

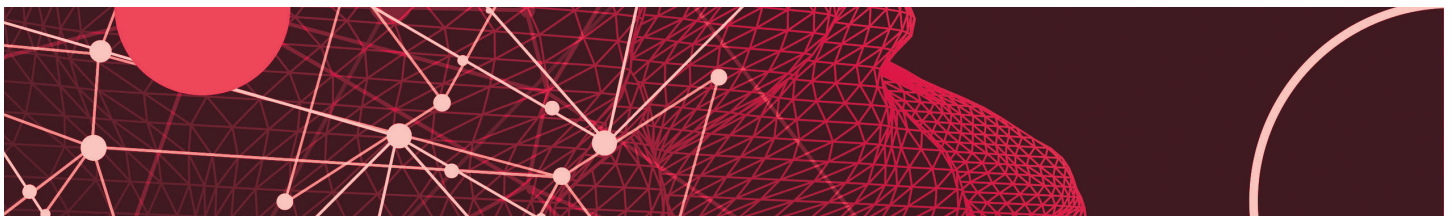


# DISC

DATA INSTITUTE FOR SOCIETAL CHALLENGES

# YEAR-END REPORT 2024

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# MESSAGE FROM THE DIRECTOR



Dear DISC Community,

Reflecting on the past year at the Data Institute for Societal Challenges (DISC), I am proud to share our remarkable progress and achievements. Our institute has made significant strides in harnessing the power of data science, artificial intelligence, and machine learning to address pressing societal challenges.

This year, DISC along with our Data Science Community:

1. Awarded \$178,723.97 in seed funding to 29 research teams comprising 76 OU researchers. This seed funding program is designed to incentivize transdisciplinary, convergent research teams focused on tackling grand challenges.
2. Submitted 84 proposals with a total funding request of \$76,996,564, showcasing our ambitious pursuit of research opportunities.
3. DISC members and affiliates have secured 37 awarded proposals, bringing in \$24,481,972 in funding to support our innovative research initiatives.
4. Grown our community to include 333 DISC members and 489 DISC affiliates, representing a diverse mix of faculty, students, staff, and postdoctoral researchers across all campuses.
5. Established 12 thriving Communities of Practice, covering crucial areas such as Bioinformatics, Environmental Systems Science, and Machine Learning & Big Data in the Social Sciences.
6. Co-hosted 69 events with a cumulative attendance of 1,575 attendees, fostering knowledge exchange.

Our involvement in the U.S. Artificial Intelligence Safety Institute Consortium further underscores our commitment to ensuring the safety and trustworthiness of AI as it increasingly shapes our world. This partnership allows us to contribute to national efforts in advancing AI trustworthiness, fairness, and safety measures.

As we look to the future, DISC remains dedicated to developing and growing convergent research teams focused on solutions for local to global challenges. We will continue to leverage our expertise in data-driven solutions to address real-world problems and drive positive societal impact.

I want to express my gratitude to our data science community, staff, and partners whose hard work and collaboration have made these achievements possible. Together, we are making significant strides in using data science to transform lives and solve our greatest societal challenges.

If you haven't engaged with DISC, we encourage you to reach out and see how we work together and support your ideas and needs.

As we enter the new year, let us build on this momentum and continue our pursuit of innovative, data-enabled research that makes a difference in our world.

Sincerely,

A handwritten signature in black ink that reads "David S. Ebert". The signature is fluid and cursive, written in a professional style.

**Dr. David S. Ebert**

*Gallogly Chair Professor of Electrical and Computer Engineering and Computer Science,  
Associate Vice President of Research and Partnerships,  
Director, Data Institute for Societal Challenges (DISC)  
University of Oklahoma*



# ABOUT DISC:

## Driving Data-Enabled Solutions for Societal Challenges

The Data Institute for Societal Challenges (DISC) at the University of Oklahoma stands at the forefront of leveraging data science to address pressing issues facing our society. As an interdisciplinary hub, DISC brings together diverse expertise, cutting-edge technology, and innovative thinking to tackle complex problems that impact Oklahoma, the nation, and the world.

Our institute is built on a foundation of clear purpose, forward-thinking vision, and strong values that guide our work. We believe in the power of data to transform research, inform policy, and improve lives. Through our strategic goals, we aim to foster collaboration, drive innovation, and establish the University of Oklahoma as a national leader in data-enabled solutions for societal challenges.

