

 NCINNOVATION

# Philanthropy Impact Report

SPRING  
2026

*Putting Innovation to Work  
for All of North Carolina*



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for All of North Carolina



## A MESSAGE FROM MICHELLE BOLAS

*President & CEO*

**North Carolina has long been a state defined** by ingenuity — from our research universities to our advanced manufacturing floor, from rural communities building new opportunity to global companies choosing to grow here. But innovation does not move itself from the lab to the marketplace. It requires intention, coordination, and capital.

At NCInnovation, we exist to close the gap between discovery and deployment. Our role is to ensure that promising applied research emerging from North Carolina’s public universities does not stall before it reaches the people and communities it was designed to serve.

Private philanthropic investment is essential to this work.

While public funding supports foundational research, private dollars allow us to accelerate

commercialization, de-risk applied innovation, and move technologies across the so-called “valley of death.” Philanthropic capital gives us flexibility, speed, and strategic leverage. It enables milestone-based funding, supports prototype development, advances regulatory pathways, and strengthens the partnerships necessary for market entry.

Your support is not simply funding projects. It is strengthening North Carolina’s economic competitiveness.

Through our statewide model, we work across regions — urban and rural alike — to ensure that commercialization pathways exist beyond a single geography. We partner with research institutions across the UNC System, industry leaders, and regional economic development organizations to build a coordinated pipeline from research to revenue.



The impact is measurable:

- ▶ Technologies advancing toward market readiness
- ▶ Startups forming and scaling within the state
- ▶ Students gaining hands-on commercialization experience
- ▶ Industry partnerships expanding across regions
- ▶ Workforce pipelines strengthening across disciplines

North Carolina's future competitiveness depends on our ability to translate knowledge into jobs, companies, and opportunity. It depends on building regional innovation ecosystems that allow talent to stay and thrive. And it depends on leaders like you who understand that economic development today requires investment at the earliest stages of commercialization.

Thank you for partnering with us in this mission. Together, we are putting innovation to work for all of North Carolina.

With gratitude,

**Michelle Bolas**  
*President and CEO*  
NCInnovation



# OUR MISSION & VISION

*North Carolina will be the Innovation State. Through a public-private partnership that accelerates commercialized innovation from NC's universities, we work to create jobs and improve economic opportunity in all 100 counties.*

NCInnovation operates through a long-term, disciplined funding model designed to sustain impact for decades. The organization is supported by a \$500 million state endowment, which is preserved as principal. Rather than drawing down those funds, NCInnovation deploys the annual earnings generated by the endowment to support applied research commercialization across North Carolina's public universities. This approach ensures that the state's investment remains intact while continuously fueling innovation, economic growth, and job creation year after year.

Private philanthropic investment plays a critical and complementary role in this model. While endowment earnings provide a stable foundation, private dollars increase flexibility, accelerate timelines, and expand the number of high-potential projects that can move forward. Philanthropic capital allows NCInnovation to act more quickly at key inflection points — advancing validation, supporting industry partnerships, and reducing early-stage risk. In doing so, private investment does not replace public funding; it amplifies it, strengthening North Carolina's ability to convert research into real-world solutions, companies, and long-term economic opportunity.



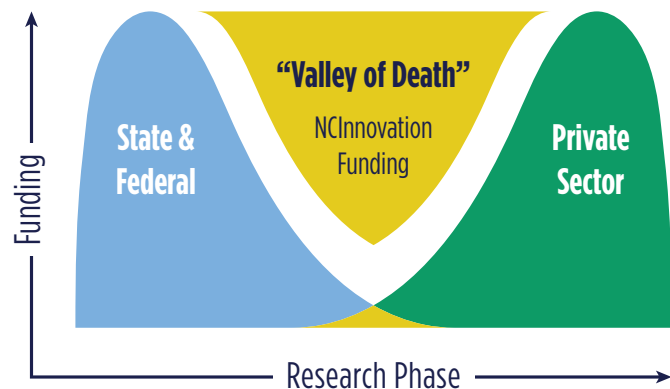
# WHY NCINNOVATION EXISTS

## *The Gap Between Research and Commercialization.*

North Carolina is home to world-class research institutions. Yet historically, a significant percentage of applied research stalled before reaching the marketplace.

The reason is structural.

Traditional research funding supports discovery. Venture capital supports later-stage scalability. Between those two phases lies a gap — often referred to as the “valley of death” — where promising technologies require additional validation but lack sufficient private backing.



