By **Marek Wagner**

Do it for love

At the 65th Lindau Nobel Laureate Meeting, which takes place 28 June to 3 July in Germany, some 650 students and postdocs will mingle with 66 Nobel laureates and attend lectures, panel discussions, and master classes. One of those laureates is Richard J. Roberts, who won the 1993 Nobel Prize in physiology or medicine jointly with Phillip Sharp "for their discoveries of split genes." In an interview with *Science* Careers, Roberts shared his thoughts on how to build a career in science. This interview was edited for brevity and clarity.

Q: What do you enjoy about science?
A: Science is my hobby as well as my profession. It is enormous fun. Just like every child, when I was young, I was very curious about everything around me. Fortunately, I managed to avoid having that knocked out of me while I was at school, and to this day, I take advantage of my curiosity to explore the life around me. As a result, I think about new things or make discoveries every day.

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Q: What traits make a successful scientist?
A: A dogged persistence to solve any problem that comes along. An appreciation that many experiments fail, especially when working in a new field or in areas where we know rather little. I like it when experiments fail repeatedly because it usually means our basic hypothesis—and hence the axioms on which it is based—is wrong and nature is trying to tell us something. A discovery is waiting to be made.

Good scientists are always open to new hypotheses and experimental opportunities. Often, a new technique applied to an old problem will reveal new features that were not predicted—again an opportunity to make a discovery.

Successful scientists will also constantly be on the lookout for good problems to solve. They tend to be skeptical of explanations that seem too simplistic or not well supported by evidence.

Q: How did you move to an independent position?
A: During my postdoc at Harvard in Jack Strominger's laboratory, I worked fairly independently but with excellent support when I needed it. This made it fairly easy to transition to an official independent position at Cold Spring Harbor Laboratory.

Q: What is the right time to transition to independence?
A: As soon as possible. Researchers are easily at their most creative when they are young, because they have no fear. This makes it much easier to challenge dogma and take risks—both essential features of the creative process.

Q: Have you experienced self-doubt?
A: I think most scientists have self-doubt from time to time, but in general, the better ones have very little of it—or at least they don't share it with others. I have always been fairly confident in my abilities and my views, although as I get older, I do recognize that my abilities are less than they were when I was younger.

Q: What advice would you offer to those planning a career in scientific research?
A: Find an area that you are completely passionate about and focus on it single-mindedly. That doesn't mean you can't change if something more exciting comes along, but you will be happier and more successful if you love what you do. Almost all of biology is at a stage where we know a little, but nothing like as much as we will need to if we want to say we have a good understanding of life. I think bioinformatics is a growth area and absolutely fundamental to future studies of biology. Ultimately, almost everything we need to know about life will come from bioinformatic analysis of DNA sequence. We have to vastly improve our ability to predict function from sequence. ■

Marek Wagner, a postdoc at the University of Bergen in Norway, will be attending the 65th Lindau Nobel Laureate Meeting. For more on life and careers, visit ScienceCareers.org. Send your story to SciCareerEditor@aaas.org.