In the following sections, we outline the core elements that define DISC: our mission, vision, values, and strategic goals. These components form the blueprint for our operations, shape our research initiatives, and fuel our commitment to making a tangible difference through data science.

As you explore our mission, vision, values, and strategic goals, you'll gain insight into the driving forces behind DISC and our dedication to harnessing the power of data for the greater good. Join us on this journey as we work towards a future where data-driven insights lead to meaningful societal impact.

### Mission

Empower transdisciplinary research and collaboration to drive convergent solutions to societal challenges in Oklahoma, the nation, and the world through data science research, tools, and capabilities.

### Values

**Collaboration** – Together, we are more effective in solving challenges.

**Innovation** – Create new techniques, tools, and data-enabled solutions to positively impact our global community.

**Inclusivity** – Integrate diverse teams, education, research, and engagement with partners.

**Trust** – Through our actions, we build trust – core to transdisciplinary team success, transition to societal impact, and sustainability.

**Empowerment** – Empower convergent research teams to solve societal challenges.

### Vision

The University of Oklahoma is a nationally recognized leader for data science research and data-driven solutions to societal challenges.

### Strategic Goals

**Research Network** – Develop, sustain, and grow a robust and transdisciplinary network of diverse OU researchers while enhancing convergent research accessibility, quality, diversity, and competitiveness.

**External Partners** – Establish relationships and partnerships with external researchers, scholars, and industry leaders to address societal challenges using data science tools.

**Financial** – Build a growing and sustainable financial foundation that will support the institute's operations and increase the amount and quality of data-enabled research at OU.

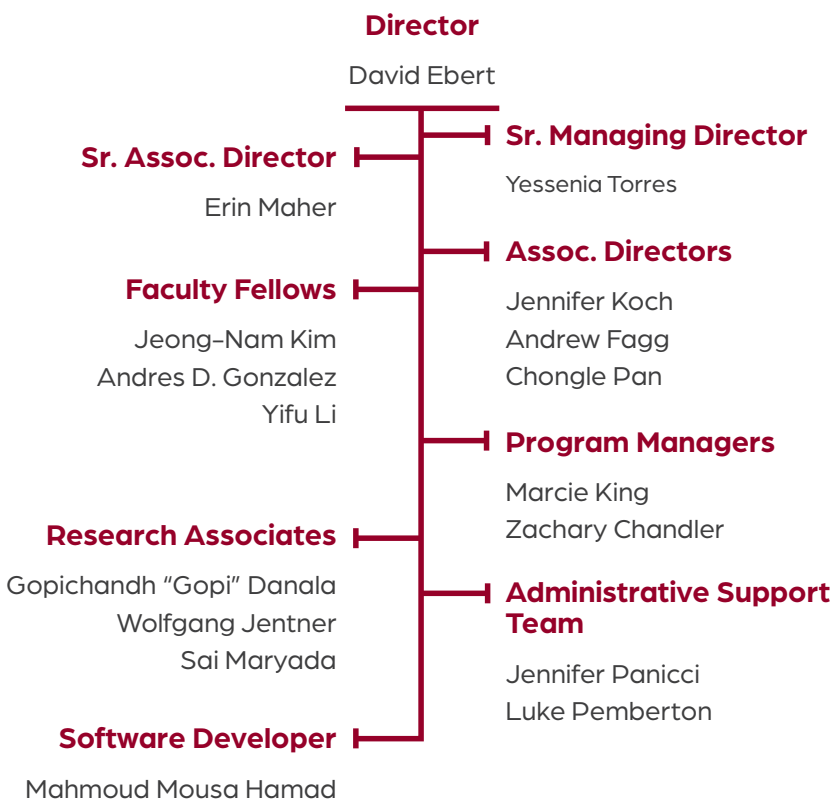
**Capabilities** – Partner with stakeholders across OU to identify, build, and provide the necessary data science capabilities and infrastructure to effectively lead and support data science research.

**Data Science Leader** – Be nationally recognized as a leader in data science and data-enabled science by accelerating and advancing emerging research in data science, engineering, science, and creative activities driven by real-world applications.

