NAGRUK KARCHAREK

DIRECTOR OF BARROW OPERATIONS AND VP OF UKPEAĠVIK IÑUPIAT CORPORATION LANDS

I am not a formal researcher or scientist. My role or responsibility as an Iñupiaq Alaska Native, as it relates to research, is to offer our perspective to the projects that are taking place in the Arctic. Iñupiaq people and researchers view the world through two different lenses. I would argue that each lens is equally important when viewing the natural world and that they are very complementary in nature. Iñupiaq people are part of the ecosystem and combining those perspectives begins to build that understanding. If you want to thoroughly understand the Arctic, you have to start to gain an understanding of how the local people interact with that ecosystem and environment. At UIC Science, we put a lot of effort into exactly that. We strive to be a conduit for the exchange of information between Western science and traditional knowledge. We understand that the conduit through which that information is flowing is a two-way street. We, as well as the researchers, have to be willing to learn as much as we are willing to teach, and sometimes that can be challenging.

PATRICK MEGONIGAL

ASSOCIATE DIRECTOR OF RESEARCH AND SENIOR SCIENTIST AT THE SMITHSONIAN ENVIRONMENTAL CENTER

I seek to understand the truth about nature through science. Being honest about the meaning of truth in a science context means that I must be mindful that both science and the human intellect are powerful, but flawed, tools, such that the truth is simultaneously attainable and elusive. My awe of nature compels me to tell the truth about our planet to the extent one person can understand it, and to trust others to be as skeptical of my evidence as I am of theirs. As a citizen of the planet, I tell my truth as clear and loud as I know how. Among peers I am clear about the insights that are facts or nearly so, those I am quite confident are true, and those that I only suspect are true. This philosophy extends to the general public. The grand appetite of the public for knowledge settles my fears about the future of our fragile planet, and compels me to translate the nuances that define truth for scientists into words, voice, art, exhibits, movies, and images. I am inspired by the passion experts in these mediums bring to our collaborations, as they also seek the truth in their own way. The truth is that the living, breathing, biodiverse Earth is a wonder found nowhere else in the known Universe and is presently under assault by a single species. I believe it is our highest calling to nurture Earth as we nurture others we love.

JULIE BRIGHAM-GRETTE

GEOSCIENCES PROFESSOR AT UNIVERSITY OF MASSACHUSETTS, AMHERST

My research is supported by taxpayers through federal allocations to the US National Science Foundation. It is my moral obligation and joy to share what I have learned about the susceptibility of the Earth system, much like using a set of natural experiments to make real the vulnerabilities we face into the future. As a geologist, I feel like a “Time Lord” from Dr. Who, a character who can move backwards through our geologic past and use that past to envision our future using sensitive global models of weather and climate change. I use the collective knowledge of my science to inform policy makers, the broader public, and other stakeholders of the challenges ahead and to see challenges as opportunity. Using the thrill of discovery, my factual observations provide an engaging means for making climate change real for non-scientists. The most important thing we can do is vote for policy makers who take climate change seriously; and support those trying to make an environmental difference (e.g., Union of Concerned Scientists; Toxic Action, etc.). Find ways to lower your environmental impact. I have solar panels on my roof that produce more power than I need so I sell it back to the grid; I have stopped eating meat (and feel great!); I drive a hybrid car and promise my next one will be electric. Think about what you buy; live as green as you can; accept the challenge of the UN Sustainable Development Goals (https://sustainabledevelopment.un.org/). Let’s do this! The world will be a better place.

VLADIMIR ROMANOVSKY

PROFESSOR IN THE GEOPHYSICAL INSTITUTE AT THE UNIVERSITY OF ALASKA, FAIRBANKS

When I started to learn about permafrost in the mid-1970s, everyone believed that permafrost will be there forever. That is why it’s called “permanently frozen ground.” However, starting from in the 1980s, the climate warming became clear. Permafrost immediately reacted to this warming of the climate by increasing its temperature. Now, with our continuous data on permafrost temperature for the last forty years, we know for certain that permafrost is changing dramatically. If this warming of permafrost on the North Slope of Alaska will continue at the same rate as the past thirty years, widespread permafrost thawing will start in the coldest permafrost area in Alaska by 2050. These changes are adversely impacting people locally and globally. Which is why we need to learn more about this process, to be able to mitigate and adapt to environmental changes. As a citizen studying permafrost, I believe that my responsibility is to collect the necessary data and provide unbiased opinion based on this data about the direction and rate of changes in permafrost and on the environmental and societal consequences of these changes. I am very vocal in sharing my knowledge and findings with the scientific community and with world citizens. For this, I use my interaction with media, publication of scientific and popular articles, as well as working with the local communities in Alaska and Russia. I believe that the members of the local population benefit from receiving their information directly from the original source and not necessarily from the media. I plan to increase my activity in disseminating my knowledge to local communities.

CRAIG TWEEDIE

PROFESSOR AND DIRECTOR OF THE ENVIRONMENTAL SCIENCE AND ENGINEERING PROGRAM AT THE UNIVERSITY OF TEXAS, EL PASO

In my role as a professor, I function as an interdisciplinary scientist, educator, and communicator. I am motivated to improve knowledge of how ecosystems are structured and function, understand how ecosystems respond to perturbations like climate change, and discern how technological and other solutions can improve both research capacity and mitigate environmental degradation. It is my moral, ethical, and social responsibility to impassionately communicate my motivations, research activities, and findings to the public and other stakeholders.

Just as our research continues to highlight the biophysical complexity of ecosystems and their connectedness to other components of the Earth System, the inherent complexity associated with environmental change is being increasingly recognized. Accordingly, the mechanisms and strategies for communicating with the public must be multifarious and balance the clarity of delivering easy to understand and compelling messaging, whilst highlighting the implicit complexity associated with the causes, consequences, and solutions for environmental change.

My research group implores opportunities to share our research publicly. In doing so, we aim to target diverse audiences with diverse approaches and especially enjoy working with communication and other disciplinary specialists— particularly in the arts. We always involve students and next-generation leaders. We have delivered presentations in conference, classroom, community meeting, industry, nonprofit, and government settings; partnered with artists, musicians, songwriters, and documentary filmmakers; developed museum and other public exhibitions; and delivered multiple interviews with news and other media. We strive to learn and innovate, building on experience, opportunity, and the catalyzing nature of our ongoing discoveries.