

## **Associate or Full Professor – Cluster Hire in Carbon-based Electronics and Photonics (Chemistry)**

As part of the **Chancellor's Faculty Excellence Program**, NC State seeks expressions of interest and nominations for a **tenured Professor in Carbon-Based Electronics, Spintronics, and Photonics** with experience in **synthetic materials chemistry**. We seek an innovative and transformative academic leader whose scholarship will advance NC State's position as one of the premier universities of its kind. While we anticipate an appointment at the rank of Professor, exceptional candidates at the rank of Associate Professor will be considered.

### **About the Cluster**

Carbon and carbon hybrid electronics offer fundamentally new avenues to solve some of the most important grand challenges of the 21st century, while at the same time requiring only low energy-budget, environmentally-friendly processing and offering possible cradle-to-cradle recycling. The **Carbon Electronics** cluster is pursuing international prominence in next-generation, carbon-based energy, display and/or detector technology and computation platforms, and it envisions interrelated fundamental and applied technology advances that provide revolutionary computing approaches, renewable power sources, advanced energy storage, and novel device capabilities such as low-cost memory and sensors.

Our vision is to become a world leader in Carbon Electronics for the next 20 years and beyond, and we believe that the new faculty attracted by the cluster hire, in synergy with the existing NC State faculty and infrastructural resources, is the final critical investment to establish and maintain a leadership position. Strategic senior hires and their complementary facilities will fill in critical gaps that will lead to international prominence in next-generation, carbon-based energy, display and/or detector technology and computation platforms, allowing us, for example, to exploit their semitransparent or unique spin properties. We envision interrelated fundamental and applied technology advances that provide revolutionary computing approaches, renewable power sources, advanced energy storage, and novel device capabilities such as low-cost memory and sensors. Many of these can be integrated into truly self-sustaining systems such as self-powered greenhouses, integrated solar cell-algae bioreactors, or integrated, self-powered health monitors.

### **About the Position**

The Carbon Electronics Cluster is seeking a visionary leader in materials chemistry with demonstrated research excellence in the synthesis and characterization of organic, polymeric, and other carbon-based materials (including hybrids) for electronics, photonics, and related technologies. Priority will be given to candidates that have demonstrated interdisciplinary collaborations that cut across academic units and are able to generate the requisite research funding necessary for supporting these activities.

Minimum requirements include a Ph.D. in Chemistry or related discipline from an accredited institution and applicants should have extensive experience teaching in the University Chemistry curriculum at both the undergraduate and graduate levels. Applicants must also have experience in the research mentoring of doctoral students and postdoctoral fellows as evidenced through

publication of research articles in peer-reviewed scientific journals. Priority will be given to candidates that have demonstrated abilities to form interdisciplinary collaborations that reach across academic units. Inclusiveness and diversity are academic imperatives and thus, university goals. Applications and materials, including a curriculum vitae, cover letter and two separate documents containing 1) a list of publications and 2) a statement of research, are accepted through our online system at <https://jobs.ncsu.edu/postings/74412>.

**Confidential inquiries and nominations should be directed to:**

Dr. Felix Castellano ([fncastel@ncsu.edu](mailto:fncastel@ncsu.edu))

**Cluster Search Committee**

Harald Ade (Physics), **cluster co-lead**

Felix Castellano (Chemistry)

Elizabeth Dickey (Materials Science & Engineering)

Michael Dickey (Chemical & Biomolecular)

Dan Dougherty (Physics)

Frank Hunte (Materials Science & Engineering)

Jess Jur (Textile Engineering, Chemistry)

Michael Kudenov (Electrical & Computer)

Shuang Fang Lin (Physics)

Brendan O'Connor (Mechanical & Aerospace)

Franky So (Materials Science & Engineering), **cluster co-lead**

Wei You (Chemistry)

**Carbon Electronics-related research and facilities at NC State:**

[Eastman Chemical Center](#)

[Next Generation Power Electronics Innovation Institute](#)

[Precision Engineering Center \(PEC\)](#)



## The Chancellor's Faculty Excellence Program

The Chancellor's Faculty Excellence Program, launched in 2011, is recruiting some of the best and brightest minds to join NC State's community of world-leading faculty at the forefront of this initiative. Guided by a strong strategic plan and an aggressive vision, new thematic clusters are adding over 75 new faculty members in 20 select fields to enhance the breadth and depth of NC State's solution-driven research and innovation. The current 20 clusters have been selected on several important criteria:

- Ability to achieve national eminence in proposed topic
- Alignment with university strategic priorities
- Demonstration of real interdisciplinarity
- Potential to build on an existing university strength (or strength of the existing assets)
- Opportunity for faculty to engage in both research and teaching of proposed topic
- Ability to attract funding
- Commitment to share resources and physical infrastructure
- Inclusion of multiple colleges
- Demonstration of a balanced hiring plan with clear leadership
- Potential to attract diverse faculty

The Chancellor's Faculty Excellence Program is managed through the Office of the Provost. Using a faculty initiated proposal process, twelve clusters were announced in February 2012 and eight in April 2015.

