

Research and Economic Development Division



FY2023 Annual Report

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2. Introduction

The Research and Economic Development Division (REDD) of the University of Wyoming catalyzes expansion of UW’s knowledge enterprise, provides experiential learning opportunities for UW students, and facilitates innovation and engagement to support economic development across Wyoming. In support of UW’s strategic objectives, REDD initiated (in FY2023) and implemented (in FY2024) the following strategies.

- Increase the breadth, size, and impacts of UW’s knowledge enterprise.
 - Establish the EPSCoR/IDeA office to allow efficient use of EPSCoR/IDeA opportunities for the entire campus and foster grants development activities.
 - Staff the Preaward Services Office fully for providing sufficient, efficient, and effective support for proposal submission and award acceptance by faculty and scientists, thereby increasing grant applications to diverse sources.
 - Establish engagement with businesses, private donors, and foundations to increase extramurally funded activities in all disciplines, with a particular focus on creative arts and humanities.
 - Ensure all institutes and centers in REDD are financially stable, sufficiently staffed, and supported primarily through extramural support.
 - Establish campus-wide facilities for instrumentation and services through careful planning and sufficient staffing.
 - Coordinate and amplify broader impacts of UW’s research activities.
- Foster economic development by building a vibrant innovation ecosystem at UW and business technical assistance across Wyoming.
 - Transform Technology Transfer Office to increase IP portfolio and revenue generation.
 - Implement programs through UW Center for Entrepreneurship and Innovation to establish and support entrepreneurship culture across campus.

- Establish the Office for Industrial and Strategic Partnerships to enhance student success and faculty excellence through collaborations with corporations, businesses, and NGOs.

To meet these goals, REDD units function as service organizations (e.g. Preaward services, Research Compliance, research facilities, research computing resources, etc.), as integrators of multidisciplinary research and knowledge (university-wide centers and institutes), as catalysts for entrepreneurship and innovation (e.g. Center for Entrepreneurship and Innovation, Technology Transfer Office), and as technical assistance providers to businesses across the state (e.g. Small Business Development Centers, Manufacturing Works.).

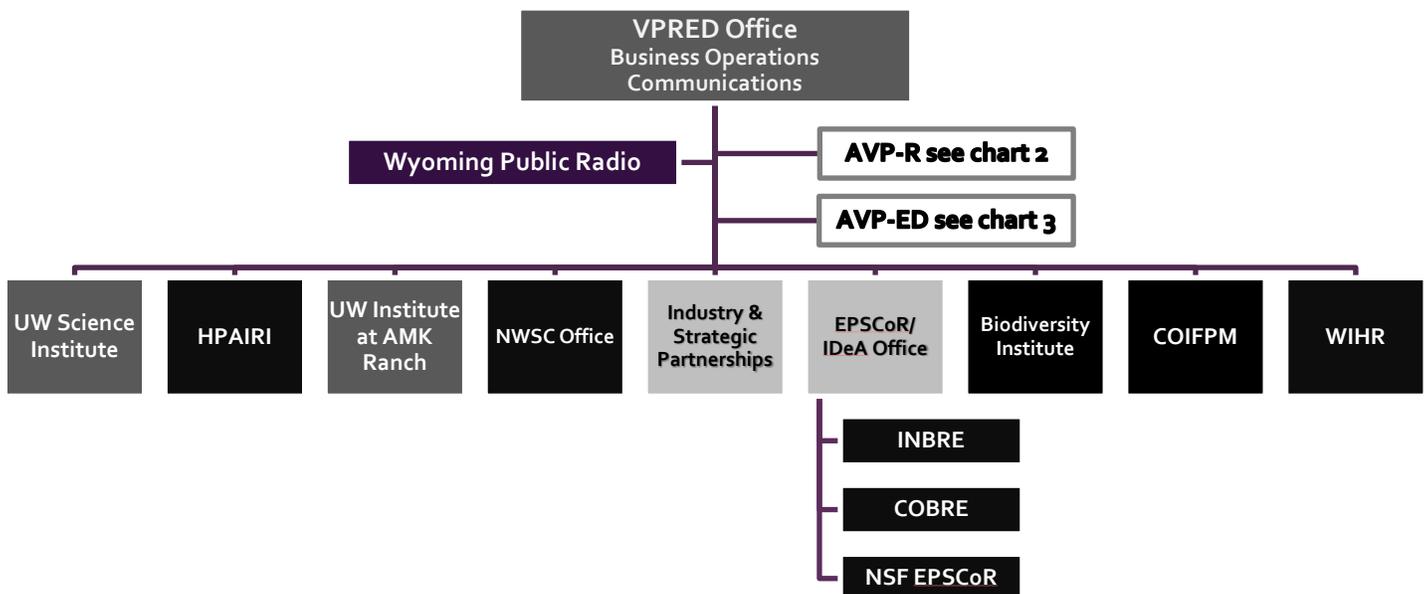
- Increase the breadth, size, and impacts of UW's knowledge enterprise.
 - Fully establish the EPSCoR/IDeA office to allow efficient use of EPSCoR/IDeA opportunities for the entire campus and foster grants development activities,
 - Staff the Preaward Services Office fully for providing sufficient, efficient, and effective grants support to faculty and scientists, thereby increasing grant application services to diverse sources.
 - Establish engagement with businesses, private donors, and foundations to increase extramurally funded activities in all disciplines, with a particular focus on creative arts and humanities.
 - Ensure all institutes and centers in REDD are financially stable, sufficiently staffed, and supported primarily through extramural support.
 - Establish campus-wide core facilities for instrumentation and services through careful planning and sufficient staffing.