# ORGANIZATIONAL STRUCTURE

DISC is powered by a diverse and talented team of experts dedicated to advancing data-driven solutions for complex societal issues. Our organizational structure reflects our commitment to interdisciplinary collaboration and excellence in research. Led by Dr. David Ebert, Associate Vice President for Research and Partnerships and DISC Director, our team brings together specialists from various fields including sociology, geography, computer science, journalism, and industrial engineering.

Each member of our leadership team contributes unique expertise, ensuring DISC remains at the forefront of data science innovation and its application to real-world challenges. From our core faculty to our administrative support, every role is crucial in driving DISC's mission forward and maintaining our position as a hub for cutting-edge data science research and education at the University of Oklahoma.



## DATA SCIENCE COMMUNITY

Designed to help researchers, students, and staff connect across disciplines and facilitate team-building and partnerships at OU.

In FY24 we had:

**333**  
MEMBERS

**489**  
AFFILIATES

### Students – Grad/Undergrad

- |                         |                      |
|-------------------------|----------------------|
| Aseel Basheer           | Marc Hanna           |
| Mehreen Habib           | Vincent Tran         |
| Gnaneswar Kolla         | Nimisha Agarwal      |
| Jacob Sturges           | Jalal Said           |
| Catherine Donner        | Richa Bhattarai      |
| Mohamed Abdelnaby       | Carolina Nicholson   |
| Parisa Masnadi Khiabani | Jessica Shaw         |
| Rowzat Faiz             | Parker Fikes         |
| Usman Syed              | Nondumismo Mndzebele |

### FYRE

- |                   |                 |
|-------------------|-----------------|
| Josiah S. Abraham | Travis E. Lloyd |
|-------------------|-----------------|

### DSA 5900 Professional Practice

- |                          |                        |
|--------------------------|------------------------|
| Kovida Mothukuri         | Nasri Binsaleh         |
| Lakshmi Bhavani Uppaluri | Uma Maheshwar Reddy    |
| Raj Saha                 | Jangalapalli           |
| Zack Herman              | Wagner Rosa            |
| Jacob O. Flynn           | Eduardo Cerqueira      |
| Luke McDougal            | Rithsek Ngem           |
| Sagar Singh              | Vamsi Thokala          |
| Ethan Strickler          | Adam D. Lambert        |
| Pedro Lucero             | Lisa Napierala         |
| Mounica Pragyna Ravalla  | Bhavya Reddy Kanuganti |
| Ony Ramananandroniaina   | Jasmin Wilson          |
| Rachana Vellampalli      | Kovida Mohukri         |
| Bhavana Parupalli        | Raj Saha               |
| Sanoj Doddapaneni        | Zack Herman            |