- Bioinformatics
- Carbon Electronics
- Data-driven Science
- Digital Transformation of Education
- Emerging Plant Disease and Global Food Security
- Environmental Health Science
- Forensic Sciences
- Genetic Engineering and Society
- Geospatial Analytics
- Global Environmental Change and Human Well-Being
- Global Water, Sanitation and Hygiene
- Innovation + Design
- Leadership in Public Science
- Microbiomes and Complex Microbial Communities
- Modeling the Living Embryo
- Precision Medicine
- Sustainable Energy Systems and Policy
- Synthetic and Systems Biology
- Translational Regenerative Medicine
- Visual Narrative

To date, fifty-five (55) new faculty have been hired via the Chancellor's Faculty Excellence Program. In addition to bringing outstanding new faculty to campus and moving NC State toward national eminence, the Chancellor's Faculty Excellence Program has seeded and nurtured an expanding culture of interdisciplinarity on campus. We invite you to explore more information about the Chancellor's Faculty Excellence Program and this cluster at <https://facultyclusters.ncsu.edu>.

## About NC State University

NC State was founded with a purpose: to create economic, societal and intellectual prosperity for the people of North Carolina and the country. We began as a land-grant institution teaching the agricultural and mechanical arts. Today, we're a pre-eminent research enterprise that excels in science, technology, engineering, math, design, the humanities and social sciences, textiles and veterinary medicine.



NC State students, faculty and staff take problems in hand and work with industry, government and nonprofit partners to solve them. Our 34,000-plus high-performing students apply what they learn in the real world by conducting research, working in internships and co-ops, and performing acts of world-changing service. That experiential education ensures they leave here ready to lead the workforce, confident in the knowledge that NC State consistently rates as one of the best values in higher education.

Each year, NC State adds \$6.5 billion to the statewide economy, equivalent to creating more than 90,000 new jobs. That represents significant return on investment for the citizens of North Carolina in the form of research advances, innovative technologies, successful companies, skilled graduates and new jobs waiting for them.

Our 9,000 faculty and staff are world leaders in their fields, bridging the divides between academic disciplines and training high-caliber students to meet tomorrow's challenges. Together, they forge powerful partnerships with government, industry, nonprofits and academia to remake our world for the better.

NC State is leading efforts to curb nuclear proliferation, develop a smart electric grid, create self-powered health monitors, help farmers confront climate change and build a new American manufacturing sector. Our award-winning Centennial Campus is home to more than 70 public and private partners — as well as the innovative Hunt Library, which Time magazine has dubbed “the library of the future.”

## Raleigh and the Community

It all happens in one of the fastest-growing urban centers in America. A top spot for young professionals and families, Raleigh is nationally recognized as a city on the rise:

- No. 1 among the best places for business and careers (Forbes, 2014)
- No. 1 among U.S. cities attracting the most families (Forbes, 2014)
- No. 2 among America's 15 best cities for young professionals (Forbes, 2014)
- No. 3 among the best midsize U.S. metro areas for college students (American Institute for Economic Research, 2014)
- Recently selected as a Google Fiber expansion city

With Durham and Chapel Hill, Raleigh anchors the Research Triangle, a national hotspot for high-tech enterprise. The top companies in the region — including IBM, Cisco Systems, SAS Institute, Biogen Idec and GlaxoSmithKline — are among the country's best employers. They also lead the way in hiring new NC State graduates.

More than 125 years after its creation, NC State continues to make its founding purpose a reality. Every day, our career-ready graduates and world-leading faculty make the fruits of learning and discovery available to people across the state, throughout the nation and around the world.



## For More Information:

NC State University at <https://www.ncsu.edu/>

NC State: Think and Do at <https://www.ncsu.edu/think-and-do>

NC State's Strategic Plan at <https://strategicplan.ncsu.edu/pathway-to-the-future/>

NC State's Commitment to Diversity at <http://oied.ncsu.edu/diversity/chancellors-statement-on-diversity/>

*NC State University is an equal opportunity and affirmative action employer. All qualified applicants will receive consideration for employment without regard to race, color, national origin, religion, sex, gender identity, age, sexual orientation, genetic information, status as an individual with a disability, or status as a protected veteran. Individuals with disabilities requiring disability-related accommodations in the application and interview process, please call 919.515.3148. We welcome the opportunity to work with candidates to identify suitable employment opportunities for spouses or partners.*