

# ATTIS 2020

ANNUAL TRANSLATIONAL AND TRANSFORMATIVE INFORMATICS SYMPOSIUM

## Keynote Talk

### “The Learning Health (Record) System”

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**Summary:** A Learning Health System (LHS) can be defined as an environment in which knowledge generation processes are embedded into daily clinical practice in order to continually improve the quality, safety, and outcomes of healthcare delivery. While still largely an aspirational goal, the promise of the LHS is a future in which every patient encounter is an opportunity to learn and improve that patient’s care, as well as the care their family and broader community receives. The foundation for building such an LHS can and should be the Electronic Health Record (EHR), which provides the basis for the comprehensive instrumentation and measurement of healthcare services, as well as a means of delivering new evidence at the patient- and population levels. While much has been written about the challenges associated with the use of current EHRs, the promise of these technology platforms remains vast and mostly under-realized. In this presentation, we will explore the ways in Biomedical Data Science and Informatics research are helping to realize the potential of EHR technologies in the context of creating an LHS, from the optimization of workflow and human factors, to the generation of reproducible and systematic clinical phenotypes, to the delivery of emergent knowledge to both providers and patients via advance clinical decision support systems.

**About the speaker:** Dr. Payne is the Robert J. Terry Professor and founding Director of the Institute for Informatics (I2) at Washington University in St. Louis. He holds additional appointments as a Professor of Medicine and Computer Science and Engineering. Dr. Payne is an internationally recognized leader in the field of translational bioinformatics (TBI) and clinical research informatics (CRI). He received his PhD with distinction in Biomedical Informatics from Columbia University, where his research focused on the use of knowledge engineering and human-computer interaction design principles in order to improve the efficiency of multi-site clinical and translational research programs. Dr. Payne’s leadership in the informatics community has been recognized through his appointment to numerous national steering, scientific, editorial, and advisory committees, including efforts associated with the American Medical Informatics Association (AMIA), AcademyHealth, the Association for Computing Machinery (ACM), the National Cancer Institute (NCI), the National Library of Medicine (NLM), and the National Center for Advancing Translational Science (NCATS). Dr. Payne is the author of over 200 publications focusing on the intersection of biomedical informatics and the clinical and translational research domains, including several seminal reports that have served to define a new sub-domain of biomedical informatics theory and practice specifically focusing upon those areas. Dr. Payne’s research group currently focuses on efforts in the fields of biomedical data science, applied clinical informatics, and clinical research informatics, including efforts related to: 1) cognitive computing and machine learning based approaches to computational phenotyping; 2) the design and delivery advanced clinical decision support system that can enable shared decision-making; 3) human factors and workflow issues surrounding the use of technology at the point-of-care; and 4) open-science platforms that enable collaborative approaches to biomedical and healthcare data analytics.