

# VT A "Public Inspired Science" Graduate Training Program

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Clickable poster 

*"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

## GOALS

- 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

## REAL-WORLD IMPACT

Over we have trained working with the public

11  
YEARS



142  
GRADUATE STUDENTS



leading to gut-wrenching ethical reflections in



5  
COMMUNITY SCIENCE DOCUMENTARIES



11  
PODCAST STORIES



10+  
EDITORIALS/ OPINIONS

Academic Research in the 21st Century: Maintaining Scientific Integrity in a Climate of Perverse Incentives and Hypercompetition  
Marc A. Edwards\* and Siddhartha Roy†  
Citizen Science During the Flint, Michigan Federal Water Emergency: Ethical Dilemmas and Lessons Learned  
Siddhartha Roy and Marc Edwards

Should scientists engage in activism?  
Ivan Oransky, Adam Marcus

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

Engineers shall hold paramount the safety, health and welfare of the public — but not if it threatens our research funding?  
Edwards, Pruden, Roy, Rhoads

The Flint Water Crisis: Overturning the Research Paradigm to Advance Science and Defend Public Welfare  
Marc A. Edwards\* and Amy Pruden

This work has reached communities in

250+  
CITIES



including Washington DC, Flint MI, Denmark SC, Cicero IL

spurred



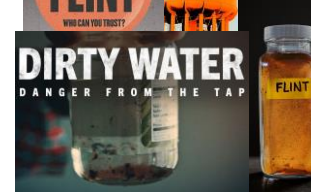
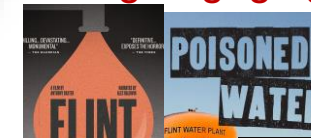
3  
FEDERAL/STATE EMERGENCIES



4  
NEW LAWS TO PROTECT PUBLIC HEALTH



reaching/engaging tens of millions via



>\$1

BILLION IN FUNDING RELIEF

12

CONGRESSIONAL HEARINGS AND INVESTIGATIONS

250+  
PRESENTATIONS

3  
TED TALKS  
IDEAS WORTH SPREADING



300+  
NEWS STORIES

