

**NATIONAL INSTITUTE FOR RISK & RESILIENCE**

# **ANNUAL REPORT FY 2021**



University of Oklahoma



# DIRECTORS' MESSAGE

Dear Colleagues,

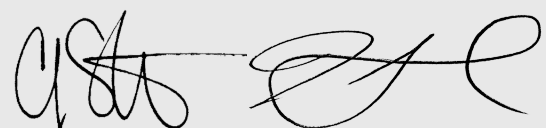
Fiscal Year 2021 posed remarkable challenges for all of us. For the NIRR, the challenge included how to (resiliently) navigate an expanding array of collaborative research projects in the context of a persistent (and risky) pandemic. Like much of the country, the pandemic forced us to adapt and shift our operations to remote work, but despite these challenges, our projects and partnerships grew rapidly, funded by an array of federal and state agencies as well as university partners.

NIRR's level of funding, research output and visibility all increased over the prior year. A few notable accomplishments from this FY include:

- Publication of a major book (Cambridge University Press) on the implications of public trust in public health experts for societal resilience during the COVID-19 pandemic;
- Completion of Oklahoma's 2021 Energy Assurance Plan, written while the State struggled with a polar vortex that threatened energy supplies and grid stability; and
- Provision of multiple online tools for tracking and understanding public responses to the risks of severe weather, COVID-19, and hazardous facilities

In the next year we anticipate many new challenges and adventures. We are rebranding and re-organizing our institute, changing our name to the Institute for Public Policy Research and Analysis (IPPRA). We are eager to bring our energy and expertise to the OU Vice President for Research's strategic vision and do our part in implementing OU's strategic plan.

As should be expected of a team that is focused on risk and resilience, NIRR persevered and thrived despite of all the obstacles that 2021 could throw at us. We are proud to be part of this amazing group and look forward to new challenges and adventures in the year to come.



**DR. CAROL SILVA & DR. HANK JENKINS-SMITH**

*Co-Directors, OU NIRR*

# MISSION AND STRATEGIC VISION

**OU's National Institute for Risk & Resilience integrates social, physical, and engineering sciences to reduce risk and enhance resilience by addressing complex societal problems that span natural, human, and technical systems.**

Our faculty, professional research staff, students, and academic and practitioner collaborators together build partnerships and conduct research that integrates the social, physical, and engineering sciences to increase human well-being, improve our social choice infrastructure, and enhance resilience by addressing complex societal problems that span natural, technological, and social systems.



The research capacity and institutional culture at NIRR is grounded in transdisciplinary thinking and collaboration.

