

RESEARCH & INNOVATION

Annual Report 2021



A TRANSFORMATIVE YEAR IN RESEARCH

UNT has had a transformative year in research. Regardless of the challenges of the global pandemic, we have had one of the most productive years of research in our university's history. Awards were up more than 25% with a record-breaking \$50 million in new contracts and grants awarded to our researchers. Almost all colleges had increases, but the College of Science was a standout with \$14.3 million in new award funding. Awards spanned numerous disciplines and reflect our intentional focus on "making a case" for the value of our work and the vision of our talented researchers.

Not sitting on their laurels with these new awards, our faculty are continuing their efforts in pushing out new research proposals in record numbers. This past year we saw a dramatic 17% increase in the value of proposals, propelling our research engine full steam ahead as evidenced by the 20% increase in our research expenditures. In addition to the increase in awards, the Research Commercial Agreements team created 722 contracts, including a record-setting 35 technology transfer licenses.

These kinds of increases are unheard of in research administration and are indicative of our research faculty who are on the move and changing their approach and tactics to grantsmanship. We have been very deliberate through a set of efforts to support and expand skills in grant writing for faculty and now Ph.D. students to obtain higher profile grants. We have expanded our workshops for re-submissions focused on NSF CAREER awards as well as NIH awards. And UNT significantly increased our grant managers — exclusively tasked to encourage and assist faculty to seek significant large grant efforts — across the colleges and institutes to seven new positions.

We also expanded our university-managed core facilities to capitalize on the brainpower and manpower to research, execute and commercialize new ideas and saw big successes with the Texas Legislature. Not only did CAAAM receive another \$10 million for the next two years, but we received a Tuition Revenue Bond for \$113.4 million for a new Science and Technology Research Building that will provide new state-of-the-art space for faculty to carry out solutions-based research.

To all of our research administration employees who truly make this success possible — Grant and Contracts Administration, Research Commercial Agreements, Research Integrity and Compliance and other support areas — I share my sincere thanks. I am incredibly proud of the dedication and perseverance our research community has shown and their contributions to our state and world, reinforcing UNT's reputation as a Tier One research university.



Mark McLellan
Vice President for Research and Innovation



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DIVISION OVERVIEW

The mission of the Division of Research and Innovation reflects a commitment to serve and support the faculty and staff at UNT with a primary purpose of collectively enhancing research. The core values outline the focus of the division's employees as driven and committed team members.

Mission

The mission of the Division of Research and Innovation is to support, facilitate and empower the growth of sustainable research at UNT.

Core Values

Integrity — Committed to creating knowledge with a high degree of honesty and accuracy

Interdisciplinary Focus — Focused on the development of solutions requiring complex multidisciplinary approaches

Partnerships — Dedicated to building connections in teams focused on solutions to society's biggest challenges

Innovation — Committed to identifying and supporting new and creative approaches

Efficiency — Dedicated to the strategic and focused use of resources

Individual Growth — Focused individuals in and of themselves as part of multidisciplinary teams

Diversity — Committed to empowered decision-making and the inclusion of talented individuals from a variety of different backgrounds

Diversity, Equity and Inclusion

National events prompted higher education across the nation to fully examine their commitment to diversity, equity and inclusion (DEI). UNT is no exception to this national trend. Furthermore, UNT's recent designation as a Hispanic-Serving Institution (HSI) underscores the commitment to DEI within the division. The Research Development team has been engaged with faculty working on grants that serve our diverse student population and informing about funding opportunities for HSIs. Furthermore, the division provided financial support for faculty and students to attend and present at diversity-focused conferences. Aaron Roberts represents the division on the university-level HSI task force and APLU Aspire grant initiatives. Internally, all staff participated in conversations and trainings focused on DEI.



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and Operations

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Autumn Pinckard
Research
Compliance
Manager



VICE PRESIDENT FOR RESEARCH AND INNOVATION

MARK MCLELLAN

Mark McLellan, vice president for research and innovation, a 31-year veteran of university research leadership, joined UNT in 2019.

McLellan came to UNT from Portland State University where he oversaw research across nine colleges and schools and implemented several initiatives that resulted in a significant increase in external research funding. McLellan also served seven years as vice president for research and dean of the School of Graduate Studies at Utah

State University, where he led a major research expansion and achieved a record level of research funding. Prior to his service at USU, McLellan was a tenured professor and department chair at Cornell University; director of a multi-college research center at Texas A&M University; and dean for research at the University of Florida.

McLellan's service includes 10 years with the U.S. Food and Drug Administration, where he chaired the Science Advisory Board from 2016 to 2019. McLellan was selected in 2016 as the inaugural chair of the U.S. Department of Agriculture's Science Advisory Council while serving on the USDA National Agricultural Research, Extension, Education, and Economics Advisory Board. He co-chaired the Association of Public and Land-Grant Universities/Association of American Universities Task Force on Laboratory Safety, and he served as a member of the APLU/AAU Task Force on Public Access.

McLellan is a distinguished and accomplished food scientist, focused on fruit and vegetable process technologies, with 46 peer journal publications, 10 book chapters, seven major technical reports for the federal government and five published software programs.

McLellan earned his bachelor's degree in food science from the University of Massachusetts Amherst and his Master of Science and Ph.D. in food science from Michigan State University.



ASSOCIATE VICE PRESIDENT FOR RESEARCH AND INNOVATION

AARON ROBERTS

Aaron Roberts, professor of environmental toxicology in the College of Science and director of the Advanced Environmental Research Institute (AERI), was appointed to serve as associate vice president of research in June 2021 to replace Pamela Padilla, professor of biological sciences, who was appointed dean of the College of Science.

Prior to his recent appointment, Roberts spent the last two years as the director of AERI. He is considered an expert on the fate and effects of chemical contaminants in freshwater and marine ecosystems. Roberts' research ranges from investigations of the impacts of oil spills on fish and shellfish to the accumulation of industrial chemicals in fur seals in the northern Pacific. His research group has been funded by federal and state agencies as well as the private sector.

Roberts earned his bachelor's degree in biology from the University of Missouri and his master's and doctorate in zoology from Miami-Ohio University. He completed his postdoctoral training in environmental toxicology at Clemson University. He received the UNT Decker Scholar Award in 2021 and is a member of the Endowment Board of Trustees for the Society of Environmental Toxicology and Chemistry.

As associate vice president, his portfolio includes overseeing the management of UNT's shared instrumentation facilities across campus, working with advisory groups and directors of each facility and assisting with the development, approval and implementation of partnership agreements with other universities, national labs and industry. Additionally, Roberts is heavily involved in research development training and limited submissions, amongst other duties.



RESEARCH FACULTY FELLOW

CHANDRA DONNELL CAREY

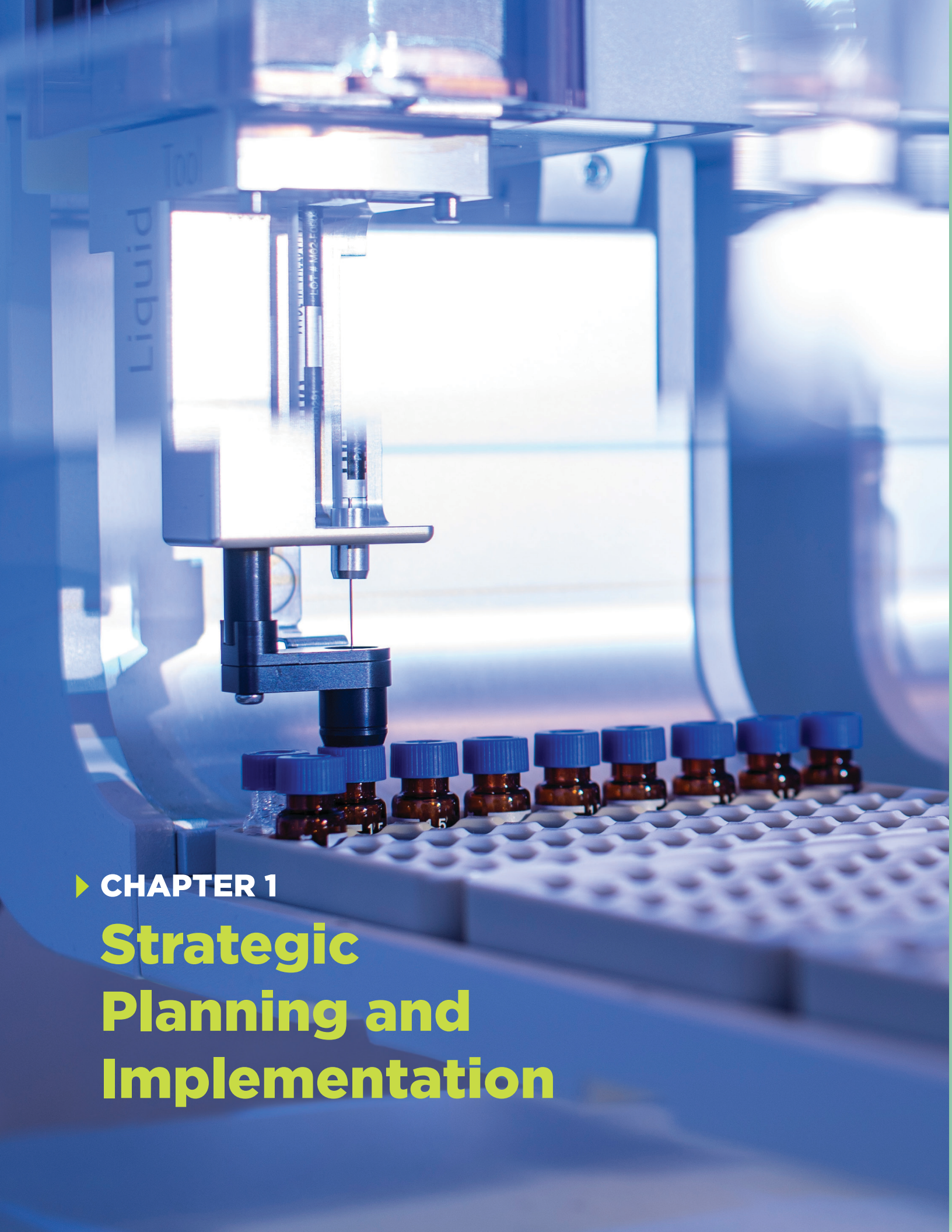
Chandra Carey, associate professor of rehabilitation and health services in the College of Health and Public Service, was selected this year to serve as the inaugural research faculty fellow for the Division of Research and Innovation.

