



DATA INSTITUTE FOR SOCIETAL CHALLENGES

The UNIVERSITY of OKLAHOMA

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Overview

The University of Oklahoma, Norman created the Data Science Institute for Societal Challenges in the Summer of 2020. The vision of DISC is to power solutions to societal problems through data-enabled research with impact. Our mission is to lead, enhance, promote cross-campus data science, data-enabled research innovation, and develop community and corporate partnerships to address pressing societal issues.

The institute is focused on problem-driven convergent research that will not only improve global issues, but advance science, humanities, and the state-of-the-art of data science through transdisciplinary collaboration, community and industry partnerships. Our mission is to integrate, enable, and accelerate cross-university research excellence with novel data-science capabilities in solving key societal challenges. A key tenant of DISC is to ensure understandable, trustable, and domain-grounded data-science solutions that enable effective decision-making by researchers, practitioners, and the public.

DISC plays a key role in the University's new strategic plan, and especially the research strategic plan. DISC is integrated and provides foundational capabilities to enable advancing the four research strategic themes: Aerospace, Defense and Global Security; Environment, Energy, and Sustainability; the Future of Health; Society and Community Transformation. The four research strategic themes were created to address specific global challenges with convergent research partnerships utilizing OU expertise. We believe that this tight alignment and integration in the University's strategic plan ensures focus, relevance, and opportunities for both impact and success.

Data Science at OU and creation of DISC

As with all universities, data science activities are pervasive across all disciplines with many labs, courses, and centers that have emerged over the past 10 years. At OU, there are data science and/or data-science-enabled activities in every college. One goal in creating DISC was to help coordinate and navigate these activities as the current organizational structure is confusing to students and researchers on campus, as well as to external organizations and potential partners. Providing a central directory of researchers and activities helps identify collaboration opportunities, relevant expertise, and breadth of interest and expertise across campus. Community building, cross-disciplinary collaboration, and teaming is a key activity of our Institute. This activity extends to community and national partnerships and teaming. The initial response from faculty and leaders across campus is extremely enthusiastic with faculty and departments anxious to engage.

DISC was created by the Vice President of Research and Partnerships (VPRP) within the office of the VPRP and with recurring financial support for the Institute. The director of DISC is also an Associate Vice President of Research and Partnerships and part of the VPRP's Leadership Team, showing the central, critical role of data-science and data-enabled research to the university's research mission. The structure of DISC has a director, managing director, research and administrative staff, and four quarter-time associate directors from departments across campus who will coordinate, and lead data science activities related to each research strategic plan themes. We are currently soliciting applications from faculty across disciplines to apply to become an associate director. This structure ensures the cross-disciplinary mission and support of DISC to the university's priorities. The annual budget of DISC also enables support for research team building, seed funding, and matching funding for collaborative activities.

Current Activities



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DISC is currently working with the OU Center for Faculty Excellence to create a series of workshops centered on the data science integrated convergent proposal development process. The intent of these workshops is to empower faculty, post-docs, and graduate students to form synergies, teams, and increase capabilities in obtaining funding for large-scale convergent problem-driven projects. Workshop topics include guest lectures from external government relations firms and experienced grant writers.

To date, the DISC center has spearheaded several successful funding applications including a series of small grants focused on COVID-19 research. DISC is engaging in international transdisciplinary research efforts with collaborations in Italy, Georgia, and Peru, with funding from NATO and others. DISC is also leading a multi-university team on newly funded NSF/USDA AI Institute planning grant.

Challenges, Opportunities, and Insights

The DISC center has faced several challenges during its first few months. The first challenge stems from being a new organization— it the first Institute created within the University's VPRP office. Another related challenge is that the director and several staff are new to the university. Unlike existing center constructs with OU faculty and staff, who are steeped in formal and informal institutional culture, the introduction of new entity and staff can lead to apprehension about the nature and purpose of DISC and our team. This highlights the needs and benefits of open, inclusive, transparent, communication and management approach that we have built into the core of DISC: the staff's mission is to bolster data-science oriented faculty and activities achieve great results with societal impact. Finally, there are certain challenges associated with starting a new center during a pandemic, with limited opportunity for group dynamics and face-to-face interaction.

Fortunately, we have a great opportunity to be growing a data science institute that is integrated within the university's strategic plan, with active support and engagement from the administration, college deans, and department heads. The vision to see data science as a fundamental, enabling core of the research strategic themes is empowering, enabling, and opens many opportunities within the university and beyond.

Even though we are in the early stages of growing DISC, we have already learned from our experiences. The first lesson is to engage in clear, consistent communication about the mission and vision of your center. This will help you cultivate a positive organizational culture within the university. The second insight is to engage in transparent communication through team building exercises. This transparency will help you establish and cultivate trust. Third, capitalize on the inclusive nature of convergent research to reach broad and wide across disciplines in the team and activities of the center. Finally, we suggest developing interpersonal relationships with faculty and staff in a non-work capacity, especially during these contact-limited times, to help build the interdisciplinary community and break down academic borders.