NCInnovation was created to address this structural failure in the innovation pipeline.

We provide:

- ▶ Non-dilutive, milestone-driven funding
- ▶ Commercialization expertise
- ▶ Industry and ecosystem connectivity
- ▶ Governance oversight and accountability

This model ensures that public research investments have a viable pathway toward economic return for North Carolina.

# NCI OUTCOMES

## Statewide Impact

### *Putting Innovation to Work — At Scale.*

NCInnovation operates with a single objective: move applied university research into the marketplace in ways that strengthen North Carolina's long-term economic competitiveness. Our outcomes reflect disciplined capital deployment, regional inclusion, and measurable advancement toward commercialization.

#### ▶ **\$29,053,280 CAPITAL DEPLOYED**

Catalytic funding committed to milestone-based commercialization projects across the UNC System.

#### ▶ **38 PROJECTS ADVANCED**

Applied research projects progressing toward prototype validation, regulatory advancement, or market entry.

#### ▶ **14 UNIVERSITIES ENGAGED**

Institutions across urban and rural regions participating in commercialization pathways.

#### ▶ **JOBS ANTICIPATED**

Direct and indirect employment opportunities emerging through startup formation, licensing, and industry partnerships.

#### ▶ **FOLLOW-ON CAPITAL LEVERAGED**

Private investment, federal grants, and industry funding unlocked through NCI-supported proof of concept.

#### ▶ **STATEWIDE REACH**

From the mountains to the coast, NCInnovation ensures that promising research does not remain geographically isolated. Innovation capacity is being strengthened across regions, not concentrated in a single corridor.





# UNC CHARLOTTE NANOMATERIAL WATER FILTRATION COMMERCIALIZATION

*Patented nanomaterial technology developed at UNC Charlotte could soon improve the quality of drinking water.*

## **ONE OF THE MOST PRESSING ENVIRONMENTAL CHALLENGES OF OUR TIME**

Per- and polyfluoroalkyl substances (PFAS), often referred to as “forever chemicals,” are now detected in water systems across the United States — including communities throughout North Carolina. Their persistence in the environment and links to human health risks have made PFAS contamination a growing public health and economic concern.

## **A NORTH CAROLINA SOLUTION EMERGING FROM UNC CHARLOTTE**

At UNC Charlotte, Dr. Jordan Poler and his team have developed a next-generation filtration technology designed to remove PFAS and other contaminants from drinking water.

Their patented nanostructured filtration media has now passed NSF/ANSI 42 and 61 testing — a critical validation that confirms both safety and effectiveness and positions the technology for large-scale production.

## **HOW NCINNOVATION IS DE-RISKING COMMERCIALIZATION**

Support from NCInnovation is enabling the transition from laboratory breakthrough to real-world deployment.

Through milestone-based funding and commercialization support, NCInnovation is helping:

- ▶ Advance certified, scalable manufacturing in partnership with Goulston Technologies
- ▶ Reduce technical and production risk at a critical stage



*“With the continued support of NCIInnovation and our partners ... we’re positioned to deliver real-world solutions to one of the most pressing challenges of our time — access to clean water.”*

*-Jordan Poler, Ph.D.*

The technology, developed through years of research in nanomaterials and membrane science, provides a new approach to removing contaminants from drinking water. Unlike conventional filtration media, the materials developed by the Poler team feature an engineered nanostructure that enhances selectivity and capacity while maintaining sustainability and lowering regeneration costs.

This important validation was made possible through support from the NCIInnovation, which invests in North Carolina-based technologies with high commercial potential.

Goulston Technologies of Monroe, North Carolina, is an established specialty chemical manufacturer that is partnering with Poler’s nanXPure to scale up production with full manufactured certification, using industry-ready methods. Once manufacturing certification is complete, nanXPure will lead commercialization efforts from its headquarters in Huntersville, North Carolina, bringing a new generation of safe, efficient and sustainable purification filters to the global water treatment market.

“This milestone confirms that our materials meet the highest standards for safety and performance,” said Poler. “With the continued support of NCIInnovation and our partners at Goulston Technologies, we’re positioned to deliver real-world solutions to one of the most pressing challenges of our time — access to clean water.”

Jordan Poler, Ph.D., has successfully passed filtration testing with his water purification system, paving the way for large-scale production on filters that remove forever chemicals and other contaminants from water.