The fellowship was created to provide an opportunity for faculty members to broaden their training and experience in research administration. Carey's experience is rich in

collaborating with researchers across disciplines on critical research associated with societal equity issues.

Her research focuses on access and utilization of mental health services for underserved populations, which led to her initiating UNT's Center for Racial and Ethnic Equity in Health and Society (CREEHS). The center seeks to increase the quality of life for all Texans and to foster an environment for economic growth and innovation by narrowing longstanding racial and ethnic gaps in health care. Carey is one of four co-PIs from UNT who were awarded a \$1.5 million grant from the Health Resources and Service Administration to investigate how to expand a bilingual trauma-based behavioral health workforce in integrated health settings.

She holds a bachelor's degree in psychology from Wittenberg University, a master's in rehabilitation counseling from the University of Illinois at Urbana-Champaign and a doctorate in rehabilitation counselor education from Michigan State University. She has been at UNT since 2009 and currently serves as academic associate dean for the College of Health and Public Service.



► **CHAPTER 1**

**Strategic
Planning and
Implementation**

STRATEGIC PLANNING

The division's three main goals focus on improving UNT's research portfolio, ensuring a commitment to integrity and expanding the university's partnership with private industry. These goals serve as the division's overall effort to guide and achieve its mission. Each goal is supported by a set of critical strategies by each of the supporting units. Each strategy will move forward through a developed set of programs, including short-term initiatives and legacy efforts, as well as new initiatives.



GOAL 1	GOAL 2	GOAL 3
<p>Grow UNT's Research Portfolio</p>	<p>Promote Integrity in Research</p>	<p>Expand Researchers' Work with the Private Sector</p>
<p>Strategies:</p> <ol style="list-style-type: none"> 1. Increase the Quantity and Quality of UNT's Proposals 2. Improve Research Support Infrastructure 3. Support Strategic Research Needs 4. Communicate Internally and Externally in Support of Research 	<p>Strategies:</p> <ol style="list-style-type: none"> 1. Mitigate Risks to the University 2. Provide Guidance and Education for Compliance Programs 3. Improve Workflow Efficiency 	<p>Strategies:</p> <ol style="list-style-type: none"> 1. Encourage Faculty to Disclose New Inventions 2. Market IP for Licensing and Corporate-Sponsored Research 3. Support/Operate an Effective and Efficient Research Contracting Process

GOAL 1

GROW UNT'S RESEARCH PORTFOLIO

One of the most important goals for the Division of Research and Innovation is growing and strengthening the university's research portfolio.

Strategy 1: Increase quantity and quality of UNT's proposals

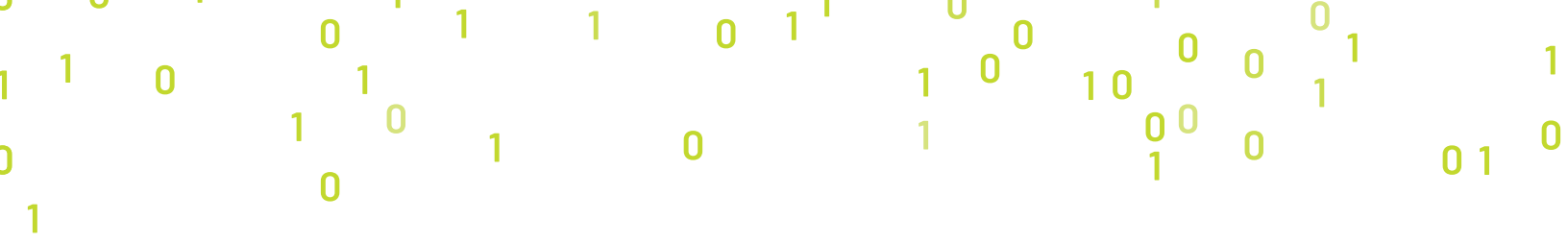
- **Grantsmanship Training** — Distinguished grantsmanship training was provided by the AtKisson Group and continues to be one of the division's most robust and sought-after training programs. Two tailored workshops were delivered this year, one geared toward STEM grantmaking agencies and one for social sciences, humanities and arts funding agencies. Two-hundred faculty registered for the two grantsmanship workshops. Research Development covered all the costs associated with the delivery and materials. Two additional faculty grantsmanship trainings are scheduled for December 2021 and April 2022 and will remain virtual along with all the trainings for next year. In addition to the faculty trainings, there will be grantsmanship training for postdoctoral and graduate students.
- **UNT Washington D.C. Research Faculty Fellows** — In December 2020, the division sponsored a nomination process in which UNT named 19 faculty to participate in a semester-long program in the hopes of visiting with federal program managers based in Washington. The program was modified and prepared faculty for virtual meetings due to the ongoing global pandemic and challenges with travel. The agencies that participated in virtual meetings included the National Science Foundation, National Institutes of Health, National Endowment for the Arts and many more. This training opportunity was focused primarily on pre-tenured faculty to jumpstart their programs.
- **Research BREAKS Training Program** — The division continues to provide regular training and communication with faculty researchers. The program focuses on narrow subjects, spending 15 to 20 minutes going into detail on them and then opening the floor for a Q&A discussion. From September to May, there were a total of 24 meetings with more than 500 registered attendees.
- **In-College Grant Editors/Managers** — To support faculty grant writing efforts, the division partners with colleges and institutes to share the cost of hiring

in-college grant editors/managers. The agreement is designed so that 50% of the salary is covered by the division year one, dropping to 30% year two and finally to 15% for year three and beyond. There are now seven full-time proposal managers on campus. The Research Development unit within the division is staffed with the associate vice president of research as the lead, an assistant director and one graduate student proposal editor.

- **Year-Round Research Training** — To support faculty efforts, the division has provided targeted informational sessions that focus on specific agency programs such as the NSF CAREER or the National Institutes of Health R15/R01 grant opportunities. Furthermore, the well-attended Research BREAKS sessions are aligned with an increase in NSF CAREER grant and NIH grant awards.
- **Arts and Humanities Workshop** — In addition to providing STEM grantsmanship training, the division offered an additional workshop for social sciences, humanities and arts funding agencies. The training was provided by the AtKisson Group. Research Development covered all the costs associated with the delivery and materials. Two additional faculty grantsmanship trainings are scheduled for December 2021 and April 2022 and will remain virtual along with all the trainings for next year. In addition to the faculty trainings, there will be grantsmanship training for postdoctoral and graduate students.

Strategy 2: Improve Research Support Infrastructure

- **Reorganization of Research Core Facilities** — To help increase collaborations on campus and provide access to useful facilities, the division expanded its university managed core facilities to capitalize on the brainpower and manpower to research, execute and commercialize new ideas. All core facilities are now under the daily management of Aaron Roberts, associate vice president of the division.
 - **Current Core Facilities:**
 - Materials Research Facility, offering high-end materials assessment instruments
 - Center for Agile and Adaptive Additive Manufacturing, a premier research and development and educational center in the field
 - High-Performance Computing services, through the Texas Advanced Computing Center in partnership with the University of Texas at Austin

- 
- Vivarium (Under consideration at Discovery Park to replace the current facility)
 - **Core Facilities Added This Year:**
 - BioAnalytical Facility, featuring state-of-the-art mass spectrometers with advanced capabilities for separating and quantifying small molecules and macromolecules
 - Genomics Center, providing RNA and DNA sequence analysis using the latest technology
 - Greenhouse Support Services Facility, including three major greenhouses: one on the roof of the Life Sciences Complex, one outside the Science Research Building and another at Discovery Park
 - **HURON IACUC Implementation** — In the first of its efforts to drive meaningful change throughout the research enterprise, the division implemented the migration of the Institutional Animal Care and Use Committee (IACUC) module to a new proposal software called Huron, otherwise known as the Grants and Research Administration Management Suite (GRAMS). Huron GRAMS migrates data from the previous proposal software Cayuse and integrates the functions of grants, contracts, Institutional Review Board (IRB) and IACUC into a single portal for principal investigators, reviewers and the division, improving routing and business processes that will make contract submissions more efficient.
 - **Development of CREEHS and CIIMS** — Collaborative research is necessary to find solutions that meet societal needs. The division developed two emerging research centers of multidisciplinary research teams to work together to solve significant problems facing our state and nation. The emerging research centers include:
 - **Center for Integrated Intelligent Mobility Systems (CIIMS)** — The university is encouraging integrated, intelligent mobility systems such as connected and autonomous vehicle research, spanning several disciplines including engineering, business, science, information and health and public service. Researchers and students are working collaboratively on the complexities inherent in the field, including the technology itself, the data collection that helps drive its development and planning and the policy and business practices necessary to support it.

- **Center for Racial and Ethnic Equity in Health and Society (CREEHS)** — CREEHS seeks to increase the quality of life for all Texans and to foster an environment for economic growth and innovation by narrowing longstanding racial and ethnic gaps in health care. Grounded in an understanding of the social determinants of health, CREEHS will redress inequity in the conditions in which people in Texas, live, work, learn and interact socially. The center seeks to investigate health quality and related systems by examining the economic, social and environmental factors that have contributed to the state’s current health crisis. CREEHS is committed to seeking solutions to stimulate movement toward health equity.

- **Reorganization of Institute Budgets** — Division leadership established a reorganization of budgets for the university Institutes of Research Excellence that will be fully implemented by FY 2022. During the FY 2021 transition year, budgets were not impacted by this change, however, they were adjusted to a campus-wide reduction that all units managed. After FY 2021, institutes will be funded based upon two operating budgets: a base budget and a performance budget.

The metrics implemented will result in institutes earning a portion of their budget allocation (performance budget) through the Facilities and Administrative (F&A) revenue generated from National Research University Fund (NRUF) eligible sponsored grants that each institute obtains.

- **Management of HEERF Funds** — In response to the Coronavirus Aid, Relief and Economic Security (CARES) Act of 2020, the Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA) and the American Rescue Plan Act (ARPA), both in 2021, the president appointed a program director to administer the university’s Higher Education Emergency Relief Fund (HEERF). The program director works closely with division leadership to make certain the various projects and programs that have launched under CARES, CRRSAA and ARP are executed properly.

The funds fall under the Department of Education’s Higher Education Emergency Relief Fund. The acts allocated an additional amount to UNT because of its designation as a Minority-Serving and Hispanic-Serving Institution. Together, the funds total approximately \$171 million.