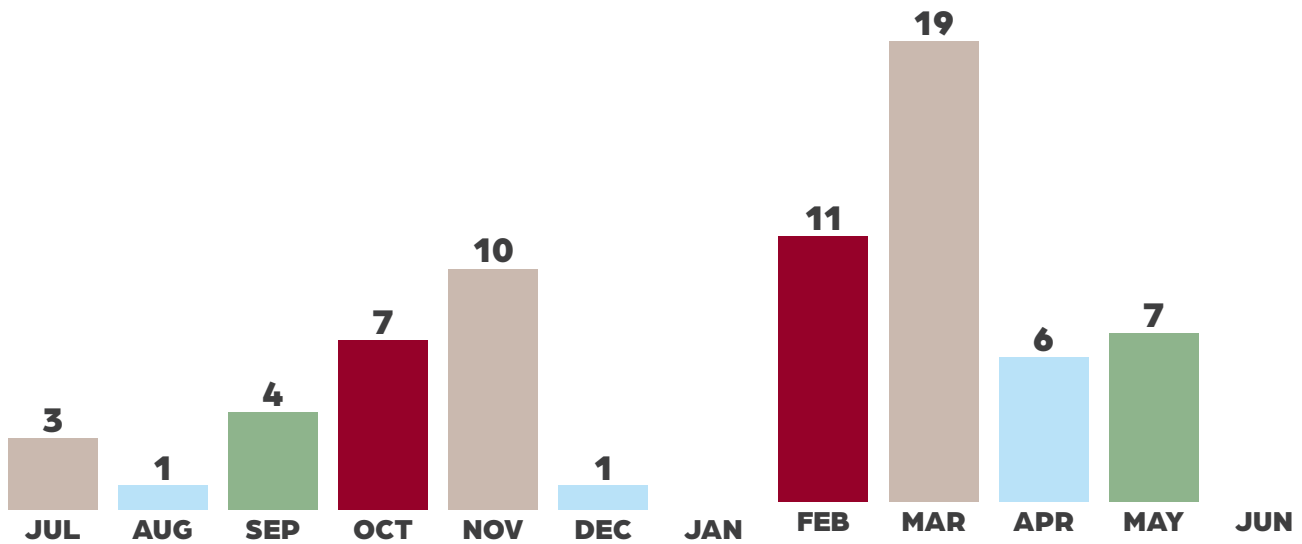
# RESEARCH ADVANCEMENT EFFORTS

We have made significant strides in advancing research that leverages data science to address societal challenges. Our efforts have focused on fostering disciplinary collaborations by hosting a variety of creative activities to connect research and being an integral player in supporting externally funded research across OU. Below is a recap of our research advancement efforts.

## Number of Events/Hosted Per Month

**69** Total Workshops/  
Events Co-Hosted

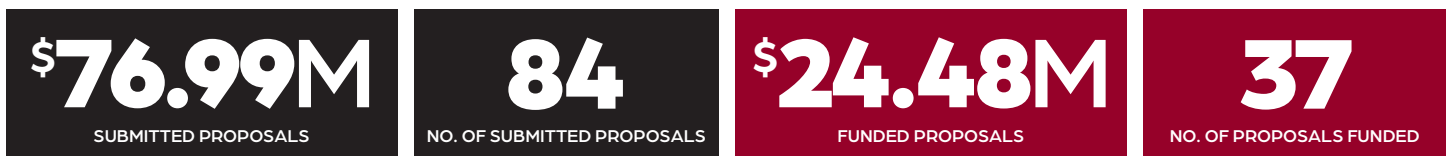
**1,575** Cumulative Workshop  
Attendance



## FY24 Workshops/Events Co-Hosted

## DISC Partnerships in External Funding Proposal Submissions

DISC plays an integral role in supporting the OU community in externally funded research.



# DISC SEED FUNDING:

## Sparking Innovation and Advancing Research

Since its inception in 2021, the DISC Seed Funding program has **supported 93 research teams with \$749,566 in funding** (This amount represents the amount DISC has given researchers over the past 4 years). This initial support has catalyzed further funding from state, federal, and private sources, including the National Science Foundation and the Oklahoma Center for the Advancement of Science and Technology. This resulted in 27 additional grants being awarded.

The impact of this funding is evident in the academic output and professional development of the researchers. To date, at least 18 papers have been published in peer-reviewed journals, and researchers have participated in numerous podcast interviews. Additionally, funding recipients have attended 27 conferences, enhancing their professional networks and sharing their findings with the broader scientific community.

These accomplishments underscore the value of DISC Seed Funding in advancing scientific research and innovation. Below you will find a recap of the FY 24 recipients.



**FY24 Seed Funding Awards Recap**

**29** TEAMS      **76** MEMBERS

**\$178.7K**

# RESEARCH SEED FUNDING

## DISC Faculty Seed Funding Program

| Project Title   | Team Members  | Amount Awarded |
|---|---|----------------|
| Bias-Aware Evaluation of Generative Search Engines: An Exploratory Study  | Jiqun Liu (PI)  | \$9,985        |
| Genomics and machine learning to predict the zoonotic potential of bat hemoplasmas  | Daniel Becker (PI)  | \$10,000       |
| Efficient Computational Approaches for Rapid Evaluation and Prediction of Processing-Microstructure Relation in Metal Additive Manufacturing                | Shuozhi Xu (PI), Cesar Ruiz (co-PI)   | \$10,000       |
| Advancing Young Children's Mental and Behavioral Health Equity in the face of Climate Change through Machine Learning and Environmental Data: A Pilot Study | Xiaolan Liao (PI), Dan Wang (co-PI), Hongwan Li (co-PI), Huajian Cai (co-PI), La'Chanda K. Stephens-Totimeh (co-PI), David Bard (co-PI) | \$10,000       |
| Hybrid image/data-driven machine learning approaches for structural design of advanced composites   | Yijie Jiang (PI), Hanping Ding (co-PI)  | \$10,000       |
| Oklahoma Natural Resource GIS Data Acquisition and Preparation for PTMApp Proof of Concept  | Lori Han (PI)   | \$10,000       |
| Mining Big Data to Understand Innovation and Growth in the Long-Term  | Kyle Harper (PI), Kun Lu (co-PI)  | \$9,857        |
| ForenCaps: Advanced Capsule Networks for Audio Forensic Analysis  | Shangqing Zhao (PI), Samuel Cheng (co-PI), Christopher Freeze (Co-PI)   | \$10,000       |
| Improve the Safety of Urban Mobility Using the Integration of Smart Infrastructure and Connected Vehicles   | Golnaz Habibi (PI)  | \$9,857        |
| Physics-Informed Forecasting and Risk Assessment of Human-Induced Seismicity  | Junle Jiang (PI)  | \$10,000       |
| Qualitative Data Collection of Ukranian Migrants in Poland  | Martin Piotrowski (PI), Nathan Marks (Co-PI), Marta Warsaw(Co-PI), Annabel Ipsen(Co-PI)   | \$10,000       |
| Unveiling Shadows: An Exploratory Study of Misinformation Dynamics and Immigrant Integration in Community Discourse on NextDoor                             | Qiong Wang (PI), June Abbas(Co-PI), Heyjie Jung (Co-PI), Jeong-Nam Kim (Co-PI), Ted Matherly (Co-PI)                                    | \$9,550        |



