

Denial of Science: UH Mānoa community paraphrased discussion (9 December 2016)

Question: What are opportunities for pro-science action, especially at UH and elsewhere in Hawai'i?

Anonymous

This has been the rise of demagoguery, but there is hope. In May of last year, the Board of Regents was convinced to divest the scholarship fund from fossil fuels. What won the board over was scientists testifying with passion. Emotion is crucial to trump demagoguery, as facts will not carry as much weight. We must let passion come into our voices to persuade people.

Anonymous

We have allies in places that we are not thinking about. I spent time on a military conference about climate change. The military cannot afford to let climate change happen. The military has priorities regarding dealing with climate change. Many of the battles are also being fought in the courts, which ultimately often side with the environment.

Kira Krend (kkrend@puhahou.edu)

Punahou School teacher

I became a K-12 teacher, and have a message to graduate students. (1) Your committee will not be disappointed with you for not entering academia upon graduation. (2) If you want to teach in Hawai'i, you do not need a teaching certificate to teach at private schools. This can ultimately have a huge influence by informing our youth about the issues at hand. Contact her for details.

Don Drake (dondrake@hawaii.edu)

UHM Botany professor

We should be offering a broad topic course in distinguishing science from pseudoscience. Colleges do a good job of teaching specific aspects of science, but not what good science is what is not. This could be an excellent foundational type of course for all undergraduate students. Contact me via email to discuss this idea.

Mark Merlin

UHM Botany professor

William Burke, a long time Instructor in the old General Science Department (now more or less integrated into the Biology Department), offered a course (co-taught I believe with a Professor in the Physics Department here at UHM) entitled something close to "Science vs Pseudoscience". It was popular and taught for some years, at least until Bill Burke, an excellent teacher, moved on to the University of Kentucky. Evolution denial and the Creationist vs Natural Selection debate was a major, but certainly not the only focus of that course. I wonder if the course is still "on the books" here at UHM, or could be rather easily "resurrected"?

Mark Hixon (hixonm@hawaii.edu)

UHM Biology professor

There are several seminars courses on communicating science to the public at UHM taught by Rob Toonen, Margaret McManus, Mark Hixon, and a few others.

Mark Slovak

UHM Physics and Astronomy instructor

Teaching outside of the college can be critical. You can become certified for 3 years as a substitute teacher through a 2-3 week course and final exam. By teaching at public high schools, you can help make a difference by better preparing kids for college without needing to take remedial courses, get kids more interested in science, and help teachers at high schools become more knowledgeable of science.

Ryan Jones

UHM Zoology graduate student

Having experience substitute teaching high school biology, I learned that biology teachers aren't always biologists. By volunteering at high schools, you can not only get the kids more excited about science, but also inspire the teachers.

Aki Laruson

UHM Zoology graduate student

I had a required undergraduate course that taught me how to argue evolution to people who choose to not believe in it and were even hostile towards it. A similar course for climate change would be a good idea.

Anonymous

People denying science and calling it a hoax is not a new concept. But scientists would never work for a hoax, because scientists want notoriety, not money. This is a fundamental concept to get across to people to fight back against science denial.

Casey Carpenter

Neal Postman wrote "Amusing ourselves to death." *1984* got it wrong but *Brave New World* got it right. We gave away knowledge and power because we would rather be entertained. To get science out there, we have to make it consumable, entertaining, a way that the average person wants to consume it.

Anonymous

One of the things that went wrong is that we took on the issue of climate change from an adversarial position relative to the big power structures, i.e., the energy industry. We came across initially as being opposed to the status quo, where the industry made their money. We, as a society must have energy. 80% of all energy consumed in the world is consumed by cities (transportation, energy into manufacturing of goods, food, waste removal, etc.). We are 55% urban society on a global basis, and to suddenly say we don't want any more carbon in our

energy mix is where we went wrong. We should have gotten behind an energy source and said this is the energy of the future. Now we have to pick our battles wisely.

Becca Riles

UHM NREM faculty

We, as a scientific community, should make sure that we are an inclusive community. Everyone should be able to understand science, but also *be able to see themselves as scientists*. One of the things where we can act is to make sure that we speak up minorities in science. Science is not a career outside of the realm of the normal.

Celia Smith

UHM Botany professor

Over the past 20 years there has been an actual gap of science as an accessible body of knowledge to the state legislature at all levels. It is shocking how few biologists are involved in the staffing of these offices. As citizens, we need to get involved in the political process. We need to be seen as accessible experts and citizens so that if they have a hard question, they can call scientists and ask for information about topics.

Brain Bowen

UHM HIMB researcher

Historians look at the printing press as transforming society. But it took several generations before books were available to the public. But the social revolution we are in right now is the internet. This is also where all of the conspiracy theorists are fighting their battles and getting their information. The internet is the key battleground.

Melissa Giresi (mgiresi@punahou.edu)

Punahou School teacher

A lot of high schools and junior high schools are looking for people to come talk to students about scientific issues. They get sick of seeing the same teacher every day. But if grad students and scientists want to go and talk about these things in the classroom, they can inspire people. Email me for more information

Mike Henley

UHM Marine Biology graduate student

What we should be asking is why someone wants to deny science, and the answer involves the psychology of human fear. People are afraid that by accepting scientific findings, certain deep-seated beliefs they have stand to change. The solution to this situation is not more data, but rather addressing the common fears people may have, whether they are aware of them or not.