- **Action Report Following Winter Storm Damage** — The Division of Research and Innovation allocated funding to faculty researchers who sustained damages to their laboratory spaces during the 2021 winter storm to reduce interruptions to



their research. More than \$285,000 supported the costs for the replacement and repairs to research equipment and supplies, etc.

In addition to allocating costs, the division created an online request form to streamline the review and approval of faculty requests.

Strategy 3: Support Strategic Research Needs

- **Seed Grants Program** — The division has offered for many years a seed grants program that utilizes the associate deans for research for each college as a decision body to help identify investments needed for seed funding. The intention and focus of this program is to create initial data that is needed for the submission of grant proposals.
- **Faculty Startup Investment Summary** — Each year, the division supports the startup funding of new faculty hires across the university.
- **InfoReady Implementation** — To help manage its intramural funding competitions, the division implemented the UNT InfoReady Review Portal, an online portal to help investigators locate and apply for limited submissions opportunities and many internal grant opportunities.
- **Development of TACC** — The division helped facilitate the transition of its High-Performance Computing (HPC) services and migration of existing research projects from the UNT Talon3 system to the UT-Austin TACC system. In December 2020, the University of Texas Board of Regents approved \$8.4 million to TACC to support the evolution of the highly successful University of

Texas Research Cyberinfrastructure initiative. Several Texas academic institutions jointly contributed \$2 million to the project, including the UNT System. These partnerships will allow researchers from each institution to use UTRC resources, and their involvement will allow TACC to build more enhanced supercomputers for shared use.

Strategy 4: Communicate Internally and Externally in Support of Research

- **Department Reports and Newsletters** — The division produces monthly newsletters to its constituents to provide resources, policy updates, rules and regulations, commercialization successes and updates, as well as innovations in science, technology, math and social sciences. Newsletters are disseminated from the Research Development, Research Commercialization Agreements and Research Integrity and Compliance teams.
- **Training/Development/Communications Position Creation** — The division hired an assistant director of research communications and project management to assist in the training and development workshops that the division offers. In addition, the assistant director manages the content for the *research.unt.edu* website, has developed communication and social media strategies for the division and serves as a liaison with University Brand Strategy and Communications to promote communications.

GOAL 1: GROW UNT'S RESEARCH PORTFOLIO

Strategies	Before FY 2020	FY 2020	FY 2021	
1. Increase Quantity and Quality of UNT's Proposals	NIH Grantsmanship Training		Arts and Humanities Workshop	
	NSF CAREER Award Training			
		UNT Washington D.C. Research Faculty Fellows		
		Research BREAKS Training Program		
		In-College Grant Editors/Managers		
		Semester Grantsmanship Workshop	Year-Round Research Training	
2. Improve Research Support Infrastructure	Cayuse Proposal Submission System			
		Huron Research Administration System	Reorganization of Core Facilities	
		Restructured Contracts and IP Systems	Huron IACUC Implementation	
		Reorganized GCA Operations	Development of CREEHS and CIIMS	
			Reorganization of Institute Budgets	
			Management of HEERF Funds	
			Winter Storm Damage Action Report	
3. Support Strategic Research Needs	Seed Grants Program			
	Completed HPC Talon Investment		Faculty Startup Investment Summary	
			InfoReady Implementation	
			Development of TACC	
4. Communicate Internally and Externally in Support of Research	<i>UNT Research</i> magazine			
		Research BREAKS Training Q&A	Department Reports and Newsletters	
		Principal Investigator Handbook Revision	Training/Development/Communications Position Created	
		Division Website Revision		

GOAL 2

PROMOTE INTEGRITY IN RESEARCH

UNT has an expanding portfolio of funding from major sponsors, including agencies of the federal government. Many of these sponsors have significant requirements to ensure the integrity of research that faculty conduct with their funding. The division is charged with ensuring that faculty conduct this work with the highest degree of ethics and integrity.

Strategy 1: Mitigate Risks to the University

- **Increase Compliance Awareness and Transparency** — The division increased awareness and transparency related to compliance and ethics matters throughout the university. Research Integrity and Compliance identified compliance requiring additional service areas. New tracking tools for documenting and analyzing incoming inquiries were created and implemented.
- **International Affiliation** — To support continued collaborations with universities and organizations worldwide, the division offered training to staff members to help them understand the current regulatory landscape and serious growing concerns by the U.S. Government concerning inappropriate influence by foreign entities over federally funded research.

Strategy 2: Provide Guidance and Education for Compliance Programs

- **International Affiliations Workshops** — The division conducted international affiliations workshops to provide education for collaborative research.
- **Responsible Conduct of Research Training** — The Research Integrity and Compliance team offered a number of Responsible Conduct of Research training opportunities to provide education and support to the research community in the ethical foundations of research.

- **In-Classroom Training to Increase and Mentor Student Researchers** — The Research Integrity and Compliance team offered a number of personalized training opportunities for graduate and undergraduate level classes with an interest in research to provide a foundation and understanding of requirements surrounding ethical foundations of research.

Strategy 3: Improve Workflow Efficiency

- **IRB** — Research Integrity and Compliance increased transparency with monthly IRB program reports.
- **Visiting Scholar** — Research Integrity and Compliance has developed Standard Operating Procedures to delineate systematic process activities and functions for compliance with regulations by collaborating with UNT’s international visiting scholars program. The procedures outline and establish processes for obtaining approvals and providing guidance to incoming scholars.

GOAL 2: PROMOTE INTEGRITY IN RESEARCH

Strategies	Before FY 2020	FY 2020	FY 2021
1. Mitigate Risks to the University	Increase Compliance Awareness and Transparency		
			International Affiliations Program
2. Provide Guidance and Education for Compliance Programs		International Affiliations Workshops	
		Responsible Conduct of Research Training	
		In-Classroom Training	
3. Improve Workflow Efficiency	Increased IRB Transparency		
			Visiting Scholar Processes

GOAL 3

EXPAND RESEARCHERS' WORK WITH THE PRIVATE SECTOR

Strategy 1: Encourage Faculty to Disclose New Inventions

- **Increased Contact with Faculty Researchers** — Staff gave presentations on intellectual property at departmental meetings and reached out to individual principal investigators. Principal investigators served by the division were encouraged to spread the word about their experiences to their peers.
- **Brought Awareness to Administrators** — Staff members briefed deans and associate deans of research on what technology transfer means and the best ways to gain value from the technology transfer function.
- **Relationships with University Advancement** — The department accelerated relationships with University Advancement for industry outreach and continued to encourage partnerships for leveraging IP for donors, foundation funding and corporate licensing.
- **Increased Reporting** — Monthly reporting to served PIs and deans keeps them up-to-date on the activities of Research Commercial Agreements and encourages more disclosures and reduces problems with faculty not being aware of contract status.

Strategy 2: Market Intellectual Property for Licensing and Corporate-Sponsored Research

- **Launched IN-PART** — The department joined IN-PART, a matchmaking platform for university-industry collaboration that provides the initial introduction for new licenses in technology transfer. The tool allows the department to connect with potential licensees globally.
- **Increased Licenses** — The department realized licenses for IP the department had been marketing since starting in 2015, increasing the number of licenses from 12 in FY 2020 to 35 in FY 2021. Of the 35 licenses, 25 were copyrights and 10 patent-based, demonstrating that software-based and educational technologies provide a great value and are of high Interest to solve commercial needs.

- **Targeting Industry Contacts** — Staff developed collaborations with companies and UNT inventors; intern marketing reports were used to target potential licensees; licensing consultants were used to target specific contacts at large potential licensees; staff connected with potential licensees through LinkedIn; and used data mining related patents for relevance to the UNT portfolio targeting potential licensing opportunities.
- **Spinout Companies** — Staff discussed with inventors and their graduate students options for spinout companies based on their technology.
- **Industry Visibility and Networking** — Staff spoke at or attended industry events to increase visibility and push specific technologies.
- **Murphy Center for Entrepreneurship** — Research Commercial Agreements worked with UNT's Murphy Center for Entrepreneurship to target potential licensees.

Strategy 3: Support/Operate an Effective and Efficient Research Contracting Process

- **Research Commercial Agreements** — Continued to operate research contracting with the same time-sensitivity and understanding of commercial needs since establishing Research Commercial Agreements in FY 2020.
- **Guaranteed Turnaround for Contract Response** — Research Commercial Agreements implemented a four-tier guaranteed turnaround time for contract response.
- **Increased Communications** — Monthly reporting continued to keep PIs and deans up-to-date on activities of Research Commercial Agreements and encouraged additional disclosures. Transparency and clear processes were maintained from FY 2020 by collaboration with college administrators and bi-weekly meetings with University Advancement.

