2020 IEEE Systems and Information Engineering Design Symposium (SIEDS’20) Plenary Talk will be held on Zoom on Friday, 4/24/2020 from 2:00 – 3:30 PM EST.

Plenary Speakers

Dr. Cody Fleming – *Am I Even Looking at the Right Problem?*

Dr. Henning Mortveit - *Responding to COVID-19 – A Systems and Information Engineering Perspective*

Zoom call information:

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[https://virginia.zoom.us/skype/93361630211](https://virginia.zoom.us/skype/93361630211)
Am I Even Looking at the Right Problem?

Abstract: Recent issues with the Boeing 737-MAX point to challenges in software engineering and the algorithms that the software must implement. Looking at immediate causes of these issues, it is apparent that there is a deep coupling between the underlying physics of a system, its various modes of actuation, and the many nested or parallel control systems that comprise any complex autonomous system. Media coverage tends to focus on the so-called MCAS system and its bugs, although we have been fortunate to see increasing coverage of other, broader factors that lead to this failure. Looking at technical issues and bugs in the software is only the tip of the proverbial iceberg, and the failure of the 737-MAX program is truly a “systems problem”. The Boeing 737-MAX case will be used to motivate, explore, and discuss a series of questions that has interested (and bothered) the speaker for years. If you had $100 to spend, or $100,000,000, how would you spend it to rectify Boeing’s problems? Is it even fair to say that this is “Boeing’s problem”? The list goes on and on...these questions can be boiled down to one overarching question that is of paramount importance to engineers: how do we know whether we are solving the right problems?
**Responding to COVID-19 – A Systems and Information Engineering Perspective**

**Abstract:** As an SIE professional, what would you do if you were asked to support a state agency such as the CDC in their development of effective interventions for COVID-19? How would you quantify the impact of social distancing? What compliance rate would an intervention require to be effective? How do you deal with uncertainties? Using the work of NSSAC at Biocomplexity Institute and Initiative at UVA as a backdrop, this presentation will address several of the challenges involved, and will give examples of how NSSAC approaches these. Elements involved include modeling, system design, data science, machine learning, high-performance computing, and the integration of all these to support rapid responses. While the talk will focus on COVID-19, the approaches are general with systems and information engineering at the center.