Judy Lemus

UHM HIMB Academic Program Specialist

As a UH community, we should be reaching out to others in the university who can offer collaboration. Fostering relationships and working with a group of people beyond just scientists can help solve pressing issues.

Floyd Reed

UHM Biology professor

One of the main issues affected by non-scientific facts in Hawaii is GMOs. As scientists, we need to be willing to sort through the facts and non-facts to educate the public.

Anonymous

When a person doesn't believe in some scientific fact like evolution, it is because some alternate idea is already occupying that slot in their belief system. If your tenet does not fit, it is not likely that more data, education, or positive communication will have a significant effect.

Mykle Hoban

UHM Marine Biology graduate student

An area for advocacy is free and open communication. A lot of people are working on areas like net neutrality and media consolidation because these areas strongly affects how facts are communicated.

Shayle Matsuda (shayle@hawaii.edu)

UHM Marine Biology graduate student

Everyone has stories behind their beliefs and understandings of things, and our job as communicators is to replace those stories with better ones. We need to think about how we are presenting our data and what is the story we want to tell. Storytelling can include an emotional hook or personal experience that allows the listener to connect with us personally, which can make it easier for them to listen to us about topics they might not have. I serve on the organizing committee for a 3-day workshop out of Harvard University on scientific communication. The Communicating Science workshop for Graduate Students (ComSciCon) is a 3-day workshop for grad students in STEM, hosted by grad students in STEM. The program covers room, board, and flight. The national workshop is in Cambridge every year, but there are also satellite workshops all over the country. Another grad student who was in the cohort I was a part of and I are hoping to host one in Hawaii in the future. The workshop brings in professional science communicators for workshops and panel discussions, and is a great way to learn to communicate more effectively across many scicom platforms, and to build a strong network of likeminded scientists. If you want to get more involved with communicating science, consider applying (ComSciCon.com). The applications should be coming on-line soon.

Anonymous

How you convince someone of scientific fact relies heavily on how you frame your argument. For instance, a recent encounter involved convincing a Trump supporter that his job is now directly in jeopardy because of potential new policies.

Paul Kemp

UHM C-MORE Associate Director

The battleground of science is the internet now, but many are afraid to argue on the internet. Scientists are trained in scholarly debate with logical, factual, polite responses, but the internet

is full of hostile, disrespectful, and non-factual arguments. Many people, especially trained scientists, are afraid to defend science on the internet because they do not know how to handle these situations. It is an avenue that can be improved for science communication.

Lillian Tuttle

UHM Biology postdoctoral researcher

We must think about what our goal is when talking to people about science. It is easy for our competitive nature to take over, and we often approach conversations with the end goal of convincing others. If we can change this, it allows for each party to meet each other as equals, allowing for free expression of ideas. This will allow us to better understand the other's perspective.

Anonymous

The effort to eliminate the EPA and control pollution is a fight that will be happening soon. Climate change may need to take a back seat while we fight that battle. There may also be an immediate attempt to stop all climate change research in US.

Albert Meier

Western Kentucky University professor

Being good at debate will not help you, but will likely hurt you. Trump supporters (1) think you probably hate them, (2) don't think you have concern for them, and (3) think you are being paid to make their lives harder. They are very scared about what is going on. We need to approach them on a caring, human level. They don't care about policies; they just care that you care about their needs and well-being.

Anonymous

We may need to let go of peers and people who offer only absurd arguments. But there is a big population that is reasonable and scared and need information. We should focus on them.

Anonymous

It is important for scientists to come across as to who we really are and really care about. Their welfare is the same as our welfare because we are all in this together.

Liv Wheeler

UHM Dive Training Coordinator

Scientists need to come down from the ivory tower and make themselves more accessible to their communities, even their neighborhoods. This could involve getting involved with children through substitute teaching and afterschool programs. Many children don't get a lot of information, have no idea what is going, and are scared. Citizen science is also a valuable tool, allowing people to get involved and feel empowered. Whatever you are passionate about doing, you must put your whole self out there to connect with people and communicate these issues.

Adel Heenan

NOAA

“Houston We Have a Narrative” by Randy Olsen is a book that talks about how to navigate conversations and become a better story teller. As scientists we always counter arguments with “but” statements. If we look at the science of improv community, they counter arguments with “yes and” statements. We should learn to be “yes...and” people to better communicate with the public. Another powerful tool is the online news platform “The Conversation.” Scientists pitch ideas and work with journalists to put their work and findings into a form that will be read by a much wider audience than just the scientific community.

Anonymous

Scientific literacy in this country is a huge issue. One of the biggest problems is trying to get people to fall in love with science again. It is hard to do that in a lecture hall. But we need to start better spreading out to the people what we are doing. Spreading videos, pictures, visuals, etc. of our research and labs via social media and other modern tools is crucial.

Maria Costantini

UHM Zoology graduate student

We can't let those people who feel like the situation is hopeless slip through the cracks. Hopelessness spreads and people begin to feel that the problem cannot be fixed through their actions. We must strive to make ourselves more informed daily in order combat these feelings of despair in ourselves and others by providing accurate information on positive things individuals can do.

Kelle Freel

UHM HIMB postdoctoral researcher

I'm interested in science communication and have been working for about a year with a group (including grad students, postdocs, and assistant professors) for [The Molecular Ecologist](#), where we briefly review recent papers in an informal, and hopefully accessible, manner. We've started a "Friday action item" post ([here's](#) the most recent one) that will be general things that anyone can do to get involved supporting science. We are always up for more suggestions, and these posts are meant to be short little posts that will inspire our readers to act in one way or another.