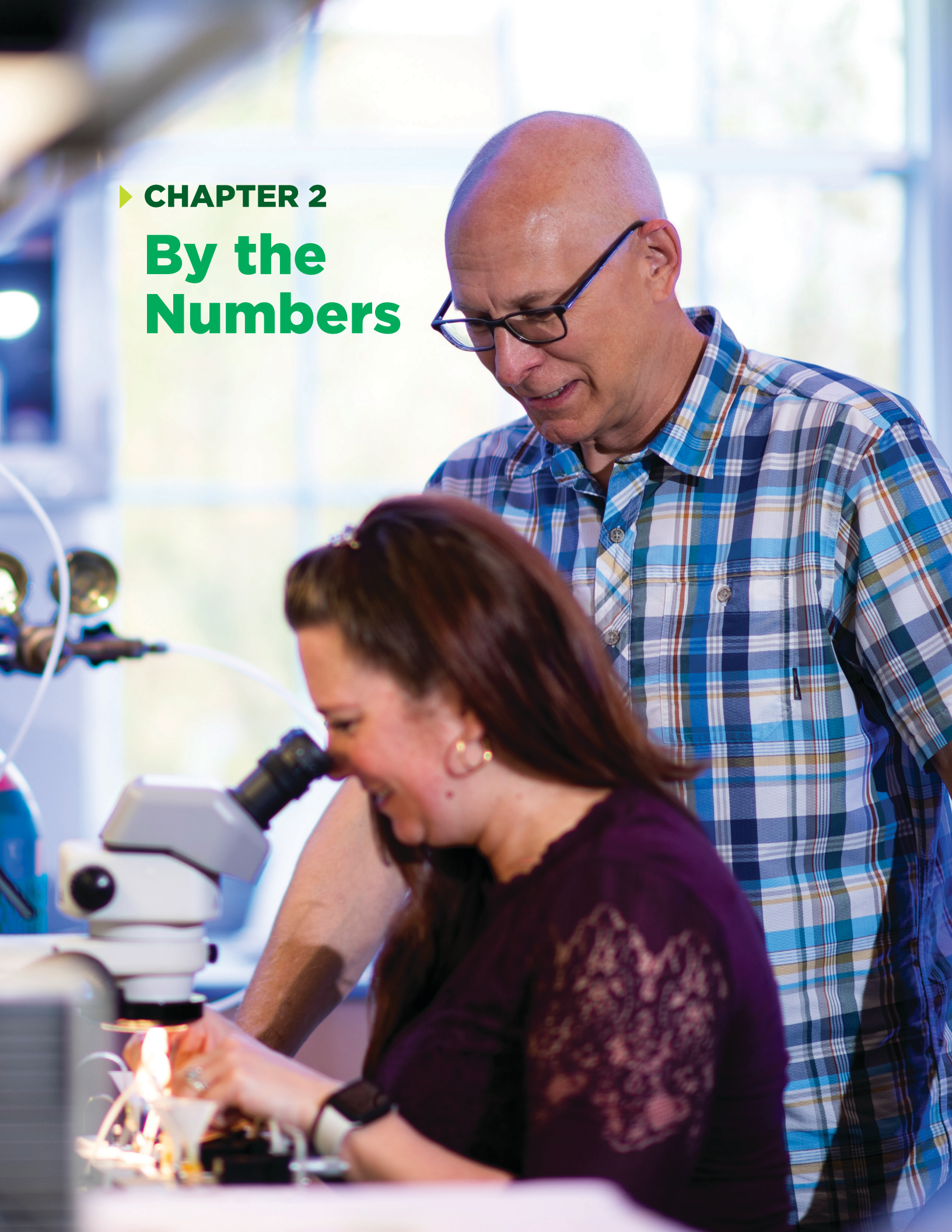
GOAL 3: EXPAND RESEARCHERS' WORK WITH THE PRIVATE SECTOR

Strategies	Before FY 2020	FY 2020	FY 2021			
1. Encourage Faculty to Disclose New Inventions	Increase Contact with Faculty Researchers					
	Relationships with University Advancement					
		Increased Reporting				
			Brought Awareness to Administrators			
2. Market IP for Licensing and Corporate-sponsored Research			Launched IN-PART			
			Increased Licenses			
	Targeting Industry Contacts					
	Spinout Companies					
	Industry Visibility and Networking					
		Murphy Center for Entrepreneurship				
3. Support/ Operate an Effective and Efficient Research Contracting Process						
				Research Commercial Agreements		
				Guaranteed Turnaround for Contract Response		
				Increased Communications		
			Improved Technology			



► **CHAPTER 2**

**By the
Numbers**



UNT PROFILE

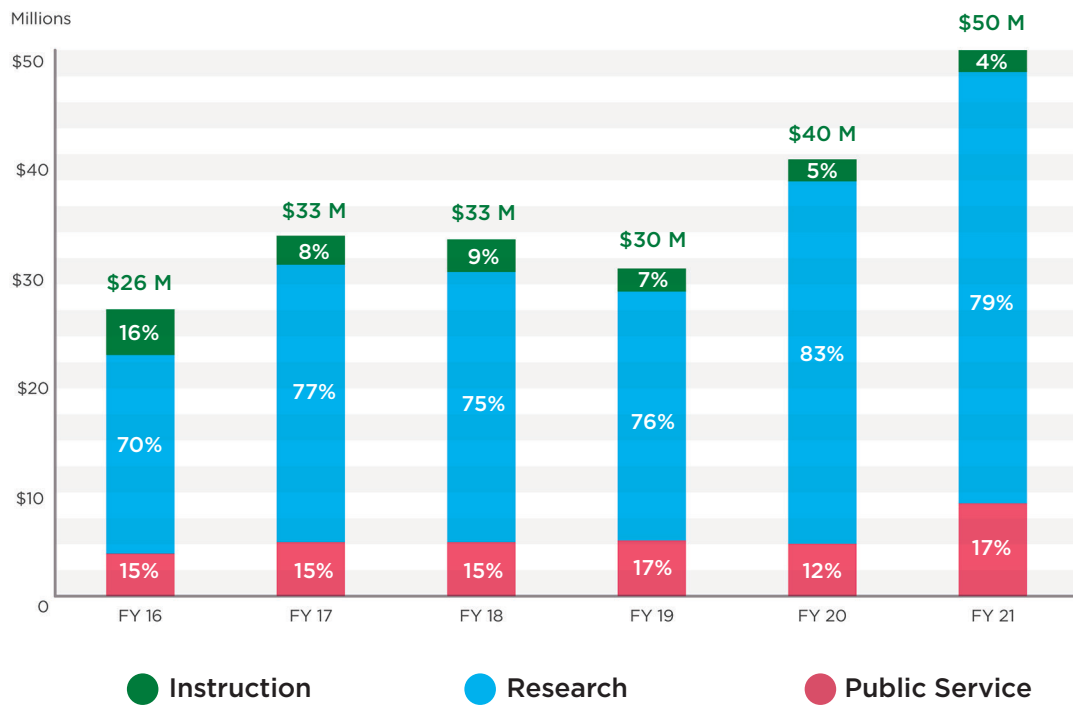
UNT is a Carnegie-ranked Tier One research university, which is a very high research activity university, and is the flagship university in the UNT System, located in Denton, Texas.

UNT has 14 colleges and schools:

- G. Brint Ryan College of Business
- College of Education
- College of Engineering
- College of Health and Public Service
- College of Information
- College of Liberal Arts and Social Sciences
- College of Merchandising, Hospitality and Tourism
- College of Music
- College of Science
- College of Visual Arts and Design
- Frank W. and Sue Mayborn School of Journalism
- Honors College
- New College
- Toulouse Graduate School®

Tenured and Tenure-Track Research Faculty Members (FY 2021)	795
Total Undergraduate Headcount Enrolled	32,596
Total Graduate Headcount Enrolled	9,776
Total Headcount Enrolled	42,372
Graduate Degrees Offered	131
Total # of UNT Sponsored Awards	263
Total UNT Sponsored Awards	\$50,055,482
Total UNT Proposals Submitted	618
Total UNT Dollar Amount of Proposals	\$251,470,703

UNT Sponsored Awards FY 2016 - FY 2021

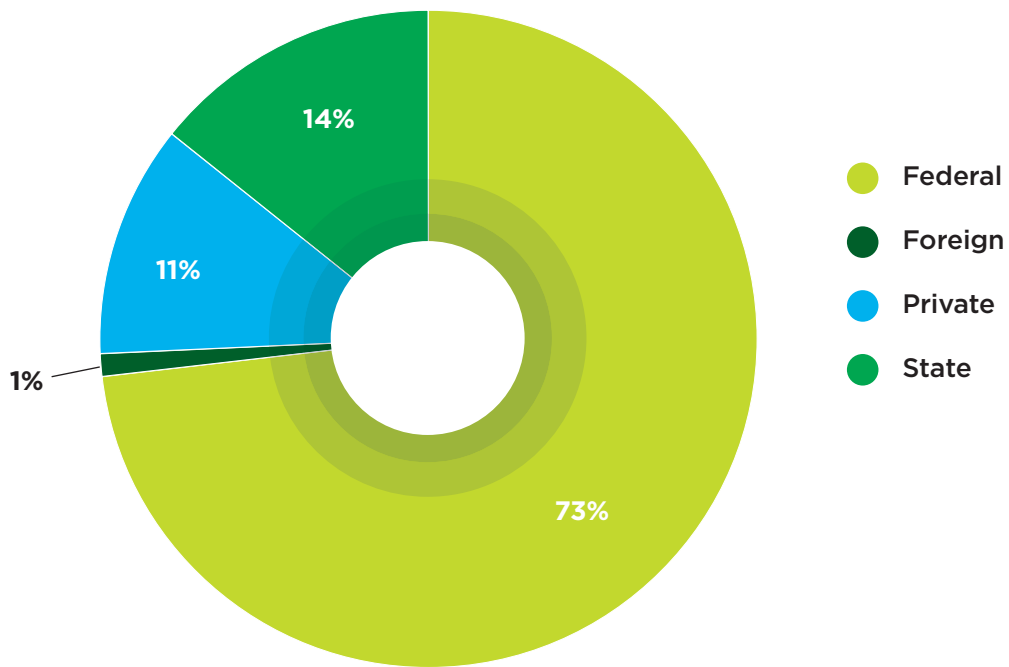


UNT College Sponsored Awards

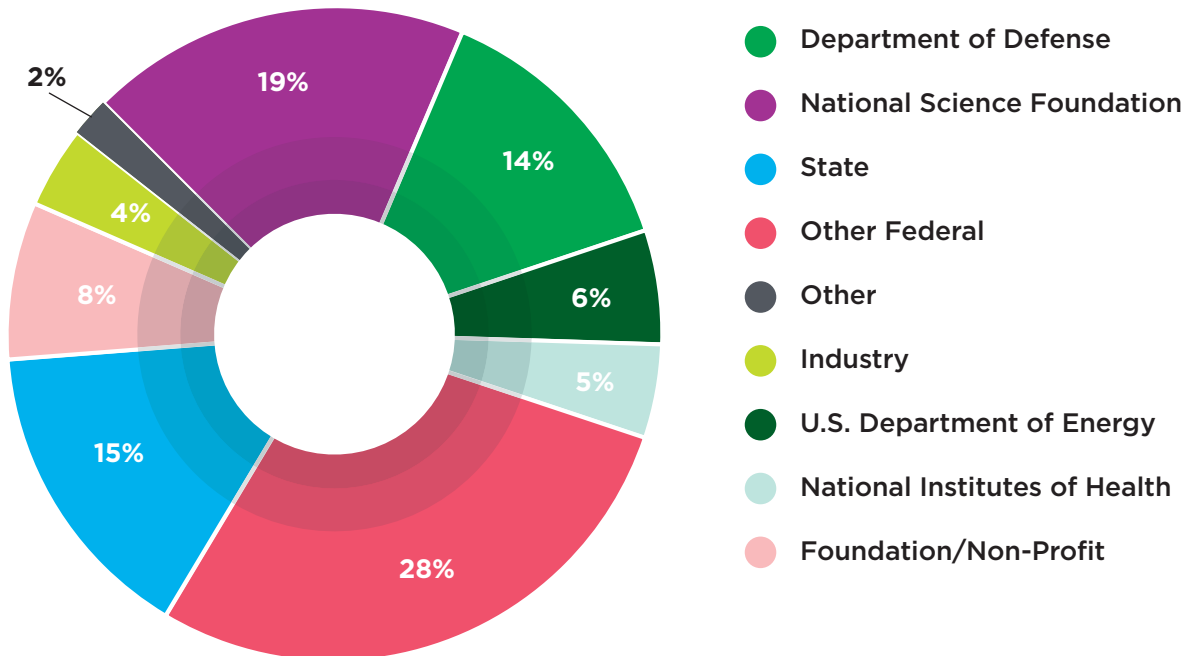
	FY 2019	FY 2020	FY 2021	Change From Last Year
College of Business	\$229,479	\$1,432,446	\$27,897	-98%
College of Education	\$1,814,991	\$2,116,357	\$2,968,587	40%
College of Engineering	\$10,257,733	\$18,772,086	\$19,042,258	1%
College of Health and Public Service	\$2,304,626	\$2,544,214	\$3,417,734	34%
College of Information	\$1,047,128	\$665,082	\$1,905,273	286%
College of Liberal Arts and Social Sciences	\$1,356,893	\$1,337,336	\$2,996,914	224%
College of Merchandising, Hospitality and Tourism	\$160,609	\$148,128	\$90,617	-39%
College of Music	\$40,000	\$0	\$0	---
College of Science	\$10,401,581	\$9,034,804	\$14,347,499	59%
College of Visual Arts and Design	\$25,000	\$106,018	\$188,610	78%
Other ²	\$2,554,714	\$3,786,149	\$3,906,831	3%
Totals	\$30,192,754	\$39,942,620	\$48,892,220	25%

