Visualizing North Carolina's Expertise Network

↘ The Issue

North Carolina is home to more than 15,000 university faculty members with expertise in areas ranging from biomedical engineering to integrated pest management. This vast intellectual resource is of tremendous value to the state, yet establishing new connections and interpreting the relationships among these experts, who are based in the 16 UNC-system institutions and private universities, can be challenging.

To enhance the accessibility and transparency of the state's pool of experts, the General Administration of the University of North Carolina is developing a statewide expertise profiling system. Once completed, the Research, Engagement and Capabilities Hub (REACH NC) will enable users to quickly pull together multidisciplinary teams for competitive research proposals and on-demand problem solving, through both internal and publicly-accessible interfaces.

↘ The RENCI Project

For users to be able to rapidly draw upon North Carolina's immense network of experts, the REACH NC system must offer more than a text-based database. Visual tools are needed to convey information that users cannot easily interpret from text alone, such as the strengths of the relationships among experts, the volume of a faculty member's productivity in a particular area of study, and areas of overlap among individuals from different fields.

RENCI has been called upon to develop advanced data visualization capabilities for the REACH NC expertise profiling system. Working with its partners in the university system, RENCI is developing customized visual analytics tools to supplement the Collexis commercial platform, which provides the system's software backbone. These advanced visual tools will allow users to quickly tap into the networks of connections among faculty members within the system and to identify potential connections to facilitate synergy and innovation. These visualization tools will be especially valuable for supporting interdisciplinary and multidisciplinary collaborations.

The prototype REACH NC system will include data on 8,000 research faculty from UNC Chapel Hill and NC State University. The system will be expanded to include an additional 8,000 researchers from UNC system schools and eventually experts from Duke and Wake Forest universities.

↘ The Expertise

RENCI brings a large body of visual analytics and information visualization expertise to the REACH NC project. RENCI's visualization specialists are skilled at structuring the display of large datasets to facilitate efficient and intuitive interpretation. RENCI facilities also host an array of unique visualization software and equipment, giving its experts the opportunity to draw upon cutting-edge visualization resources as they develop optimal desktop computer visualization applications for the Collexis platform.

↘ The Partners

UNC Chapel Hill
NC State University
UNC General Administration
TraCS Institute
Collexis-Elsevier

↘ The Impact

The REACH NC platform will help leverage the UNC system's expertise in life sciences, biomedical research, engineering and other fields to allow full utilization of the state's intellectual resources. The system's interactive tools will make the scope and depth of the research activities in the UNC system more transparent and accessible for faculty members, administrators and the public. As the project evolves, REACH NC will allow users to identify new collaborators and relevant work being done across all North Carolina research institutions, leading to more competitive research and grant pursuits.

The system is designed to be both self-maintaining and customizable. Expert profiles will automatically update when faculty members publish work in scholarly journals, providing a robust system for ongoing profile maintenance.

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