

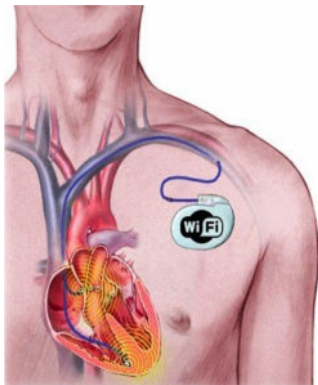
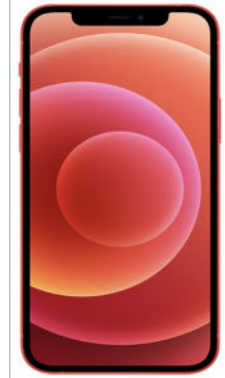
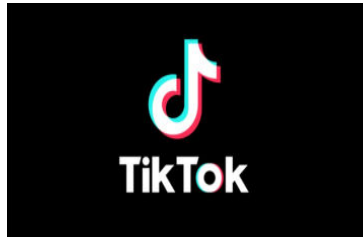
Teaching Social Responsibility in a Tech-powered World

Dr. Fran Berman

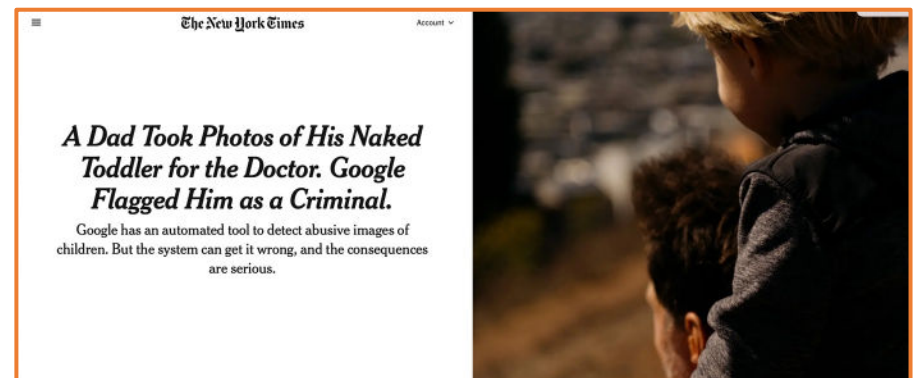
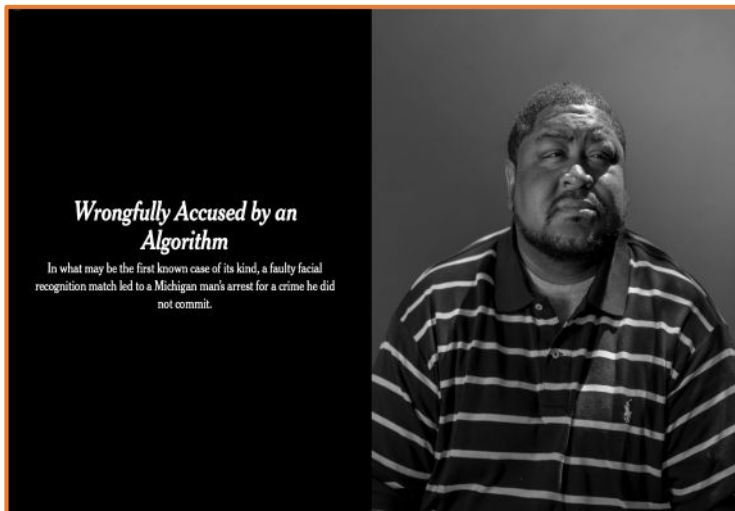
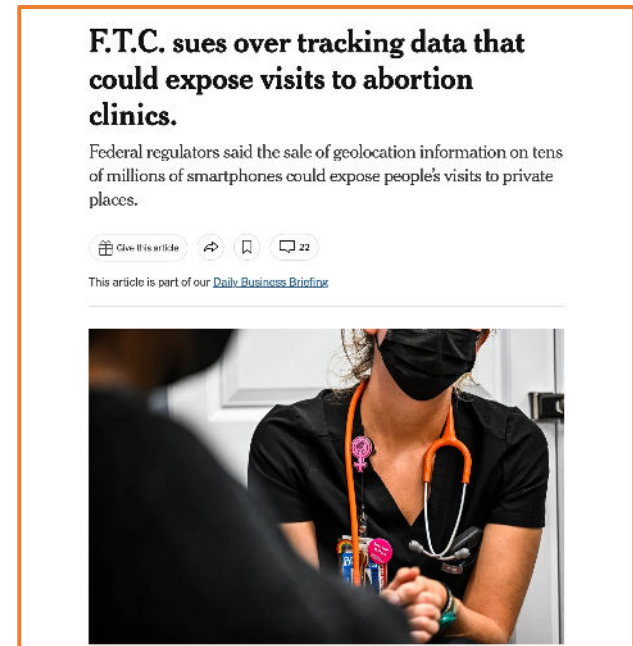
Director of Public Interest Tech
Stuart Rice Honorary Research
Professor, UMass Amherst
@FranBerman

