

**NC STATE**

**External Affairs,  
Partnerships and  
Economic Development**

**Annual Report**

**2021**

**2022**



# Contents

---

Overview	3
Partnerships	5
Economic Development	16
Small Business and Technology Development Center (SBTDC)	20
State/Local Relations	24
Federal Affairs	30

# Overview

---

NC State's Office of External Affairs, Partnerships and Economic Development (EAPED) works to position the university as one of the top public research universities in the state of North Carolina and the United States. EAPED's strategic focus towards building and managing relationships and economic partnerships enhances local and global engagement, resulting in new jobs and investment for the state of North Carolina. EAPED works with a variety of internal and external constituencies to advocate for NC State in achieving its three-tiered mission of teaching, research, and extension and engagement. The Office aligns five areas into one organizational structure: Partnerships, Economic Development, the Small Business and Technology Development Center (SBTDC), State Relations and Federal Affairs.

## Leadership Team

---

**Kevin Howell** | Vice Chancellor, EAPED

**Julie Smith** | Assistant Vice Chancellor, EAPED

**Mark Schmidt** | Associate Vice Chancellor, Partnerships

**Leah Burton** | Director, Partnerships

**Tom White** | Director, Economic Development

**Byron Hicks** | Assistant Vice Chancellor  
and State Director, SBTDC

**Matt Peterson** | Director, Federal Affairs

EAPED builds and maintains strong collaborative partnerships with industry, government and nonprofit organizations, including those on Centennial Campus; the Economic Development Partnership of North Carolina; NC Department of Commerce; UNC System Office and its constituent institutions; the North Carolina Community College System; United States Congress; North Carolina General Assembly; Office of the Governor; Council of State; Wake County (and other counties throughout North Carolina); City of Raleigh; and NC State faculty, staff and students.

## Year in Review

---



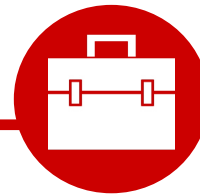
**124**

Corporate,  
Government and  
Nonprofit  
Partners

**\$22M**

Industry  
Sponsored  
Research

*Supported by the  
Partnerships Office*



**\$3.9B**

Capital  
Investment

**12,415**

Jobs

*Created through Economic  
Development partnerships*



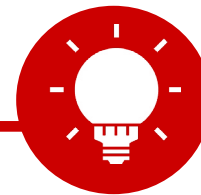
**319**

Businesses  
Started

**66,377**

Counseling  
Hours

*Resulting from SBTDC's small  
business programs*



**\$350M**

Direct  
Appropriations

*State Relations secured  
approx. \$350M in direct  
appropriations to NC State  
(not including salary increases)*

# Partnerships

## Highlights

---



**\$114M**

Industry Funding

*FY18-22*



**2,000+**

Students Hired

As interns by Centennial  
Campus partners  
*FY18-22*



**8**

MRAs Signed

*FY18-22*



**10%**

Increase in  
Industry Sponsored  
Research

*FY22*



**6,263**

Alumni Employed

By all industry partners  
*FY22*



**45%**

Improvement in  
Prospect-Partner  
Conversion Rate

*FY22*

This year the Office of Partnerships supported \$22 million in industry sponsored research (a 10% increase over the previous year) and \$1.5 million in directed gift funding. The latest data from the National Science Foundation ranks NC State 7th nationally for industry-funded research, among public universities without a medical school. Industry research expenditures make up about 10% of NC State's total \$547M portfolio. In comparison, Georgia Tech's industry expenditures make up 6% of their research totals. The Office of Partnerships continues to work closely with the Office of Research and Innovation to identify opportunities to strategically increase this segment of NC State's portfolio.

The increase in industry funding is partially attributed to improved prospect-partner conversions. In FY21-22 the Office of Partnerships managed 49 prospects and brought in 14 new partners – resulting in a 29% conversion rate. Last year, our conversion rate was 20%. This is a 45% improvement in our conversion rate over the previous year.

The Office also continues to provide unique opportunities for students and faculty. Over the last five years, Centennial Campus partners have hired more than 2,000 NC State students as interns. And, there are currently 6,263 alumni employed across all of our partner companies (2,415 alumni working for Centennial Campus partners and 3,848 employed by partners not on Centennial).

## Partnerships

Category	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Partners	115	121	117	121	124
Prospects	80	39	35	40	49
New partners	14	14	11	8	14
Sponsored research facilitated by the Partnerships Office	\$18 million	\$23 million	\$24 million	\$20 million	\$22 million
Unrestricted gifts facilitated by the Partnerships Office	\$1.6 million	\$1.2 million	\$1.2 million	\$1.7 million	\$1.5 million
Total partner employees on Centennial Campus	4,808	4,343	4,150	4,254	4,245

The majority of the 120 partnerships we manage result in new products entering the marketplace. On average, each year the university receives 275 invention disclosures, files 90 new patents and executes 150 licenses/options. The Office of Partnerships works very closely with the Office of Research Commercialization and our corporate partners to ensure each side is aligned towards bringing research discoveries to the marketplace, taking into account practical business realities. This year NC State ranked second among all U.S. public universities in research technology transfer and commercialization.

Sponsored research (top five)	
1. USDA	\$6.7 million
2. Laboratory for Analytic Sciences (LAS)	\$4.8 million
3. Eastman Chemical	\$1.9 million
4. NC Wildlife Resources Commission	\$1.8 million
5. Cisco	\$1.2 million
<b>TOTAL FY22 sponsored research: \$22 million</b>	

Unrestricted gifts (top five)	
1. Cisco	\$289,726
2. Eaton	\$269,960
3. BASF	\$176,593
4. Eastman Chemical	\$131,520
5. VF Corporation	\$110,000
<b>TOTAL FY22 unrestricted gifts: \$1.5 million</b>	

Below are a few of the interdisciplinary funding opportunities managed by the Office.

### USDA

USDA invested more than \$6 million in NC State research across the College of Natural Resources, College of Veterinary Medicine and College of Agriculture and Life Sciences. Resources were also slated to create an interdisciplinary doctoral program that focuses on renewable polymer production.

### LAS

LAS issues an annual call for proposals where tailored responses are submitted by NC State researchers, other universities and corporate partners. This year, LAS distributed a total of \$4.8M.

