



The volunteer scientists who answer your questions have a wide range of expertise in the biological sciences. All have been involved in fellowship programs supported by the Howard Hughes Medical Institute. They include graduate students completing their Ph.D. or M.D. degrees, HHMI postdoctoral fellows, and principal investigators.

FEATURED SCIENTIST

Jeremy Tuttle



"I've been a scientist for 30 years, and every morning I still wake up eager to go to the lab," says Jeremy Tuttle, professor of neuroscience and professor of research in urology at the University of Virginia (UVa). "Every week something new happens that startles me and keeps me excited about my work.

"Science provides a good life for an intensely curious person," Tuttle continues. "It offers personal freedom to pursue exciting questions that have value to humanity." His current research focuses on neurodegenerative and urological diseases.

Tuttle's interest in science was fostered in part by his family's involvement in biomedical research. "My uncle co-initiated the Gordon summer conference series. It attracted Nobel laureates in science, and I spent vacations listening to exciting scientific discussions." To gain more knowledge about how research is conducted, he also attended a National Science Foundation summer research program at the Jackson Laboratory in Maine.

Click on the names below to read brief stories about some of the scientists who have participated in Ask a Scientist.

[Featured Scientist](#)

[Lauren Aleksunes](#)

"It is gratifying knowing that an idea you came up with on your own has an impact on the lab's research program."

[Mark Ansel](#)

"I believe that it's good for me, as a scientist, to practice communicating biological concepts to a broad audience."

[Richard Auchus](#)

"We need to get more young people interested in science, so when they have questions, I like to encourage them."

[Sarah Bagby](#)

"We're nearing the point where part of being a responsible citizen is having some idea what DNA is and how it works."

[Nathan A. Baker](#)

"There are too many exciting projects to work on. There are just not enough hours in the day."

[Crista Barberini](#)

"Find something you love, something that has meaning to you and that will be rewarding. That enthusiasm will carry you through periods of very hard work."

[Jennifer Berman](#)

"The future of science is dependent on encouraging young scientists, fostering their interest and enthusiasm."

[Jay Bikoff](#)

"You're always dealing with a new problem, having to think of a new way to answer a question."

[Joshua Bittker](#)

"I enjoy getting kids to think chemistry is cool. I also feel it's important to get people to understand basic science."

[Adam Breier](#)

"The pursuit of science and knowledge, and greater understanding of how life works, is going to benefit everyone in the future."

[Victoria Carlton](#)

"I wanted more of a sense of my research having implications that mattered to me, to have potential effects in disease treatment."

Tuttle encourages high school students considering science careers to “get involved in research programs. Being part of the scientific enterprise is the best way to collect data points for good career decisions.”

Tuttle’s career data points led him to complete a dual major—American literature and biology—at the University of Rochester. “After graduation,” he says, “I realized I could pursue literature by myself, but not science.”

Tuttle completed his Ph.D. at the Johns Hopkins University School of Medicine. “However,” he recalls, “I was clueless about how to actually have a research career.” With guidance from mentors, Tuttle wrote a successful grant proposal and conducted postdoctoral research at the University of Connecticut (UConn).

“Writing American lit papers helped me tackle the grant application,” Tuttle says. “Writing skills are incredibly important for scientists—we must craft clear explanations for our peers, the public, and granting agencies.”

Tuttle’s career took him from UConn to an assistant professorship at UVa, where he has continued to conduct research informed by his scientific curiosity, the teachings of his mentors, and his understanding of the history of science. “Mentorship is critical,” Tuttle observes. “Biomedical research is a collaborative endeavor. New scientists need to learn about the system and how to interact with it. The history of science demonstrates the importance of mentoring—even the early alchemists had apprentices learning beside them.”

Tuttle’s historical perspective also has increased his commitment to the future of the field. “I want science to be incorruptible. I’m proud of being a good citizen in science, and I want new scientists to have the same ambition.”

To realize this mission, Tuttle teaches an NIH-mandated course in responsible scientific conduct. “The pressure to cheat by fabricating data starts early,” he notes. “New scientists want to advance, and that creates conflicts between listening to what the data says and jamming the data into the answers they want.”

Tuttle extends his interest in future researchers through Ask a Scientist. “I’m in contact with budding scientists, and their questions

☐ **Lisa Catapano**

“I think that having interaction with patients makes you a better scientist and understanding psychiatric diseases at a scientific level makes you a better doctor.”

☐ **Dennis Chang**

“Science is not for everyone. You have to be really interested in figuring out how things work.”

☐ **Robert Choy**

“Once you get to the graduate level, you are for the first time on the edge of where research is being done.”

☐ **Daniel Cohen**

“Today, there’s a need for politicians to be a little more scientific and scientists to be a little more political.”

☐ **Nicholas Cozzarelli**

“The good scientist knows the literature, whereas the really good scientist knows when to forget the literature.”

☐ **Jayatri Das**

“That’s how we progress—by asking more questions and looking for more answers.”