This talk and all the images
herein may be used for
educational purposes only
and with attribution

What happens when technology changes everything?



Social impacts and unanticipated consequences



Will all this technology make us better humans? Will society be better off?

- What do we need to put in place to promote societal well-being and the public interest?
- What do we need to be aware of?
- What do we need to do *now*?



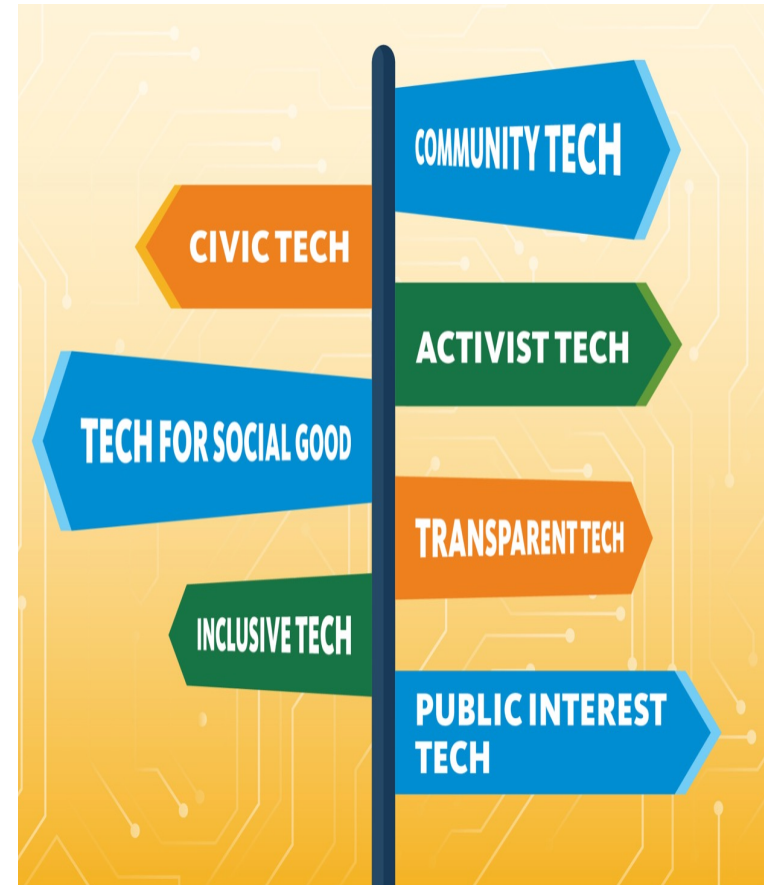
How do we educate students to meet the challenges of the 21st century?

- How do we help students gain the skills, knowledge and experience base to
 - Think critically about technology and society
 - Problem solve for the world we live in
 - Develop strategies and remediations that promote the public interest



Public Interest Technology

Public Interest Technology is an emerging area that builds skills to address **complex problems** in a **socially responsible** way using the tools of modern **information technologies**.



