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Gonzaga alum, Harvard professor wins ‘Nobel Prize of the Environment’

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James McCarthy (Courtesy of the Tyler Prize)

Jim McCarthy didn't always plan to become a scientist.

But in the '40s and '50s, when he was a boy growing up in Sweet Home, Oregon, a lumber town on the eastern edge of the Willamette Valley, nature was a constant source of inspiration.

“I spent all my free time outside,” McCarthy recently recalled. “I think I was probably about 10 when my father bought me a microscope, and I started looking at pond water and feathers, and I was just absolutely fascinated.”

Today, McCarthy is a celebrated Gonzaga University alumnus, a Harvard professor and a pioneering oceanographer who has contributed greatly to the study of climate change. He is also a winner of the 2018 Tyler Prize for Environmental Achievement – an award often described as the “Nobel Prize of the Environment.”

McCarthy is sharing the prize with Rutgers professor Paul Falkowski and said he plans to donate a portion of the \$200,000 award to various scientific institutions. Part of that will fund scholarships for Gonzaga students who are pursuing careers in science, he said.

A full month after the Tyler Prize committee announced this year's winners, McCarthy said he still was trying to make sense of the decision.

The prize – named after the late philanthropists John and Alice Tyler and established with help from California Gov. Ronald Reagan in 1973 – has marked the height of achievement in environmental science for most of McCarthy's 47-year career. He said the list of past recipients includes many of his mentors and heroes.

"I have interacted with a lot of these people and worked with them in a variety of ways," McCarthy said. "And it just never really occurred to me that I would, at some point, be on a roster in their company in this way."

After graduating from Gonzaga in 1966 with a bachelor's degree in biology, McCarthy earned his doctorate from the Scripps Institution of Oceanography in San Diego. He has since conducted research in many parts of the world, in coastal waters and the open ocean, on the causes and effects of storms and pollution and on organisms ranging from the tiniest plankton to behemoth whales.

At the bottom of the food chain, plankton play an important role in the ocean's production cycle. They are the "first pulse of organic material that fuels everything else," McCarthy said.

Early in his career, while working for Johns Hopkins University, McCarthy spent three years studying the effects of nitrogen pollution – from sources including crop fertilizers and septic systems – on the plankton of the Chesapeake Bay, and since then he has heavily focused on marine nitrogen levels.

"What we found is that it's retained in the system, that it recycles in the system many, many times. So a small pulse going in will have an effect for a very long time. It doesn't flush out," McCarthy said. "It turns out that nitrogen is the element that most limits ocean production. If you can understand what controls the nitrogen, you can understand, in many cases, what controls the production."

McCarthy went to work at Harvard in 1974 and was instrumental in creating an undergraduate degree program in environmental health and public policy. From 1982 to 2002, he directed Harvard's Museum of Comparative Zoology. In 1986, he helped found the International Geosphere-Biosphere Programme and served as its chairman for the following seven years.

For the past two decades, McCarthy has served as an author, reviewer and co-chair of the Intergovernmental Panel on Climate Change, helping lead a major assessment of climate change impacts and vulnerabilities in 2001, as well as a 2004 study of the Arctic. In 2007, when the IPCC shared a Nobel Peace Prize with Al Gore, the former vice president offered words of praise for McCarthy.

"His ability to effectively and eloquently communicate the importance and risks of the climate crisis are unparalleled," Gore said at the time.

The Tyler Prize committee said in a news release that "Dr. McCarthy's efforts to communicate the risks of climate change in novel, clear and compelling ways became an international standard in science policy."

McCarthy, 74, also has led the Union of Concerned Scientists and the American Association for the Advancement of Science. He still teaches ocean science and advises students at Harvard, and works with the university's Center for Health and the Global Environment, which aims to make environmental science accessible to policymakers as well as faith communities.

McCarthy said scientists can't simply state their findings in jargon and numbers and expect others to act accordingly – and they shouldn't assume that science is the prevailing force in everyone's decision-making process. To effect change, he said, scientists occasionally must put themselves in others' shoes.

“Something scientists may worry a lot about – you know, what the climate is going to be like 100 years from now – doesn't mean a lot to most people, who are perhaps mostly worried about their children's health problems, or how they're going to make ends meet this month,” McCarthy said. “I think it's a conversation scientists don't often have among themselves, and a lot of scientists are reluctant to have it because it's not comfortable for them.”

McCarthy said it's “entirely possible” to avoid the worst effects of climate change, and he urges people to change their behavior to reduce their consumption of carbon-based fuels by just 2 percent a year.

“Two percent a year. That moves us pretty rapidly along the trajectory that we need to sustain over the next few decades to avoid the worst of what could happen,” McCarthy said. “And what is hard to convey is how rapidly things are changing.”

Average temperatures on Earth are on track to “warm as much in one century as we warmed in 10,000 years coming out of the last ice age,” he said. “That's 100 times faster.”

Among his heroes, McCarthy listed the Rev. Timothy O'Leary, the Jesuit priest and chemistry professor who taught at Gonzaga from 1933 until his death in 1975. McCarthy recalled taking organic chemistry under O'Leary, a course many students dreaded but had to complete on their way to medical school.

“It was kind of a magical time for me, because it really opened my eyes to a whole perspective on living organisms,” McCarthy said, adding that O'Leary was known to fill the whole length of the chalkboard with formulas and diagrams. “He just had a manner of introducing material and explaining it that, to this day, I kind of marvel at.”

McCarthy, who returned to Gonzaga in 2008 to deliver the annual O'Leary Distinguished Scientist Lecture, also credited the late priest with inspiring him to push boundaries and explore new disciplines – from biology to chemistry, from science to public policy.

“He's a legend,” McCarthy said. “What a profound effect that man had on so many of us.”

McCarthy and Falkowski will be formally presented with their Tyler Prize medallions during a ceremony May 3 in Washington, D.C.

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