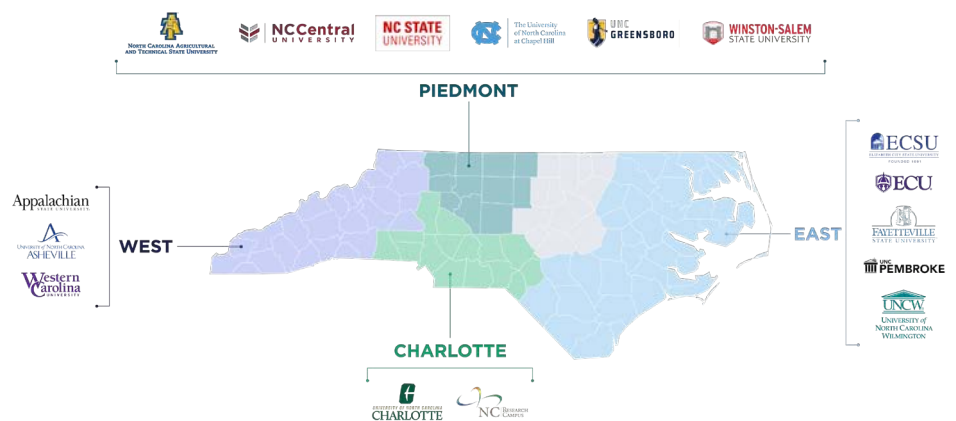
Poler, a professor of chemistry in the UNC Charlotte Klein College of Science, is a leader in advanced water purification solutions, using a patented nanostructured filtration media developed by his team at the University.

The filters passed NSF/ANSI 42 and 61 Point-of-Use (POU) testing, which are industry-standard certifications that confirm the filters are both safe and effective for drinking water treatment.

# A STATEWIDE MODEL FOR INNOVATION

## *NCInnovation Is Intentionally Statewide.*

NCI coordinates four regional innovation networks — East, West, Piedmont, and Charlotte — that connect public research universities, industry partners, and business leaders to advance commercialization across North Carolina. Each network is anchored by hub institutions and supported by seven Regional Innovation Network Directors who lead regional operations statewide.



Economic growth cannot be limited to one metropolitan region. Innovation capacity must extend to rural communities, emerging industry clusters, and historically underrepresented institutions.

Our model:

- ▶ Engages universities across the UNC System
- ▶ Supports both large research institutions and regional campuses
- ▶ Strengthens rural and economically transitional communities
- ▶ Builds cross-campus collaboration

By embedding commercialization infrastructure statewide, we are strengthening regional economic resilience and ensuring opportunity is broadly distributed.

# THE POWER OF PHILANTHROPIC CAPITAL

*Catalytic.  
Accountable.  
Leveraged.*

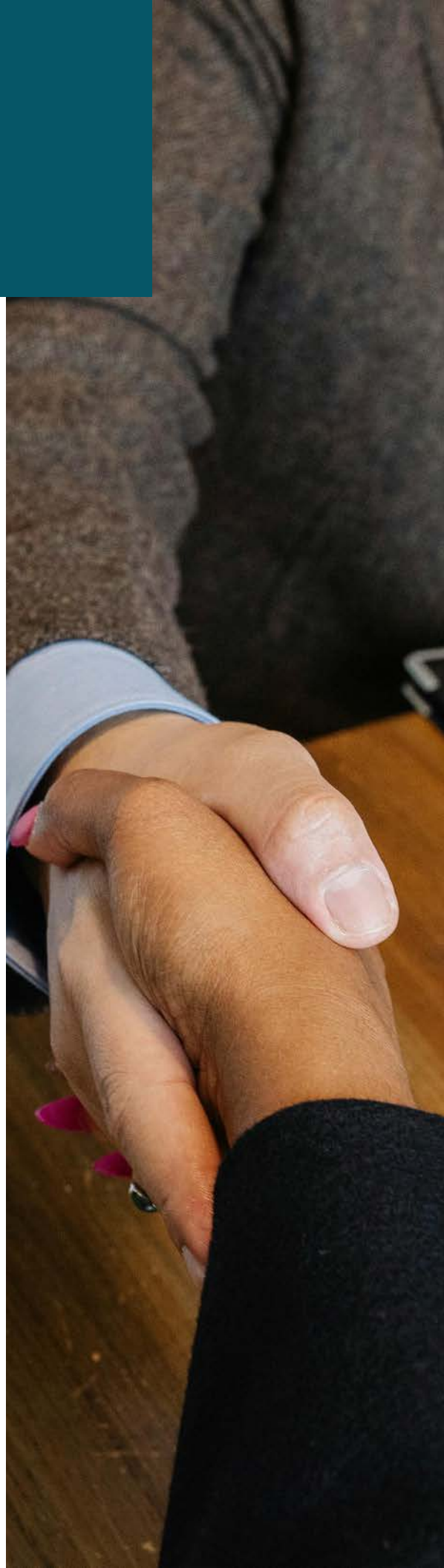
Philanthropic investment plays a distinct and essential role in our model.