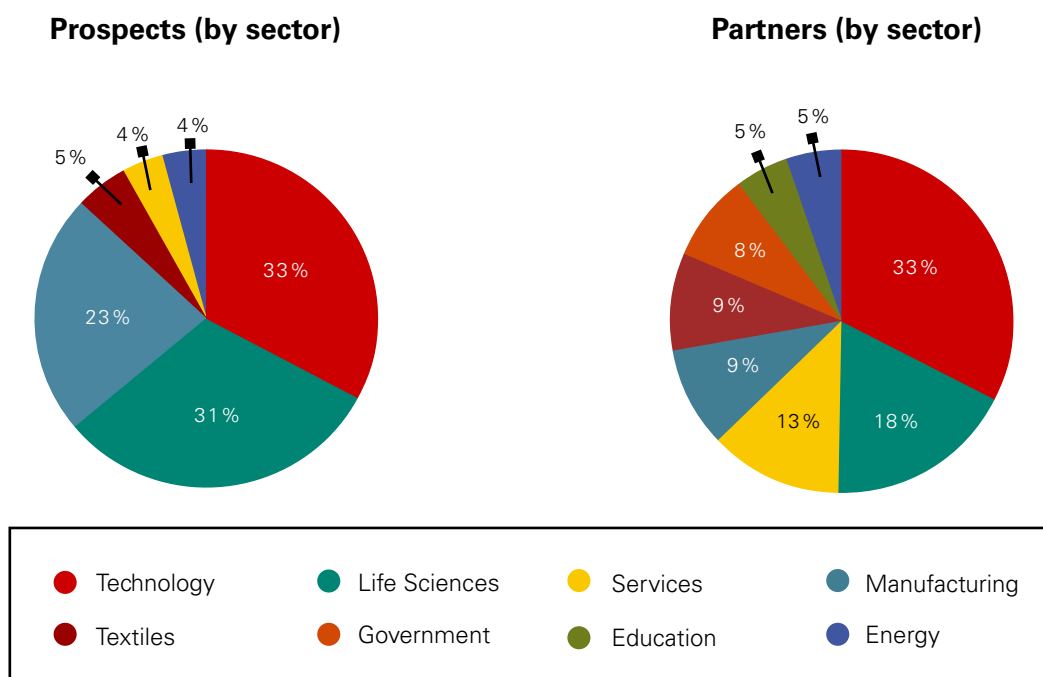
### Eastman Chemical

This year Eastman sponsored \$1.9 million in research projects, as well as testing and services agreements, across disciplines including chemistry, animal science, textile engineering, materials science, mechanical and aerospace engineering, chemical and biomolecular engineering, and forest biomaterials. Eastman also increased their focus on sustainability-related collaborations with NC State. And the company provided gift funding to strengthen its brand on campus, including contributions to the university engagement fund and NC State's Feed the Pack food pantry.

### Cisco

In FY22 Cisco signed a master research agreement with NC State, which was coordinated through the Office of Research and Innovation. The Office of Partnerships manages this relationship with the goal of continued growth. Through Cisco's first open call for proposals, the company identified six projects to fund from the College of Engineering on the topics of machine learning, cloud computing and cybersecurity. These projects total more than \$850,000 with one project receiving an additional \$430,000 in funding.

Consistent with FY20-21, FY21-22 activity was strongest across technology and life sciences sectors. Technology-based companies, mainly focused on data analytics and computer science, continue to represent the largest portion of both prospects and partners.



## Building Long-term Partnerships

The Office of Partnerships works alongside more than [120 partners](#) — ranging from early-stage startups to large enterprises listed on Forbes’ Global 1000 — to make the process of doing business with NC State as easy and effective as possible. This requires our staff to provide the agility, speed and responsiveness industry collaborators expect.

While the data reveals significant contributions in areas like research funding, the impact of the Office of Partnerships is represented by more than quantitative metrics. Below are just a few examples of how we serve as a catalyst for developing effective university-industry partnerships.

### Under Armour

This year the Office of Partnerships led the development of a new strategic partnership with Under Armour. This resulted in the leasing of an innovation center on Centennial Campus. Under Armour also plans to sign a master research agreement in the coming months.



The company is working with NC State to advance innovation in product design and to commercialize breakthroughs in sustainable apparel. Under Armour is primarily working with the Nonwovens Institute to commercialize research and sponsoring senior design projects in the Wilson College of Textiles, as well as conducting thermoregulation and friction testing in order to improve fabric performance and endurance. The company has committed to invest \$1.5 million in research with NC State in FY23 and has plans to more heavily recruit from NC State.

### **Fujifilm Diosynth Biotechnologies**

NC State was a [key driver in recruiting Fujifilm Diosynth Biotechnologies'](#) new \$2 billion R&D and manufacturing facility to Wake County. Building off last year's foundational work to secure this partner, this year the Office of Partnerships worked to strategically grow collaborations. This resulted in increased research collaborations in the areas of bioprocess innovation through BTEC, and a heightened focus on sustainability. With the Raleigh Chamber, NC State and Fujifilm Diosynth also co-launched a Business Sustainability Roundtable – a program to advance North Carolina business sustainability leadership. Credit Suisse, Duke Energy, John Deere, SAS and Wake County join us as founding members in this strategic initiative. Fujifilm Diosynth is also nearing completion on negotiations to sign a master research agreement – with plans to broaden research collaborations with our faculty.

### **Eastman Chemical**

This fall we will celebrate 10 years of the partnership with Eastman. In FY21-22 Eastman invested \$1.9M in research, bringing their total investment to \$19 million, funding 100 projects across 11 academic departments. To strengthen the partnership, we continued process improvements to streamline ease of project submissions and tracking on both the Eastman and NC State sides.

This year Eastman increased their focus on [sustainability-related collaborations with NC State](#) – including sponsoring multiple Senior Design Projects within the College of Design and launching a composting field trial with NC State Waste Reduction and Recycling. They are now exploring the development of a program that brings students to Eastman to learn about the company's sustainability practices in order to prepare future recruits around the importance of these efforts.

### **Novo Nordisk Foundation**

This year the Office of Partnerships became the primary liaison for NC State's partnership with the Novo Nordisk Foundation (NNF). We are building on a strong foundation in which NC State is the lead on two major initiatives, including the \$27 million Accelerated Innovation in Manufacturing Biologics (AIM-Bio) project and the \$30 million Collaborative Crop Resilience Program (CCRP). In order to strategically grow the partnership, the Office of Partnerships has developed an internal task force to align NC State's research strengths with the Novo Nordisk Foundation's 2030

strategy. The internal task force is made up of select NC State research leads engaged with NNF interests. With the Office of Research and Innovation, the Office of Partnerships has initiated an internal call for proposals to identify faculty teams with transformational interdisciplinary research ideas that we may propose to NNF in alignment to their 2030 strategy. The NNF 2030 strategy (released in April 2022) focuses on solving global challenges in three areas – sustainability, health and life science. The strategy identifies several future opportunity areas that align to NC State capabilities – for example, NNF is interested in doing more with NC State on agricultural sustainability with interest in the Science and Technologies for Phosphorus Sustainability (STEPS) Center and PSI.

