

**EXECUTIVE SUMMARY**

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**Item Name: Request to Approve the University of Arizona’s Proposal for the Use of TRIF Supported Opportunity Initiative Funds**

Action Item

**Requested Action:** The University of Arizona asks the board to approve the university’s proposal to expend \$10 million in TRIF Opportunity Initiative funds for research and Arizona workforce development programs.

**Background/History of Previous Board Action**

Arizona law established TRIF from Proposition 301 state sales tax revenue and gives ABOR the authority to administer the fund on the universities’ behalf.

In compliance with the TRIF statute, the board allocates funding to the university to invest in programs that address one of the five strategic research and workforce areas:

- Improving Health;
- Water, Environment and Energy Solutions;
- National Security Systems;
- Space Exploration and Optical Solutions, and
- Workforce Development.

**Discussion**

In FY 2021, the board received more TRIF revenue than originally budgeted. The board is distributing to the universities a significant portion of the additional revenue received as TRIF Opportunity Initiative Funds. The TRIF Opportunity Initiative funding totals \$40 million in FY2022. This one-time funding is allocated as follows:

- \$10 million to ASU
- \$20 million to NAU
- \$10 million to UArizona.

Each university is asked to submit a proposal explaining how the institution intends to expend its portion of the Opportunity Initiative funding in accordance with board expectations and TRIF statutory requirements.

UArizona is proposing to use its \$10 million allocation to launch new programs to:

- Ensure the strongest research and entrepreneurial experiences for students;
- Create the best prepared talent for Arizona;

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- Energize and diversify the creativity of our faculty and staff to further improve research impact; and
- Transfer to Arizona industry not just licenses to profit from the university's discoveries, but also the personnel with first-hand experience working with the inventors and the solutions to rapidly create effective products and offerings for the marketplace. UArizona's full proposal is attached.

### **Committee Review and Recommendation**

The Research and Health Sciences Committee reviewed this item at its January 27, 2022 meeting and recommended forwarding the item to the full board for review and consideration. The committee may receive additional information at a future meeting.

### **Statutory/Policy Requirements**

A.R.S. §15-1648 "Technology and Research Initiative Fund"

ABOR Policy 3-412 "Administration of Technology and Research Initiative Fund"

## **ABOR TRIF Supported Opportunity Initiative Funds – Request \$10m**

The University of Arizona is committed to achieving value for the State of Arizona and its Residents through effective use of TRIF funding. That value is most clearly expressed in the workforce we prepare for Arizona; In the knowledge created for Arizona through our research; and in the tools licensed to industry stemming from those research insights.

Programming for highly-skilled Workforce Development purposes, deep hands-on experience with cutting edge technologies and inventions, and career-enhancing skills with the software and tools used by industry, goes hand in hand with the University's commitment to achieving top level Research Impacts that come through innovation and discovery. Truly, achieving \$1B in research productivity each year is extremely undervalued without the ability to translate that productivity into a healthy society and economy for Arizona.

There are five targeted programmatic initiatives at the University of Arizona which lend themselves immediately to Workforce Enhancement efforts:

- 1) The Institute for the Future of Data and Computing's (IFDC) Emerging Leaders Program
- 2) Student Experiential Learning Enterprise at Scale
- 3) The PREPARE Program: Creating the geriatric workforce of the future
- 4) 4<sup>th</sup> IR Capstones and Senior Design Projects in the College of Engineering
- 5) Internships in Resiliency that Employ Comparative International Development

Taken together, investments in these program areas will deliver huge progress in University goals and desires to:

- Ensure the strongest research and entrepreneurial experiences for our students
- Create the best prepared talent for Arizona, its industry, and its employers
- Energize and diversify the creativity of our faculty and staff as we seek to further expand and improve our research impact
- Be prepared to transfer to Arizona industry not just licenses to profit from the university's discoveries, but also the personnel with first hand experience working with the inventors and the solutions to rapidly create effective products and offerings for the marketplace.

### Making the Difference

#### **The Institute for the Future of Data and Computing's (IFDC) emerging leaders program – Request \$3m**

The university of Arizona is embarking on a concerted effort to capture the future of digital capacities that underlie the 4<sup>th</sup> industrial revolution, and the future of research itself. We have teams exploring the edge devices that manifest the 4<sup>th</sup> IR, with their smarts, their connectivity, their automation, and their autonomy. The IFDC is focused on capabilities that will:

- Wisely enable and employ data systems, engineering and tools to empower these edge devices
- Seek to understand and control bias in the development of artificial intelligence and machine learning systems that learn with these data
- Advance secure use of these data at scale, particularly for human medical and clinical research data
- Achieve a quantum leap in research impact by delivering insights at machine scales that exceed unaided human comprehension
- Ensure Arizona is America's leader in computer and data innovation.