☐ **Matthew Daugherty**

“Science is a great place to be if it matches your personality. I can’t imagine doing anything else.”

☐ **Michael Tri H. Do**

“From a very early age, my parents urged me to ask a lot of questions.”

☐ **John Doench**

“It’s really fun to be in a field that is such a black box. You find anything and it’s new.”

☐ **Claire Edwards**

“I love the operating room, being able to do something concrete for people.”

☐ **Eldad Enekeve**

“I feel enormously privileged to have learned from so many outstanding, patient teachers.”

☐ **David Feldman**

“My perspective is that part of the responsibility of being at an academic medical center is to teach.”

☐ **Christina Gutierrez Ford**

“Everybody has potential. You never know what you might achieve.”

☐ **Margy Glasner**

“It’s hard to think of a more fundamental question in biology than the origin of life.”

☐ **Lucy Godley**

“This is a way of giving back to high school education.”

☐ **Julie Goodman**

“The more lab experience you get the more you’ll know if that’s what you really want to do.”

push me intellectually. For example, someone asked why human sperm uses fructose for energy rather than glucose, which is a more common simple sugar. After consulting with other scientists, I could explain that fructose is more chemically stable.

"I enjoy helping to attract and train scientists," Tuttle concludes. "As the pace of scientific discovery accelerates, we must harness and direct the energy of curious, compassionate individuals to ensure that these discoveries add to the quality of human existence."

—Joan Guberman

5/07

□ **Karen Gross**

"Scientists have a responsibility to help educate the public about science, especially since misinformation is so common."

□ **Kristin Harper**

"It is important to me that science is accessible to everybody."

□ **Thomas Hawn**

"I wanted to bring public health to basic science, so by the end of college I had decided to do both."

□ **Hopi Hoekstra**

"Some of the most interesting questions in science today are ones that were raised years ago."

□ **Eurie Hong**

"Advances in science are best achieved by sharing information and sharing data."

□ **Audrey Jackson**

"Scientists should take a leading role in educating and calming fears when necessary."

□ **Melanie Kuechle**

"Trust your instincts, read a lot, and stay excited, even if you hear from people 'it's so hard to get a job in science,' or 'you'll never make it.' Don't let people discourage you."

□ **Andrea Ladd**

"Some people are very intimidated by science, but you don't have to be a super genius to be a scientist."

□ **Mark Larson**

"I was struck by all the complicated biochemical actions that go on inside a cell."

□ **Peter Lin**

"It would be nice to see more people doing both science and medicine, but the fields seem to be splitting."

□ **Jennifer Linden**

"Understanding more about the brain and the body can improve people's lives enormously."

□ **Hue Han Luu**

"It's hard for a young person to make such a big commitment, but being in a lab is important to see if science is what you want to do."

□ **Jeffrey Marcus**

"One of the most difficult parts of science is figuring out which questions you should ask and how you might try answering them."

□ **Sean Megason**

"A scientist is more of a detective, an engineer more of a builder. And I'm an engineer at heart."

□ **Nigel Noriega**

"Everybody is a scientist in a way. Science can be boiled down to asking a series of questions and designing systems to answer them."

- ❑ **Jorge Oksenberg**
"We need a lot of respect for the truth and confidence that we are asking a good question and asking it right."
- ❑ **Stephen Pan**
"Science for me is about figuring out things that haven't already been figured out."
- ❑ **Sima Patel Porten**
"Follow your interests and you'll wind up where you're meant to be."
- ❑ **Daniel Pennington**
"It can be a lot of fun to challenge other people's ideas of 'truth' and 'the facts' about the natural world."
- ❑ **Jennifer Powell**
"I really love to do research, but I also love to teach undergraduates."
- ❑ **Susan Ptak**
"Science covers so many aspects of our lives, from how we move our arms to what our children look like to the technology involved in building homes."
- ❑ **Kit Purdy**
"Talk to as many scientists as possible, pick their brains, keep reading as widely as possible. If not, you're limiting yourself to conventional paths and thoughts about science."
- ❑ **Tom Rutkowski**
"The truth is not carved in stone, but evolves as the latest experiments reveal new information."
- ❑ **Sam Sia**
"Science is a great opportunity to be creative. If you put your mind to it, you can basically go after any question. Science is a tremendously exciting place to be right now."
- ❑ **Walter Sipe**
"My payoff is learning. That makes almost every day enjoyable."
- ❑ **Lars Steinmetz**
"It's important to keep in mind the big picture. Then when some of your experiments don't work, you still know you are aiming at something worthwhile."
- ❑ **Olga Troyanskaya**
"Being a scientist is all about asking questions, and I want to encourage young people to do just that."
- ❑ **Jeremy Tuttle**
"Science provides a good life for an intensely curious person."
- ❑ **Alexey Veraksa**
"I receive profound biological questions that probe our existence."
- ❑ **Yongping Wang**
"Through research, I can study some of the most intriguing questions still unanswered in medicine."

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