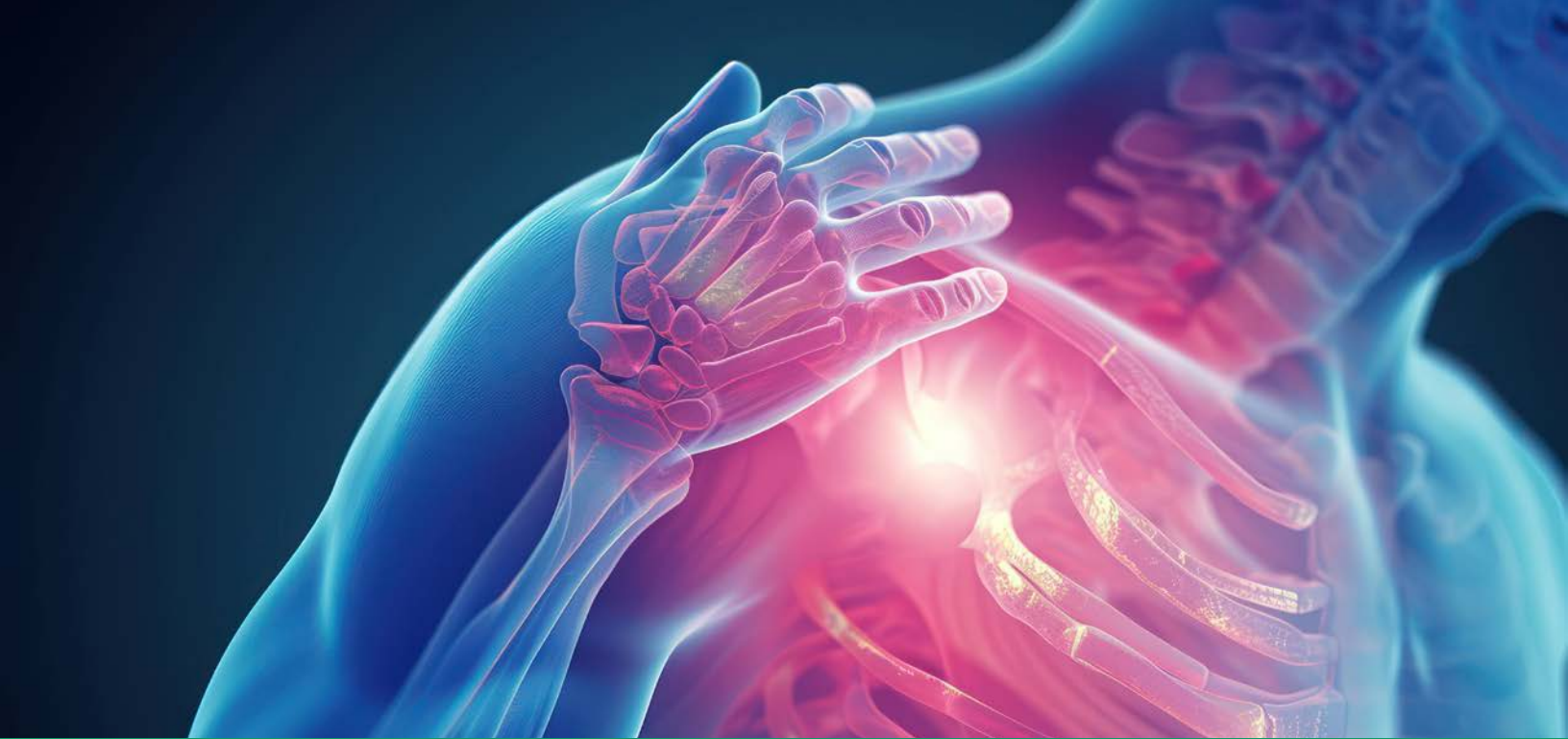
Private dollars provide:

- ▶ Flexibility to move quickly
- ▶ Risk tolerance during early validation stages
- ▶ Strategic leverage to unlock additional capital
- ▶ The ability to fund critical commercialization milestones

Every philanthropic dollar deployed through NCI is structured to maximize economic return — not just for a single project, but for the broader ecosystem.