² Includes: Admissions, Distributed Learning Support, Enrollment Management and Equity and Diversity, Honors College, Office of the President, Office of the Provost and Vice President of Academic Affairs, Student Affairs-General, Student Engagement, Toulouse Graduate School®, University Libraries, UNTD, UNT Systems, Vice Provost for Academic Affairs and Vice President for Student Development

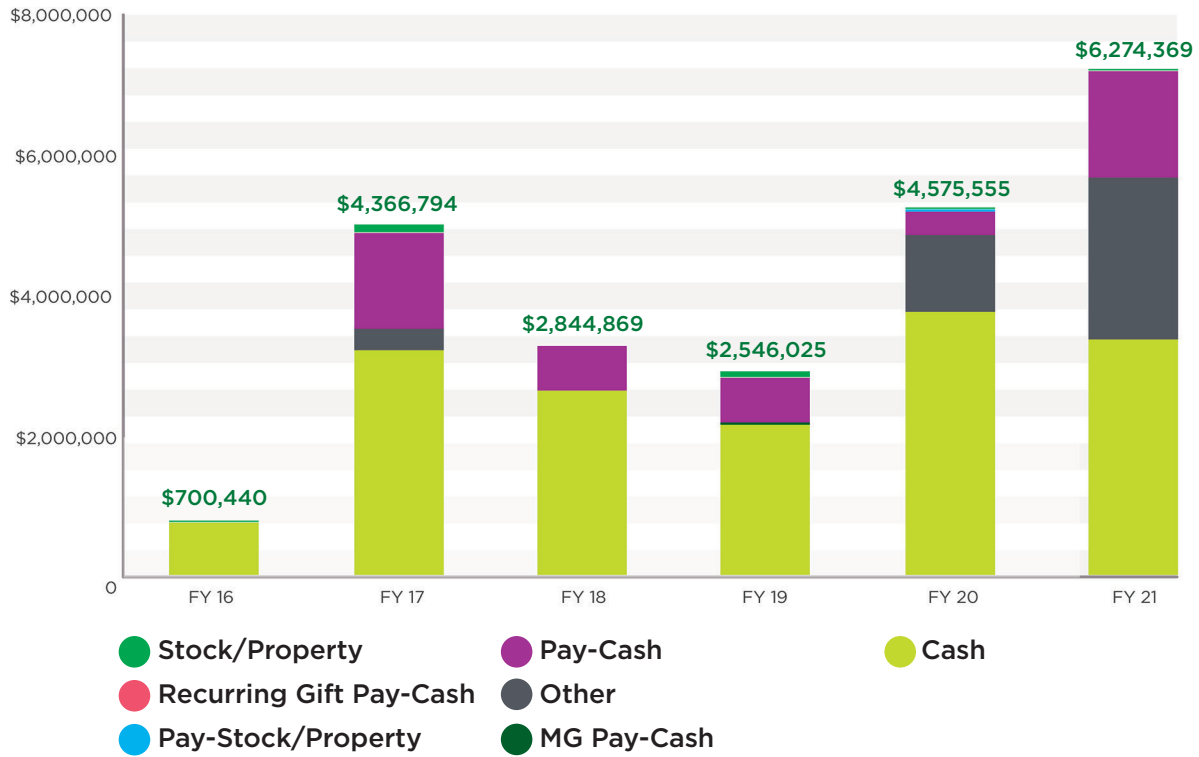
UNT Research Award by Source FY 2021



UNT Research Award by Sponsor FY 2021



UNT Research Gift Awards FY 2016 - FY 2021



Research Expenditures

	FY 2019	FY 2020	FY 2021	Change From Last Year
Total UNT Research Expenditures (HERD)	\$78.7 million	\$83.4 million	\$81.1 million	-3%
Restricted UNT Research Expenditures (NRUF)	\$18.1 million	\$16.3 million	\$20.3 million	20%

Texas NRUF Aspirations

The University of North Texas aspires to achieve Texas National Research University Fund (NRUF) status. To reach this status, universities are required to meet a certain threshold among a series of metrics. Those metrics include reaching \$45 million in restricted research expenditures. To accomplish this aspiration, the Division of Research and Innovation has implemented a plan with goals and strategies that are designed to significantly increase the university’s grantsmanship capability while maintaining the utmost integrity and efficiency.

Higher Education Emergence Relief Funding

March 13, 2020 is the day the university stood still. The President of the United States delivered a proclamation on declaring a National Emergency Concerning the Novel Coronavirus Disease (COVID-19) Outbreak. And, just like that students, faculty and staff were sent home to try and learn and work remotely.

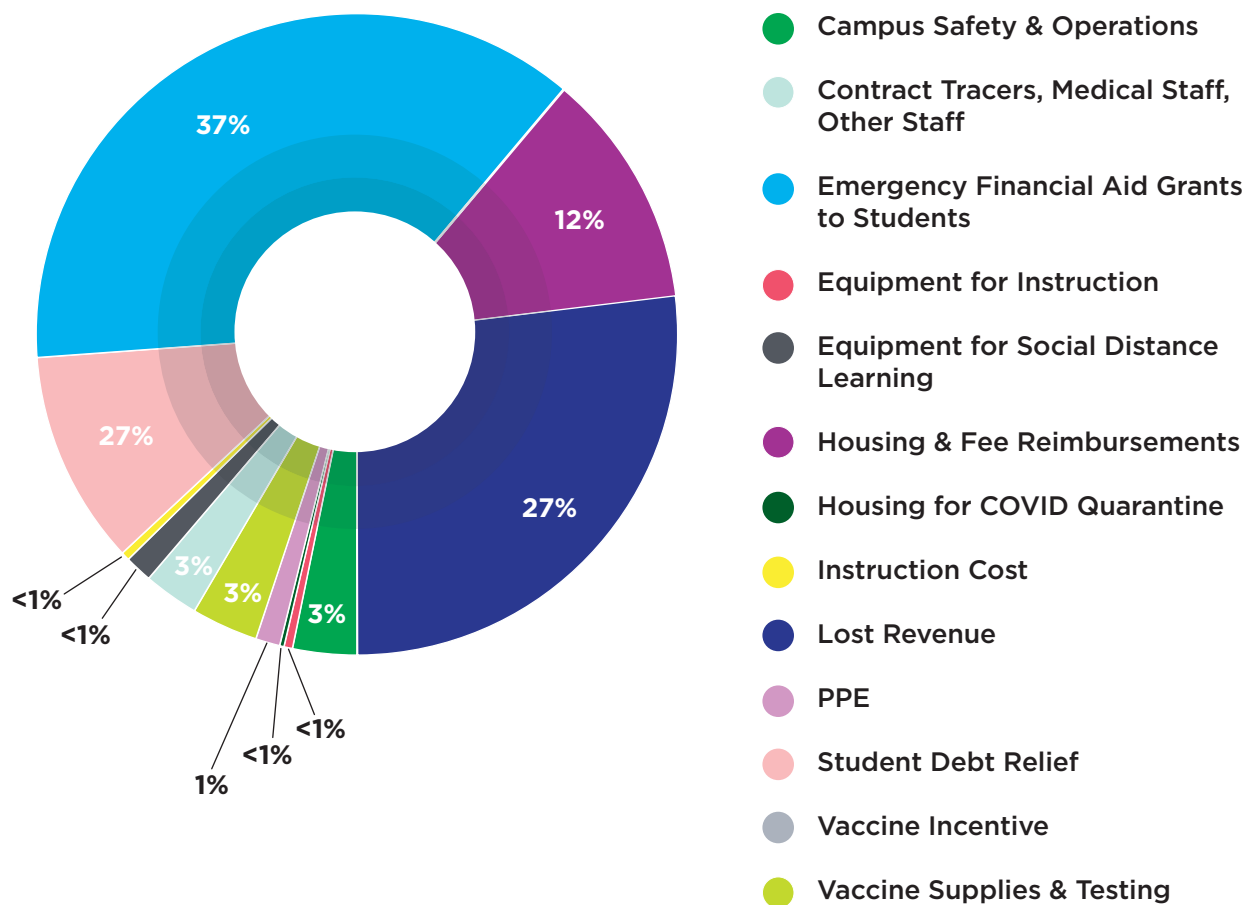
UNT, like other institutions of higher education, underwent significant operational changes and bore great financial cost to continue supporting students amidst rapidly changing health and economic conditions. The transition to remote learning was a historic undertaking and continues to evolve into a “new normal.” The transition has required significant financial resources due to increases in costs for technology and significant physical infrastructure changes to facilitate social distancing and enhanced protocols and testing regimes to keep everyone safe.

