Abstract: Beginning with brief highlights from my HCC R&D in South Carolina industry, academia, and K-12 from 1986-92, I will discuss my research in tangible visualization and ICy STEAM over the past two decades, and relate this to broader Clemson HCC trajectories. My group investigates and applies tangible interfaces, which facilitate interaction through systems of computationally-mediated physical artifacts, toward representing and engaging complex computational systems. Our interfaces range from handheld to architectural physical scales, and in different editions that span and interweave several interaction paradigms. Our research both develops enabling tools and architectures, and studies and engages specific application domains. I will consider several applications engaging ICy STEAM (interactive computational science, technology, engineering, arts, and mathematics), with emphasis on supporting computational comparative genomics and communicating scientific content to diverse audiences. I will also explore how these activities relate to broader trajectories and prospects for HCC at Clemson, and how these might synergize with broader activities of Clemson’s School of Computing and the campus at large.

Bio: Brygg Ullmer is the Effie C. and Donald M. Hardy associate professor at LSU, jointly in the School of Electrical Engineering and Computer Science (EECS) and the Center for Computation and Technology (CCT). He leads CCT’s Cultural Computing focus area (research division), with 15 faculty spanning six departments, and co-leads the Tangible Visualization group. He serves as director for the NIH-supported Louisiana Biomedical Research Network (LBRN) Bioinformatics, Biostatistics, and Computational Biology (BBC) Core, in support of 13 statewide campuses. Ullmer completed his Ph.D. at the MIT Media Laboratory (Tangible Media group) in 2002, where his research focused on tangible user interfaces. He has held internships at Hansley Industries (Columbia, SC), the Industrial Mathematics Initiative (U. South Carolina), Interval Research (Palo Alto) and Sony CSL (Tokyo); a postdoctoral position in the visualization department of the Zuse Institute Berlin; and has been a visiting and remote lecturer at Hong Kong Polytechnic’s School of Design. His research interests include tangible interfaces (and more broadly, human-computer interaction), computational genomics (and more broadly, interactive computational STEAM), visualization, and novel physical and electronic prototyping technologies. He also has a strong interest in computationally-mediated art, craft, and design, rooted in the traditions and material expressions of specific regions and cultures. https://cc.cct.lsu.edu/groups/tangviz/