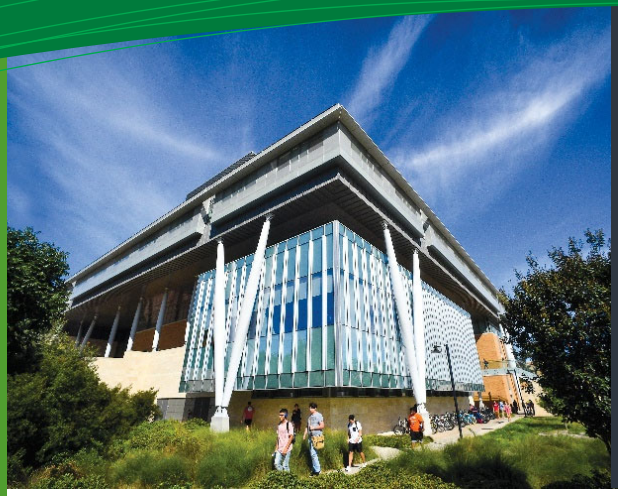
ISSUE
07
March
2022

Jim McNatt Institute Newsletter



this issue

JIM MCNATT INSTITUTE FOR LOGISTICS RESEARCH

Research BREAKS Sessions

All UNT researchers are invited to participate in a new research education series every first and third Thursday of the month. Each session will be led by a topic expert in the field in order to elevate best practices, while answering some of the most frequently asked questions by UNT researchers related to the topic. These hour-long discussions are a comfortable conversation where no question is too basic, too simple, or too complicated. Our team of research experts will bring the conversation topics to the researchers.

Research BREAKS for March:

Cost Share Essentials

Thursday, March 3
4:00 to 5:00 PM
Held via Zoom
More info RSVP

The National Science Foundation Graduate Research Fellowship Program (GRFP) - For Faculty Mentors

Thursday, March 17
4:00 PM
Held via Zoom
More info RSVP

Proposals and Opportunities

Selected List of Proposals Submitted in February

Proposal Title/Topic: Guidelines for Integration of UAS LiDAR and Photogrammetry to Enhance Land Surveying Capabilities
Funding Agency: Texas Department of Transportation

Proposal Title/Topic: Develop Texas Electric Vehicle Charging Infrastructure Readiness Plan
Funding Agency: Texas Department of Transportation

Proposals in Development

Proposal Title/Topic: Aviation Research
Funding Agency: Federal Aviation Agency
Proposal Due Date: open

Proposal Title/Topic: Human Networks and Data Science
Funding Agency: National Science Foundation
Proposal Due Date: July 14, 2022

Funding Opportunities

If interested in applying, please email Kathy Dreyer

Proposal Title/Topic: Strengthening American Infrastructure
Funding Agency: National Science Foundation
Proposal Due Date: May 5, 2022

Proposal Title/Topic: Civic Innovation Challenge
Funding Agency: National Science Foundation
Proposal Due Date: May 5, 2022

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New Grant Management System to be Available in March

The Grants and Research Administration Management Suite (GRAMS), UNT's new Research Administration System, is being implemented this month, and is planned to go live on March 7.

The new, fully electronic system will enable faculty and staff to route and approve proposals, submit most federal applications to grants.gov and manage awards, contracts and agreements in one integrated dashboard. Additionally, the system will be able to create more robust reports and metrics, which will provide better insight into submission details for grants.

Click here for training resources on pre-award activities, including budget development and approvals. Additional resources for post award and research integrity and compliance will be available at a later date.

Research Profile

Jacob Maywald

Background:
Jacob Maywald is an active duty United States Air Force officer and third-year logistics doctoal student at the G. Brint Ryan College of Business. His professional background includes leadership tours managing aircraft fuel and spare parts, and directing Air Force enterprise supply chain management. He currently holds a master's degree in logistics and supply chain management and plans to teach at the Air Force Institute of Techonology after completing his PhD.

Research Interests:

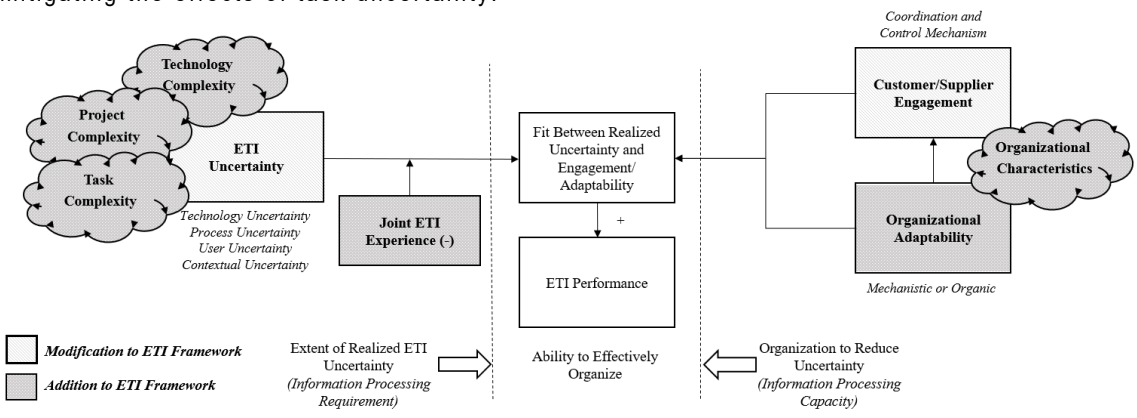
- Technology integration
- Grounded theory methodology
- Behavioral research in SCM

Research Summary:

Retail warehouse and distribution centers are facing intense pressure to increase operational efficiency and effectiveness in response to growing e-commerce and omni-channel distribution demands. Warehouse automation has the potential to reduce operational costs, optimize space, increase picking accuracy, and minimize delivery response, yet most warehouses still rely on manual, picker-to-part strategies due to cost and loss-of-flexibility concerns.

Autonomous mobile robots (AMRs), are a new class of highly interactive "cobots", or collaborative robots, designed to work alongside human operators and increase task efficiency. Compared to traditional automation, AMRs are more flexible, scalable, and cost-effective. Leveraging artificial intelligence and machine learning, AMRs operate autonomously and are designed specifically to interact with human counterparts continually, acting as "intelligent assistants" in shared workspaces. In this way, AMRs' autonomous and interactive qualities make them more akin to a new form of worker. Thus, factors affecting successful integration of this new form of technology are presumed to be fundamentally different than traditional types of warehouse automation.

Examining external technology integration (ETI) in the context of warehouse AMR, we employ grounded theory methodology to develop a conceptual framework identifying key sources of uncertainty during integration and the organizational strategies firms take to overcome them. Our model extends prior models of ETI, positing that uncertainty during project execution is a product of technology, process, user, and contextual uncertainty. Furthermore, borrowing from the theoretical lens of organizational information processing theory (OIPT), we show that establishing joint teams capable of efficiently sharing knowledge is effective at mitigating the effects of task uncertainty.



AMR External Technology Integration Framework