



Anchoring a Commercialization Ecosystem for Environmental Technologies and Know-How

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Executive Summary

The Desert Research Institute (DRI) has initiated a two-year program to stimulate the transition of ideas from our research labs to the marketplace. Our strategy includes targeted support for interested faculty to explore the commercial potential of their research output, as well as strategic partnerships with experts from the entrepreneurial community in Nevada to help bridge the knowledge gap between research expertise and commercialization skills. A new Commercialization Fellowship Program at DRI has engaged nine DRI faculty who have both research products and an interest in exploring the commercial potential of those research products. This is the first cohort of participants in this program, which will engage additional faculty in a second round later in 2022. At least two participants are in active discussions with an existing commercial partner regarding new research and development activities, and at least two participants are actively planning for new SBIR/STTR grant submissions. In addition to the Commercialization Fellowship Program, DRI is offering matching funds to successful SBIR/STTR grant submissions and growing our network of strategic partnerships with experts in technology transfer, commercialization, and entrepreneurship.

Project Overview

Toward a goal of contributing to economic growth and vitality in Nevada, the Desert Research Institute has initiated a two-year program to stimulate the transition of ideas from our research labs to the marketplace. Our approach builds on our recent success in spinning out technology and engaging with corporate partners. We also acknowledge that there remains trepidation among some faculty when it comes to translating their innovation into commercial

products or services. Thus, the project aims to achieve three objectives over the two-year project period:

- Increase the level of sophistication, knowledge, and interest in commercializing research products (primarily from DRI faculty)
- Identify, support, and evolve several promising ideas that are already in the DRI research portfolio
- Emplace a structure that can support a commercialization ecosystem beyond the project period

Our strategy includes targeted support for interested faculty to explore the commercial potential of their research output, as well as strategic partnerships with experts from the entrepreneurial community in Nevada to help bridge the knowledge gap between research expertise and commercialization skills. We have formalized this strategy into a new “Commercialization Fellowship Program” for faculty which aims to provide: limited salary support for active exploration of commercialization of an idea; training in some key aspects of practicing commercialization; and access to experts for consultation on their specific challenges to commercialization. We are also providing matching funds to SBIR/STTR grant funds coming to DRI as an incentive for faculty to collaborate in commercial research and development. Finally, we are actively building strategic partnerships with commercialization and entrepreneurial experts from within the state and beyond to help guide our overall approach to supporting technology transfer at DRI and to help individual faculty be successful in their efforts at commercializing their research. It is our intent to sustain these activities over the coming years as an ecosystem for commercialization that strengthens over time.

Commercialization Fellowship Program

DRI has embarked on a new program to foster faculty engagement in the commercialization of research products resulting from DRI’s labs and programs. The program is designed to achieve several specific goals, including: (1) engage faculty who either have an interest in commercializing their research products, or have a research output that they think might have commercial potential; (2) provide limited salary support to compensate faculty for the time they spend exploring the commercialization of their research; (3) provide education to our faculty and opportunities for them to receive direct consultation with experts within our network of strategic partners. The Program exists in three phases with both a progressive level of salary support available to the faculty member and an obligation by the faculty member to invest a progressive level of their own effort on direct commercialization of the idea resulting from their lab.

Phase 1 – Understanding commercialization

Nine members of the DRI faculty participated in the first phase of the commercialization fellowship. To participate, interested faculty were obligated to provide a brief description of the research product they think might have commercial potential and what information they think they need to advance their idea toward commercialization. Ideas that were submitted range from water quality monitoring and treatment technology to measurement technology for soils and air pollution to applications of environmental forecasting technology in occupational safety and

renewable energy. A few participants have taken steps to protect the underlying intellectual property of their idea, or have explored the potential market for their idea. Most participants have not taken any of these initial steps yet. The purpose of phase 1 is to help all participants understand some of the basic elements of commercializing an idea resulting from academic research and provide the information and some limited resources to begin thinking about these initial steps.