The emerging leaders program combines support for the faculty, students, and corporate engagement efforts necessary to build the ecosystem that will drive innovation in data and compute. First and foremost, an effective training system will be developed so the entire University community can engage with the advanced data and compute infrastructure at IFDC. Second, Faculty will be supported to seed exploratory efforts to rapidly identify fruitful research avenues that can expand on existing corporate capabilities and interests, unlocking new markets. Third, Students will be directly involved in these pre-competitive exploratory efforts, to not only use the research tools first-hand, but contribute to a broader consideration of the possibilities for those research efforts that perform well. And, fourth, there is support for corporate engagement to establish internships and other experiential learning opportunities so students can grow in both academic and practical skills in these new data and compute application areas.

University Partners: UA Health Sciences, RII, Social and Behavioral Sciences, College of Science, College of Engineering

### **Student Experiential Learning Enterprise at Scale – Request \$2m**

The University of Arizona seeks to rapidly expand the base of experiential learning opportunities across the entirety of the academic enterprise. It represents a direct acknowledgement that meaningful experiential learning is a large retention and student success factor on US residential campuses, and an essential element of our strategies to expand the range of research impacts that are building off our base of already highly research productive faculty and staff. Beyond research, however, it is imperative that our student cohorts be imbued with an entrepreneurial mindset. If COVID, remote work, and economic uncertainty have taught us anything, it is that our alumni will be more resilient and agile if they have an entrepreneurial mindset, both to inform their contributions with their employers, and in exercising the personal confidence to succeed independently or in pursuit of other career opportunities.

University Partners: RII, the RII Office of Undergraduate Research, the Provost, and the Provost's office of Student Engagement and Career Development, the RII FORGE Student Venture Pathways and Entrepreneurial Ecosystem programs and other offices will collaborate to empower students and faculty in building meaningful multidisciplinary experiential opportunities and connections for internships, student research, and other appropriately engaging projects.

### **The PREPARE Program for providing support to our aging citizens and their families - Request \$1m**

The health and wellness of older adults impacts on the quality of life for nearly all families, caregivers and communities. The PREPARE (what is PREPARE an acronym for?) program, under the leadership of the Arizona Center On Aging, and strengthened by our longstanding partnerships, will align our state's geriatric workforce needs with training opportunities, and provide accessible and affordable educational opportunities for diverse students to join the healthcare workforce, and advance their careers. The training will provide support to our aging citizens and their families, attract business to Arizona, and ensure a thriving economy powered by a diverse healthcare workforce. We will also conduct interdisciplinary research to identify strategies to reach/engage and retain new populations of diverse students through an alignment of healthcare workforce needs with academic programming.

University Partners: RII, University of Arizona Health Sciences, AZ Center on Aging

### **4<sup>th</sup> IR Capstones and Senior Design Projects in the College of Engineering – Request \$3m**

The 4<sup>th</sup> Industrial Revolution is upon us, and the University is not skipping a beat in expanding our Engineering and technological research, curriculum and STEM student-centric programming and experiential opportunities. Some of the finest opportunities to assist our future alumni in making connections with industry and strengthening their

academic portfolios is through Capstone Projects and Senior Design Projects. These activities, which are normally envisioned and managed in partnership with external industry and well-placed alumni guidance and feedback, are created to allow students to get a true sense of the processes and practices needed in industry to bring a project through the entire process from conception to completion, to explore their fields of interest in practical terms, and to further connect them with potential employers or advisors as they enter their careers. Students emerge with interesting portfolios, examples of dealing with research and operational constraints and challenges to discuss in their professional interviews, and increasingly, leaving the university with publications and/or disclosed intellectual property. Students with these experiences quickly rise to the top of the interview and hiring priority lists.

The University is seeking to rapidly expand the number of Capstone and Senior Design projects to maximize our impact as our research gains influence and leadership in the technologies, tools, and techniques of the 4<sup>th</sup> IR.

University Partners: RII, College of Engineering

### **Internships in Resiliency that Employ Comparative International Development – Request \$1m**

The University of Arizona holds a pre-eminent position in the research and programming around water and the environment. Our recent moves to establish the Arizona Institutes of Resilience (AIR) is setting the mark for knowledge of practical applications of research insights, analytical efforts, and policy studies across the globe. In parallel with AIR, the University has created a new RII Division focused on Resilience and International Development, headed by Associate Vice President, Greg Collins, whom previously was the highest ranked Senior Executive Service officer at the US Agency for International Development. It is through this division and the resulting research and outreach programs that we are able to validate the research and policy work conducted through AIR.

Our deep appreciation for the need to adapt and adopt best practices at global scale if we are to truly achieve resilience, requires us to test out research findings, policy and governance practices, and technical innovations in appropriate circumstances, from local to regional, to state and beyond, but also for those techniques to be performed in comparatively similar diverse locations and socioeconomic systems distributed about the world. Students will empower these investigations and outreach activities through internships, and gain global experience in resiliency in the process. Their familiarity with efforts to achieve resilience across the built environment in diverse ecosystems will ensure the technical workforce to support market-scale deployment of solutions from transportation, to potable water and waste water management, to energy efficient buildings, and beyond.

University Partners: RII, Arizona Institutes for Resilience, Division of Resilience and International Development, Provost, and all Academic Units.