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## Systems Engineering DL Students Look at Innovation From Industry’s Perspective

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Article By: *Mike DiFranco*

Students in the Joint Executive Systems Engineering Management - Product Development Leadership Education for the 21st Century (SEM-PD21) Degree Program, an interdisciplinary leadership program designed for senior engineering and technical professionals, recently attended the INCOSE International Symposium in Denver, Colo.

“Attending industry visits and related technical conferences are designed to expose the students to the latest state of the art concepts, tools and best practices, both private and public, in systems engineering, product development and business management related fields,” says SEM-PD21 Program Manager, Dr. Wally Owen. “The industry trips play a key role in the student overall development to become future leaders and senior managers responsible for driving business growth through innovation and to become effective change agents at their companies and organizations.”

One of the key elements of the program is collaboration, not only jointly within defense and across the services, but also with defense industry partners.

“The INCOSE International Symposium in Denver provided an excellent venue for students, educators, and professionals to come together and learn the latest techniques applied in system engineering,” says Terence Ontawco, SEM-PD21 student and Electrical Engineer for Naval Air Systems Command (NAVAIR). “It is an opportunity for students to learn from other cohorts, to gain insights on possible thesis topics, and build working relationships and networks.”

“I expected a litany of standards and governance administration; what I got was a vital community ‘exploring the edge of the envelope’ in this discipline, improving, validating and evolving the state of systems engineering knowledge,” says Dan Mulligan, SEM-PD21 student and NASA Project Orion Risk Manager “It really helped me ‘size the scope’ for my thesis topic, and put several of my ideas in a larger supporting context that will vastly improve the utility of my publication.

As part of the INCOSE International Symposium, the SEM-PD21 students attended the Laboratory for Atmospheric and Space Physics (LASP), one of America’s leading university facilities for space science research, spacecraft instrument development, and space mission operations.

A research facility operated by the University of Colorado, LASP is a full-cycle space institute, combining all aspects of space exploration through its expertise in science, engineering, mission operations, and scientific data analysis. LASP’s science research focuses on the study of earth’s atmosphere, the sun and the solar system. The tour provided a glimpse into the fields of space science, aerospace engineering, and space mission operations.

“The visit to the Laboratory for Atmospheric and Space Physics was very beneficial in seeing SE in practice,” says Phuong N. Lam, SEM-PD21 student and ESSM System Integration Manager/NATO.

In addition to the industry experience, students noted the trip provided a venue for interaction with each other in a professional setting.

“Attending the conference helps students strengthen their communication skills, which can help strengthen their social and networking skills especially when dealing with potential customers,” says Ontawco. “Developing soft skills allow the student to form strategic alliances with industry professionals to help them solve problems using various system engineering approaches within their organization.”

Planning and execution of the trip was coordinated by the Naval Postgraduate School’s Center for Educational Design, Development, and Distribution (CED3).

“The administrative team’s coordinated funding and travel arrangements, planned social events and executed contracts with numerous agencies involved in trip,” says Heather Rougeot, CED3 Assistant Student Coordinator. “The student services team compiled a list of suggested industries to visit, and worked directly with selected sites to make the necessary arrangements for access and presentations.”

CED3 also provided participants with exceptional support through travel documentation processes, detailed communications about logistics, requirements and frequently asked questions, as well as in person and 24-hour on call support throughout the duration of the trip.

“Thanks to [CED3’s] tireless synchronizing, coordinating and communicating, I never ended up lost or missed an important message, and was free to fully focus on and absorb the content of the symposium,” says Mulligan.

According to the students, SEM-PD21’s industry visits continue to exceed their expectations, with annual trips playing a key role in the development of future student cohorts.

“The support staff encouraged the students to use the (INCOSE) venue as an opportunity to conjure up ideas for their thesis, select an NPS advisor that could guide them, and start formulating their thesis on paper early,” says Ontawco.

“I believe experiences gained and the relationships established among these students pays great dividends to the students themselves, their organizations and DoD not only during the program but well into the future as each graduate climbs their respective corporate ladders,” says Dr. Wally Owen. “The long-lasting relationships established and knowledge gained by the students will help improve the way defense does business.”



*Students in the Joint Executive Systems Engineering Management - Product Development Leadership Education for the 21st Century are captured during this year’s INCOSE International Symposium in Denver, Colo.*

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