The Office of Partnerships also developed and strengthened several new partner relationships in FY21-22. Notable new industry relationships, beyond those noted above, include the following.

- **Google** – NC State alumna Kamala Subramaniam is leading Google’s new 1,000-job cloud engineering hub in Durham. We have broad capabilities in all areas important to Google’s growth and Kamala serves on NC State’s Computer Science Advisory Board. The university’s commitment to grow our computer science and engineering graduates by 40% provides a talent pipeline for Google and the state’s growing technology sector.
- **Amazon** – The Workplace Health and Safety (WHS) Human Factors and Ergonomics (HFE) group is engaged with the NC State Ergonomics Center (Industrial and Systems Engineering) about potential research projects recognizing NC State as a partner of choice.
- **Meta / Facebook** – Upon opening a new innovation hub in Durham (300 jobs), the Office of Partnerships is coordinating contact with Meta / Facebook including working to advance a master research agreement.
- **Spin / Ford** – With a unique model of providing an annual research budget (\$200K) to support micromobility research, Spin is in consideration to be the micromobility provider for NC State starting in Fall 2022.
- **Pratt & Whitney** – The Advanced Concepts and Technologies group, along with the Asheville facility, want to establish an advanced manufacturing center of excellence at NC State. The Office of Partnerships is developing this relationship to include talent engagement and a research program strategy.
- **Other opportunities (in development)** – Amgen, Apple, INEOS, USGA and many others.

# Telling Our Story

---

## Connecting industry with faculty

In FY21-22 we continued to enhance our marketing and storytelling strategy. Our Partnership Portal website is a hub for connecting industry partners with researchers, and generating awareness about the benefits of partnering with NC State. This year the portal generated 17,116 views – a 21% increase over the previous year.

**21%**  
Increase in  
Portal Views

We continue to promote new industry opportunities to faculty, using our custom Portal tool. This allows us to increase our reach across disciplines — sharing potential funding opportunities with 150 faculty across 10 colleges. This year we posted 20 opportunities from Amazon, BASF, Cisco, Facebook, Microsoft and Sony, among others. The postings receive a high open rate of 61%.

## Generating leads

**19**  
New  
Leads

Our strengthened Search Engine Optimization (SEO) strategy continued to yield results. We generated 19 leads through organic search in FY21-22. Half of these leads were converted to prospects. Examples include Biocair, Bona and CC Industries. This year 18% of new prospects resulted from digital marketing efforts.

## Promoting partner success stories

Market research shows that promoting existing partner testimonials is the best way to reach new partners. In FY21-22 we developed videos and articles profiling our partnerships with BASF, Delta Air Lines, Eastman and Fujifilm Diosynth, among others. These stories live on our Case Studies page and were promoted on social media, via email and featured on the NC State and Centennial Campus websites.

Continued focus was also given to earned media coverage. We pitched and coordinated a dozen stories in local and national outlets yielding more than 2 million positive impressions.

**2M**  
Media  
Impressions

## Internal communications

Strong internal partnerships are critical to the success of our external partnerships. We worked to increase awareness among colleges and units about resources and assistance provided by the Office of Partnerships. We continued regular meetings with each college dean, and convened our Industry Liaisons Workgroup which is made up of key contacts across NC State's colleges, centers and institutes who interface with our corporate partners. The quarterly meetings are a chance to strengthen strategies to create multidisciplinary engagements.

# Advancing Centennial Campus

---



*March 18, 2022: Belgium-based cybersecurity firm Spotit announced Centennial Campus for its North American headquarters.*

Out of the 120 partnerships managed by the Office of Partnerships, more than half are based on Centennial Campus. We work closely with each corporate, government and nonprofit partner to connect them with university resources to help solve their business challenges.

We also work jointly with the Office of Real Estate to anticipate current and future demand for innovation space and amenities on Centennial. Regular meetings are held between our offices as we work together to shape the strategy for the planned innovation district. Work is underway to market the innovation district's first building, and the Office of Partnerships has been engaged with several large-scale prospects that have expressed interest.

The office also helped recruit industry partners to locate in the Plant Sciences Building, including BASF, Bayer, Novozymes and SAS. And we announced new partners joining campus, including Belgium-based technology firm [Spotit choosing Centennial for its North American headquarters](#). The company is working with faculty and students to bring cybersecurity breakthroughs to market.

### Digital marketing initiatives

Our Centennial Campus website generated 34,200 visitors – a 37% increase over the previous year. The [Lake Raleigh landing page](#), developed to better promote the outdoor and recreation spaces on Centennial, continues as the most popular page on the site, followed by the Visit page (3,901 views) and Live and Work page (3,348 views).

**37%**  
Increase in  
Website Visitors

The [Centennial Campus jobs tool](#) is a digital platform we built that integrates with ePACK and offers additional functionality for our partners to showcase opportunities to NC State students and alumni. This year we promoted 30 opportunities receiving 1,232 views. And our [partner benefits toolkit](#), which highlights the amenities available to Centennial partners, is shared with new and existing partners. This year the toolkit received 1,359 views.

Our team continued to distribute our bi-weekly Centennial Campus newsletter to 1,500 stakeholders, including partner companies, key faculty and staff, and Research Triangle community leaders. We shared relevant content including research breakthroughs, partner profiles and upcoming events. The newsletter performance improved by 33% over the previous year.

### Programming and events

- **Executives Connection:** This quarterly event brings together executives on Centennial Campus to explore topics important to the advancement of university-industry partnerships. In FY21-22 programming included updates from Chancellor Woodson on the university's vision for growing public-private partnerships and the planned innovation district; and a discussion about NC State's new Data Science Academy featuring Executive Director Rachel Levy.
- **Centennial Campus Spotlight Series:** The series showcases partner stories to generate awareness among the Centennial community, and creates an opportunity for enhanced partnerships. Speakers included SKEMA Business School and Advanced Energy Corporation.
- **Industry Day:** This event featured College of Engineering faculty who presented their research to an audience of industry partners and university stakeholders. The objective was to boost sponsored research. Partnership developers engaged in follow-up with attendees.
- **Centennial Campus Partner Orientation:** The event introduces Centennial partners to campus and explains the benefits that they can access as affiliates of NC State. The virtual format has allowed us to deliver a streamlined presentation, while highlighting our digital resources.
- **Mobile Blood Drive:** We partnered with The Blood Connection to bring mobile blood drives back to Centennial Campus after a break during the pandemic. These continue to promote wellness and community engagement on Centennial.



# Supporting Economic Development

---

We continued to work closely with economic development partners to recruit new companies that align with NC State's strengths. This year we strengthened our focus on proposing a partnership strategy earlier in the recruitment process.