3. REDD Organizational Structure and Staffing

One of major aims in FY2023 was to fully staff key offices that were understaffed for several years and thus could not provide the services at the expected levels. The current organizational structure of REDD is provided below. All charts use the following coloring convention about staffing status in those units.

Fully Staffed	Staffed close to the level projected in the FY2024 budget request
Mostly Staffed	Most positions filled; a few key positions will be recruited by the end of FY2024
In progress	Unit started or redesigned in FY2024; staff is being recruited

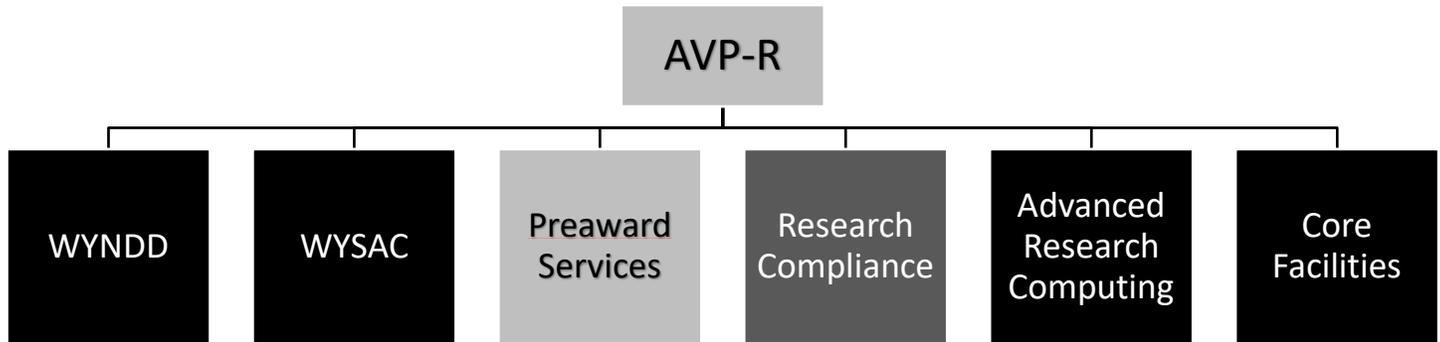
Chart 1. VPRED Organizational Structure



Notes:

- VPRED Office:
 - In addition to one business operation position, two key positions that need to be filled are AVP for Research and AVP for Economic Development. These positions will be realigned in their responsibilities and national search will be launched in spring 2024.
 - While the two AVP positions are being recruited, two faculty members with administrative assignment undertake special projects: AVP for Special Research Initiatives (Dr. Bryant Smalley) and Senior Advisor to VPRED (Dr. Haibo Zhang).
- Biodiversity Institute is expected to be reassigned to the Haub School for Environment and Natural Resources from FY2025.
- UW Science Institute and UW Institute at AMK Ranch will seek Directors through campus-wide search.
- Additional information about two new units in REDD, Industry and Strategic Partnerships Office and EPSCoR/IDeA Office is provided later.

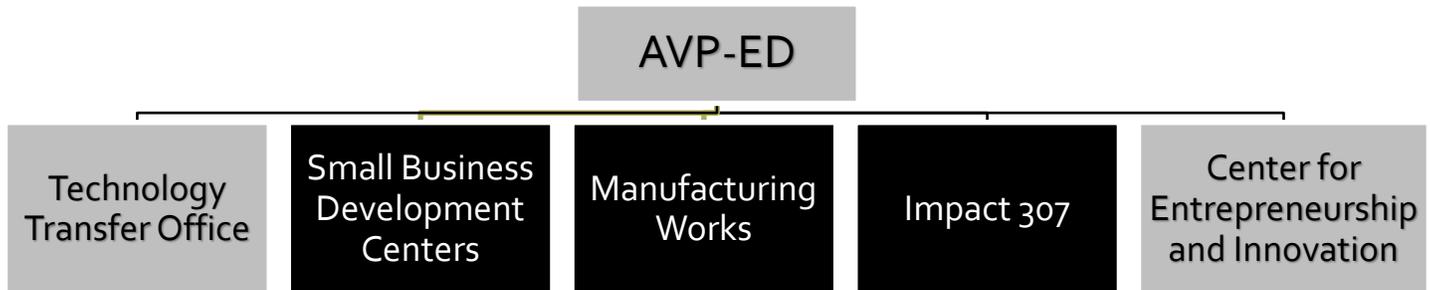
Chart 2. AVP-Research Organizational Structure



Notes:

- AVP for Research, Dr. Bryant Smalley, focused on his faculty responsibilities and thus reduced his role in REDD. Currently AVP-Research position is vacant; realignment of some of the units between research and economic development subdivisions is being examined. National search to fill in this position will begin in spring 2024.
- Research Compliance: With additional animal research facility becoming operational and to allow proactive training and oversight of animal and human research, an additional position will be recruited in spring 2024. In addition, the Director for COI and Export Control will report to the Senior Director for Research Compliance from Spring 2024.
- See information about status of each position in the Office of Preaward Services later.

Chart 2. AVP-Economic Development Organizational Structure



Notes:

- AVP for Economic Development, Mr. Steve Farkas, retired. Since both positions are currently unoccupied, realignment of some of the units between research and economic development subdivisions is being examined. National search to fill in this position will begin in spring 2024.
- Two units, Technology Transfer Office and Center for Entrepreneurship and Innovation are being reimagined and restaffed.

4. VPRED Units

UW Science Institute

Based on the report of the SI2025 committee (posted at [XXXX](#)), REDD established the Science Institute to manage UW Top Tier Science Initiative and its programs. The Science Institute catalyzes convergence of physical, social, and biological sciences, engineering, humanities, and computing to address Wyoming's needs through transformative research, engagement, and experiential learning. It is expected that the UW Science Institute will be fully operational by 2025. The Science Initiative annual report was presented to the Board of Trustees in their November meeting; the revised report based on their feedback is posted at [XXXX](#).

High Plains American Indian Research Institute (HPAIRI)

HPAIRI is an entity that tribes and scholars can access and utilize both tribally driven projects and UW-conducted research that pertains to Native American people, their lands, and resources. HPAIRI has critical role in many institutional grants to UW, including WY-ACT, the NSF EPSCoR Track 1 Project.