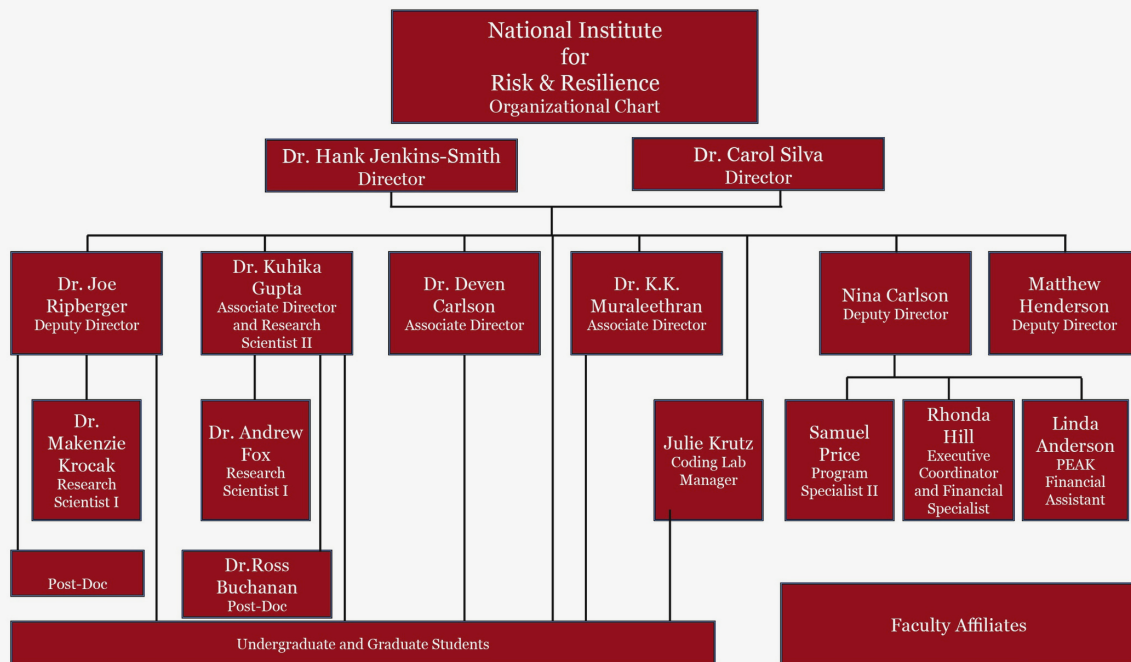


The NIRR culture emphasizes finding new ways to bridge basic and applied research, thereby bringing fundamental knowledge to bear on urgent societal problems.

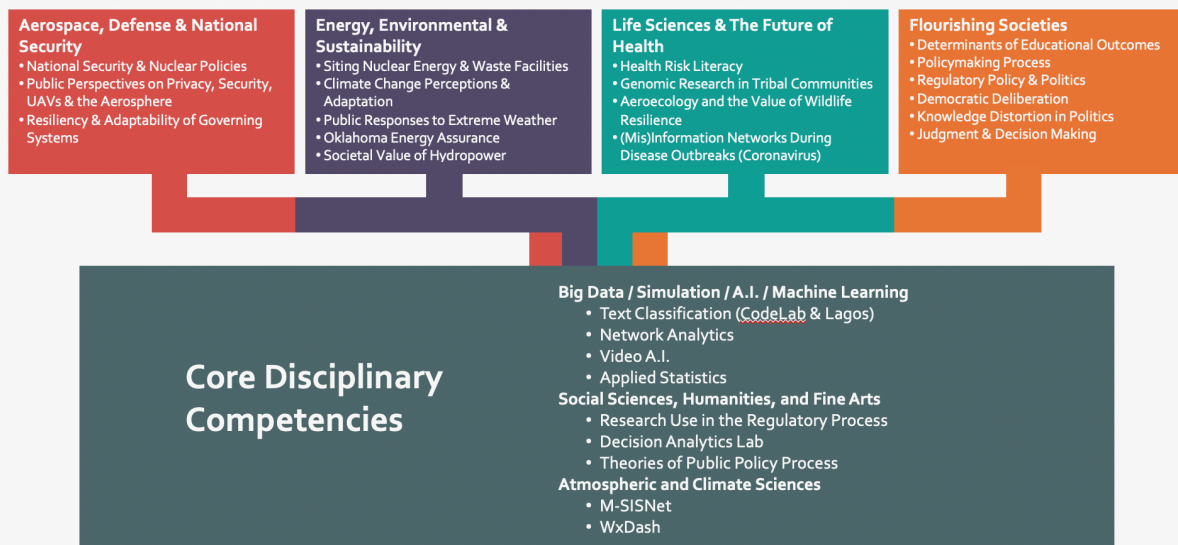


The NIRR team brings insights drawn from the social and behavioral sciences into collaborations with researchers in the physical, biological, and engineering disciplines to find innovative solutions to complex problems.

# ORGANIZATIONAL AND RESEARCH STRUCTURE



## NIRR RESEARCH IN RELATION TO THE OVPRP STRATEGIC FRAMEWORK



The National Institute for Risk & Resilience offers a unique blend of core disciplinary competencies that lie at the intersection of the four vertical pillars of the OU Vice President for Research & Partnerships' Strategic Framework.

# OUR RESEARCH MAKES AN IMPACT

NIRR employs a diverse range of modeling and state of the art social science methods to achieve a common systems perspective, seeking to integrate the social, natural, and technological components of a problem area.

Our applications range from local to international in scope.



## OUR RESEARCH ENABLES

effective societal responses to risks and opportunities, grounded in transdisciplinary sciences.

