

The Engineer as a Decision Maker

George Hazelrigg

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National Science Foundation

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221 MEC

1:00 to 2:25pm



Abstract:

We currently educate engineers to be problem solvers. This talk challenges this approach and suggests instead that engineers are decision makers. Dr. Hazelrigg shows the differences between problem solving and decision making and argues that the problem-solving approach fails to provide maximum value to an engineering education. He goes on to point out mathematical errors present in the current approach to engineering education and suggests approaches to the correction of these errors.

About the Speaker:

George Hazelrigg enjoyed designing and building things when he was young. So he decided to go to college to study engineering. He obtained a B.S. in mechanical engineering from New Jersey Institute of Technology and went to work for Curtiss-Wright. There, he found that his education had utterly destroyed his abilities to do engineering design. So he felt it necessary to get a master's degree. He completed an M.S. in mechanical engineering, also from NJIT, but still hadn't regained his design abilities. While getting his MS, however, he did some teaching and liked it. So he figured that, if he couldn't do design, the next best thing would be to teach it. Five years later, he had obtained M.A., M.S.E., and Ph.D. degrees in aerospace engineering from Princeton University. Now, in addition to not knowing how to do design, he couldn't teach it either. For the next 25 years, he roamed industry and academe in an attempt to understand the theory of engineering design, including time spent at the Jet Propulsion Laboratory, General Dynamics, Princeton University and a consulting firm of which he was a co-founder. He also spent a year in Korea helping to found the Systems Engineering Department of Ajou University. He joined the National Science Foundation in 1982 and, in 1996, became program director for the Engineering Design program where, for eight years, he provided support to others in the field. In January, 1996, he did a stint as Station Science Leader of the U.S. South Pole station. Since 2006, he has been Deputy Division Director of the Division of Civil, Mechanical and Manufacturing Innovation. For relaxation, he spends his weekends soaring over the Shenandoah Valley, and he is a certified flight instructor in gliders (CFI-G) with about 1,800 total flying hours.

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