NWSC Center

NWSC Center represents a collaboration between NCAR and UW. Through this center, 320 million core hours of the [Derecho System](#), are available for UW-led projects in the atmospheric, earth system, geological, other NSF-supported sciences, and science areas of interest to Wyoming.

INBRE

The Wyoming IDeA Networks for Biomedical Excellence (INBRE) Program is funded by the National Institutes for Health. The INBRE program funds statewide networks of higher education and research institutions in each IDeA-states and Puerto Rico to build biomedical research capacity through support for faculty research and mentoring, student participation in research, and research infrastructure enhancement at network institutions. The Wyoming INBRE works collaboratively with all community colleges in Wyoming to advance opportunities for biomedical research experiences in all institutions of higher education in Wyoming.

COBRE

Wyoming Sensory Biology Center (SBC) is a phase II (P20) Center of Biomedical Research Excellence program (COBRE) funded by the National Institute of General Medical Sciences (NIGMS) of the National Institutes of Health (NIH). The primary mission of the SBC is to foster and conduct high-quality scientific research that advances the understanding of our sensory systems and disorders related to them.

UW Institute at the AMK Ranch

The University of Wyoming Institute at the AMK Ranch is a cooperative effort between the University of Wyoming and the National Park Service. Headquartered on the University of Wyoming campus in Laramie, the UW Institute at the AMK Ranch promotes multidisciplinary research in the Yellowstone-Teton area of Rocky Mountains. The Institute operates a field research station at the AMK Ranch in Grand Teton National Park which is open from mid-May through mid-October.

Wyoming NSF EPSCoR

EPSCoR is a federal and state matching grant program which enables Wyoming to continue to be nationally competitive in science and technology. EPSCoR funding and state match are utilized to build science and engineering in higher education and a technology-based economy for the future. EPSCoR has helped to move the State of Wyoming along the path of research and excellence by supporting the State's research endeavors.

Center of Innovation for Flow Through Porous Media (COIFPM)

COIFPM is the world leader in research, development, and practical implementation of novel breakthrough technologies for extraction of oil and gas and geo-storage of greenhouse gases. It is arguably the world's largest experimental and computational research center focused on flow through porous media problems with applications primarily in oil and gas recovery, carbon utilization and storage, and hydrogen storage. The facility provides imaging and flow capabilities at atomic, nano, micro, and macro scales. Furthermore, it establishes a massive capacity for users to conduct numerous studies in parallel. COIFPM started reporting to VPRED from FY2024.

Wyoming Institute for Humanities Research (WIHR)

The Wyoming Institute for Humanities Research strives to be an engine for producing interdisciplinary research in the humanities; a community for faculty, students, and the public; and a model of democratic education fit for our land-grant university. WIHR started reporting to VPRED from FY2024.

5. AVPR Units

Wyoming Natural Diversity Database (WYNDD)

The Wyoming Natural Diversity Database (WYNDD) is a service and research unit of the University of Wyoming that maintains a comprehensive database on the distribution and ecology of rare plants, rare animals, and important plant communities in Wyoming. WYNDD distributes this information upon request under the philosophy that the best decisions regarding natural resources will be made only when everyone has access to complete and current scientific data.

Wyoming Survey & Analysis Center (WYSAC)

WYSAC seeks to provide clear, accurate, and useful information to decision-makers through applied social research, scientific polling, information technology services, and rigorous program evaluation. As such, WYSAC conducts research for government agencies, educational institutions, and other entities in Wyoming and beyond.

Preaward Services Office

It provides service to faculty and researchers that seek extramural grants for research, education, and other activities. The office facilitates submission of grant applications to funding sources in a timely and accurate manner. The office also serves as the authorized organizational representative for such grants.

Office of Research Integrity and Compliance

The office is committed to ensuring that all research and educational practices are carried out in a manner that is responsible, ethical, and congruent with the University's mission. It assists UW faculty, students, and staff engaged in research in obtaining appropriate approvals for conducting research involving animals, humans, drones, etc. Its additional areas of expertise include research integrity, conflict of interest, export control, biological and radiation safety, data management, and responsible conduct of research.