## OUR RESEARCH PROVIDES

understanding of how individuals, groups, and decision-makers perceive and respond to an array of threats and opportunities.



## OUR RESEARCH FOCUSES

on the human element in complex systems by generating and utilizing state of the art theory development, data collection and modeling of social perceptions, belief systems, social valuation, public choice, decisionmaking, and human behavior.

Enhancing  
Communities'  
Preparedness and  
Resilience to Post-  
Wildfire Hydrology in  
Mountainous Areas

Mis-  
Information  
About the  
COVID-19  
Outbreak

Research Guided  
Recommendations  
for Communicating  
Uncertainties and  
Probabilities

## APPLIED PROJECTS: MULTIPLE DOMAINS AND TRANSFORMATIVE IMPACTS

Organizational  
Problem Solving and  
the Use of Research  
in Education Policy

Oklahoma  
Energy  
Assurance  
Plan

UNSA/OU  
Alianza

Communicating  
Forecast  
Uncertainty and  
Probabilistic  
Information

# FY 2021 Highlights

## RESEARCH

\$2 Million in Sponsored Research Expenditures

\$2.1 Million in New Sponsored Awards

\$200K in Faculty Summer Research

## PEOPLE

2 New Research Scientists

9 Graduate Research Assistants

12 Undergraduate Research Fellows

Full Tuition Waivers for Graduate Students

## PRODUCTS

19 New Peer Reviewed Publications

1 book (Cambridge University Press)

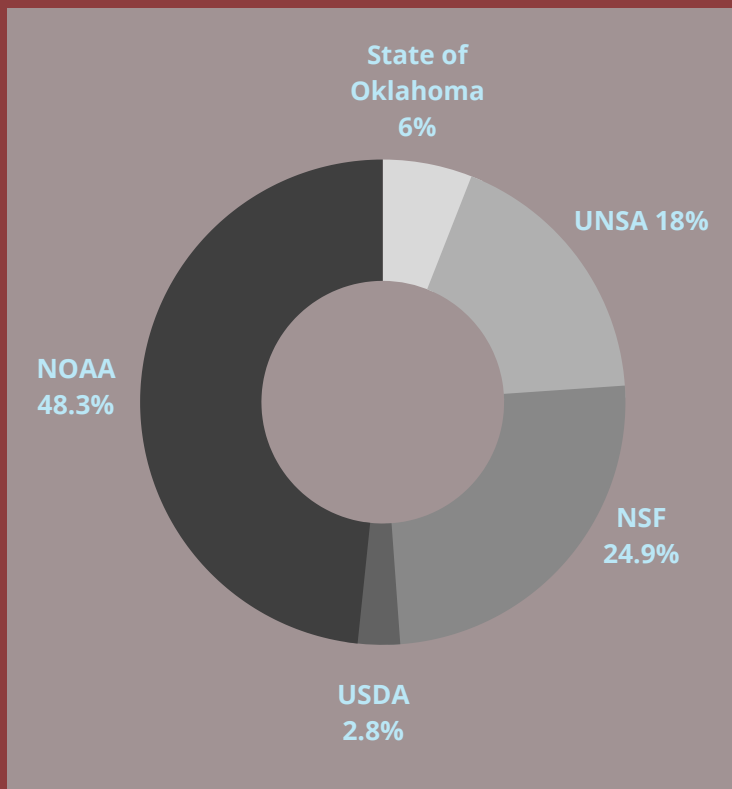
35 New Citations

8 Presentations

4 Technical Reports

# FINANCIAL SUMMARY

## FY 2021 New Sponsored Research



NOAA	\$555,173
NSF	\$533,152
NOAA	\$478,312
UNSA	\$383,740
State of Oklahoma	\$127,362
USDA	\$60,000

