



THE UNIVERSITY OF NORTH CAROLINA SYSTEM

UNIVERSITY OF NORTH CAROLINA
RESEARCH AND SPONSORED PROGRAMS
REPORT TO THE PRESIDENT
Fiscal Year 2019

November 23, 2020

University of North Carolina System
Chapel Hill, North Carolina

Executive Summary

The annual Report to the President provides a snapshot of sponsored program activity across the University of North Carolina System. For fiscal year 2019 (FY2019), the number of proposals submitted for funding and the amount funded from grants and contracts external to each institution was higher than in FY2018. There was also an increase in commercial activity, spread across more institutions than in years past.

Introduction

The University of North Carolina System is a public, multi-campus university dedicated to the service of North Carolina and its people. It encompasses the 17 diverse constituent institutions and other educational, research, and public service organizations. Each shares in the overall mission of the University. That mission is to discover, create, transmit, and apply knowledge to address the needs of individuals and society. This mission is accomplished through instruction, which communicates the knowledge and values and imparts the skills necessary for individuals to lead responsible, productive, and personally satisfying lives; through research, scholarship, and creative activities, which advance knowledge and enhance the educational process; and through public service, which contributes to the solution of societal problems and enriches the quality of life in the state. In the fulfillment of this mission, the University shall seek an efficient use of available resources to ensure the highest quality in its service to the citizens of the state.

While instruction is the primary responsibility of each of the constituent institutions, research, coupled with economic development, is essential to the UNC System's work on behalf of North Carolina. Research and public service enhance teaching and learning, but their relative importance varies, depending on the constituent institutions' overall missions. In addition to developing new discoveries and innovations, UNC System engagement in research and its related activities supports student success by providing a platform for training graduate students; attracts external funding; contributes to North Carolina's business climate and reputation; and enhances recruitment and retention of talented faculty and students.

Fiscal Year 2019 Sponsored Program Funding for UNC

UNC System institutions generated a total of \$1,679,803,796 in sponsored programs funding in FY2019. When adjusted for inter-institutional awards distributed among UNC System institutions totaling \$28,365,108, the adjusted total for FY2019 was \$1,651,438,688. Table 1 contains more detailed sponsored program funding data for each UNC System institution FY2019.

Table 1. FY2019 Sponsored Program Activity¹⁻³

	Total Proposals Dollars	Total Awards Dollars Includes inter-institutional awards)	Inter-institutional Award Dollars	Adjusted Total Award Dollars (minus inter-institutional awards)
Doctoral Granting Institutions				
ECU	\$266,930,452	\$72,586,163	\$3,823,470	\$68,762,693
NCA&T	\$149,048,001	\$64,377,910	\$2,531,791	\$61,846,119
NCSU	\$1,316,683,825	\$372,993,237	\$5,154,465	\$367,838,772
UNCCH	\$4,078,082,824	\$941,167,545	\$5,184,624	\$935,982,920
UNCC	\$286,893,777	\$51,008,661	\$3,221,895	\$47,786,766
UNCG	\$172,710,862	\$39,662,499	\$754,977	\$38,907,522
UNCW	\$65,068,589	\$12,024,748	\$1,012,831	\$11,011,918
Masters Institutions				
ASU	\$55,894,265	\$14,805,053	\$784,976	\$14,020,077
ECSU	\$17,135,464	\$8,644,330	\$174,027	\$8,470,303
FSU	\$20,951,011	\$17,443,527	\$589,092	\$16,854,435
NCCU	\$86,252,097	\$33,177,922	\$106,121	\$33,071,801
UNCP	\$17,266,403	\$5,729,418	\$251,152	\$5,478,266
WCU	\$12,931,735	\$5,569,854	\$500,380	\$5,069,474
WSSU	\$53,781,816	\$14,139,117	\$514,948	\$13,624,169
Baccalaureate Institutions				
UNCA	\$12,229,334	\$8,032,965	\$3,720,360	\$4,312,605
Special Focus Institutions				
UNCSA	\$314,000	\$262,000		\$262,000
NCSSM	\$7,638,722	\$5,638,860		\$5,638,860
System Office				
UNC	\$12,266,912	\$12,539,987	\$40,000	\$12,499,987
Totals				
	\$6,632,080,087	\$1,679,803,795	\$28,365,108	\$1,651,438,688

¹UNC fiscal year runs July 1 through June 30.

²Amounts rounded to nearest dollar.

³Not all current fiscal year submissions are funded in the same fiscal year. Additionally, FY Total Proposed Dollars includes some non-competing renewal proposals (primarily associated with NIH funding).

Trends in Sponsored Program Activity (Funding, Proposal Submission, Awards)

From FY1998 to FY2019, UNC System-sponsored programs activity has increased significantly. This sustained growth in acquiring federal funding allows UNC System institutions to make targeted use of facilities and administrative (F&A) receipts to help cover the costs of supporting the research enterprise. UNC System institutions utilize F&A receipts to maintain and upgrade research infrastructure; to invest in new research through matching funds to provide seed grants and “start-up” packages for new faculty; to support library holdings; to provide cost share funding needed to attract new research projects and jobs to the state; and to ensure compliance with federal and other regulations.