This capital does not replace public funding. It multiplies it.





# TARGETING INFLAMMATION AT ITS SOURCE

## *How Kerui Wu Is Rethinking Precision Treatment.*

The human immune system is essential to healing, but when its signals don't turn off at the right time, they can cause lasting harm. In chronic diseases and even everyday wounds, the immune signals meant to protect the body can linger, damaging healthy tissue and making long-term treatment difficult. At UNC Greensboro (UNCG), Dr. Kerui Wu is developing a targeted delivery platform designed to act on the immune cells that help keep inflammation running — aiming for more precise control with fewer systemic side effects.

“In modern medicine, we still have many diseases that are not curable,” Wu says. “Cancer, autoimmune disease, even viral infections. The immune system is a powerful weapon, but when one component goes wrong, the consequences can be severe.”

Rather than targeting a single disease, Wu's research focuses on the immune system itself. Autoimmune and inflammatory diseases, he says, provide a rigorous testing ground for new therapeutic strategies — challenging models that can reveal whether a treatment truly works in complex, real-world conditions.

Most existing therapies for chronic inflammation rely on systemic suppression — dampening immune activity throughout the body. Steroids and nonsteroidal anti-inflammatory drugs can reduce symptoms, but often at a cost: increased infection risk, organ damage, and serious side effects that make long-term use untenable.

“We don't want to shut off the entire immune system,” Wu explains. “We want to control the critical components driving the disease.”



inflammation. By using nanoparticle-based carriers engineered for targeted uptake by macrophages, his research aims to shift macrophages toward a less inflammatory state and reduce tissue inflammation in disease models.



*“In modern medicine, we still have many diseases that are not curable... The immune system is a powerful weapon, but when one component goes wrong, the consequences can be severe.”*

*~Kerui Wu, Ph.D.*

The platform has already shown promise in laboratory and animal models, including previously published work on liver inflammation. With NCIInnovation support, Wu’s team is now expanding into more advanced testing — building organoid models to study how reprogrammed macrophages interact with skin cells and fibroblasts involved in wound healing and scar formation.

The clinical relevance of Wu’s work became personal when his 2-year-old child suffered a cut on the face. As any parent would, Wu asked doctors what could be done to speed healing and reduce inflammation to prevent scarring.

“There was nothing available,” he recalls. “No product designed to control inflammation at the site of the wound.”

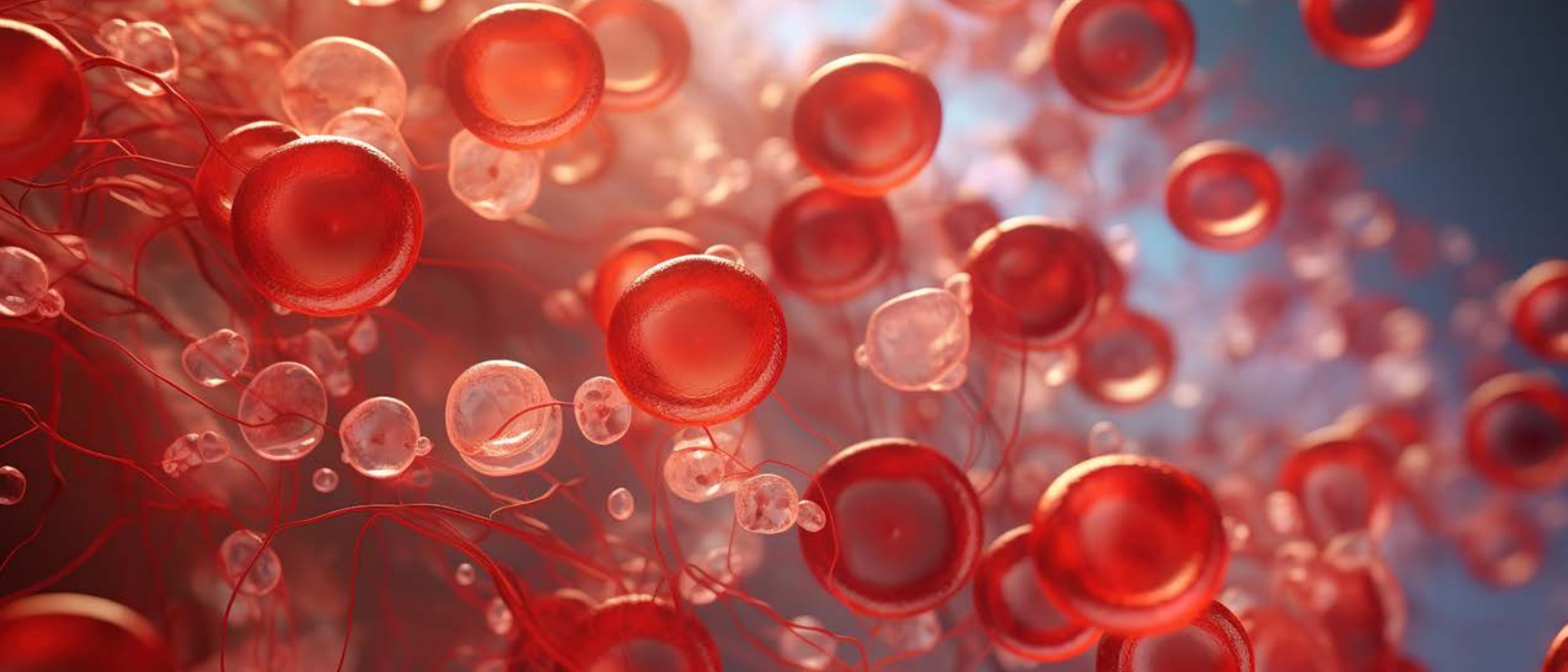
That moment reinforced what his research already suggested: inflammation itself is often the problem, and effective treatment requires acting locally — at the precise site where damage is occurring.