## DISC/ICAST Seed Funding Competition

| Project Title   | Team Members  | Amount Awarded                        |
|---|---|---------------------------------------|
| Community Informed AI-based Treefall Vulnerability Assessment within the Built Environment under Extreme Weather Events   | Aikterini Kyprioti (PI),<br>Chris Malloy (Co-PI), Georgia Kosmopoulou (Co-PI), Justine McCarthy (Co-PI), Kuhika Ripberger (Co-PI), Dimitrios Diochnos (Co-PI) | \$5,000, (ICAST contributed \$26,000) |
| Mitigating Deepfakes in Platforms and Organizations   | Yifu Li (PI), Lacey Schley (Co-PI), Matthew Jensen (Co-PI), Rui Zhu (Co-PI)   | \$5,000, (ICAST contributed \$25,000) |
| Creating Opportunities to Navigate Health and Safety Hazard in Ottawa County, Oklahoma by Designing a Geospatial Database | Laurel Smith (PI), Todd Fagin (Co-PI), Jackie Vadjunec (Co-PI), Jennifer Koch (Co-PI)   | \$5,000, (ICAST contributed \$23,000) |
| Shedding Light on the Shadows: Economic Integration in the Face of Anti-Immigration Stigma                                | Weiyu Wang (PI), June Abbas (Co-PI), Heyjie June (Co-PI), Jeong-Nam Kim (Co-PI), Sunha Yeo (Co-PI)  | \$5,000 (ICAST contributed \$25,000)  |

## DISC/IREES/ICAST Seed Funding Competition

(additionally, IREES contributed \$15,000, and ICAST contributed \$5,000)

| Project Title  | Awardee   | Amount Awarded |
|--|---|----------------|
| A Deep Learning Approach to Identify Center Pivot Irrigation in the High Plains and Quantify Hydrological Dynamics                     | Todd Fagin (PI), Jason Vogel (Co-PI)                          | \$5,000        |
| The OU Microplastic Research Center: The Importance of Soil Environments and Climate Change  | Tingting Gu (PI), Mark Nanny (Co-PI)                          | \$2,500        |
| Producer Knowledge and Perceptions of Biochar for Improving Soil Health and Combating the Invasive Eastern Red Cedar in Rural Oklahoma | Lori Ann Han (PI), Matthew Bray (Co-PI), Robert Nairn (Co-PI) | \$2,500        |