Rebooting higher education to incorporate Public Interest Tech

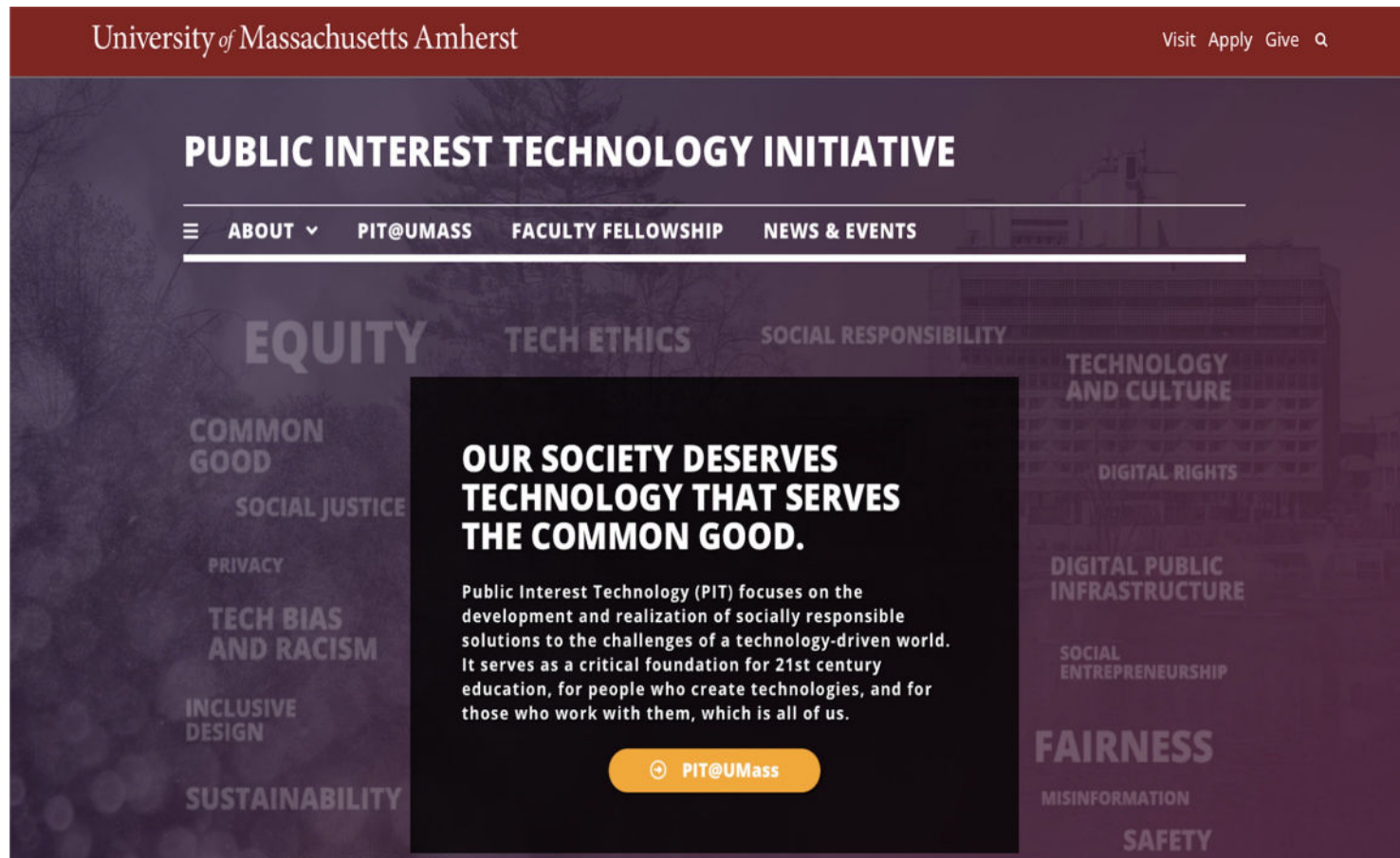
Fundamental skills for a 21st century workforce:

- Tech literacy
- Social literacy
- Pragmatic strategies to promote the public interest
- Empathy, ethics, broad perspective, critical thinking, communication skills, social responsibility, cultural sensitivity

Emerging 21st century careers:

- **Public sector:** support for development, enforcement of policy, law, regulation for tech innovation
- **Private sector:** public-focused design, compliance with increasing tech-focused legislation
- **Academia:** New courses, tracks, research, majors in society and tech

UMass Amherst Public Interest Technology Initiative (PIT@UMass)



<https://groups.cs.umass.edu/pit/>

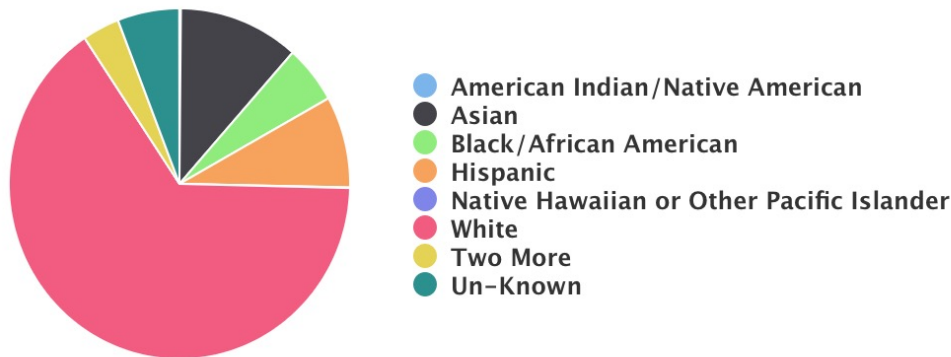


UMass Amherst is a large public university

Flagship university of UMass system, largest public research university in New England