Recognizing that the impact to higher education institutions would be significant, the U.S. government used the Department of Education as a pass-through entity to deliver much needed financial assistance, through a series of congressional acts

Higher Education Emergence Relief Funding

	Student	Institutional	Minority-Serving Institution
CARES	\$14,509,044	\$14,509,044	\$2,150,220
CRRSA	\$14,509,044	\$33,345,551	\$3,102,636
ARP	\$42,468,686	\$41,799,783	\$5,293,032
Total	\$71,486,774	\$89,654,378	\$10,545,888

known as Higher Education Emergency Relief Funding (HEERF). The first, CARES Act (Coronavirus Aid, Relief and Economic Security Act) was passed by Congress on March 27, 2020 and gave UNT \$31.1 million in assistance. In late December 2020, additional aid was given to universities through CRRSA (Coronavirus Response and Relief Supplemental Appropriations). UNT received \$50.9 million through CRRSA. And then, with the American Rescue Plan (ARP) signed by Congress on March 11, 2021, UNT received its largest appropriation of \$89.5 million. UNT to date has received more than \$171M in HEERF funds. Of that, more than \$71 million will go straight into the hands of students through student emergency aid. Students are able to use the refunds for whatever need they may have. The remaining funds are being used to offset losses to the university, provide technology, staff up contact tracers and covid testers, secure vaccine supplies and testing, provide housing for quarantined students who had to remain on campus, supply personal protection equipment for the safety of staff and faculty, offer vaccination incentives and provide student debt relief.



NOTABLE NEW GRANT AWARDS

In any one year, UNT faculty are awarded many significant and important grants based on proposals for research submitted. We would love to share all of them, but due to space limitations, we have chosen a few notable award highlights.

Principal Investigators	Dept./ College	Project	Sponsor	Amount
R. Mishra, R. Banerjee, M. Baskes, D. Burford, Y. Jiang, S. Mukherjee, R. Reidy, T. Scharf, N. Shepard, S. Srivilliputhur and M. Young	College of Engineering	Technical Proposal for Advanced Ballistics Technology: A Mechanisms-based Approach to Designing Materials Systems for Enhanced Dynamic Performance	U.S. Army Research Laboratory	\$5,500,000
W. Burggren and P. Padilla	College of Science	Non-Genetic Inheritance of Hypoxia Tolerance in Fishes: Dynamics and Mechanisms	National Science Foundation	\$1,100,000
R. Christensen and G. Knezek	College of Information	simEquity: Improving Student Learning While Decreasing Bias in Teaching Through Simulation	National Science Foundation	\$840,000
L. Liang and A. Ponette-González	College of Liberal Arts and Sciences	Patterns and Drivers of Intra-Urban Heat and Pollution Island Interactions	National Science Foundation	\$399,000
I. Mahbub	College of Engineering	Next Generation of Wireless Power Transfer Network of Unmanned Aircraft System (UAS) Using Electromechanical Beamforming	Defense Advanced Research Projects Agency Young Faculty Award	\$499,000
P. Ceballos, C. Carey, A. Cartwright, D. Mukherjee	College of Education and College of Health and Public Service	Expanding a Bilingual Trauma-Based Behavioral Health Workforce in Integrated Health Settings	U.S. Health Resources and Services Administration	\$1,400,000



**New Faculty Startup Allocation from Division of Research
and Innovation (All Funding Sources)**

College	FY 2019	FY 2020	FY 2021
G. Brint Ryan College of Business			
College of Education			
College of Engineering	\$807,069	\$478,075	\$384,428
College of Health and Public Service	\$76,225		
College of Information			
College of Liberal Arts and Social Sciences		\$35,000	
College of Merchandising, Hospitality and Tourism			
College of Music	\$64,000		\$89,600
College of Science	\$867,813	\$554,841	\$661,348
College of Visual Arts and Design			
Total	\$1,815,107	\$1,067,916	\$1,135,376

F&A Reimbursements

	FY 2020	FY 2021
Revenue Distribution	Fund 850000 (F&A)	Fund 850000 (F&A)
Colleges (PI, Dept., and College)	\$1,584,888	\$1,855,525
VP Finance and Administration	\$1,396,047	\$1,644,572
VP Research and Innovation	\$1,743,436	\$2,053,376
Total	\$4,724,371	\$5,553,473

Division of Research and Innovation F&A Budget

	FY 2020	FY 2021
Division of Research and Innovation	Fund 850000 (F&A)	Fund 850000 (F&A)
Total		
Prior FY Balance Carried Forward	\$1,958,770	\$1,767,973
FY 2021 New F&A Distribution	\$1,743,436	\$2,053,376
Total Resources	\$3,702,206	\$3,821,349
Allocation		
VP Research and Innovation		
Salaries/Fringe	\$17,216	\$133,591
Materials and Office Supplies	\$33,750	\$24,255
Dean and Associate Dean Meetings	\$3,533	
Travel	\$12,310	
Staff Professional Development	\$2,707	\$338
COVID-19 Related Expenses	\$5,968	
Data Analytics & Institutional Research (DAIR) support		\$21,000
Risk Management - Hazardous Waste Disposal		\$33,838
Research Development	\$34,160	\$58,209
Grants and Contracts Administration	\$77,384	\$50,919
Research Integrity and Compliance	\$25,461	\$90,664
Research Commercial Agreements	\$109,410	\$219,000
Core University Shared Research Facilities	\$419,250	(\$269,367)*
Research Institutes and Centers	\$387,709	\$389,170
Faculty Grantsmanship Training and DC Fellows	\$64,921	\$30,114
Other UNT Research Program Support	\$84,987	\$77,630
Direct College Support for Research	\$31,723	\$81,444
New Faculty Startup	\$414,002	\$484,318
Faculty Retention	\$303,000	\$10,000
Faculty Research Seed Grants and Awards	\$170,237	\$264,666
Sponsored Grant Award Cost Share	\$20,000	\$34,637
EIS Budget Conversion Error Correction (one-time)	\$185,487	
Support for Winter Storm Research Damages (one-time)		\$285,483
Total Budget Allocation	\$2,419,712	\$2,019,909
Expected Year Ending Net Balance	\$1,282,494	\$1,801,440

*Credit in FY 2021 due to shared research facilities equipment maintenance/service agreement expenses moved off F&A and instead paid from alternative funding source.

A photograph of two field researchers in a grassy field. The researcher on the right is wearing a wide-brimmed hat, a light-colored jacket, and a backpack, and is writing on a clipboard. The researcher on the left is wearing a grey long-sleeved shirt and dark pants, and is looking towards the first researcher. The background is a bright, sunny day with a blue sky and some trees in the distance.

▶ **CHAPTER 3**
Unit Reports

GRANTS AND CONTRACTS ADMINISTRATION



Charles Tarantino

Assistant Vice President for Grants and Contracts

Despite hurdles presented by the global pandemic, UNT set record growth in research productivity last year. Unprecedented gains in new research grants and proposals and overall research expenditures reflect the university's rise as a major national research university.

The total number of research proposals rose 17% from \$213 million in FY 2020 to \$251.4 million in FY 2021, which ended Aug. 31. The university secured its highest-ever level of external funding, with a 25% increase from \$39.9 million to \$50 million in sponsored awards.

The success of the last year is indicative of a research faculty on the move and changing their tactics and approach to grantsmanship. The Grants and Contracts teams were proud to play a small role in the groundbreaking year in research.

Huron Grants and Agreements Implementation: The entire Grants and Contracts Administration unit, both pre-award and post-award, have been working on the implementation process for the Huron GRAMS Grants and Agreements software. The teams are excited to implement the module, which will provide a more organization-wide process integration between the various Huron Modules and PeopleSoft within the division.

With the implementation of Huron, the post-award work processes are being updated as the team takes on more of the award process in Huron, which has traditionally been performed by pre-award.

Staffing Changes: This was a year of great change for Grants and Contracts Administration. The pre-award team continued to evolve. Several pre-award grant and contract vacancies were filled. Due to the increased volume of proposal submissions, there was a greater need for a more experienced team. Two additional positions were upgraded from pre-award specialist positions to pre-award analyst positions. This will add more experienced individuals to the team who can mentor newer pre-award team members, along with the ability to review proposal submissions. The team now has two senior analysts, two analysts and two specialists.

Successfully adapting to COVID-19, the pre-award team continued to demonstrate the effectiveness of working remotely. All staff are trained in-person and once fully operational, team members choose the work arrangements that works most effectively for them. FY 2021 saw another increase in proposal submissions, while still providing the best customer service to faculty members.

New Hires: The post-award team also filled its vacancies, including a senior accounting analyst and two analyst positions. In addition, the vacant cost accountant position also was filled.

Isaac Collins — Financial Analyst: Collins was added to the post-award team in the financial analyst role. He leads the implementation of a cost-sharing automation, the preparation of the F&A proposals, as well as the implementation of the Huron GRAMS effort reporting system. He also oversees the service center rate calculation process.

Holly Wang — Senior Accounting Analyst: Wang works on automating the annual reporting process alongside the director of research computing services. The pair have collaborated to automate the amount and type of research information required by the National Science Foundation annual Higher Education Research and Development (HERD) report. Wang also has assumed an approver role in regards to internal and external transactions.

Patrick Gautraud — Senior Accounting Analyst: Gautraud came to the Grants and Contracts Administration team from the University Budget Office. With his familiarity of PeopleSoft, Gautraud was able to quickly adapt to the unit's processes and was promoted to his current position, where he manages the state and federal flow through awards.

Nermin Zachary — Accounting Analyst: Zachary has a background in project management from another institution of higher education. She manages private awards, which include for-profit and non-profit organizations.

Gleb Filatov — Accounting Analyst: Filatov, a UNT alum, manages National Institutes of Health and National Science Foundation awards.

Cost Sharing Automation: The division is partnering with Financial Systems Support and the University Budget Office to automate the cost sharing process by incorporating the cost sharing budget and expenditures in the PeopleSoft Grants module. Grants and Contracts Administration is currently piloting one of its sponsored projects.

PeopleSoft Changes: The university has a two-phase implementation of PeopleSoft capabilities. Grants and Contracts Administration is currently implementing Fluid, which allows for the use of tiles as navigational tools. In FY 2022, the unit will implement Agile, which will allow for PeopleSoft screens to be redesigned to make them more effective and user-friendly.

Content Updates: The suite of research administration policies was updated in FY 2020. Two research policies will be updated in FY 2022, including a much-needed update to the travel policy.

Service Centers: Grants and Contracts Administration worked with several new service centers in FY 2021 and assisted them in the calculation of rates. Reviews also were done on calculation of rates of larger service centers.