That insight carried into Wu’s customer discovery efforts. When he spoke with parents about potential wound-care solutions that could reduce inflammation and improve healing, the response surprised him.

That philosophy led his lab to focus on macrophages — immune cells that act as central communicators within inflamed tissue. Unlike cells with highly specialized roles, macrophages appear everywhere inflammation occurs. They integrate signals from many immune pathways and relay instructions to surrounding cells, including those involved in wound healing and scar formation.

Because macrophages sit at the center of these signaling networks, Wu saw them as a leverage point: regulate macrophages, and it becomes possible to rebalance inflammation locally without suppressing immune function throughout the body.

Dr. Wu’s project is developing a macrophage-targeted delivery platform designed to bring anti-inflammatory therapeutics directly to immune cells that drive chronic



“Every parent we spoke with said they would be interested,” Wu says.

For a researcher early in his career, the result was both validating and instructive. It underscored the importance of designing therapies not only around biological mechanisms, but around real-world needs, an approach Wu now sees as central to his research program.

With support from NCInnovation, Wu is advancing both the science and the translation of his work. The award provides critical resources, including funding for bioprinting equipment to construct organoid models and support for collaborations with researchers at North Carolina A&T State University and UNC-Chapel Hill to validate the platform.

Equally important, NCInnovation is helping Wu navigate the unfamiliar terrain of commercialization — connecting him with industry partners and providing entrepreneurial-in-residence guidance as he explores regulatory pathways. Depending on formulation and use, the technology could move forward as a wound-care bandage, a topical skincare product, a medical device, or eventually a therapeutic delivered intravenously for chronic inflammatory diseases.

“Those are decisions we’re working through now,” Wu says. “This award gives us the space

to test, gather safety data, and determine the right path forward.”

Students also play a central role in the project. Wu sees commercialization-focused research as a powerful training ground — especially in a competitive job market where not every graduate student will pursue a traditional academic career.

His students gain exposure not only to experimental science, but also to customer discovery, regulatory considerations, intellectual property, and product development. For Wu, that breadth is intentional.

“I want students to understand the full process,” he says. “Not just the science, but how research connects to patients, consumers, clinicians, and real-world use.”

Over the longer term, he hopes to see his work contribute to North Carolina’s economy — through new companies, new jobs, and therapies that improve quality of life. Just as important, he hopes to one day offer the same mentorship and support he has received at UNCG to the next generation of researchers.

“If these projects can make it to market,” Wu says, “and help patients while also contributing to the state’s workforce and economy — that’s success.”

# BUILDING NORTH CAROLINA'S INNOVATION WORKFORCE

## *Economic Competitiveness Depends on Talent.*

NCI-supported projects are deeply integrated with workforce development across the university system.