The Office of Partnerships has been actively engaged with several companies who recently announced plans to locate in North Carolina. For example, following Toyota's \$1.29 billion and 1,750-job commitment to build an electric battery plant in Randolph County, we are now working with Toyota to develop a long-term partnership around student engagement and R&D opportunities with faculty researchers.

We also provided custom proposals and support for several projects, in collaboration with Wake County Economic Development. One example is our work to help land Project Overland. This year Raleigh was announced as the North American headquarters for INEOS Automotive, with initial plans to create 25 managerial jobs in the next year.

## Boosting early-stage startups through the Daugherty Endowment

The Daugherty Endowment seeks to increase the success of startups based on NC State intellectual property and to promote entrepreneurship on campus. Since the Endowment was established in 2003, the Office of Partnerships has led and coordinated the program – managing expenditures, overseeing the advisory committee, and managing partnerships with investors and internal units.

**\$40M**  
Follow-on  
Funding

To date, the Endowment has awarded \$518,000 to 50 early-stage startups, 75% of which are still in business today and remain in North Carolina. Those companies have gone on to raise \$40 million in follow-on funding.

The Endowment partners with the Lulu eGames and the Kenan Institute to run a Daugherty Track at the eGames, targeting newly formed NC State spinouts. This year, \$50,000 was awarded to the top three finishers:

- **Vizma Life Sciences (first place):** Developing low-cost molecular imaging as an alternative to existing medical imaging technologies to deliver diagnostic power that is safer and more convenient
- **Mammae Biosciences (second place):** Creating a cost-effective and scalable method for producing LacNAc, a key probiotic and beneficial, health-promoting human milk oligosaccharide (HMO), to meet the growing consumer demand for foods containing HMOs

- **DNAli Data Technologies (third place):** Developing a long-lasting end-to-end DNA data storage platform that is also environmentally friendly

We created a [video and landing page](#) to promote the overall impact of the Endowment, as part of our strategy to increase partners and investment.

## Team Updates

---

Nikki Olive joined the Office of Partnerships to fill the vacant partnership developer role. And our team remained committed to serving on relevant boards and professional organizations that align with the work of the Office.

In FY21-22 we launched an objective consultant review to define a leading partnerships organizational model and strategy, in order to differentiate NC State for future success. We partnered with Segal Consulting, a nationally recognized consulting firm, to conduct the review. Following more than 50 interviews with university leadership, corporate partners and community leaders, Segal distilled their findings to develop a comprehensive report with recommendations to ensure the Office of Partnerships is most effectively structured with needed support across our operations. The assessment outlines opportunities to position NC State better to meet the growing needs of our current and future partners and workforce. We are currently working to operationalize these recommendations in order to build a strategic plan for long-term success.



*Partnership Developer Keisha Demps was awarded the 2021 Rising Star Award by the Association of University Research Parks.*

# Economic Development

NC State's Economic Development Partnership (EDP) works across the state to attract new businesses and industries to North Carolina, partnering closely with the NC Department of Commerce, the Economic Development Partnership of North Carolina (EDPNC), and local economic development organizations. In FY21-22 NC State's EDP worked with statewide partners to secure twelve industry announcements, resulting in capital investments totaling \$3.9 billion and the creation of 12,415 new jobs. Part of a heightened strategy, the Office also contributed significantly to helping recruit advanced manufacturing clients to multiple North Carolina megasites.



## Announcements

---

- **Project Darwin (Toyota):** Announced Dec. 2021 a \$1.3 billion capital investment along with more than 1,300 new jobs at the Liberty/Randolph County megasite. Working closely with the EDPNC and Greensboro Chamber of Commerce, NC State subject matter experts presented to Toyota executives along with the company's site selection consultants, and the university provided significant data and background information promoting NC State's strengths.
- **Project Thunderbird (Boom Supersonic):** Announced Jan. 2022 a \$500 million capital investment and the creation of 2,000 advanced manufacturing jobs in Greensboro at the Piedmont Triad International Airport megasite.
- **Project XD (Amazon Distribution Center):** NC State EDP collaborated with Johnston County economic developers to help secure a new 500-job Amazon Distribution Center, announced May 2021.





- **Project Blue (VinFast):** Announced March 2022 one of the most significant advanced manufacturing projects in the state's history, investing \$2 billion and creating 7,500 jobs at the Moncure megasite in Chatham County. NC State EDP showcased the university's electrical and computer engineering and computer science expertise to help land the project.
- **Project Payton (Plant Pathways):** The SBTDC, EDPNC, NC Department of Agriculture and Consumer Services, NC State CALS and the Sanford Area Growth Alliance collaborated to identify sites to accommodate this \$5 million capital investment/25 job university spinout in stevia production, with additional lab and office operations in Broadway/Lee County.
- **Project P. Web (Spotit):** NC State EDP worked with EDPNC to showcase the university's technology assets in order to help recruit Belgium-based cybersecurity firm Spotit, creating 100 jobs by 2025. In Spring 2022 Spotit announced Centennial Campus as the location for its North American headquarters.
- **Project 300810 (Schaltbau):** NC State EDP joined statewide partners in recruiting Schaltbau, a German-based engineering firm, to North Carolina. Highlighting the university's assets in electrical and computer engineering helped North Carolina secure this 500-job, \$100 million investment advanced manufacturing project. A soft announcement about the specific location is expected in 2022.
- **Brightview Technologies:** The Durham-based engineering firm will create 30 new jobs, with a focus on recruiting highly-skilled engineering talent. NC State was a driver in the company's decision because of the university's recognition as a leading producer of STEM talent.
- **Project Sunrise (Ontic):** Announced Nov. 2021, NC State EDP supported Granville County economic developers to secure a 100-job, \$100 million investment from Ontic. There will be additional opportunities for an internship/co-op program with NC State in aerospace engineering.

- **Project Keegan (Garland Shirt Manufacturing):** NC State EDP brought in experts from the College of Engineering and Wilson College of Textiles to help Sampson County secure 180 new manufacturing jobs in Garland, announced June 2021.
- **Xerox:** NC State EDP collaborated with the Cary Chamber of Commerce on this 200-job, \$125,000 average annual wage expansion, with participation from the Department of Computer Science and University Career Development Center.
- **AlgiKnit:** NC State EDP helped recruit AlgiKnit, a sustainable textile manufacturing company, to establish an Innovation Hub in Morrisville, initially creating 10 jobs.