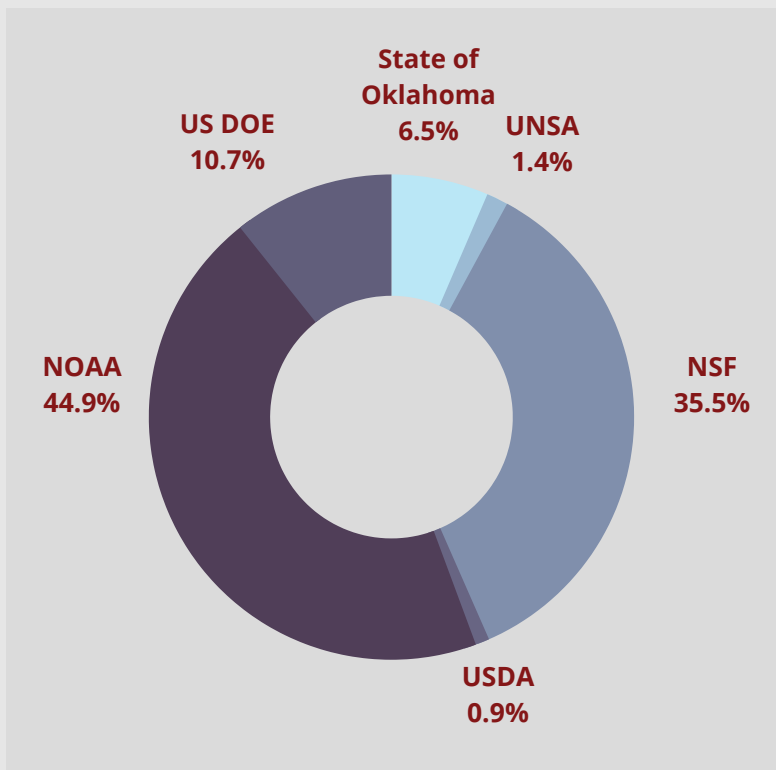
<b>Total</b>	<b>\$2,137,739</b>
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Anticipated IDC returns, life of award: \$550,000+

FY 2021 brought significant growth for NIRR. During this fiscal year, NIRR secured \$2.1 million in new sponsored research awards. These awards represent diverse funding sources, including the National Oceanic and Atmospheric Administration, the National Science Foundation, the State of Oklahoma, the United States Department of Agriculture, and the Universidad de Nacional de San Augustin. These new awards are expected to generate over \$550,000 in indirect costs returns to the University of the life of the awards.

# FINANCIAL SUMMARY

## FY 2021 Total Sponsored Research Expenditures



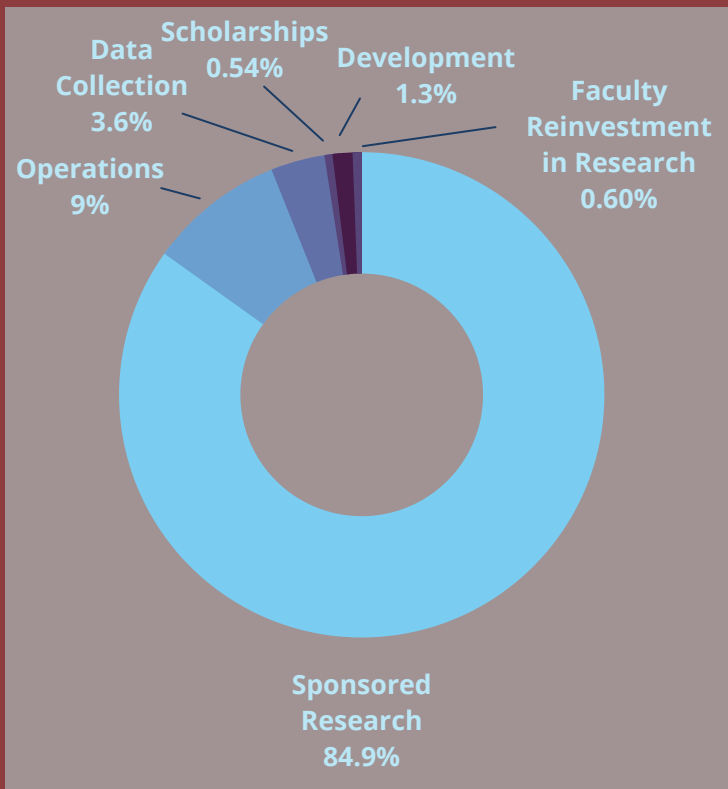
NOAA	\$902,934
NSF	\$713,600
US DOE	\$215,524
State of Oklahoma	\$130,036
UNSA	\$28,807
USDA	\$18,699
<b>Total</b>	<b>\$2,009,600</b>

