

Experiential Learning Programs for Data Science/Logistics Students

In addition to academic and technical preparedness, on-the-job training and other work-based learning experiences are critical components of worker readiness programs. These national programs provide co-curricular value to student career preparedness:

American Statistical Association (ASA)

The American Statistical Association student chapters provide opportunities for students to connect with other students interested in statistics and interact with prominent statisticians locally and at national meetings. They also encourage students to continue studying statistics and provide career information in the statistical sciences. Students and professionals have the opportunity to attend conferences, apply for scholarships, have access to classroom resources, as well as a multitude of statistical publications.

The Institute for Operations Research and the Management Sciences (INFORMS)

The Institute for Operations Research and the Management Sciences brings together a wide range of information and resources for students considering or pursuing degrees in analytics and data science. Through this organization both students and professionals can take advantage of resources such as the analytics program database, video library, scholarships, conferences, publications related to the data science profession and much more.

Digital Analytics Association (DAA)

The DAA is a global organization that makes analytics professionals more effective and valuable through professional development and networking. The University Membership category is a new and unique opportunity for universities to gain global recognition among the digital analytics community and provide new resources to its students and faculty. For one annual membership fee, all faculty and students within a digital analytics programs will receive full membership benefits. Some of these benefits include professional development and career resources, as well as access to conferences and international member directories.

Council of Supply Chain Management Professionals (CSCMP)

CSCMP is devoted to connecting, developing, and educating logistics and supply chain professionals throughout their careers, starting with students. The organization hosts an annual supply chain conference (Edge) as well as numerous roundtables focused on industry hot topics. Members receive a subscription to CSCMP's *Supply Chain Quarterly*, access to research and case studies, and a member-only directory to enhance networking opportunities.

Transportation Club

Transportation Clubs are found in cities across the country and are organizations made up of transportation, distribution, and logistics professionals. The Clubs, such as the Transportation Club of Memphis, host monthly professional development sessions and other industry-related events. The Clubs offer students an opportunity to network with professionals and learn about industry trends in an out-of-classroom setting.

Data Science Association (DSA)

The purpose of the Data Science Association is to create a social and academic environment for Mathematics, Computer

Science, Economics, and Data Science majors. It allows students to make connections to companies who work in the field of Big Data and Analytics. DSA gives students the resources and guidance to make them top candidates while applying for jobs or higher education. Members can participate in committees and conferences, and also have access to the DSA library which includes podcasts, slides, videos, and academic papers, that can all be of assistance to students and professionals in the data science and logistics fields.

Big Data and Analytics Association (BDAA)

The Big Data & Analytics Association is the only undergraduate student organization of its kind, prioritizing the education of its members above all else. Weekly BDAA meetings are host to a variety of insightful events, including hands-on workshops in which industry professionals teach our members about the hottest topics in data analytics, and case competitions in which members put the skills they have acquired to the test. BDAA is located at The Ohio State University, but many of their resources are online and available to the public.

Logistics and Transportation Association of North America (LTNA)

The Logistics & Transportation Association of North America is a member-driven networking organization consisting of individual members, non-profit clubs, associations and corporate entities involved in every aspect of transportation logistics and supply chain management throughout the United States and Canada. LTNA members are recognized experts in the planning, execution and subsequent tracking of supply chain logistics orders and assignments. LTNA members enjoy the perks of the annual LTNA conference, scholarships, member directories, and more.

US DOT Federal Highway Administration (FHWA)

FHWA offers internships and financial support through its Dwight David Eisenhower Transportation Fellowship Program to students pursuing transportation-related occupations. Two hundred students are placed annually in interest-related assignments throughout the agency.

Summer Transportation Internship Program for Diverse Groups (STIPDG)

The U.S. Department of Transportation (U.S. DOT), Federal Highway Administration's (FHWA) Office of Innovative Program Delivery offers internships to college students of various backgrounds. The objective of the STIPDG is to provide college/university students with hands-on experience and on-the-job training while working on current transportation-related topics and issues. The STIPDG is open to all qualified applicants but is designed to provide qualified women, persons with disabilities, and members of diverse groups with summer opportunities in transportation where these groups have been underrepresented.

Innovative Learning Strategies for a Data Science Analysts/Logisticians Program of Study

To establish curricular lessons and activities that incorporate the latest strategies for increasing student learning effectiveness and retention, a review of practices deployed by workforce and CTE practitioners reveals several approaches that would benefit students within data science and logistics programs of study. These learning strategies include:

Competency-Based Curriculum

Curriculum that meets academic and quality standards, is designed and organized by competencies required for jobs, and is cross-walked with industry skill standards and certifications, where applicable. Job profiling and the use of subject matter experts (SMEs) should be considered to meet the competency needs of business.

Modularized Curriculum

Structured and sequenced curriculum in modules tied to jobs with multiple entry and exit points and multiple levels of industry-recognized credentials built into the pathway.

Asynchronous Learning

Education and training for students and incumbent workers provided at times and locations convenient to students and employers. This may include evenings or weekends, blended or "hybrid" delivery models, and delivery at off-campus locations.

Problem-Based Learning

Instruction that helps students who benefit from hands-on learning foster team-building skills while solving real-life problems.

Experiential Learning

Opportunities for "learning-by-doing." Examples include apprenticeships, internships, externships, rotational programs,

co-op work experiences, simulations, and class projects that are assignments from local employers.

Context-Based Learning

Instruction that fosters interpretation of new information in the context or place of where and when it occurs. By relating new information to what the student already knows, the student comes to understand its relevance and meaning.

Individual Learning

Learners are different and innovative learning environments reflect the various experiences and prior knowledge that each student brings to class. It's important that practices and processes help teachers engage each student where they are.

Online "Micro-Learning"

This approach provides short, content-rich exploration of career opportunities and training modules that lead to a new form of stackable credentialing through badges and other forms of recognition, typically subject to the agency hosting the content.

Industry Academies

Employers develop their own internal programs that are offered to candidates immediately following high school graduation. No formal post-secondary education or training is required for these students to enter a job, and candidates who successfully complete these employer-based programs are immediately hired.