## Workforce Development Initiatives

---

- **NC Workforce Development Academy:** Working with the NC State MPA Program/Municipal Research Lab, NC State Institute for Emerging Issues, NC State Continuing Education, the NC Works Commission and the NC Association of Workforce Development Boards leadership, this collaboration helped secure a \$500,000 USDOC Economic Development Administration grant to launch the new statewide academy for the fall semester of 2022.
- **NC Workforce Development Partnership Annual Conference:** NC State EDP produced a session on the value of collaboration at the Oct. 2021 NC Workforce Development Partnership Annual Conference. Partners included NC State BTEC, NCBC, Wake Technical Community College and the Capital Area Workforce Development Board.
- **National Association of Workforce Boards:** At the April 2022 Annual Forum, NC State EDP conducted a workshop in Washington, DC highlighting the collaboration between NC State, NC A&T and other partners to recruit Toyota and Boom Supersonic to the state.
- **NC Economic Development Association:** NC State EDP's Tom White served as a panelist for a discussion on the UNC System Economic Transformation Council partnership with local, regional and state economic developers.
- **Pratt & Whitney (Project Ranger):** NC State EDP worked with state partners to help create a career development network for referrals, internships, capstone projects and co-ops to support Pratt & Whitney's North Carolina location.

## Professional Activities

---

In FY21-22 NC State EDP Director Tom White served in several leadership roles:

- Vice Chairman, NC Coalition for Global Competitiveness, GoGlobal NC
- Chairman, Research Triangle Foreign Trade Zone Rates Tariff and Legal Review Board
- Recipient, 2021 American Society of Public Administrators (ASPA) Public Service Excellence Award by Research Triangle Chapter



## Highlights

---

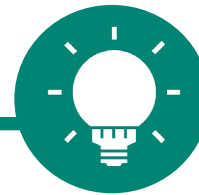
In FY21-22, the SBTDC experienced a substantial increase in its volume of work with small and midsize business clients as a result of COVID-19. Key highlights of service milestones for FY21-22 are included below. These numbers represent direct economic impacts for small businesses in North Carolina. All impacts are attributed to the SBTDC by clients in writing. In addition, we engaged graduate and undergraduate student teams with 263 clients statewide, providing over 20,000 hours of student engagement with existing businesses. Our Regional Service Center, hosted on NC State's Centennial Campus, contributed 37 of these clients and 2,699 hours of engagement.



**7,459**  
Clients  
Served



**66,377**  
Counseling  
Hours



**319**  
Businesses  
Started



**\$291.7M**  
Capital  
Formation



**6,442**  
Jobs Created  
and Retained



**20,000+**  
Hours of  
Student  
Engagement

# Engagement Through Strategic Partnerships

---

The SBTDC continues its role as a leader by strengthening strategic partnerships in support of small business in North Carolina. We have ongoing partnerships with the NC Department of Commerce and the NC Rural Center. Many staff members also serve in leadership positions at the national, state and local level with economic development partners. For example, SBTDC State Director Byron Hicks serves as Chair of the UNC System Economic Transformation Council. Some of the additional organizations where SBTDC staff are engaged in leadership positions are highlighted below.





## Continued COVID-19 Outreach and Response

---

Our primary counseling focus on small businesses continues to be pandemic assistance and resiliency building. The SBTDC core staff of business advisors are consistently working with small businesses as they navigate COVID-19 funding options, including the different state and federal programs. Given strong demand for services in a rapidly changing environment, SBTDC staff stepped up to meet the needs of clients and partners.

In 2020, the SBA awarded \$5.4 million in supplemental funding to the SBTDC in order to expand capacity to help small businesses across the state recover from the COVID-19 crisis. These funds are set to expire in September of 2022. Using this funding, the SBTDC continues its critical work through the Business Recovery and Resiliency Program which supports 20 time-limited Business Resiliency Counselors across the state. We also continue to send our “Navigating Your Business through COVID-19” newsletter to over 5,000 small business clients once a month.

## Achieving Organizational Excellence

---

The SBTDC maintains organizational excellence and creates a culture of continuous improvement in several ways. Every SBTDC employee statewide has a requirement of 40 hours of continuing professional education every year. Much of this professional development is achieved through our two annual professional development conferences: (1) NC Small Business Advisors Professional Development Conference in partnership with the NC Community Colleges Small Business Center Network; and (2) our Spring Focus Training Conference for all SBTDC staff statewide. For FY 2021-2022, both these conferences were held in person and provided numerous training sessions on technical and counseling skills. In addition, we were able to conduct team building events at both, thus adding additional value especially since several of our staff members across the state began during the pandemic and had not been able to attend such activities in person.

We finalized our new strategic plan in the second half of 2021 and held a launch event that engaged SBTDC staff statewide. In addition, the SBTDC uses an annual Employee Engagement Survey to solicit feedback from all staff on current satisfaction and opportunities for improvement.

Utilizing a new organizational structure that supports and champions our strategic priorities, the SBTDC is already living its mission of positively impacting North Carolina’s economy by helping to grow small and mid-size businesses and launch promising start-ups.

## Diversity and Inclusion Initiatives

---

The SBTDC continues to serve the diverse small businesses of North Carolina. Many underserved markets are supported by our offices hosted by the Historically Minority Serving Institutions of the UNC System. Of particular note, over 2% of our clients identify as Native American owned businesses. The SBTDC is also partnering with the NC Bankers Association and the NC Chamber of Commerce in creating a Capital Access website for underserved markets.

## Team Updates and Recognitions

---

After a reorganization of the leadership structure, SBTDC announced in January of 2022, two new leadership positions (Eastern and Western District Directors). These two positions add to the senior leadership team, providing better oversight and collaboration among our 11 Regional Service Centers.

For the ninth consecutive year, an SBTDC client was selected as the SBA Exporter of the Year due to the excellent work of our International Business Development specialty program.

And most recently, Ginny Vaca (SBTDC International Business Counselor at the NC State Center) was recognized for the Chancellor's Division Award of Excellence.



# State/Local Relations

## NC General Assembly

---

### 2021 Long Session

We concluded the 2021 Long Session, which started in January, in November of last year. Highlighting the session was the tremendous level of support that NC State received from the state budget. Signed into law by the Governor, this budget (Senate Bill 105, 2021 Appropriations Act) reflects both his and the North Carolina General Assembly's strong support and recognition of NC State's critical role in advancing our state's future. It included a number of both NC State specific and UNC System overarching priorities.

