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## How a Stanford neurobiologist balances science and faith

*William Newsome is a world-class neurobiologist and a Christian man of faith. He spoke to Stanford News about how he became a scientist and the tensions, real and imagined, between science and religion.*

BY NATHAN COLLINS

To some, William Newsome might seem a tad unusual. He is not only a world-class scientist who has made extensive contributions to the study of vision and the neurobiological underpinnings of choice but is also a church-going Christian.

Newsome, the Harman Family Provostial Professor and the Vincent V. C. Woo Director of the Stanford Neurosciences Institute, leads an institute devoted to understanding how the human brain gives rise to mental life and shapes who we are. He talked to Stanford News about growing up the son and grandson of Baptist ministers, the wonders contained in a single drop of water and how he bridges the worlds of science and religion.

### **Did you feel any pressure from your family not to pursue science growing up?**

My father and mother were what I would call orthodox Christian believers, but they never created any barriers between my interest in science and the Christian faith that they wanted to raise me in. I remember hunting for fossils with my father when I was a kid, and my father was particularly interested in new paleontological discoveries on hominid origins, things like that. So I had a healthy interest in both science and in matters of religious faith in my background. I've always been grateful for that.

### **Was there a moment when you knew you wanted to actually pursue a career in science?**

I got really interested in biology early on. I had a great course from a great teacher in the ninth grade. I remember the first time I looked at an apparently, to my naked eye, clear drop of water – looked at it under the microscope and saw all these little bugs swimming and moving around in a clear drop of water. I was just enthralled by that and made up my mind right then and there I really wanted to be a biologist when I grew up.

### **What tensions do you see between science and faith?**

There are two ways in which one could find tension. One, which I think is a red herring, is saying that the discoveries of science make religious faith untenable.

I actually think that most of the discoveries of science are open to a religious worldview. I think that the discovery of the big bang, for example, shows that our universe has not been in existence forever, that there was a moment where it started, and that's very consistent with the notion of creation in early Genesis stories.

The theory of evolution has been a flash point obviously. People have said that religious faith requires purposeful creation and evolution depends on random mutations and random events, so how can anything that depends on randomness be purposeful? That's a red herring. Scientists, including my own laboratory, use random events to purposeful ends all the time. That's why people who create good random number generators are so valued in science.

### **What is the real tension?**

Where the real tensions exist are the habits of mind in science and the habits of mind in religion. In science, we want everything to be objective, so if I do an experiment properly in my lab it can be replicated anywhere in the world given the adequate conceptual background and technical expertise. In religion, we're searching for meaning and trying to construct and perceive patterns of meaning in our lives. There's some objectivity in that, but it's much more reliant on intuition, much more reliant on gut-level feelings.

### **You've said that science is good for answering some questions, while faith or something like it is good for other questions, like whether to get married.**

This is a favorite example, because when you marry someone you're really making a commitment. It's a declaration of hope, and yet there's no scientific experiment you can do that proves that this is the right person to marry. If you wait for scientific proof, you'll be waiting an awfully long time.

Now that doesn't mean that you check your brain at the door. You think really hard, but in the end you don't have proof and you have to take a step of faith.

### **And yet scientists have tried to figure out what makes marriages work. Are there areas of overlap between science and religion?**

I think that there are definitely areas of overlap where you want to bring both kinds of evidence to bear. When I speak to religious communities of students at colleges or other events, I always tell them that your faith should be informed by science. It should not be replaced by science. Science can't bear that weight. It can't give you the things that you need from faith or well-reasoned philosophy. But your faith should always be informed by science.

### **It sounds like in your faith community there's a lot of room for exploring different perspectives and challenging each other. There's something similar in how you've constructed the Neurosciences Institute – there's an interest in building community and merging different viewpoints. Is there a parallel?**

You know, I like science and I like running a lab, but the things that I like most are the personal relationships of trying to figure things out in a lab.

Deep down, I'm finding that I am like my father in important ways. I may be a pastor at heart. Community means a lot to me, and mentoring means a lot to me, and the personal relationships within science mean a lot to me. The politics, on the other hand, I frequently find off-putting. My father really liked the personal aspects of ministry, but disliked the political aspect of church life. Amusingly, perhaps, I'm coming back around toward home after 50 years, realizing that I'm more like my father than I ever believed.