Advanced Research Computing Center (ARCC)

ARCC is the primary research computing facility for the University of Wyoming. ARCC provides centralized scientific computing resources, including HPC and research storage. This facility is often used by faculty for

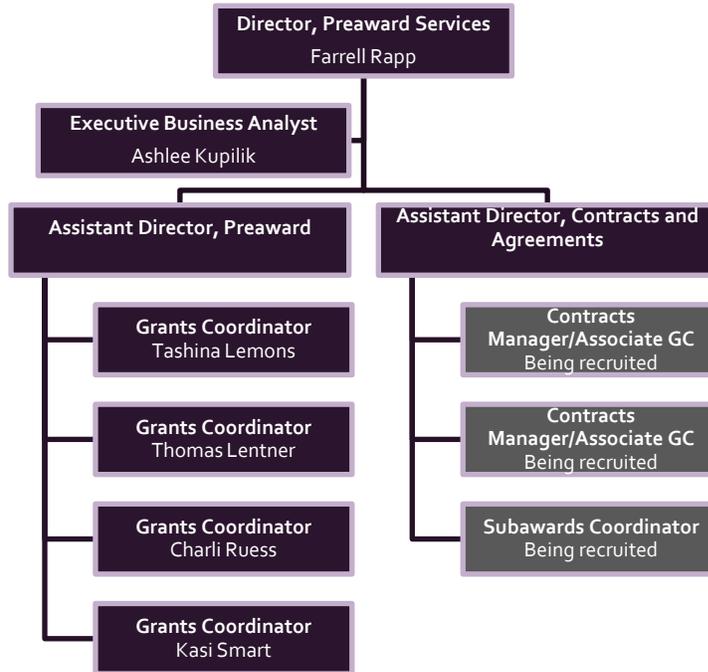
Core Facilities

REDD manages several multiuser facilities that provide service to researchers at UW and outside in conducting specialized assays.

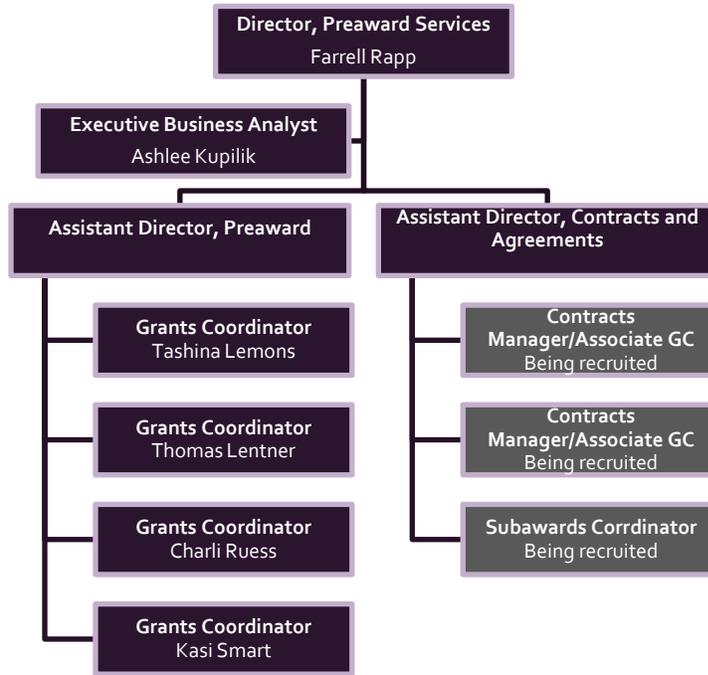
Office of Preaward Services

Functions:

Staffing Progress:



Office of Preaward Services



6. AVPED Units

Technology Transfer Office

The Technology Transfer Office supports UW faculty and scientists in translating their research to societal use through the protection, marketing, and ultimate transfer of their intellectual property to industry.

Small Business Development Centers (SBDC and related services)

The Wyoming SBDC Network is a partnership between the University of Wyoming, the Wyoming Business Council, and the U.S. Small Business Administration offering business expertise and technical assistance to help Wyoming's small businesses start, grow, reinvent, or exit.

