Sarah Teichmann’s work on how cells regulate gene expression and build protein complexes recently won her a European Molecular Biology Organization Gold Medal. At 40, Teichmann holds a joint appointment with the European Bioinformatics Institute and the Wellcome Trust Sanger Institute in Hinxton, U.K. She leads a systems biology group of 17 researchers that uses both computational methods and lab experimentation. *Science* Careers asked Teichmann how she combines the two approaches. This interview has been edited for clarity and brevity.

**Q:** What came first, informatics or biology?

**A:** Biology, but informatics has always been at the heart of my research. I felt inspired by computational biology when, as an undergraduate, I read a 1992 commentary by Cyrus Chothia where he made a simple calculation of the likely number of protein families. I felt excited about discovering general principles in biology and became convinced that computational biology would provide the necessary tools.

By the time I started looking for a Ph.D. in the mid-1990s, data sets had become large enough to gain a global view of the protein structure universe and of protein and gene sequences. So I went to work with Chothia at the Medical Research Council Laboratory of Molecular Biology in Cambridge, exploring protein families and the domain organization of proteins in the first completely sequenced genomes.

**Q:** Was computational biology a risky career choice?

**A:** Yes. But I never looked back, even though at one point I came to feel that computational biology and bioinformatics were viewed as eccentric and unorthodox. My Ph.D. mentor exuded such unwavering optimism and confidence, however, that it made his lab a great place to work. Altogether, during my Ph.D., I published 10 papers.

**Q:** What are the pros and cons of combining computational and experimental approaches?

**A:** The beauty of a “wet-dry” group is that you have the ability to interpret your own experimental data computationally and to test computational predictions experimentally. The challenge, however, is maintaining the right balance and harnessing the potential of both sides of the group.

**Q:** How did you learn these two approaches?

**A:** During my first degree in the natural sciences at the University of Cambridge, I took math, physics, chemistry, and biology at a high level. I built on this through short courses and learning by doing. Today, I’d recommend more structured courses in algorithms and programming.

**Q:** How do you feel about experimental work?

**A:** I discovered early on that my fine motor skills are not up to some of the very tricky handling needed to be a top experimentalist in molecular biology. I have huge respect and gratitude for people who generate data through wet-lab experiments. What unifies both wet and dry work is the conceptual part of the science, which has to be logical and original, and both require exceptional dedication.

**Q:** Is there anything you wish you had done differently?

**A:** I made career choices mostly based on the package and colleagues I would have. In retrospect, it is also important to consider questions such as whether the scientific strategy and values of an institute are aligned with your own. I’ve also learned to shed my introverted nature and appreciate how important it is to talk to people often and openly.

**Q:** Has it been hard to maintain a good work-life balance?

**A:** Yes. I have two young daughters, and I believe that our society is a long way from empowering both men and women to balance their professional and family lives. There should be financial and cultural support for both men and women to work shorter hours for several months after the birth of an infant. Ultimately, fair and equal treatment would decrease unconscious bias in all of us.

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Biology, wet and dry
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