Ray Hylock, PhD, is an Assistant Professor in the Department of Health Services and Information Management. He completed his PhD in Health Informatics at the University of Iowa in May 2013 and joined the ECU faculty in July of the same year. His research primarily focuses on computation advancements to support patient care in the areas of health care databases/data warehouses, federation, advanced data structures, optimization, and heuristics. In addition to theoretical research, Dr. Hylock has an extensive applied background with an emphasis on Java, C++, and SQL programming in both research and support capacities. During graduate school, Dr. Hylock was employed by the Institute for Clinical and Translational Science (a CTSA awardee) at the University of Iowa, where he worked with MD’s, biologists, geneticist, nursing informaticians, professional developers, and a variety of other fields, to research, create, and promote theories and tools to improve patient care. Currently, Dr. Hylock is creating the foundation for what will eventually become the HSIM Computational Lab using the 1.3 TFLOP/s cluster purchased with his start-up package. The cluster will soon be open to all faculty and students in the college.

**What do you like best about working at ECU?**
The people. I knew after my on-site interview ECU was where I wanted to work. It wasn’t just how they treated me, but their interaction with one another. Since joining the faculty in 2013, everyone has been very supportive and genuinely interested in my success as both an educator and researcher. I have been given ample opportunities to serve and contribute in various capacities, my research is supported through a start-up package, and I thoroughly enjoy the OFE training (specifically the Teaching with Technology Summer Academy and Grant Writers Workshop).

**What do you find most exciting about your research and its potential?**
My research revolves around theoretical and applied computational techniques, which are limited only to the problems I confront. For example, current projects include: a new storage paradigm for heterogeneous data, federated query optimization, optimal off-target detection with IUPAC and unbounded mismatch support (bioinformatics), I’m rewriting the JVM (Java) to improve address space and memory performance in high performance computing environments, and research on how best to instruct health care management-oriented students computer and information science materials. Therefore, what excites me the most is the unknown, “what will I work on tomorrow?” It affords me the
opportunity to expand my horizons and collaborate outside of my comfort zone, with the potential of making advancements in various fields through translational science.

**What excites you about teaching?**
I teach subjects one wouldn’t exactly call “exciting,” like database systems and computer security – especially when my target audience is health care management professionals. Thus, what excites me most is watching them progress from basic or even no knowledge of the subject matter, to a working understanding of the material. For example, one of the most difficult database topics is SQL programming. Most have never been trained to think procedurally or programmatically, so even conceptually it can be challenging. Quizzical looks are inevitable during introductory sessions, but one after another, you see that “aha” moment and the excitement it brings – for me as well as them. Additionally, I enjoy preparing for class (well, at least most of the time). The health care landscape is always in motion, so I must stay current in order to provide the most up-to-date information to my students; a side effect of which is boosting my knowledge base as well.

**What do you hope students take away from their experiences from working with you on your research?**
While there haven’t been many opportunities for me in this area as of yet, there are three main points I strive to present. First, don’t be afraid to fail. My research involves a lot of mathematical optimization, heuristics, programming, etc., which eventually reduces to trial and error. Just because something looks great theoretically, doesn’t mean it holds when applied; it’s iterative. I have learned a great deal from past failures. Second, if you’re not passionate about the subject, move on. I know when I was a graduate student I thought I understood what it meant to be a researcher – I had no idea. It requires dedication, patience, and perseverance. Third, be nosy and try everything you can. Our faculty are immense resources for the aspiring researcher. If something sparks your interest, investigate the topic, see who is working in the area, and pay them a visit – that’s how this business student ended up in health informatics.

**What is your favorite teaching or research moment?**
Last year, the Graduate School featured one of our MS students. There was one little question about what professor influenced you the most, and for some reason she gave them my name. Now, I’m sure I’m not at the top of many of my students’ list of influential professors, but for at least one student, I made an impression. It was very humbling and serves as a constant reminder of the potential impact I (we) can have on my (our) students, and I try to live up to that sentiment every day.