



# 学术报告

## Dr. Barry Shoop

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### 报告题目： **Developing the Critical Thinking, Creativity and Innovation of Undergraduate Engineering Students**

报告摘要：

We present the framework of a novel upper-division undergraduate course that was developed to deliver disruptive and innovative applications of commercial technologies to an external funding agency and simultaneously develop the critical thinking, creativity and innovation of undergraduate engineering students. The course is structured as a deliberate interactive engagement between students and faculty that combines the Socratic method with the Thayer method to develop an understanding of disruptive and innovative technologies and a historical context of how social, cultural, and religious factors impact the acceptance or rejection of technological innovation. We present an assessment of this new course based on a course-end survey, several external indicators, a post-graduation survey and faculty assessment., the networked society. Therefore, IoT has attracted a great deal of attention from the industry, the academia, and the government alike. In this talk, first, a brief introduction to history and background, as well as the current trend of IoT, will be presented. Second, the technologies that lay out the foundation of IoT will be introduced. Finally, future research problems and directions will be identified and discussed.



### 人物介绍： **BARRY L. SHOOP, Ph.D., P.E.**

For more than thirty years, IEEE Fellow **Barry L. Shoop** has been a member of and leader within the global IEEE community. As Chair of the RAB/MGA Transformation Ad Hoc Committee, he led the transformation of the Regional Activities Board (RAB) into the Member and Geographical Activities Board (MGAB). During his tenure as Vice President of MGA, Barry was the architect of MGA's Regional Geographic Strategy, and created the Metropolitan Area Workshops. Additionally, as IEEE Secretary, he restructured IEEE's Governance Committee to improve the efficiency and effectiveness of IEEE governance.

Barry received his Ph.D. from Stanford University and B.S. from the Pennsylvania State University, both in electrical engineering. During his tenure at West Point, he has served in a number of leadership positions including Director of the Electrical Engineering Program and Director of the Photonics Research Center. He is currently Professor of Electrical Engineering and Head of the Department of Electrical Engineering and Computer Science, responsible for an undergraduate academic department with over 79 faculty and staff supporting ABET accredited programs in electrical engineering, computer science and information technology.

Earlier in his career, he was a satellite communication engineer responsible for the design and installation of a high-capacity, global digital communication network, and also the CTO for a US\$4.5B organization addressing the Improvised Explosive Device (IED) challenge worldwide.

In addition to being an IEEE Fellow, Barry is also a Fellow of the Optical Society of America (OSA) and the International Society for Optical Engineering (SPIE). In 2008, OSA recognized Barry with their Robert E. Hopkins Leadership Award and, in 2013, he earned both the SPIE Educator Award and the IEEE Haraden Pratt Award. He holds a patent on photonic analog-to-digital conversion and has authored over 150 archival publications as well as 8 books and book chapters. He is a licensed Professional Engineer in Virginia, USA.

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