PRE-AWARD



Emiley Locey
Director of Pre-Award

Emiley Locey serves as the director of pre-award for the Grants and Contracts Administration team. During her first year as director, proposal submissions increased from 610 in FY 2020 to 621 in FY 2021. In addition, the pre-award team was an integral part of the Huron GRAMS implementation efforts and led the way for the UNT customization. The team developed resource training guides and have plans to conduct a series of virtual training sessions for faculty once the implementation is finalized.

Locey is responsible for proposal submissions for the following areas: Department of Materials Science and Engineering, University Libraries, College of Music, Mayborn School of Journalism, College of Liberal Arts and Social Sciences and UNT administration units, including the Office of the Provost, Division of Student Affairs, Division of Enrollment and Admissions.

She manages two senior grants and contracts analysts and two grants and contracts specialists. The team has two open positions that they are actively looking to fill.

Ami Schackel — Senior Grants and Contracts Analyst: Schackel is responsible for proposal submissions for the following areas: Department of Electrical Engineering, Department of Computer Science and Engineering, Department of Linguistics, College of Merchandising, Hospitality and Tourism, G. Brint Ryan College of Business and College of Visual Arts and Design.

Amanda Thomas — Senior Grants and Contracts Analyst: Thomas is responsible for proposal submissions for the following areas: Department of Mathematics, Department of Physics, Department of Biological Sciences, Department of Learning Technologies all four Institutes of Research Excellence.

Bridget Ford — Grants and Contracts Specialist: Ford is responsible for proposal submissions for the following areas: Department of Biomedical Engineering and Department of Mechanical Engineering.

Sheila Yingwangkay — Grants and Contracts Specialist: Yingwangkay is responsible for proposal submissions for the following areas: College of Education and College of Health and Public Service.

RESEARCH COMMERCIAL AGREEMENTS



Michael Rondelli

Associate Vice President
for Research Commercial Agreements

This past year, FY 2021, continued the successes from FY 2020 with high levels of customer service, fast and professional contracting for our faculty researchers, and explosive growth in the number of licenses. The Research Commercial Agreements (RCA) unit's radical change in FY 2020 to mix servicing all research contracts with our technology transfer services continued its success, allowing for growth across all service metrics for the two areas. Our success, again, was the product of our team approach to our work. With only 4.5 full-time employees, we created 772 contracts including a record-setting 35 technology transfer licenses, all while serving our campus and industrial collaborators during the highly chaotic pandemic.

Technology Transfer: Technology transfer is the process of commercializing intellectual property developed by UNT faculty and staff. Although common across large universities for decades, UNT formed its unit in December 2015. The field of technology transfer has many data points to allow different universities to compare and contrast their efforts, allowing each to set reasonable performance goals. According to the Association of University Technology Managers – the industry association for technology transfer – universities should expect three disclosures of new intellectual property for every \$10 million in federal research funding and one license for every \$10 million in research funding. In FY 2021, UNT earned 45 disclosures and 35 licenses, far exceeding industry expectations by over 350% and 1000%, respectively. This performance far exceeds comparable universities and demonstrates how valuable UNT’s applied research is to the global community.

UNT manages technology transfer as a portfolio, similar to an investment portfolio. Just like investments, not all will pay out, and not all are part of the portfolio to have huge successes. Research and Commercial Agreements manages the portfolio in order to include both large, highly risky projects that could produce multi-million dollar returns and less risky, more stable licenses that continue to add some value while also continuing to meet the university’s mission of gaining use of UNT’s applied research. As such, the university is engaged with all faculty, not driven on just the short-term financial success, but also the long-term impact on communities.

Research Contracting: After taking over research contracting in FY 2020, this past year was the first full year with this function. Of the 772 contracts created, the team executed 662 contracts, allowing faculty, graduate students and the sponsors to all gain the value from those research projects being completed by UNT. These contracts brought in \$19.6 million, having a huge impact on the research effectiveness of UNT. As Research Contracting continues to operate, more and more faculty customers have mentioned how much they appreciate our transparency, so they know where their contracts are in the process. Also, the team has continued to turn contracts around faster than many would expect from a university. This unit generally responds within one business day after receiving a new contract. This includes edits or asking the faculty or sponsor to schedule time to discuss possible contractual solutions. This success comes from the team who have established an internal process that triages all contracts as soon as they come in, weighing the urgency and difficulty and providing maximal productivity across the unit. This true triage approach means that simple, easy requests like a material transfer or non-disclosure agreement are turned around so quickly that the faculty

have no time wasted waiting for contract review. At the same time, the more complex and difficult language has been added to a large database so the unit has easy and fast access to find solution language that has proven successful with past contracts.

RESEARCH INTEGRITY AND COMPLIANCE



Jamie Peno

Assistant Vice President
for Research Integrity and Compliance

Over the past year, the Research Integrity and Compliance team has been busy making substantial and innovative additions to compliance programs to ensure transparency, accessibility, timeliness, collaboration and consistency in research compliance operations.

Addition of Team Members: The Research Integrity and Compliance team began 2021 with six members and have now onboarded two new employees. The two new roles in the unit were to give the team a dedicated analyst for the conflict of interest program as well as a dedicated administrative coordinator in support of continued responsiveness to campus needs and to allow analyst staff more time to perform expedient reviews and processing of submissions.

Institutional Review Board (IRB), Institutional Animal Care and Use Committee (IACUC) and Conflict of Interest (COI) Programs: The team continued process improvement efforts for all programs throughout the year and started a monthly newsletter providing key communications and transparent updates for the UNT research community.

The IRB team created and updated resources for researchers to improve consistency of submissions and turn-around times. The team maintained a throughput of 8.4 days processing 952 submissions in FY 2021, which included 539 initial protocols, 29 renewal protocols and 337 modifications over the past year.

The IACUC team made the change from a paper-based system where submissions were made through email to the Huron GRAMS system. This process began in the beginning of 2021 and was made available to researchers for use in time for the Fall semester. This system integrates training documentation into the submission and will

integrate further with the coming implementations for Grants, Conflict of Interest (COI) and Safety. The IACUC program managed animal research conducted in UNT's vivarium, performed Post Approval Monitoring (PAM) and semi-annual inspections for all animal labs and processed 96 submissions including 32 new protocols, 21 renewals and 37 modifications in FY 2021.

The team also made fundamental changes to the process workflow for the COI programs to improve end-user support. Through increased training and communication efforts made throughout the year and the use of eForms and the RedCap platform to automate their workflow, they successfully reduced administrative burden on faculty. The COI program processed 456 conflict of interest disclosures.

International Affiliations and Visiting Scholars: Further process improvements and guidance documents were provided online, including a standard operating procedure outlining compliance concerns and obligations for visiting scholars. Research Integrity and Compliance processed more than 829 disclosure agreements in 2021.

Responsible Conduct of Research (RCR) Training: The Responsible Conduct of Research (RCR) training, with the Toulouse Graduate School®, ensured that monthly trainings were provided to faculty, students and staff. A comprehensive program schedule was provided to the UNT research community, and resources were made available throughout the year online. Efforts are currently being made to also include RCR training opportunities through the UNT Bridge.

RESEARCH COMPUTING SERVICES



Julian Quintero

Director of Research
Computing Services

Julian Quintero was hired in March of 2021 to fill the vacant position that managed application support. Following his hire, the division announced that it would absorb the transition of High-Performance Computing (HPC) services and migration of existing research projects from the UNT Talon3 system to the University of Texas at Austin Texas Advanced Computing Center (TACC). HPC services was restructured to become the Research Computing Services unit to align with the

institutional goal of expanding the research enterprise and provide better resources for computational research.

With the restructuring of HPC, Quintero's role was expanded to lead the Research Computing Services team. The three members from the University Information Technology team were absorbed by the Research Computing Services unit, including Richard Harrington, Ph.D., Research Scientist III, Yuguang Ma, Ph.D., Research Scientist II, and Bailu Zhang, Graduate Research Assistant.

The partnership with TACC will enable Research Computing Services to eliminate all hardware management aspects and focus entirely on supporting PIs with their research needs. It also ensures that UNT researchers have access to the most modern computational resources available for research.

In addition to the current team members of Research Computing Services, by the end of 2021, a new Research Scientist position also will be added. The new position will focus primarily on creating a bioinformatics core service to support the growing needs of UNT's BioDiscovery Institute. Aside from this primary focus, the new research scientist position also will provide consulting services for advanced computational methods in various fields of life sciences.

RESEARCH AND DEVELOPMENT



Naomi Wood

Assistant Director
for Research Development

To continue efforts to provide excellent support and training for faculty and staff, the Research Development unit continued the search for new proposal managers and research training opportunities for faculty in FY 2021.

New Research Development Professionals: The College of Health and Public Service and the College of Information, along with the remainder of our Research Institutes of Excellence — BioDiscovery (BDI) as well as

Advanced Manufacturing and Materials Processes (AMMPI) — partnered with the Division of Research and Innovation in hiring proposal managers. These positions complement the pre-award central office support staff by offering earlier and

additional services such as: grant matchmaking/prospecting, identifying potential collaborators, creating proposal timelines, scheduling regular proposal kickoff and planning meetings and editing/polishing the proposal package prior to submission. All four searches were successful, and all hires began in September. There are now seven full-time proposal managers on campus. The Research Development unit is staffed with the associate vice president of research as the lead, an assistant director and one graduate student proposal editor.

Grantsmanship Training: Distinguished grantsmanship training was provided by the AtKisson Group and continues to be one of our most robust and sought-after training programs. Two tailored workshops were delivered this year, one geared toward STEM grantmaking agencies and one for social sciences, humanities and arts funding agencies. The workshops were held in December 2020 and April 2021. Two-hundred faculty registered for the two grantsmanship workshops. Research Development covered all the costs associated with the delivery and materials. Two additional faculty grantsmanship trainings are scheduled for December 2021 and April 2022 and will remain virtual along with all the trainings for next year. In addition to the faculty trainings, grantsmanship training for postdoctoral and graduate students was held in September 2021.

BREAKS Knowledge Series: All UNT researchers were invited to participate in a well-attended virtual research education series held the first and third Thursday of the month. Each session was led by a topic expert in the research field. From September to May, there were a total of 24 meetings with more than 500 registered attendees.

NSF CAREER Workshops: An NSF CAREER workshop was hosted by Research Development in April where 36 early investigator faculty attended. Eight faculty submitted NSF CAREER proposals in July 2021. Award notices for the last submission cycle were sent to three faculty researchers, two of which had submitted before. These awards totaled \$1.45 million for NSF CAREER, another great year for UNT.