FY 2021 IDC returns generated: \$513,982

NIRR had a record year in sponsored research expenditures for FY 2021, totaling just over \$2 million. These expenditures supported a combination of projects, both ongoing and new. Our FY 2021 expenditures also provided significant support to the University's larger research infrastructure through generation of over \$500,000 in direct cost returns to the University during the fiscal year.

# FINANCIAL SUMMARY

## NIRR Total FY 2021 Departmental Expenditures



Sponsored Research	\$2,009,600
Operations	\$214,236
Data Collection	\$85,200
Development	\$31,437
Faculty Reinvestment	\$14,268
Scholarships	\$12,669

<b>Total</b>	<b>\$2,367,410</b>
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In FY 2021, NIRR expended nearly \$2.4 million, approximately 85% of which was research expenditures in support of sponsored research. In addition, our organization utilized approximately 9 percent of total expenditures for operational support, 5.5 percent of total expenditures for research support and development work, and 0.5 percent of total expenditures for non-sponsored student support.

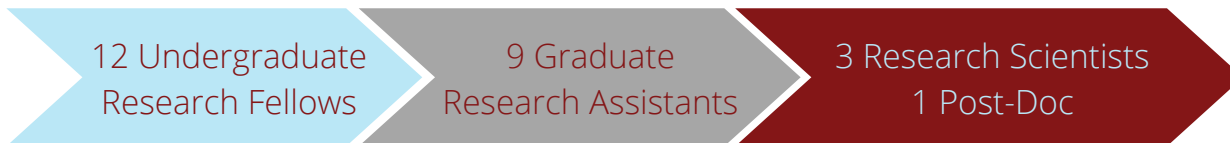
# OUTCOMES AND KEY PERFORMANCE INDICATORS

In Fiscal Year 2021, NIRR significantly advanced our research enterprise, contributing new knowledge to various academic and applied fields, augmenting our research infrastructure, and providing research and salary support as well as training and career development opportunities for students, staff, and faculty.

## New Knowledge...



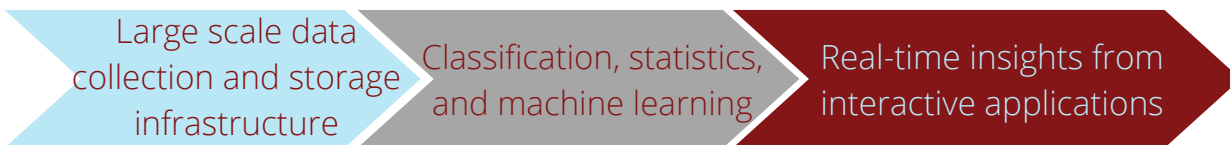
## Workforce and Leaders of the Future...