#### *NC State Specific Items:*

- College of Engineering Expansion – “Engineering NC’s Future”
  - \$12.5 million in the first year and \$7.5 million in the second year of the biennium to support additional faculty and staff in order to expand the College of Engineering
    - Language included that first year funds shall not revert at the end of the fiscal year but will remain available until the end of the 2022-2023 fiscal year
  - \$30 million for capital improvements associated with this specific initiative
- Capital
  - Additional repairs and renovations (R&R) funds over and above what was included in the UNC System request [\$102.4 million, noted under UNC System section below] to further facilitate growth on campus
    - \$60 million for R&R to Dabney Hall; \$30 million in each year of the biennium
    - \$10 million in the first year of the biennium for R&R to Polk Hall
  - \$54.75 million for the Integrative Sciences (S.T.E.M.) Building over the biennium; \$18,250,000 in year one of the biennium, \$36,500,000 in year two; the final \$18,250,000 allocation for the Building is scheduled for FY 23-24
    - Includes language exempting NC State from one to one matching requirement with the State for each dollar spent prior to meeting 50% project commitment
  - \$4 million for a new Apiculture Research Facility
  - \$12 million over the biennium for the construction of an Esports facility
  - \$4 million for a new Esports mobile arena truck
- Agricultural Initiatives
  - \$1.7 million for 4-H Centers and Camps to offset revenue loss caused by the pandemic



## State/Local Relations

- \$750,000 to Betsy-Jeff Penn, \$600,000 to Eastern 4-H Center, \$350,000 to Millstone 4-H Camp
- \$244,330 for two additional Agricultural Education Coordinators
- \$62,500 for the Food Safety Extension Program to develop standard operating procedures and training to recover unserved prepared food for the purpose of reducing food waste
- \$5 million over the biennium to the North Carolina SweetPotato Commission to contract with NC State to study nematode mitigation
- Authorization of a 40 year lease of up to 15 acres for the US Department of Agriculture facility at the Lake Wheeler Field Lab
- \$150,000 for a Student Beekeeping Grant Program which provides funds to create bee-keeping programs for high school chapters of NC Future Farmers of America
- \$50,000 for the Ag Institute’s Soldier to Agriculture Program
- Other
  - \$2 million in the first year of the biennium for NIIMBL (National Institute for Innovation in Manufacturing Biopharmaceuticals) which serves to provide matching funds for a federal grant from the National Institute of Standards and Technology which allows NC State along with other universities and community colleges in North Carolina to participate in a collaborative effort to accelerate the development of innovative manufacturing processes for biopharmaceutical products



### *UNC System Items:*

- Salaries/Bonuses
  - 5% across the board salary increases; 2.5% in each year of the biennium
  - \$1,000 bonus for all full-time state employees regardless of funding source, with an additional \$500 for employees who make less than \$75,000 or who work as law enforcement officers

- Capital
  - Full funding of the System's approximately \$1 billion R&R request over the next four years with \$500 million allocated this biennium
    - NC State's portion of the approximately \$1 billion total R&R request is \$102.4 million in specifically designated projects
    - Includes language that allows for reallocation of funds within the total proposed project authorizations for each institution, specifies that funds may only be reallocated to that particular institution
  - \$26 million in recurring funding for UNC Building Reserves over the biennium and \$2.8 million in nonrecurring funding in fiscal year 21-22
    - Includes Fitts-Woolard at \$4.1 million and the first partial year of Plant Sciences at \$1.8 million
- Other
  - \$67 million in recurring funding for UNC enrollment growth
    - NC State's allotment – \$5.8 million
  - \$5 million in additional recurring funding for the UNC faculty recruitment and retention fund
  - \$1.5 million nonrecurring in the first year of the biennium for the NC Food Innovation Lab at the NC Research Campus in Kannapolis to support new and existing staff salaries and benefits, added working capital, and expanded lease capacity
    - Language included that funds will not revert at end of fiscal year but shall remain available until expended
  - Reserves \$64.6 million in recurring funding for enrollment changes at the UNC System and Community College System, along with the average daily membership in public schools
- Special Provisions of Interest
  - Allows for in-state tuition for out of state athletes beginning with the 2021-22 academic year
  - Revises carryforward authority language to allow institutions to utilize the previously authorized 2.5% carryforward for other uses besides R&R

## 2022 Short Session

After the lengthy 2021 Long Session, legislators promised a true short session for the second year of the biennium. The North Carolina General Assembly came back into session on May 18th and, true to their word, wrapped up their work on July 1st. In the short session budget (House Bill 103, 2022 Appropriations Act) signed into law by the Governor, legislators prioritized addressing issues such as inflation and making sure they continued to save money to respond to any future downturns in the economy. They also made a number of key investments and policy changes impacting both NC State as well as the UNC System.

### *NC State Specific Items:*

- Capital
  - Integrative Sciences (S.T.E.M.) Building
    - In order to respond to inflationary pressures associated with our Integrative Sciences Building and to allow us to continue moving forward with this critical project, the legislature increased our total project authority from \$160 million to \$180 million
    - As this is a 50/50 split with the State where the university pays for half of the project, the legislature also increased the State's contribution to the building by an additional \$10 million for a total of \$90 million
  - Full funding for Plant Sciences Building Reserves with an increased appropriation of \$2.5 million giving us a recurring total funding amount of \$4.3 million
- Other
  - Final \$2 million installment of the State's five year, \$10 million total commitment to NC State for NIIMBL
  - Recurring funding of \$400,000 for the NC Clean Energy Tech Center located on NC State's campus that provides resources and support in the clean energy space

### *UNC System Items:*

- Salaries
  - Provides for an additional 1% salary increase for our faculty and staff in addition to the 2.5% increase they were already set to receive for a total of 3.5%
  - Labor Market Adjustment Salary Reserve
    - Establishes a labor market salary reserve of \$80 million (\$32.9 million for the UNC System) for state agencies to address staff shortages and help recruit and retain capable employees
- Enrollment Funding
  - Includes \$38 million for enrollment changes and for summer term undergraduate resident student credit hours; funding provided supports the transition to a new enrollment funding formula approved by the UNC Board of Governors (BOG)
- Special Provisions of Interest
  - Informal Bid Threshold
    - Increases the dollar threshold for capital projects required to be informally bid from \$30k to \$100k for UNC institutions only
  - BOG Capital Project Threshold
    - Increases the dollar threshold for design, construction, or renovation of BOG approved capital projects from \$2 million to \$4 million

- Non-Reversion of Unexpended Nonrecurring Funds
  - All unexpended nonrecurring funding allocated in the 2021-22 budget would not revert to the General Fund until June 30, 2023

## Elected Officials Visits to Campus

---



- Secretary Elizabeth Biser of the NC Department of Environmental Quality visited the College of Natural Resources
- Senate Pro Tempore Phil Berger and Representative Dean Arp joined us to offer remarks for the dedication of the Plant Sciences Building and Fitts-Woolard Hall, respectively
- Senator Tom McInnis accompanied a constituent and family friend on her visit to campus as a prospective student; the Senator also met and engaged with a number of College of Education professors and administrators
- Senator Amy Galey joined us on campus to discuss issues associated with name, image, and likeness legislation

## Local/Community Engagement

---

### ***Local Engagement with Elected/Appointed Officials and Boards***

- Worked extensively with a variety of stakeholders on future plans associated with PNC Arena, Dix property, and road construction impacting NC State operations