Students are not passive observers. They are active participants in:

- ▶ Prototype design
- ▶ Market research
- ▶ Data analysis
- ▶ Regulatory planning
- ▶ Startup strategy

This hands-on commercialization experience prepares graduates for high-skill roles within North Carolina's innovation economy.

By aligning research commercialization with workforce training, we strengthen both simultaneously.



# STRENGTHENING THE STATEWIDE INNOVATION ECOSYSTEM

## *Aligning Partners Across North Carolina.*

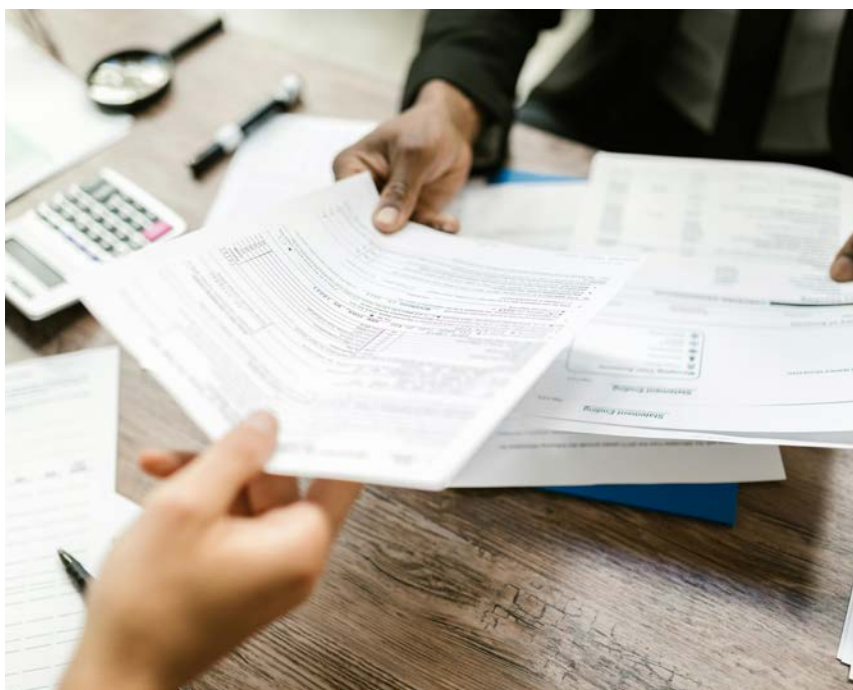
NCI operates within a broader network of public and private partners.

Our collaboration includes:

- ▶ UNC System leadership
- ▶ Industry stakeholders
- ▶ Regional economic development organizations
- ▶ Philanthropic partners
- ▶ Policy leaders

This alignment ensures that commercialization efforts are coordinated — not fragmented — and that promising technologies connect efficiently to market demand.

We are building infrastructure, not isolated projects.





# EMBEDDING INNOVATION AT ELIZABETH CITY STATE UNIVERSITY

Elizabeth City State University is entering a new chapter — one defined by intentional innovation and expanded opportunity for students and the region it serves. Under the leadership of Chancellor S. Keith Hargrove Sr., ECSU is deliberately embedding innovation into its academic programs, partnerships, and campus culture.

A former faculty member with experience launching and growing initiatives, Chancellor Hargrove brings an engineering-informed, execution-oriented mindset to the role — focused on outcomes, not just aspiration. “At ECSU, innovation isn’t a buzzword — it’s a responsibility,” Chancellor Hargrove said. “It’s about preparing our students for real careers, creating pathways for ideas to move beyond the classroom, and ensuring our university plays an active role in regional and statewide economic growth. That means being intentional about how innovation shows up across our campus and in our partnerships.”

That mindset is reflected in ECSU’s 2025-2030 Strategic Plan, which emphasizes innovative academic programs, entrepreneurial thinking, and workforce-aligned growth. Rather than treating innovation as a standalone activity, ECSU is integrating it across disciplines — connecting classroom learning to real-world

application in areas such as aviation, unmanned systems, defense-related technologies, and entrepreneurship.

This shift is already producing results. ECSU has moved from having a single innovation effort to eight active projects in the NCInnovation pipeline — an important signal of both institutional momentum and the potential that exists at smaller universities when the right structures and support are in place.