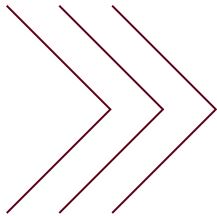
## Graduate Student Seed Funding

| Project Title  | Awardee  | Amount Awarded |
|--|--|----------------|
| Advanced Characterization of Hybrid Composites using Deep Learning   | Sanjida Ferdousi, Md Nurul Islam   | \$2,500        |
| Uncovering The Microbiome: Data-Enabled STEM Engagement in Rural Oklahoma  | Horvey M. Palacios (PI), Robin Singleton (Co-PI), Brittany Bingham (Co-PI)             | \$2,500        |
| Exploring User Cognitive Aspects in Human-Large Language Model Interaction: A Feasibility Study  | Ben Wang (PI), Jinmiao Chen (Co-PI)  | \$2,500        |
| Developing a Comprehensive Short Form Assessment Tool for Misophonia Stratification  | Catherine Bain (PI), Lauren Ethridge (CO-PI), Andy Fagg (CO-PI), Jordan Norris (Co-PI) | \$2,500        |
| Construction, utilization and cosmology of the Indigenous Achuar House in the Central Western Amazon                                     | Felipe Flores (PI)   | \$2,500        |
| Mitigating Chatbot Communication Breakdown: A User-Chatbot Congruence Perspective  | Weiyu Wang (PI), Hua Ye (Co-PI)  | \$2,500        |
| Intermittent-Flow Respirometer for Small Aquatic Organisms   | Justine Rionach McCarthy (PI), Dr. Laura Stein (Co-PI)                                 | \$2,500        |
| Materials Language Processing: A Pilot Study on Domain-Specific Fine-Tuning and Retrieval-Augmented Generation for Large Language Models | Xin Wang (PI), Anshu Raj (Co-PI)   | \$2,500        |

## Postdoctoral Fellowship Awards

| Project Title   | Awardee                                     | Amount Awarded |
|---|---|----------------|
| Identifying Multiscale Basin Management Challenges and Current Research Priorities based on Topic Modeling of the Mississippi River Basin | Joshua Wimhurt (Pi), Jennifer Koch (Co-PI)  | \$4,475        |
| Using High-Speed Film to Make Evolutionary Inferences About Feeding Biomechanics  | Michelle St. John (PI), Laura Stein (Co-PI) | \$4,999.97     |

# FY24 HIGHLIGHTS

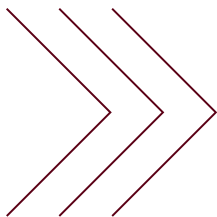


## **OU Advances AI Safety: Joining National Consortium to Shape Responsible AI Development**

The University of Oklahoma (OU) has joined the U.S. Artificial Intelligence Safety Institute Consortium (AISIC), a group led by the National Institute of Standards and Technology to promote safe and trustworthy AI development. OU's participation involves two key entities:

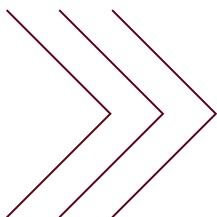
1. The Data Institute for Societal Challenges (DISC)
2. The NSF AI Institute for Research on Trustworthy AI in Weather, Climate, and Coastal Oceanography (AI2ES)

These entities will contribute to addressing AI challenges, shaping industry standards, and developing trustworthy AI for weather-related applications. OU's involvement demonstrates its commitment to advancing AI safety and positions the university as a leader in responsible AI technologies.



## **New Supercomputing Resources Empower Campus-Wide Research**

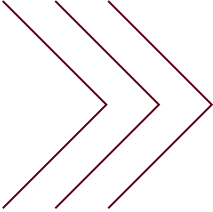
The University of Oklahoma's Data Institute for Societal Challenges (DISC) has significantly boosted research capabilities through a major acquisition of advanced computing resources for the OSCER Supercomputer. Funded by the OU Vice President for Research, this includes high-performance CPU nodes (two 64-core nodes with 2TB of RAM each), powerful GPU nodes (one quad 80GB A100, five dual 80GB A100, and two dual 80GB H100), and 93 TB of OURDisk storage. These resources are accessible to all DISC members, enhancing computational power, supporting machine learning and AI research, enabling efficient big data analysis, and fostering interdisciplinary collaboration. This strategic investment gives OU researchers a competitive edge, promoting innovation, groundbreaking discoveries, and valuable hands-on experience for students and early-career researchers.



## **DISC Showcases at the AI Expo for National Competitiveness in Washington, DC**

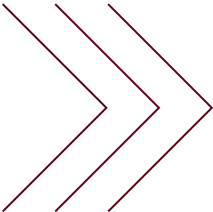
DISC recently made a significant impact at the AI Expo for National Competitiveness in Washington, DC. Represented by Jeong-Nam Kim and Wolfgang Jentner, DISC showcased its cutting-edge research activities alongside 150 exhibitors to over twelve thousand participants over the course of two days. The expo featured participation from top national industry leaders in AI and key government agencies, including the National Science Foundation, National Security Agency, and Department of Energy. Jeong-Nam and Wolfgang engaged in dynamic conversations with industry leaders, potential collaborators, and students passionate about pursuing degrees in artificial intelligence and data science.