Manufacturing Works

As Wyoming's NIST MEP Center, Manufacturing Works assists Wyoming manufacturers, producers, and entrepreneurs in growing their revenues, increasing their productivity and performance, and strengthening their global competitiveness. Manufacturing Works tailors its services to meet the critical needs of Wyoming manufacturers, ranging from process improvement and workforce development to cybersecurity and supplier scouting. Through collaboration with a wide array of [industry partners](#), Manufacturing Works strategically identifies and solves clients' most pressing issues, enabling them to elevate their business to the next level.

Impact307

IMPACT 307 is a statewide network of innovation-driven business incubators committed to growing and strengthening Wyoming's entrepreneurial community by providing resources and support for founders to thrive.

Center for Entrepreneurship and Innovation (CEI)

CEI fosters entrepreneurship training and culture across UW, including marketing a minor for all majors, bootcamps, pitch competitions, and training for students, postdocs, faculty, facilitating interaction with incubators such as Impact 307 hubs, building a pipeline of innovation to the incubators, and developing mentoring program with mentors.

7. REDD Highlights: Expanding Knowledge Enterprise

3	<p>Enhance Participation in New Opportunities</p> <p>The CHIPs and Science Act Working Group to analyze authorization and appropriations acts and identify ways to help UW faculty and students to apply for the opportunities created by these acts. Activities have been implemented or initiated to address all three recommendations.</p>
<p>Increased Submissions</p> <p>Strategic help for proposal preparation, additional staff for pre-award services, and increased number of seed grants in FY2023 resulting in increased proposal submissions in the first four months of FY2024.</p>	>20%
\$120.4 million	<p>Sponsored Funds Received</p> <p>Average annual funds for the research, education, or service projects received during FY19-22 were \$120 million (includes COVID-related projects in FY21)</p>
<p>Sponsored Project Expenditures</p> <p>In FY2023, UW registered record expenditures on sponsored projects for research, education, or service. Average annual expenditures during FY19-22 were \$98 million.</p>	\$115.2 million
4	<p>Outstanding Graduate Students</p> <p>Four UW graduate students received prestigious NSF Graduate Research Fellowships. When normalized for the number of graduate students, UW's success is comparable to many R1 Universities.</p>

8. REDD Highlights: Enhancing State-wide Engagement

2262 K-12 students	<p>K-12 outreach</p> <p>SI Road show brought active STEM learning to 2262 K-12 students through 19 events across the state .</p>
<p>Active Learning</p> <p>44 LAMP-trained educators at UW impacted 3,653 students in 118 active learning classes.</p>	3653 UW students
52	<p>Wyoming Research Scholars</p> <p>Of 52 undergraduate students conducting research as Wyoming Research Scholars, 33 are from Wyoming. Others come from 8 different states.</p>
<p>New Businesses Started</p> <p>SBDC staff served 1,160 clients, receiving attribution from 54 clients starting new businesses, 39 equity infusion transactions totaling more than \$4.6 million, reporting more than \$135 million in annual sales with \$1.4 million in sales revenue growth, and supporting 1,857 jobs.</p>	54
\$2.1 million	<p>SBIR/STTR success</p> <p>Wyoming SBIR/STTR Initiative helped Wyoming small businesses receive more than \$2.1 million in Phase I/II awards from various federal agencies.</p>

9. REDD Highlights: Fostering Innovation

\$6 million	Accelerating Research Translation UW is one of 18 universities to receive a grant from NSF to build infrastructure and change culture for translating research to commercial and societal use.
Invention Disclosures Compared to FY22 (27 disclosures), FY23 showed a major increase.	40
17	Patents Granted UW is one of the top 100 universities in number of patents issued.
Industry Research Agreements Over 770 contacts were made with industry. Many discussions are still in progress.	5
\$28.3 million	Industry and Foundation Support Funds from Foundations and Industry either as gifts or grants to UW.