As North Carolina’s statewide public-private partnership, NCInnovation is focused on accelerating the commercialization of university research. It is designed to support institutions like ECSU — helping promising ideas move from concept to application while reinforcing campus leadership and local context. “ECSU’s progress underscores why NCInnovation exists,” said Derrick Welch, Senior Regional Innovation Network Director for the East. “Our role is to support institutions of all sizes — especially those with strong momentum but limited capacity — by helping connect their most promising ideas to funding, expertise, and statewide commercialization pathways. When innovation is inclusive, the entire state benefits.”

# RESPONSIBLE STEWARDSHIP AND FINANCIAL TRANSPARENCY



## *Disciplined Capital. Long-Term Impact.*

NCInnovation operates with a long-term financial model designed to preserve public investment while delivering sustained economic impact. The organization is supported by a \$500 million state endowment, with the principal maintained in perpetuity. Annual program funding is derived from the earnings generated by this endowment — not from spending down the state's investment.

This structure ensures that North Carolina's commitment to innovation remains durable, while enabling consistent, year-over-year support for applied research commercialization across the state.

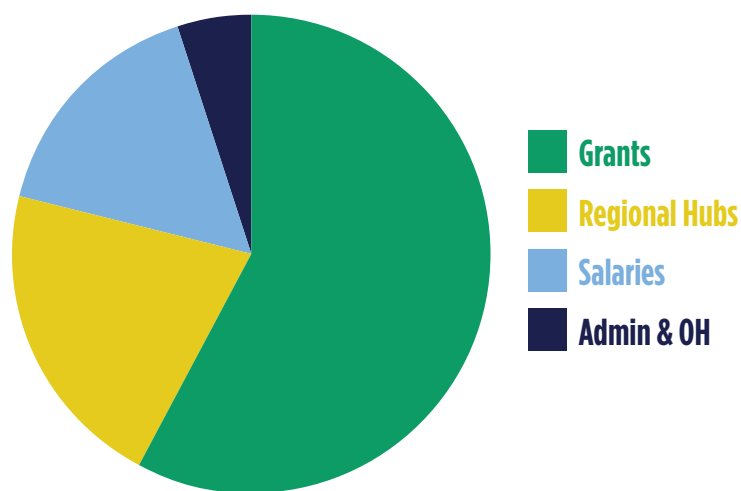
### ANNUAL FINANCIAL OVERVIEW (FY 2025-26)

- ▶ **Total Annual Budget:** \$28.3 million
- ▶ **Program Investment:** \$22.3 million directed to non-dilutive grants and statewide university support
- ▶ **Projected Annual Program Funding from Endowment Earnings:** \$22-\$25 million

These funds are deployed through a milestone-based model that emphasizes accountability, measurable progress, and commercialization outcomes.

### STRATEGIC USE OF FUNDS

The majority of NCInnovation's resources are directed toward advancing technologies and supporting statewide infrastructure:



**58% GRANTS:** Direct investment in applied research projects with commercial potential

**21% REGIONAL HUBS:** Building and supporting statewide commercialization infrastructure

**16% SALARIES:** Talent required to execute disciplined program oversight and commercialization support

**5% ADMINISTRATIVE & OVERHEAD:** Maintaining operational efficiency

This allocation reflects a program-first approach, with the vast majority of funding dedicated to activities that directly advance economic impact.



## THE ROLE OF PHILANTHROPIC INVESTMENT

Private philanthropy plays a critical role in strengthening and accelerating this model.

- ▶ **Annual Private Support:** ~\$6 million
- ▶ **Leverage Effect:** Enables NCInnovation to amplify state endowment funding by approximately 2.7x

Philanthropic capital increases flexibility at key inflection points — allowing NCInnovation to move more quickly, support additional high-potential projects, and accelerate commercialization timelines.

Rather than replacing public investment, private funding enhances its effectiveness — ensuring that more technologies reach validation, more partnerships are formed, and more economic opportunities are realized across North Carolina.

### ACCOUNTABILITY AND OVERSIGHT

All funding is deployed through a structured, milestone-based process with defined performance expectations. Projects are evaluated for technical progress, commercialization readiness, and alignment with economic development goals.

This disciplined approach ensures that capital — both public and private — is invested responsibly, with a clear focus on measurable outcomes for the state.



## Together, We Are Putting Innovation to Work for All of North Carolina

By aligning research excellence, disciplined commercialization strategy, and catalytic philanthropic investment, NCInnovation is ensuring that ideas developed here translate into opportunity here.



 **NCINNOVATION**