\$224K  
Faculty Summer Salary for Sponsored Research

\$129K  
Faculty Academic Year Salary for Sponsored Research

## Research Enterprise Development...

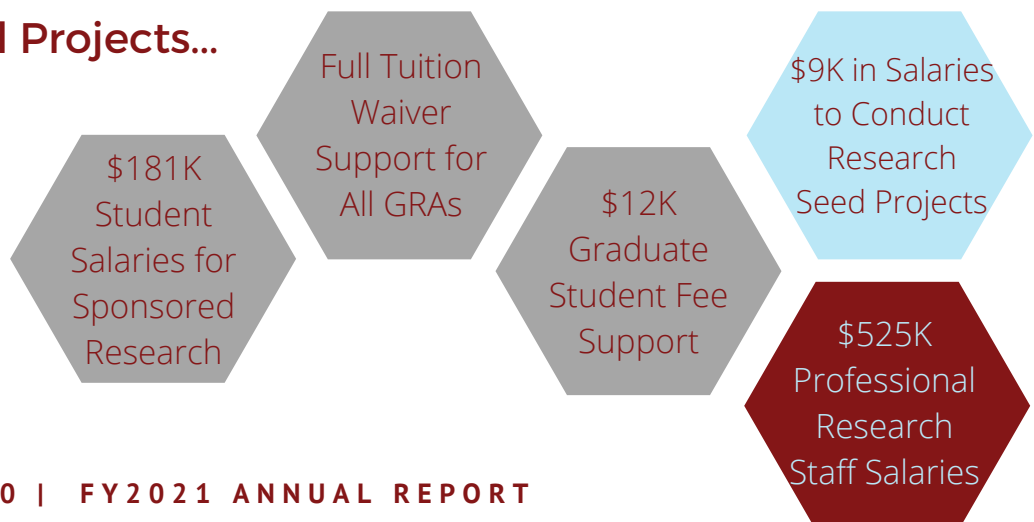


\$42K in Salaries for Strategic Initiative Leadership Efforts

## Societal Impacts...

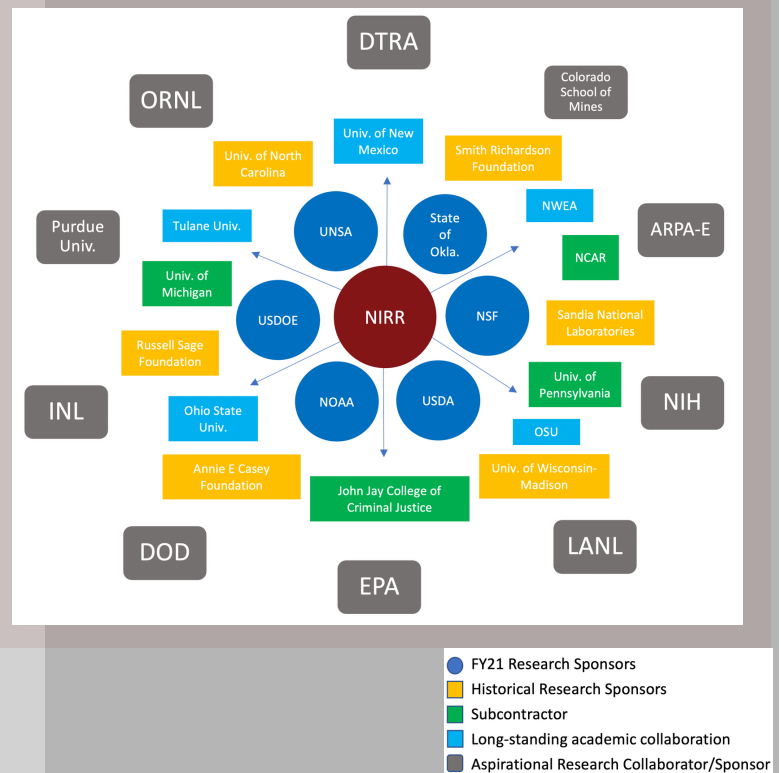


## Support for People and Projects...



# LOOKING TO THE FUTURE

- Maintain current and establish new long-term research partnerships with funding sources
- Initiate larger-scale interdisciplinary projects with strategic partners
- Preserve and expand the diversity in relationships and capacity
- Increase research expenditures
- Significant growth in our current funding sources are expected
- Cultivate new sources of funding and partnerships
- Increase research infrastructure
  - Research scientists
  - Post-docs
  - Students
  - Investments in data collection
  - Security clearances



As we look to the future, NIRR remains on a strong growth trajectory. Our network of collaborators, funders, and affiliates continues to expand and we are engaged in strategic planning to further broaden our opportunities for partnerships. Our growth planning utilizes a multi-layered approach that not only maintains existing relationships with research sponsors, subcontractors, and long-standing academic collaborators, but also involves conducting development work to position us for collaborations and funding with new sponsors.

In the next three years, NIRR plans to initiate larger-scale interdisciplinary projects, significantly grow our current funding sources and increase our research expenditures, and expand our research infrastructure to support our growth.

**FY 22 will also bring a new name; NIRR will be re-named the Institute for Public Policy Research & Analysis (IPPRa)!**

# CONNECT WITH US



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