### Board of Visitors

- Facilitated successful fall and spring meetings, with State Budget Director Charlie Perusse serving as the external speaker at the most recent meeting
- Recruited the following new members to serve on the Board:

*Terms Beginning July 2022:*

- Matt Hong – Former Chief Operating Officer, Turner Sports
- Amber Moshakas – President, LM Restaurants
- Matthew Scott – District Attorney, Robeson County
- Kamala Subramaniam – Engineering Leader, Google Cloud Networking and Site Lead, North Carolina’s Google Cloud Engineering Hub
- Erik Troan – Co-founder and Chief Technology Officer, Pendo
- Mike Youngblood – Founder & Chief Executive Officer, Job Squad

## Staff Mentions

---

- Vice Chancellor Kevin Howell has served as the Chair of the Raleigh Chamber of Commerce for the past year.
- In addition to his role at the Chamber, Vice Chancellor Howell also serves on a number of other boards, to include the UNC Rex Hospital Board, Friday Institute for Educational Innovation Advisory Board and the Littleton Academy Board, all of which he joined in the last year.



# Federal Affairs

## Protect and Promote Research Funding

---

Overall, federal research and development programs saw a 7.1% increase in FY 2022, and Congress provided a 5.4% increase in federal support for fundamental research. There were significant gains at National Science Foundation (NSF) and National Institutes of Health (NIH) with modest increases for other agencies like National Oceanic and Atmospheric Administration (NOAA), National Aeronautics and Space Administration (NASA), Department of Defense (DOD), and Department of Energy (DOE) and no substantial cuts to research agency funding. The Biden Administration proposed substantial increases to nearly all federal research agencies, extension programs, and student aid funding, but those increases were moderate when the final Omnibus spending bill was agreed to by Congress in March of 2022.

For FY 2023, the Biden administration is requesting a 9% increase in federal research expenditures above FY 2022 levels. The FY 2023 budget proposal builds on modest increases in the previous year's research investments and is a reversal of the Trump Administration's proposed research budget cuts. For the second straight year, the Biden Administration has proposed substantial increases for extramural research across nearly all federal research agencies.

## Support Extension and Economic Development Programs

---

The President's FY 2022 budget proposed some very modest increases to extension and economic development programs like Smith-Lever, SeaGrant, SpaceGrant, and the Manufacturing Extension Partnership (MEP). Bipartisan congressional support for federal extension and economic development led to slight increases to the programs that NC State leads and participates in, including the MEP Program. Extension programs including Smith-Lever (agriculture) and McIntire-Stennis (forestry) avoided cuts but were not significantly increased.

For FY 2023, the Biden administration is requesting a 9% increase in federal research expenditures above FY 2021 levels, as well as modest increases to selected extension and student aid programs.

## Advocate for Additional Student Aid

---

For FY 2022, the Biden Administration proposed no increases for the Federal Work-Study program and the Supplemental Educational Opportunity Grants (SEOG). Congress provided 1.7% increases for SEOG and Federal Work-Study. Congress also provided an increase of \$400 to the maximum Pell Grant, a 6.1% increase. University associations and student advocacy groups are asking Congress to double the maximum Pell Grant over the next several years.

## Research Agency and Advocacy Highlights

---

**National Science Foundation:** NC State Federal Affairs successfully advocated for increased funding for NSF to \$8,838M in FY 2022. That represents an increase of 4.1% above FY 2021. The President's FY 2023 budget requested an 18.8% increase. Neither the House nor the Senate has yet to release their recommended FY 2023 funding levels for the NSF. NC State's Federal Affairs has led a series of more than 35 advocacy visits by deans and faculty as well as a visit to campus by Rep. Deborah Ross to visit ASSIST and other labs on Centennial Campus where NSF research was featured prominently. Rep. Ross is a member of the House Science Committee. Congressional action on the FY 2023 budget got a late start and is still in the early stages. Over the last several years, NSF funding has grown slightly faster than the overall discretionary spending levels.

**Manufacturing Extension Partnership:** NC State Federal Affairs has successfully supported advocacy efforts for NC State's MEP program in FY 2022. MEP funding was increased by 5.2% in FY 2022 and MEP received \$50 million in the COVID-related stimulus bills. Federal Affairs and the MEP program held advocacy visits for their regular appropriation level in FY2023 and a site visit by Rep. Hudson in May of 2022. Congress increased MEP funding in FY 2022 to \$158 million, an increase of \$8M. The Biden Administration is proposing \$275 million for MEP in FY 2023, a 74% increase from FY 2022.

In March of 2022, NC State Federal Affairs supported a series of advocacy meetings between our delegation offices and MEP leaders and third-party advocates to advance support for the program. NC State's MEP program has over 100 employees statewide through a combination of federal grants and funding from the work they do with the private sector, but the primary programmatic source of funding is the Department of Commerce MEP program. Congress has not yet released the details of the FY 2023 Commerce, Justice, Science spending measure which includes MEP funding.

**Student Aid (Pell, SEOG, Work Study and TRIO):** NC State Federal Affairs scheduled and supported advocacy from NC State student government leaders for increasing the Pell Grant maximum, SEOG, Work-Study, and TRIO. NC State student leaders joined their colleagues at other ACC schools in North Carolina for a series of virtual advocacy visits in January of 2022. Congress increased student aid programs including the maximum Pell Grant by \$400 in FY 2022. Congress also increased SEOG by 1.7% to \$895M and Federal Work-Study to \$1,210M, an increase of 1.7% as well. There were also modest increases for GEAR-UP (+2.7%) and TRIO (+3.6%). The FY 2023 bills have not been released as of the date of this report. NC State Federal Affairs continues to encourage our delegation to support increases to student aid accounts in the FY 2023 Appropriations process.

**SpaceGrant:** NC State Federal Affairs supported the SpaceGrant advocacy efforts that led to support for funding NASA's SpaceGrant Program in the FY 2023 Omnibus Appropriations bill. In March of 2022, Federal Affairs coordinated virtual DC visits with the NC delegation to discuss the impact of the SpaceGrant program in our state. In FY 2022, SpaceGrant received \$54.5M, an increase of 6.9%. Neither the House nor Senate have gone public with their FY 2023 Appropriations bills at this time.

**SeaGrant:** Like SpaceGrant, NC State Federal Affairs supported SeaGrant advocacy efforts for FY 2023. Our office coordinated March 2022 congressional advocacy efforts with both SeaGrant program leaders and external stakeholders. SeaGrant funding has increased in each of the past several years despite a presidential request to eliminate the program.