Proposal Submissions and Quality

An average of 12.042 proposals have been submitted over the past five fiscal years. The number of proposals submitted for FY2019 met that five-year average with 12,075 and exceeded the 11,973 submitted in FY2018. In FY2019, UNC System investigators requested \$6.6B in submitted proposals.

Fiscal Year 2019 Sponsors

Approximately two-thirds (67.3%) of the UNC System’s research portfolio is federally funded, as outlined in Table 2.

Table 2. FY2019 Federal Government Sponsored Awards

United States Federal Government	Dollar Award Amount	Percent of Total Federal Awards
National Aeronautics and Space Administration (NASA)	\$6,468,265	0.6%
National Foundation for the Arts and Humanities (NFAH)	\$693,400	<0.1%
National Science Foundation (NSF)	\$153,340,206	13.8%
US Small Business Administration (SBA)	\$3,374,323	0.3%
US Department of Agriculture (USDA)	\$60,978,801	5.5%
Department of Commerce (DOC)	\$12,411,676	1.1%
Department of Defense (DOD)	\$55,932,844	5.0%
US Department of Education (DOED)	\$104,705,044	9.4%
Department of Energy (DOE)	\$39,404,284	3.5%
Department of Health and Human Services (DHHS)	\$55,538,631	5.0%
National Institutes of Health (NIH)	\$537,943,881	48.4%
Department of Homeland Security (DHS)	\$6,118,598	0.6%
Department of Housing and Urban Development (HUD)	\$259,623	<0.1%
US Department of the Interior (DOI)	\$4,251,310	0.4%
US Department of Justice (DOJ)	\$481,426	<0.1%
Department of Labor (DOL)	\$307,000	<0.1%
US Department of State (DOS)	\$1,498,957	0.1%
US Department of Transportation (DOT)	\$7,718,941	0.7%
Department of Veterans Affairs (VA)	\$845,250	<0.1%
United States Environmental Protection Agency (EPA)	\$9,090,457	0.8%
Agency for International Development (USAID)	\$32,709,015	3%
Corporation for National and Community Service (CNCS)	\$1,142,571	0.1%
All Other Federal Agencies	\$3,320,959	0.3%
Confidential	\$12,415,384	1.1%
United States Federal Government Total	\$1,110,950,847	100%

The distribution of other significant sources of sponsored programs funding is outlined in Table 3. Educational and research organizations, business and industry, and the North Carolina State Government provide the greatest amount of award dollars.

Table 3. FY2019 Non-Federal Government Sponsored Awards

Non-Federal Government Award Type	Dollar Award Amount	Dollar Award Amount (Other States)	Dollar Award Amount (Total)	Percent of Total Non-Federal Awards
Non-Profit Organizations	\$32,446,250	\$26,450,522	\$58,896,772	10.4%
Associations	\$2,037,322	\$18,394,729	\$20,432,052	3.6%
Foundations	\$27,970,741	\$62,516,945	\$90,487,686	15.9%
Educational and Research Organizations	\$45,204,900	\$102,235,625	\$147,440,525	25.9%
Business and Industry	\$38,980,202	\$86,523,685	\$125,503,887	22.1%
Individuals	N/A	N/A	N/A	N/A
Local Governments	\$6,728,787	\$89,000	\$6,817,787	1.2%
State Government (NC)	\$116,191,779	\$1,875,447	118067226	20.8%
Federal (non-US)	N/A	\$703,319	\$703,319	0.1%
Other Sponsors	\$247,298	\$177,256	\$424,554	<0.1%
TOTAL NON-FEDERAL GOVERNMENT	\$269,807,278	\$298,966,529	\$568,773,807	100%

Fiscal Year 2019 Commercial Activity

UNC System institutions possess a wide array of existing and emerging strengths in research and related commercial activities. Institutional investments supporting these activities include strategic faculty hiring, sponsored awards, and entrepreneurship programs. In addition, institutions seek to maximize research and commercial activity with existing resources. UNC System institutions with the largest research programs estimate that approximately 10% of their faculty are engaged in research with commercial potential.

The Association of University Technology Managers (AUTM) Annual Licensing Survey is a leading source of information on university commercial activity. A subset of UNC System doctoral granting institutions participates in the annual AUTM survey. The six metrics reported by members to AUTM were requested from all UNC System institutions to create a more robust and timely data set for FY2019.

Table 4 summarizes FY2019 UNC System commercial activity (invention disclosures, U.S. patents issued, licenses or options executed, new start-up companies, and license income). In FY2019, there were a total of 605 invention disclosures, 131 patents issued (one of which was provisional), 257 licenses or options executed, 49 start-ups created, and more than \$13M in license income generated.

