provisional patent and discussions of potentially licensing the technology to a mass spectrometer manufacturer are ongoing.
- A new technology for early detection of Lithium-ion battery fires based on detection of the specific chemical signature of early emissions has been developed. Early results indicate superior performance compared to existing technologies in the marketplace.
- A partnership with a Reno-based startup has been formed to use DRI lab facilities to evaluate new technology for smoke removal from air during structure fires. SBIR funding in collaboration with DRI is being sought.
- A new technology for the integration of weather forecast model data into systems that use optical telescopes or radar systems to track the dynamics of objects in the sky has been developed. A provisional patent has been obtained, and a full patent application is pending.

Targeted Opportunities

- In partnership with financial institutions development of a Climate Risk Assessment (CRA) tool to provide more readily usable information for sectors susceptible to natural hazard risks.
- Two projects in the critical minerals area, both of which await decisions on additional federal funding. i. mapping lithium resources in Nevada towards an efficient method for investing in mining infrastructure. ii. identifying critical minerals availability in already processed mine deposits, potentially reducing permitting and drilling costs.
- NSF Engine:

  The project enabled DRI to more effectively participate and benefit from the NSF Innovation Engine, the "Futures Engine in the Southwest."

  This Engine, comprising Arizona State University (lead), DRI, University of Nevada Las Vegas, and University of Utah potentially funded at $160M over ten years pending satisfactory progress, focuses on sustainability issues for the Southwest in three core technology areas of Energy, Air, and Water.

  In leveraging Knowledge Fund resources, DRI was additionally able to compete for a Catalyst Grant from within the Engine to execute an important project for Nevada that would have otherwise been prohibitively expensive. The funded Catalyst Grant was for developing the tools and algorithms to use fine scale thermal retrievals from a newly

launched satellite platform (Hyrdosat) to more accurately estimate evaporation from the large reservoirs of the Colorado River. DRI is involved in the Engine in other ways that did not draw on Knowledge Fund resources, but that benefit Nevada including a Workforce/K-12 STEM program, stakeholder engagement efforts, and providing input and guidance through the technical workgroup.

Nevada Center for Applied Research – UNR

Project Inception: October 2015
Total Funds Awarded (all years): $9,208,536.60
Project Status: Current Project
Contract End Date: June 30, 2027

The Nevada Center for Applied Research (NCAR) is a best-in-class, stand-alone, fully functional, applied research and development technology center that serves to enhance the global competitiveness of Nevada industry, by leveraging the physical and intellectual assets of the University of Nevada, Reno (UNR).

NCAR's mission is to expand and improve the already established professional, flexible, sustainable, market-responsive, technology innovation center that serves to stimulate regional innovation-based economic development (IBED), by aligning the needs of industry, startup companies, researchers, and entrepreneurs with resources at University of Nevada, Reno. NCAR aims to enhance the development of programs that provide industry with a broad range of technical services, intellectual capital, testing and research capabilities, advanced tools and methodologies in Science and Engineering, helping to nurture economic development.

Main foci are i) Robotics, ii) Life Sciences, and iii) Unmanned Aircrafts Systems, and iv) Advanced Manufacturing, including the breadth of relevant fields and the convergence with other disciplines. NCAR offers fast and effective access to more than 40 Shared Research Facilities and Core Labs, including the High-Performance Computing Facility, to support existing and new programs.

As a one-stop shop for applied research, NCAR's mission is to help industries:

- Establish collaborative relationships between industry and academia that promote open innovation research programs and scientific studies to address real-world problems.
- Facilitate industry access to cutting-edge, shared research laboratories and sophisticated instrumentation and equipment.
- Build an interdisciplinary team of faculty, scientists, postdoctoral students, and graduate students to work on ongoing or one-off projects, or new-complex developments.
- Provide access to an entrepreneurs' support network that includes incubation and business mentoring from experienced entrepreneurs and executives.
- Provide reduced-cost co-working space available to the University community and local startups.