The AI Expo, a hub for innovation and collaboration, will return in 2025, promising another exciting opportunity for DISC to connect and inspire.



## Dr. Erin Maher Receives Trio of Prestigious Awards

Dr. Erin Maher, Associate Professor of Sociology and DISC Senior Associate Director, has been honored with three significant awards. She received the Commitment to Social Justice Award, recognizing her exceptional work in promoting diversity and social justice education at the University of Oklahoma. Additionally, she was awarded the William Foote Whyte Award, given annually to individuals who have made notable contributions to sociological practice and public sociology. Dr. Maher also received a travel award to attend the annual Congress of the International Society for the Prevention of Child Abuse and Neglect, which will be held in Uppsala, Sweden, in August 2024.



## OU's ART: InTRO Initiative Announces Winners of Research Translation Grants and Fellowships

The ART: InTRO team at the University of Oklahoma has made significant progress in its mission to accelerate research translation and maximize societal impact. Within six months, they received 26 competitive proposals for the Seed Translational Research Project (STRPs) Program and several applications for the ART Academy fellowships. In July, the team announced funding for five STRPs and four ART Academy fellowships, totaling \$400,000. The winning STRP projects and their leaders include:

- **Ashlee H. Rowe:** Using AI to develop pain blockers from scorpion venom
- **Chongle Pan:** Creating safe and intelligent chatbots for health communication
- **Dong Zhang:** Developing data-driven battery prognostics for second-life applications
- **Qinggong Tang:** Designing a pre-transplantation donor liver viability evaluation system
- **Felipe Perez, Gabriel Barbosa, and Tran Le:** Creating user-friendly software for de-risking hydrocarbon pipelines

Four additional researchers have also been admitted to the ART Academy and given fellowships of up to \$10,000 each: **Averi Bates**, graduate student in the School of Computer Science, **Chen Wang** and **Feng Yan**, doctoral candidates in the Stephenson School of Biomedical Engineering, and **Aikaterini Kyprioti**, and assistant professor in the School of Civil Engineering and Environmental Science.

The ART: InTRO initiative has already begun to forge networks, foster relationships, and provide educational and financial resources to researchers. To further catalyze the development of solutions for societal and global challenges, the STRPs Program and ART Academy will be opened to other public and research-based institutions throughout Oklahoma.

# INNOVATIVE STUDENT RESEARCH AND IMPACTFUL PROJECTS

This year, under the supervision of the DISC Team, our students have embarked on various impactful projects, demonstrating their ability to integrate theoretical knowledge with practical applications to address real-world issues. Here are some highlights of some of our students' accomplishments:

- **Luke McDougal:** In the Spring 2024 semester, Luke worked on a project to improve the prediction of clinical complications following aneurysmal subarachnoid hemorrhage (aSAH). Using advanced machine learning techniques, he developed a hybrid ensemble model to provide more accurate predictions, aiding medical professionals in better managing aSAH. This project showcased the importance of interdisciplinary collaboration in medical data science.
- **Josiah Abraham:** Through the First-Year Research Experience (FYRE) program, Josiah focused on classifying social media misinformation using machine learning algorithms. Under Dr. Ebert's mentorship, he created a new dataset and evaluated various models, contributing significantly to the project. His work highlighted the growing expertise in machine learning and data analysis.
- **Jacob Flynn:** Jacob's 5900 professional practice project involved using time series analysis to forecast agricultural satellite measurements. He learned about models like Long Short-Term Memory (LSTM) and Vector Auto-Regression (VAR), aiming to reduce costs associated with USDA's remote field sensors by forecasting variables such as the Enhanced Vegetative Index (EVI) and Land Surface Water Index (LSWI).
- **Travis Lloyd:** As part of the FYRE program, Travis learned data science concepts and machine learning models under Dr. Gopichandh Danala's mentorship. He applied his knowledge to create a machine learning program using the USDA-ARS grain-only wheat pasture dataset and presented his research at a symposium.
- **Rowzat Faiz:** Rowzat's project focused on developing a predictive model for assessing the prognosis of aSAH patients. Presented at the SPIE Medical Imaging Conference, her study integrated radiographic and deep learning techniques. Collaborating with Luke McDougal, she developed a hybrid ensemble prediction model, significantly advancing the field of medical prognostic prediction.
- **Catherine Donner:** Catherine conducted her master's thesis on misinformation detection using large language models (LLMs) and generative AI models under Dr. Ebert's guidance. Her research demonstrated the effectiveness of LLMs with NLP dimensions in detecting misinformation and was successfully defended in March 2024.
- **Parisa Masnadi:** Parisa's general exam focused on a real-time monitoring system for CH<sub>4</sub> emissions using satellite imagery and computational techniques. She developed a comprehensive questionnaire to gather stakeholder information, covering various aspects of the proposed methane emissions monitoring platform.