Table 4. Commercialization in FY2019

	Invention Disclosures	US Patents Issued	Licenses or Options Executed	Start-ups	License Income
Doctoral Granting Institutions					
ECU	75	3	7	1	\$27,270
NCA&TSU	8	5	0	0	\$18,000
NCSU	296	41	155	21	\$5,600,000
UNCCH	178	55	78	10	\$7,500,000
UNCC	25	19	5	4	\$174,791
UNCG	11	3	4	12	\$12,059
UNCW	7	1	8	1	\$45,000
All other Institutions (ASU/FSU/NCCU)					
	5	4*	0	0	\$0

*Includes 1 provisional

Table 5 provides comparison data for FY2012 through FY2019. Over the FY2012 – FY2019 timeframe, translation of invention disclosures into patents increased significantly. This trend bodes well for increased numbers of patents, licenses/options, start-ups, and license income in future years as researchers become more proficient in translating intellectual property from the laboratory into the economy. It is encouraging that more institutions have established commercial activities on their campus.

Table 5. Trends in Commercialization, FY2012-2019

	Invention Disclosures	US Patents Issued	Licenses or Options Executed	Start-ups	License Income
FY19 Totals	605	131*	257	49	\$13,377,120
FY18 Totals	563	148	275	29	\$12,838,941
FY17 Totals	525	133	275	31	\$9,644,526
FY16 Totals	549	131	232	28	\$8,071,704
FY15 Totals	547	125	228	25	\$8,006,835
FY14 Totals	467	97	212	31	\$15,927,897
FY13 Totals	449	85	197	30	\$10,735,867
FY12 Totals	532	91	149	17	\$8,977,264

*Includes 1 provisional

The University of North Carolina System Office

The UNC System Office supports research through the administration of three strategic research development initiatives. First, the UNC System Research Opportunities Initiative (ROI), funded by the North Carolina General Assembly, promotes innovative and potentially game-changing research projects within the UNC System. Awards are designed to build capacity in the following strategic research areas: pharmacoengineering, advanced manufacturing, energy, data science, marine sciences as well as the military and other security-related issues. ROI awards are typically three years in duration, and

therefore, funds available for new awards depend on continuing commitments. Second, the Inter-institutional Planning Grant (IPG) initiative promotes collaboration between larger and smaller UNC System institutions across disciplinary boundaries. Third, Undergraduate Research Program Award (URPA) provides funding to universities or consortia of universities within the UNC System to support undergraduate research. Undergraduate research provides students with intensive, high impact learning opportunities and supports the University’s teaching mission to pursue multiple approaches to student learning while allowing students and faculty to undertake scholarly activities of the highest intellectual caliber. Awardees for each of the initiatives are chosen through a highly competitive proposal solicitation and review process. The competition is held in the fiscal year prior to the fiscal year of funding (e.g., the competition for FY2019 funding was held in FY2018). Below are summary data for each initiative competition held in FY2018. It should be noted that the demand for award dollar far exceed the amount of award dollars available.

Table 6. Summary of UNC System Office Research Initiatives

Initiative	Pre-proposals (Amount Requested)	Full Proposals (Amount Requested)	Number Funded	Total Awards
ROI	31 (\$68M)	7	2	\$499,742*
IPG I	N/A	13 (\$301,677)	5	\$104,500
IPG II	23 (\$1.9M)	7	4	\$293,685
URPA	N/A	33 (\$201,015)	4	\$75,000

*FY2019 award total limited by continuing project commitments

North Carolina Research Campus

Seven UNC System institution-led research centers at the North Carolina Research Campus (NCRC) share the goal of “empowering human health through nutrition.” The UNC System NCRC centers are significant contributors to the sponsored programs activity. The centers are part of a collaborative community that focuses on the science of safer, more nutritious crops, healthier foods, and precision nutrition. The centers collaborate with other academic and industry partners on and off the NCRC campus. Thus, their impact extends far beyond the laboratory to reach families, farmers, people with chronic diseases, soldiers, athletes, food companies, undergraduate and graduate students, scientists, doctors, and nutritionists around the globe.

The seven UNC System research centers at NCRC include:

- Human Performance Laboratory: Appalachian State University
- Nutrition Research Program: North Carolina Central University
- Plants for Human Health Institute: North Carolina State University
- Center for Excellence in Post-Harvest Technologies: North Carolina A&T State University
- Nutrition Research Institute: University of North Carolina at Chapel Hill
- Bioinformatics Research Services: University of North Carolina Charlotte
- Center for Translational Biomedical Research: University of North Carolina at Greensboro

These research centers generated more than \$21M in sponsored programs funding in FY2019 (see Table 7).

Table 7. UNC System NCRC FY2019 Sponsored Program Funding by institution

Institution	FY 2019 Total Award Dollars
ASU	\$1,093,409
NCA&T	\$3,600,058
NCCU	\$208,106
NCSU	\$6,807,456
UNCC	\$624,545
UNCCH	\$7,922,952
UNCG	\$828,631
Grand Total	\$21,085,157