As part of NCAR, *Nevada Autonomous* operates the Nevada FAA UAS Test site. Nevada Autonomous achieved full compliance with the FAA UAS Test Site Other Transaction Agreement (OTA). This

was a key milestone for the NV UAS Test Site, as the FAA granted increased authority to conduct more complex UAS Test Operations.
Nevada Autonomous submitted to and coordinated with the FAA a first-of-its-kind Public UAS Certificate of Approval (COA) and 49 USC 44803(C) Civil UAS Waiver. Through this effort, the FAA has approved a 9,000 square miles airspace with altitudes up to 18,000 feet Mean Sea Level (MSL) to conduct UAS Testing well beyond what is allowed per current small UAS regulations in Northern Nevada. This presents significant opportunities for UNR and the economy of northern Nevada. The COA and Waiver allow Nevada Autonomous to fly uncertified UAS up to 1,320 lb. after it performs an Air Worthiness Assessment (AWA). Drones over 1,320 lb. can also be approved after a specialized AWA.

Highlights for the Reporting Period

- NCAR has onboarded 3 new companies to have operations on UNR campus. These new companies, along with the other existing affiliated companies have created 11 new jobs.
- Since the last annual report, NCAR-affiliated companies have collectively raised an additional $18.3M in Venture Capital.
- Discussion with RTC continued to make the Living Lab infrastructure permanent and to be used as a data collection hub for traffic research and traffic management including the Digital Twins system for bus stop maintenance with the goal of expanding the system from one bus to a fleet of 4-5 buses.
- Launched NASA FireScience, a three-year grant that focus on forest fire prevention project, titled "Subcanopy UAS development for watershed-scale surface and ladder fuel quantification" which will execute in-lab first and the actual proof of concept.
- International engagements: Executed a Memorandum of Understanding with the Central European Institute of Technology (CEITEC) in Czech Republic, Austral University in Argentina and NCAR continue to be part of the Cynergy4MIE project, a new European Union consortium of more than 14 companies, agencies, and academic institutions in 7 different countries.
- Assumed operational control of the Reno Beyond Program (a White House initiative managed by the FAA), collaborating with the Washoe County Sherif's Office on a "Drone as First Responder" program. We are also exploring medical delivery applications with Renown Medical Center under this program.
- Hosted high field elevation testing (5,000 feet MSL) of the UAS delivery system for Google Wings Aviation at Reno Stead Airport. We contracted with and performed a two-week testing activity with the company.

Sierra Accelerator for Growth and Entrepreneurship (SAGE) – UNR, UNLV, DRI

Project Inception: July 2023
Total Funds Awarded: $456,508.73
Project Status: Current Project
Contract End Date: June 30, 2027

The Sierra Accelerator for Growth and Entrepreneurship Program (SAGE) strengthens innovation-based economic development by providing federal R&D grant support services to Nevada tech-based businesses, innovators, and entrepreneurs. This program focuses on federally funded Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grants administered by the Small Business Administration (SBA). SBIR and STTR programs are also known as "America's Seed Fund" and designed to help tech-based small businesses to commercialize innovative technologies.

Through targeted programming and resources, SAGE aims to increase both the number of applicants and the number of successful awards to the state. This is a statewide program to help advance small businesses engaged in technological innovation that have a business operation in Nevada and entrepreneurs build a technology-based startup in Nevada. While most of the SAGE staff is based at the University of Nevada, Reno (UNR), the SAGE Team collaborates with the University of Nevada, Las Vegas (UNLV) and the Desert Research Institute (DRI) to connect faculty/researchers in all three institutions and community entrepreneurs statewide to SBIR/STTR funding opportunities and grant support.



SAGE team and clients pictured at UNR.

The startup community in Nevada, especially those R&D-based businesses and university faculty, are often unaware of federal programs such as SBIR/STTR grants that could help translate their R&D into commercially viable products and jump start their technology businesses. This is especially true for underserved entrepreneurs.

SAGE targets programs to support underserved entrepreneurs and businesses to increase their participation in the technology sectors and will leverage programs specifically for businesses in SBA Hub Zones and Opportunity Zones.

SAGE offers the following services to small technology-based businesses:

Programming and Services: SAGE consists of targeted events in marketing, proposal development, business development and grant proposal support. Workshops are being offered periodically over the course of the program period and will include networking events with mentors, speakers, university faculty, and community entrepreneurs. Individual one-on-one sessions for grant and technical support are available by appointment, and will be promoted through email campaigns, partner organizations, and the SAGE website.