To provide instruction in this area we have partnered with StartupNV who provided a series of lecture and discussion sessions drawn from the curriculum for their incubator program for startup founders. Sessions were held on the following topics: protecting intellectual property and licensing; researching markets; SBIR/STTR grants and non-dilutive investments; and the researcher's role in commercialization. The size of the group encouraged informal discussion and group brainstorming. Discussions included contributions from StartupNV staff and guests from their network of mentors and experts. Participants were provided with salary coverage for the time to attend the events. Participants were also provided with another 8 hours of salary coverage to spend some time reflecting on their own commercialization project considering the content that StartupNV provided, and prepare a short report on what kind of support they felt they needed next to advance their idea further. Based on these reports, all participants have been offered an opportunity to advance to Phase 2

Phase 2 – A Deeper Dive

Phase 2 for the first cohort of participants in the Commercialization Fellowship Program is currently in the initial stages. We will be working with partners from StartupNV and Steam Law to provide individualized advice to each participant on the next appropriate steps to move their idea forward toward commercialization. Faculty participants will be provided with up to 40 hours of salary support for this and any appropriate follow-up consultation with other experts from our community of strategic partners. Participants may also use this salary support for other initial steps appropriate to their idea, including preparing an IP disclosure or filing a provisional patent, market research and engagement, researching potential SBIR/STTR funding opportunities and finding potential proposal partners. At least two phase 2 participants are in active discussions with an existing commercial partner regarding new research and development activities and at least two phase 2 participants are actively planning for new SBIR/STTR grant submissions, one with an existing commercial partner and one through a new startup venture.

Phase 3 – Path to Startup

In Phase 3, which will commence approximately mid-year in 2022 for the first cohort of Program participants, will offer a limited group of participants (up to 4) extended salary support for more intensive efforts at commercialization. With input from a panel of advisors the participants will be chosen based on the maturity of their idea and a compelling commitment from the faculty member for dedicated effort on a commercialization pathway. Partial salary coverage will be provided in 2-month increments with recurring assessment of the progress. This will include a recurring evaluation of whether further investment of faculty salary coverage and other support is warranted. Support for other costs of commercialization, such as patent filing, legal costs, marketing, or business development may also be provided on a case-by-case basis.

While the first round of the Commercialization Fellowship Program is currently underway, the Program is designed to offer future rounds in a recurring fashion so that new faculty interest, or new research outputs can be incorporated into the Program.

Incentives for SBIR/STTR Projects

The pursuit of SBIR/STTR funding fosters collaboration among DRI faculty and the private sector on research oriented toward commercialization. To incentivize such proposals, we are offering matching funds to faculty up to the amount of the federal SBIR/STTR grant awarded to DRI. Since the start of the project there have been two DRI faculty who have collaborated with industry partners on SBIR/STTR proposals, and as noted above, at least two Commercialization Fellowship participants are actively planning to seek SBIR/STTR funding to advance development of their ideas.

Strategic Partnerships

A key element of assisting DRI faculty in advancing their research toward commercialization is strategic partnerships. We have partnered closely with StartupNV and Steam Law to provide direct support to DRI faculty on aspects of protecting intellectual property, commercialization planning, and connecting DRI faculty with their broader network of entrepreneurial experts in the region. Additionally, we continue to collaborate with the UNLV Technology Transfer Office, and we have sought to connect DRI faculty with the Sierra Accelerator for Growth and Entrepreneurship at UNR. We have also begun consulting broadly with technology transfer and commercialization experts from a variety of universities to learn about programs they have implemented to support their faculty. These include Oklahoma State University technology transfer office and App Center, and the UNLV iCorp program. Such outreach will be ongoing and will inform both the evolution of our Commercialization Fellowship Program, as well as our broader effort to create a sustainable ecosystem for commercialization at DRI.

Knowledge Account Budget

DRI's grant for this project from the Nevada Knowledge Account totals \$1,496,096 for the period 10/1/2021 to 6/30/2023. Expenditures through 4/27/2022 (the latest available) total \$38,630.53, entirely from the DRI Faculty time and fringe benefits lines of the project budget. Recent partnership agreements with StartupNV and Craig Macy of Steam Law mean that expenditures from the commercialization expert budget line are anticipated in the coming quarter as well as ongoing faculty support as the Commercialization Fellowship Program advances through phase 2 and into phase 3 for the first cohort of participants. We anticipate offering another round for a new cohort of faculty later in 2022.