**US Department of Agriculture (USDA) Research And Extension:** NC State Federal Affairs has supported campus stakeholders and outside advocates with virtual visits with every congressional office from North Carolina in the Spring of 2022, primarily with leaders from the College of Veterinary Medicine (CVM) and College of Agriculture and Life Sciences (CALs). Our office works closely with national associations and prominent land-grant universities that have significant agriculture capacity funding to advocate for more Hatch, Smith-Lever, and McIntire-Stennis funding. Those three funding streams have not increased at the same rate as the competitive agriculture grant program, Agriculture and Food Research Initiative (AFRI).

Federal Affairs, CALs, College of Natural Resources (CNR) and the Office of Research and Innovation (ORI) are exploring an August 2022 agriculture and natural resources congressional staff trip that would visit Raleigh, the Piedmont area and Charlotte. The last staff delegation visit (2019) included tours of research farms as well as partner facilities across Eastern North Carolina including the Hoffman Forest, Center for Marine Sciences and Technology, Cooperative Extension locations and the location of SeaGrant work being supported on the Outer Banks. All of those efforts gave details and examples of the importance of competitive and formula-based AFRI USDA federal research funding as well as Hatch, Smith-Lever and McIntire-Stennis.



USDA capacity funding (Hatch, Smith-Lever and McIntire-Stennis) were level funded in FY 2022. The FY 2022 spending measure provided a slight increase of 2.3% for AFRI competitive research to \$445M. Growth in these accounts has been a priority for our agriculture and natural resources research faculty. NC State is a top recipient in each of the three formulas and in competitive AFRI research. The Administration proposed substantial increases to formula research (Hatch Act and McIntire-Stennis) that were not adopted in the final Omnibus Appropriations Act for FY 2022.

**USDA Report Language on ARS/NC State initiatives:** Congress can direct federal agencies to invest in areas of interest. There are several specific directives from the FY 2022 Agriculture report language that directly and favorably impact NC State and Agricultural Research Service (ARS) Raleigh. One such directive supports GEM (Germplasm Enhancement of Maize) and Small Grain Genomics Research, which are both led by ARS Raleigh. The Food Animal Residue Avoidance Database (FARAD) program also received \$2.5M. NC State is part of a 4-university consortium that runs the FARAD program.

**USDA Specialty Crop Research Initiative (SCRI) Match Elimination:** NC State has been a leader among land-grant universities in advocating for and getting legislative language inserted into the annual spending measures that permitted USDA to waive the 100% matching requirement that was included in the 2018 Farm Bill. Congress again included the waiver in the FY 2022 Omnibus Appropriations bill. NC State Federal Affairs has begun working with CALS, CVM and CNR to discuss areas of policy in the next Farm Bill. The SCRI matching requirement will again need waiver language in FY 2023 and the language will need to be amended when the new Farm Bill is passed into law next year.

The matching requirement was imposed on land-grant universities for the first time in 2019 and a number of SCRI funding proposals that NC State was a partner in were not submitted because sufficient matching funds were not identified by the grant proposal teams. Since then, we have been successful in garnering support from Rep. Price, Rep. Rouzer, Rep. Butterfield, and Rep. Adams, which has led to the inclusion of the provision to allow USDA to waive the matching requirement in the final Appropriations law.

**Name/Image/Likeness Athletics:** Federal Affairs continues to engage with ACC Federal Affairs colleagues, NCAA Federal Affairs, and the Association of Public and Land-Grant Universities (APLU) Council on Government Relations colleagues in responding to the issue of name/image/likeness (NIL) and other federal legislation regarding athlete amateurism. In the past 12 months, more significant discussions have taken place with conferences, Lead1, as well as APLU regarding national legislation that would address NIL.

## Project-related Advocacy

---

In addition to successful advocacy for research and extension programs in FY 2022, NC State Federal Affairs has been engaged in several high-profile opportunities including Pathfinder Airborne and “Making Computer Science Stick,” a Department of Education project related to computer science education in Wake County schools. The effort will engage the Friday Institute with Wake County public schools to implement a grade-school level computer science curriculum across the county.

**Army Futures Command (AFC) Research Partnership:** NC State Federal Affairs has been engaged in the FY 2021 and FY 2022 congressional plus-up efforts to develop a response to the 82nd Airborne partnership with NC State suggested by the AFC. In FY 2021, Congress included \$8 million in FY 2021 and a second \$8 million for the research partnership was included in the FY 2022 defense spending measure.

**High Entropy Ceramics for Hypersonic Applications:** NC State Federal Affairs has worked closely with ORI and the College of Engineering to advocate for a new navy research initiative in the area of High Entropy Ceramics. The navy-supported proposal has been requested by Reps. Price and Ross as well as Sens. Tillis and Burr for FY 2023.

**MOF Textiles for Soldier Protection:** NC State Federal Affairs has worked closely with ORI and both the Colleges of Engineering and Textiles to advocate for a new army research initiative in the area of protective textiles for soldiers and structures. The Army-supported proposal has been submitted to the offices of Reps. Price and Ross as well as Sens. Tillis and Burr for FY 2023.

**USDA Agricultural Research Service Facilities Improvement Request:** NC State Federal Affairs worked closely with ORI, CALS, and USDA ARS to develop a facilities improvement proposal for the Central Crops research facility that would support more than \$7 million for infrastructure improvements related to the soybean and corn improvement efforts jointly supported by NC State and USDA ARS researchers.

## Distinguished Visitors

---



**Visit by Environmental Protection Agency (EPA) Administrator Regan:** On Oct. 18, 2021, Federal Affairs worked with a diverse team from NC State to host EPA Administrator Regan on campus for a policy address and a tour of relevant research facilities. The Administrator also met with faculty that are working on topics of interest to EPA, including PFAS.

**Rep. Ross Visit:** Federal Affairs hosted Rep. Ross in June 2021. She visited PowerAmerica, the Nonwovens Institute, the ASSIST Center, and the Hunt Library during her visit to campus.

**Rep. Ross and Staff Visit:** Federal Affairs hosted Rep. Ross and her staff on Aug. 5, 2021 for a visit to research labs that are engaged in substantial NSF and DOD-related research including the FREEDM Center, ASSIST Center, the Textile Protection and Comfort Center, and the Laboratory for Analytic Sciences. Rep. Ross serves as a member of the House Science Committee and the House Rules Committee.

## Professional Activities

---

In FY21-22 Matt Peterson served in several leadership roles:

- Co-Chair of the APLU Council on Government Affairs (CGA) Winter 2022 meeting, developing the agenda, securing speakers and presenters and managing the small team of fellow CGA members who put together the February 2022 meeting.
- Served on the Science Coalition Steering Committee, which is responsible for developing and leading the execution of the Science Coalition's federal research advocacy efforts on behalf of all the Science Coalition members.

**NC STATE**  
UNIVERSITY

[eaped.ncsu.edu](http://eaped.ncsu.edu)