SAGE services also include basic SBIR/STTR training and workshops, setting up entities and required registration to receive federal grants (e.g., SAM.gov), proposal development and technical support, assistance with grant budget development, and if feasible, more tailored proposal development and review by grant experts.

Proposal Development and Technical Support: This is the most intensive and time-consuming stage. SAGE works with each client to 1) develop a responsive proposal, 2) provide the technical assistance/support needed for the client to complete all registrations and documentation required for proposal submission, 3) determine business development and technical needs, and 4) facilitate any necessary partnering, contracting or sub-contracting, and research collaborations. The SAGE team also consults external sources to ensure that suitable advice or subject matter expertise is given to the respective company applying for the SBIR/STTR grants.

SBA FAST Program: SAGE integrates the SBA Fast Program and provides its services to deep-tech startups and established companies in the state. At its core lies a dedicated SBIR/ STTR Accelerator, InnovateNV. InnovateNV forms a comprehensive support initiative that leverages existing infrastructure to create new opportunities for small businesses to engage in the SBIR and STTR programs. InnovateNV comprises four elements: i. a Speaker Series, ii. NSF Project Pitch Support, iii. an SBIR/STTR Proposal Accelerator (InnovateNV), iv. and Phase 0 Microgrants for small businesses actively developing a proposal. Although the future of the federal FAST Program is uncertain, the Knowledge Fund will step in to continue supporting those services that have been available under FAST.

Highlights for the Reporting Period

- SAGE received 23 new applications from small businesses, 11 of which were from Northern Nevada, and 12 from Southern Nevada.
- A total of 40 new SBIR/STTR proposal preparations were initiated for opportunities at the National Science Foundation (NSF), the National Institute of Health (NIH), the Department of Defense (DOD), and the Department of Energy (DOE). Of these 40 proposal preparations, 9 were started by new SAGE applicants for this reporting period.
- Furthermore, a total of 33 SBIR/STTR proposals were submitted to the federal agencies by previous/current SAGE applicants.
- 4 proposals to the NSF were accepted to apply to their Phase 1 SBIR program through the project pitch mechanism. In addition, 4 full proposals were submitted to the NSF, with 2 currently under review, 6 proposals were submitted to the DOE, and 5 proposals were submitted to the DOD, with 4 currently under review.
- The applicants to the SAGE program during this reporting period were all businesses not associated with our research universities; therefore, SAGE truly serves Nevada's technology-based businesses across the state.
- During the past year, Innovate NV, the SBIR/ STTR Accelerator program under the FAST component, delivered the following results:
    - Conducted 8 SBIR Speaker Series events covering commercialization strategy, agency-specific program details, TABA (Technical and Business Assistance), intellectual property,

Phase 3 and sole source contracting, and related programs such as the NSF I-Corps program.
- 249 founders were supported across these events and facilitated 2 nine-week Proposal Accelerator cohorts resulting in 11 SBIR proposals being submitted to DoD, NSF, DOE, and NIH.
- 2 Phase 0 microgrants were awarded with 5 more pending.
- 63% of the cohort participants were in Las Vegas and 37% were in located in Reno.

WaterStart – DRI

Project Inception: July 2025
Total Funds Awarded: $800,060.69
Project Status: New Project
Contract End Date: June 30, 2027

WaterStart, was established in 2013 by the Knowledge Fund as a public-private partnership between DRI, GOED, SNWA, and DETR. In 2020, Water Start spun out of DRI and has since continued to drive economic growth by commercializing innovative water technologies and expanding solutions from Nevada onto the global stage.

With new legislation linking water conservation to economic development, the state is well-positioned to showcase next-generation water solutions. Consequently in 2023, GOED received ARPA funding to develop a waterwise economic framework that integrates water resource incentives with economic growth strategies. This effort directly supports Nevada's long-term water management and sustainability goals.



WaterStart Announcement at 2025 SWSIE Conference.