These projects reflect the diverse and impactful work our students have accomplished at DISC, showcasing their dedication and the importance of interdisciplinary research in solving complex societal challenges.

# PUBLICATION SAMPLES BY DISC MEMBERS AND AFFILIATES

- [1] M. Y. Araghi, M. H. Parsa, M. Ghane Ezabadi, R. Roumina, H. Mirzadeh, and S. Xu, "Characterizing pearlite transformation in an API X60 pipeline steel through phase-field modeling and experimental validation," *Front. Mater.*, vol. 11, p. 1390159, Jun. 2024, doi: [10.3389/fmats.2024.1390159](https://doi.org/10.3389/fmats.2024.1390159).
- [2] P. Arcidiacono, J. Kinsler, and T. Ransom, "What the Students for Fair Admissions Cases Reveal about Racial Preferences," *Journal of Political Economy Microeconomics*, vol. 1, no. 4, pp. 615–668, Nov. 2023, doi: [10.1086/725336](https://doi.org/10.1086/725336).
- [3] P. Arcidiacono, J. Kinsler, and T. Ransom, "Divergent: The Time Path of Legacy and Athlete Admissions at Harvard," *J. Human Resources*, vol. 59, no. 3, pp. 653–683, May 2024, doi: [10.3368/jhr.0421-11641R1](https://doi.org/10.3368/jhr.0421-11641R1).
- [4] L. Azzopardi and J. Liu, "Search under Uncertainty: Cognitive Biases and Heuristics – Tutorial on Modeling Search Interaction using Behavioral Economics," in *Proceedings of the 2024 ACM SIGIR Conference on Human Information Interaction and Retrieval*, Sheffield United Kingdom: ACM, Mar. 2024, pp. 427–430. doi: [10.1145/3627508.3638297](https://doi.org/10.1145/3627508.3638297).
- [5] M. Baby, A. Guptan, J. Broussard, J. K. Allen, F. Mistree, and A. B. Nellippallil, "A Framework to Support Multilevel Robust Co-Design of Manufacturing Supply Networks," in *Volume 3A: 49th Design Automation Conference (DAC)*, Boston, Massachusetts, USA: American Society of Mechanical Engineers, Aug. 2023, p. V03AT03A031. doi: [10.1115/DETC2023-117145](https://doi.org/10.1115/DETC2023-117145).
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- [7] M. Baby, R. Rama Sushil, P. Ramu, J. K. Allen, F. Mistree, and A. B. Nellippallil, "Robust, Co-design Exploration of Multilevel Product, Material, and Manufacturing Process Systems," *Integr Mater Manuf Innov*, vol. 13, no. 1, pp. 14–35, Mar. 2024, doi: [10.1007/s40192-023-00324-4](https://doi.org/10.1007/s40192-023-00324-4).
- [8] Y. M. Banad, S. M. A. Hasan, S. S. Sharif, G. Veronis, and M. R. Gartia, "Optical properties and behavior of whispering gallery mode resonators in complex microsphere configurations: Insights for sensing and information processing applications," *Nano Select*, vol. 5, no. 4, p. 2300184, Apr. 2024, doi: [10.1002/nano.202300184](https://doi.org/10.1002/nano.202300184).
- [9] M. Beattie and T. Tran, "Poster Submission: A clustering and machine learning approach to identification of structural drivers of unsheltered homelessness," Nov. 2023.
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We extend our deepest gratitude to our dedicated researchers, staff, partners, and supporters. Your hard work, collaboration, and commitment have been instrumental in our success. Together, we will continue to drive impactful research and make meaningful contributions to society. Thank you for being part of our journey. We look forward to another year of innovation, collaboration, and success!

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