NSF Resubmission Series - Three-week Workshop on Proposal Resubmissions: In May, faculty who had previously submitted an NSF CAREER application but were not awarded were invited to attend a three-week mentorship series to revise and resubmit their applications. Five faculty attended these sessions in which faculty mentors advised the attendees on panel reviews, broader impacts and their education plans. Four out of the five attendees resubmitted their NSF CAREER proposals in July.

Limited Submissions Competitions: When a sponsor limits the number of applications for which an institution can apply, there must be an internal competition to select the applicants to move forward. A total of six competitions were run through UNT's Limited Submissions Competitions program, in which a faculty peer committee reviewed the competitive proposal applications. This year, there were a total of 21 applicants across six competitions. Out of the 21 applicants, 14 were selected to move forward with the full application to the sponsor.

Research Seed Grants: Every year, the Division of Research and Innovation provides funding to support scholarly and creative activities. The intent of research seed grants (RSGs) is to enable research that seeds funding from extramural sponsored programs. RSGs are provided to PI faculty members that hold the academic ranks of tenure-track assistant professors or tenured associate/full professors and are employed on a full-time basis in a permanent position. In FY 2021, the division received 16 applications and awarded funding to 11 faculty at UNT, totaling \$79,380.

RESEARCH COMMUNICATIONS AND PROJECT MANAGEMENT

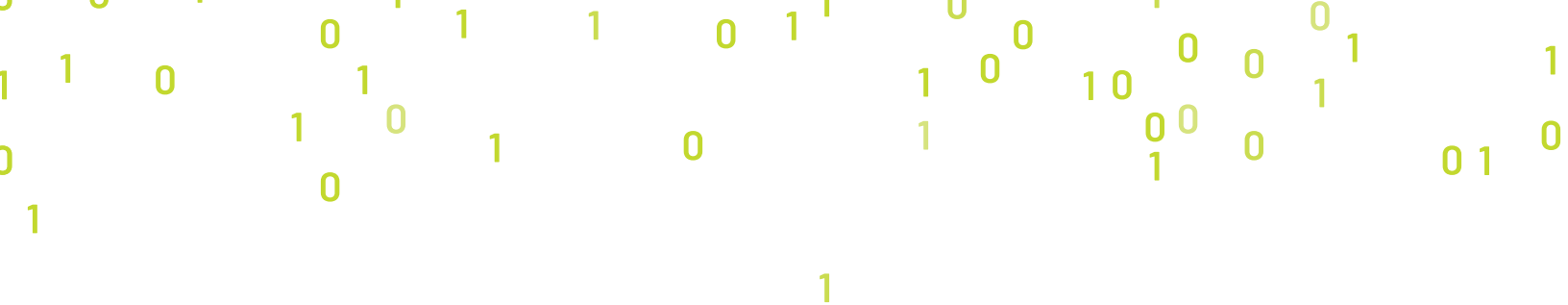


Lacy Fenn

Assistant Director for Research Communications and Project Management

In response to the division's goal of improving all internal and external research communications, event planning and project management, Lacy Fenn was hired in June 2021 as the assistant director for research communications and project management. As part of the Research Development team, she is responsible for the planning, development and implementation of event management, marketing and communications for the division.

Liaison with Campus Communicators: Fenn established a role as a liaison for the division between college and institute communicators, as well as with the University Brand Strategy and Communication team. She is working to implement monthly meetings with all college and institute communicators to produce content for a division newsletter.



Communications: Fenn planned, developed and executed research communications for the division by working with division leadership on accuracy and timing and works closely with and pitches story ideas to the University Brand Strategy and Communication team. She develops comprehensive marketing materials for all division programs, events and projects. She is developing and maintaining effective working relationships with both internal and external stakeholders to accomplish the goals of the division.

Special Events: Serving as a team lead in the coordinating, planning and management of events, Fenn is responsible for planning, development and implementation of event management, marketing and communications for the division.

Project Management: Coordinating with senior leadership staff, Fenn as the team lead, executes project management, marketing and communications for the division.

Social Media: Fenn plans, develops and executes all communications for the division through a variety of media sources to promote accomplishments, services offered, events, trainings and programs. She also is responsible for the management and maintenance of the Division of Research and Innovation website and social media content for the division. She has developed a social media strategy incorporating LinkedIn, Twitter, Facebook and TikTok that meets aligns with the UNT social media strategies.

Website Maintenance: Fenn assumed content updates and maintenance of the *research.unt.edu* website and works closely with University Brand Strategy and Communication liaison to make timely updates. She also develops new content for important updates, including the Huron GRAMS implementation.

RESEARCH CENTERS

Center for Integrated Intelligent Mobility Systems (CIIMS) — The university is encouraging integrated, intelligent mobility systems such as connected and autonomous vehicle research, spanning several disciplines including engineering, business, science, information, and health and public service. Researchers and students are working collaboratively on the complexities inherent in the field, including the technology itself, the data collection that helps drive its development and planning, and the policy and business practices necessary to support it.

Center for Racial and Ethnic Equity in Health and Society (CREEHS) — CREEHS seeks to increase the quality of life for all Texans and to foster an environment for economic growth and innovation by narrowing longstanding racial and ethnic gaps in health care. Grounded in an understanding of the social determinants of health, CREEHS will redress inequity in the conditions in which people in Texas, live, work, learn and interact socially. The center seeks to investigate health quality and related systems by examining the economic, social and environmental factors that have contributed to the state’s current health crisis. CREEHS is committed to seeking solutions to stimulate movement toward health equity.

INSTITUTES OF RESEARCH EXCELLENCE



Advanced Environmental Research Institute — FY 2021 was an exciting year for the Advanced Environmental Research Institute (AERI). Amie Lund assumed the director role after the previous director. Aaron Roberts, stepped down to become the associate vice-president of research. AERI membership also increased, including faculty from the College of Health and Public Service, College of Education and College of Science, allowing for enhanced interdisciplinary team proposal submissions focused on

environmental research and education. During FY 2021, AERI proposal manager Kelly Basinger assisted in submitting 50 grant proposals with a total value of more than \$8 million. AERI researchers were supported by various agencies, including National Science Foundation, National Institutes of Health, National Oceanic and Atmospheric Administration, the State of Texas and private industry and foundations. Newly funded projects in AERI involved topics ranging from the environmental physiology of hypoxia to citizen science and air pollution to biocultural research in Chile.



Advanced Materials and Manufacturing Processes Institute — The Advanced Materials and Manufacturing Processes Institute (AMMPI) reorganized its membership by adding an associate director, Wonbong Choi from Department of Materials Science and Engineering, an original member from 2016. AMMPI also reorganized and formed its leadership teams to include a both a six-member leadership team along with a 14-member team. AMMPI members brought in more than \$6.5 million in research funding FY 2021, highlighted

by a \$5.5 million research grant from the U.S. Army Research Laboratory with five AMMPI members (Rajiv Mishra, Raj Banerjee, Tom Scharf, Srinivasan Srivilliputhur and

Marcus Young), a \$500,000 CAREER National Science Foundation grant for Diana Berman and a \$498,000 National Science Foundation grant for Francis D'Souza.



BioDiscovery Institute — Research in the BioDiscovery Institute (BDI) focused on the utilization of living systems for the biosynthesis of many useful products as sustainable alternatives to “fossil-derived” sources. Two new faculty members were recruited to join BDI last year with expertise in computational science and synthetic chemistry. In FY 2021, BDI projects were supported by 23 grants and contracts that combined for \$3.1 million in research expenditures. The interdisciplinary research activities led to more than 60

scholarly publications and eight patent applications. In the summer of 2021, Ana Alonso was appointed associate director of BDI to assist director Kent Chapman in leading the ongoing efforts of the institute. A new manager for the UNT Genomics Center was recruited, and core facilities in both metabolomics and genomics that were developed within BDI were transitioned to broad oversight by the Division of Research and Innovation. In addition, two new administrative staff members were added to the BDI team to support the research activities of the institute.



Jim McNatt Institute for Logistics Research (JMI) — The Jim McNatt Institute for Logistics Research (JMI) expanded to more than 40 researchers from across six colleges during the past year. Researchers submitted 42 proposals requesting \$29,011,617, 32 proposals to federal sources and 10 to non-federal. As a result of these proposal submissions, \$1,630,457 was awarded. The institute jointly funded the Center for Integrated Intelligent Mobility Systems (CIIMS) with the Dean of the College of Engineering to advance

the study of unmanned aerial vehicles (UAVs), autonomous ground vehicles (AVs), and UAV to AV communications. JMI continuously offers seed grants to support the formation of multidisciplinary teams pursuing externally funded, NRUF eligible grant opportunities. Future plans include pursuit of a U.S. Department of Transportation University Transportation Center and collaborative research between NASA and the Choctaw Nation of Oklahoma in the areas of UAVs, AVs and increasing supply chain resiliency. In addition, the institute continues to maintain a research office in Austin manned by two research professors conducting research in support of the Texas Department of Transportation.

RESEARCH CORE FACILITIES

UNT's core research facilities, available for researchers across campus on a fee-for-service basis, have expanded this year. The facilities are under the daily management of Aaron Roberts, associate vice president of research and innovation. The move is designed to increase access to facilities for all UNT researchers and supports future development of cross-college and cross-departmental collaboration.

Current core facilities:

- Materials Research Facility, offering high-end materials assessment instruments
- Center for Agile and Adaptive Additive Manufacturing, a premier research and development and educational center in the field
- High-Performance Computing services, through the Texas Advanced Computing Center in partnership with the University of Texas at Austin
- Vivarium (a new one is under consideration at Discovery Park to replace the current facility)

Core facilities being added:

- BioAnalytical Facility, featuring state-of-the-art mass spectrometers with advanced capabilities for separating and quantifying small molecules and macromolecules
- Genomics Center, providing RNA and DNA sequence analysis using the latest technology
- Greenhouse Support Services Facility, including three major greenhouses: one on the roof of the Life Sciences Complex, one outside the Science Research Building and another at Discovery Park





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“What our researchers accomplished this year is nothing short of astounding. Their activities in research and creative activity, beyond just the numbers, are yet more examples of their dedication to excellence. These research and sponsored project investments by federal, state and private foundations indicate confidence in UNT’s talent and mission, and bear witness to our university’s dedication to the advancement of education, knowledge and the well-being of our community and state.”

— Mark McLellan, Vice President for Research and Innovation

Learn more at research.unt.edu.