Nevada's participation in the National Science Foundation's first-ever Regional Innovation Engines awards, the *Futures Engine of the Southwest*, led by Arizona State University and including DRI and UNLV, as well as the University of Utah has prompted the Knowledge Fund to again support WaterStart and strengthen the Futures Engine by accelerating research, commercialization, and workforce development to strengthen innovation capacity in Nevada and the Southwest. Because of WaterStart's proven model—uniting academia, industry, and public entities—GOED has awarded funding to WaterStart to amplify these efforts by further advancing

water technology adoption, supporting workforce development, and enhancing Nevada's competitiveness in attracting investment.

Highlights for the Reporting Period

- Announcement of a partnership with Las Vegas-based startup and UNLV-spin-out company WAVR Technologies, the NSF Futures Engine and UNLV to pilot an innovative atmospheric water harvesting system. The $60,000 in project funding from WaterStart will help support the 15-month project, which aims to replace a portion of the irrigation water needed for landscaping on UNLV's campus with sustainably sourced water from the air. The pilot project will include prototype design and fabrication, performance and longevity testing, and addressing and resolving related engineering challenges. Full-scale deployment is expected by summer 2026.
- Engagement with promising water technology startups at Imagine H2O Demo Days, a San Francisco-based water technology accelerator. This event, along with the review of over 200 proposals submitted to the latest Futures Engine RFP, offered valuable insights and access to potential solutions for Nevada's water stakeholders and utility partners throughout the Southwest.
- The Truckee Meadows Water Authority (TMWA) shared with WaterStart two technology priorities related to the detection of PFAS and low dosage chemical monitoring.
- In partnership with the Futures Engine, DRI and SNWA, WaterStart has identified 3 priorities to include in a future RFP (Round 27). These 3 priorities, alternative water treatment approaches to pressure membranes, advanced leak detection and containment solutions for commercial applications, and next-generation, high efficiency cooling alternatives have the potential to solve challenges and drive impact in the sector locally, regionally, and globally. WaterStart, alongside TMWA, will engage potential solution providers to explore their interest in doing business in Nevada.

WaterStart welcomed a new intern in May 2025 and who has been contributing to two critical areas: technology recruitment and stakeholder engagement. This role has been instrumental in identifying and vetting potential innovative solutions that align with WaterStart's technology priorities. On the stakeholder engagement front, the intern has supported outreach efforts to existing and prospective partners, including utilities, municipalities, and other water-related organizations.

EDA Build to Scale (B2S) Grant Matching (UNLV)

Project Inception: May 2024
Total Funds Awarded: $500,000
Project Status: New Project
Contract End Date: April 30, 2027



gener8tor Cohort at Tesla Factory in Sparks, NV.

This project provides matching dollars for the EDA Build to Scale grant award to the University of Nevada, Las Vegas (UNLV), Project Name "Accelerate Electric Nevada Renewable Energy Cluster Development", as portion of the local Nevada match of $750,121 for the federal share of $749,037.

NRS 231.1597 authorized uses of allocations from the Knowledge Fund account for matching funds for federal and private sector grants and contract opportunities that support economic development consistent with the State Plan for Economic Development developed by the Executive Director pursuant to subsection 2 of NRS 231.053.

The Accelerate Electric Nevada Program is designed to not only align with the mission of NSF Futures Engine but also support the RDA TechHub as well as Recharge Nevada by building a startup pipeline in the new energy technology space.

Highlights for the Reporting Period

In May and June 2025 gener8tor ran two programs concurrently in Reno and Las Vegas, supporting a total of nine startup companies. Through these seven-week programs, participating companies received individualized coaching and mentorship focused on company growth and investor readiness. Each program facilitated 30 mentor meetings and 25 investor pitches throughout the program.

For the Fall programs, gener8tor received over 264 total applications across Reno and Las Vegas representing a significantly higher applicant pool than the spring cohort. Among these applicants, 42 were based in Nevada. 38 first-round interviews were completed in the last week of August and over 25 final-round interviews were conducted during the first week of September. Among the finalists, 12 are Nevada-based companies (7 in Las Vegas and 5 in Reno) aligned with the Program's investment thesis, while an additional 13 companies demonstrated strong deep tech capabilities and/or university-affiliated technology. An additional 11 companies were selected for the Fall gBETA programs (5 in Reno and 6 in Las Vegas), bringing total 2025 participation to 20 companies across the accelerator programs. The selected companies will be announced in October via a joint press release with GOED, UNLV, and gener8tor.