A “Public Inspired Science” Graduate Training Program
Marc A. Edwards and Siddhartha Roy, Civil and Environmental Engineering, Virginia Tech

“Set the millions of eyes in this great Republic to watching, and intelligently observing and thinking, and there is no secret of Nature or art we cannot find out; no disease of man or beast we cannot understand; no evil we cannot remedy; no obstacle we cannot surmount” – Jonathan B. Turner (1866), Father of the Land Grant University Act

MODEL
Graduate class:
Engineering Ethics and the Public
Projects:
Citizen Science Collaborations and Field Work

PUBLIC INSPIRED SCIENCE
Public Reflections:
Storytelling, podcasts, and documentaries
Outreach:
Professional documentaries congressional work, papers

REAL-WORLD IMPACT
Over 11 YEARS we have trained 142 GRADUATE STUDENTS working with the public

- Retain and Train → Altruistic, ethical engineers who seek and speak the truth — especially when doing so is unpopular
- Acknowledge and overcome barriers to ethical practice (i.e., personal bias, perverse incentives, institutional corruption, shunning)
- Understand historical dangers of ill-informed academic activism, but also learn effective “last resort” strategies for whistleblowing
- Generate valid scientific data, oftentimes in direct collaboration with the public, to assist stakeholders in evaluating complex problems
- Cultivate engineering ethics “street smarts” and coping strategies through case studies and engagement with unfolding public dilemmas

This work has reached communities in
250+ CITIES including Washington DC, Flint MI, Denmark SC, Cicero IL

leading to gut-wrenching ethical reflections in

- 11 MUSIC PODCAST STORIES
- 10+ EDITORIALS/OPINIONS

We helped uncover a public health crisis in Flint, but learned there are costs to doing good science

Science is broken
The Hand-in-Hand Spread of Mistrust and Misinformation in Flint

leading to gut-wrenching ethical reflections in

- 5 COMMUNITY SCIENCE DOCUMENTARIES

We helped uncover a public health crisis in Flint, but learned there are costs to doing good science

Science is broken
The Hand-in-Hand Spread of Mistrust and Misinformation in Flint

and fueling a much-needed national conversation.

This work has reached communities in

- 3 FEDERAL/STATE EMERGENCIES
- 4 NEW LAWS TO PROTECT PUBLIC HEALTH
- >$1 BILLION IN FUNDING RELIEF
- 12 CONGRESSIONAL HEARINGS AND INVESTIGATIONS
- 250+ DOCUMENTARIES

reaching/engaging tens of millions via

- 300+ NEWS STORIES
- 250+ PRESENTATIONS

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