



# 2021 PSERC Summer Tutorial

## Securing Critical Energy Infrastructures in the Digital Age

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Smart grid is a complex cyber-physical system (CPS) that forms the lifeline of our modern society. Reliable, secure, and resilient operation of nation's energy infrastructure is of paramount importance to national security and economic wellbeing. In recent years, there has been a growing trend of cyber threats/attacks, both in numbers and sophistication, targeting critical infrastructure systems around the globe (e.g., Stuxnet, Ukraine power grid attacks, and Colonial Pipeline attack). This evolving cyber threat landscape underscores the importance and urgency for CPS security R&D, technologies, and tools that go beyond the traditional IT cybersecurity and be able to prevent, detect, and mitigate stealthy CPS attacks. This tutorial will provide an overview of cybersecurity threats to the energy infrastructure, then it will present a holistic life-cycle model for CPS security with illustrative discussions on risk assessment, attack prevention, anomaly detection, and attack mitigation/resiliency. Finally, it will briefly discuss CPS security testbeds for attack-defense evaluations, and then highlight sample cybersecurity standards and industry best practices.

**JUNE 22, 2021**

**3:00-4:30 P.M. EDT**

[LINK TO TUTORIAL REGISTRATION](#)

(12:00-1:30 P.M. PDT)

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**Manimaran Govindarasu** is the Mehl Professor of Computer Engineering and holds the title of Anson Marston Distinguished Professor in Engineering at Iowa State University (ISU). His research experience includes CPS security for the smart grid, Internet infrastructure security, and real-time systems. He has co-authored over 200 peer-reviewed research publications, has presented many invited talks and tutorials at IEEE conferences, and delivered about two dozen tutorials and industry training sessions on the subject of cybersecurity.

He is a Fellow of the IEEE and currently serves as the Chair of Cybersecurity Working Group within IEEE PES. His research has been funded over the years by NSF, DOE, DHS, DoD, PSERC, and ISU EPRC.

