

ANNA NEILL

FIRST BIOINFORMATICS PH.D. AT SCRIPPS



FOR ANNA NEILL, THE EMERGENCE of genomic sciences in marine biology could not have come at a better time in her education. It allowed her to not only become the first bioinformatics Ph.D. graduate of Scripps, but also to accomplish much more research.

During studies on sea urchin fertilization processes in Victor Vacquier's biochemistry lab, Neill worked with one protein for four years. But at the end of her fifth year, she worked on 400 proteins, and in greater detail.

Among the proteins she studied was one nearly identical to a protein associated with human polycystic kidney disease. According to Neill, that is the serendipity you find when looking into the genomes of marine organisms.

Her doctoral dissertation on the structure and function of proteins in sea urchin sperm was the first at Scripps in which genomics was used as the basis of research. Neill had switched from traditional embryonic development studies to genomics research in 2003, and soon after made a connection with newly appointed Scripps Genomic Center Director Terry Gaasterland. Gaasterland and Vacquier were Neill's co-advisors, even though having two advisors is unusual, especially when they are from two very diverse areas of science—one being a biologist and the other a computer scientist. Her course of study, according to Vacquier, shows how flexible the graduate program is at Scripps. "We don't stamp them out of a mold," he said. "Students have a lot of flexibility—the program isn't set in stone."

Neill discovered her interest in marine invertebrates while taking undergraduate courses through Duke University's marine program in Bermuda. In 1999, she graduated from the University of Richmond with two bachelor degrees, in biology and in Spanish. Neill then received a full scholarship at Scripps as a Howard Hughes Medical Institutes pre-doctoral fellow. It's not unusual for Vacquier's students to be headed toward medical pursuits. Two of his students went on to medical school, but Neill has gone further afield. She is currently enrolled in law school at Stanford University, where she plans to apply her scientific background to legal issues related to intellectual property and products in molecular biology. 🍷



"SEA URCHINS PROVIDE AN EXCELLENT MODEL FOR THE STUDY OF FERTILIZATION."

—ANNA NEILL