By the numbers:

- 200+ academic programs
- 24+ K undergrads, 7+ K grads
- Many UMass students first-gen, work in MA after graduation
- 27+% non-white



Major Schools and Colleges

- Social and Behavioral Sciences
- Information and Computer Sciences
- Humanities and Fine Arts
- Natural Sciences
- Management
- Public Health and Health Sciences
- Nursing
- Engineering
- Education

PIT@UMass: Broad portfolio of PIT offerings aimed at *all* students in *all* majors and the UMass community

- **Educational Offerings** (courses, certificates, concentrations)
- **Research Projects** (integrating domain methodologies, responsible use of information technologies, and assessment of societal impacts)
- **Practica** (internships, fellowships, partnerships with professionals and practitioners)
- **Community outreach** (Events, short courses, briefings, community engagement)

Public interest
focused curricula

Socially
Responsible
Integrative
Research

Hands-on
Experience

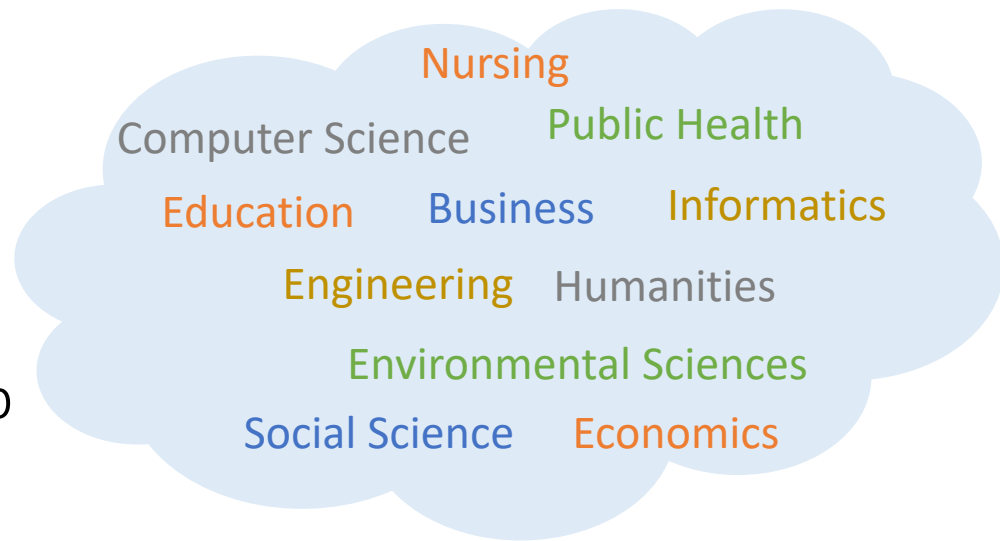
Community
outreach

PIT@UMass Curricula

- **Signature “supercourse”:** Introduction to Public Interest Technology
- **PIT portfolio of courses:** wide spectrum of courses across the campus with substantial PIT content
- **PIT Undergrad Certificate:** 5 course concentration for students from *any* major that documents student’s training and skills around tech literacy, social literacy and pragmatic public interest strategies

PIT Courses

- Broad set of courses with PIT content. Foci include:
 - Racial justice
 - Health and AI
 - Social media
 - Cybersecurity
 - Social entrepreneurship
 - Inclusive design, etc.



- Course development expanded by first year of “PIT Fellows Program”

“Supercourse” – Intro to Public Interest Tech: gen ed PIT course for all undergrads

Learning objectives -- social literacy, technology literacy, pragmatic strategies to promote the public interest

No prerequisites
No programming
**All majors
welcome**

Theme	Topics
Section 1: What is the Public Interest? What is PIT?	<ul style="list-style-type: none">• What is PIT and why does it matter?• Everything has consequences
Section 2: The Socio-technical World	<ul style="list-style-type: none">• Information technology basics• Your digital profile• Digital rights and privacy• Social impacts of technology
Section 3: Strategies to promote the public interest	<ul style="list-style-type: none">• What can government do?• What can the private sector do?• What can the public do?
Section 4: Who promotes the public interest?	<ul style="list-style-type: none">• PIT Stars – individuals who make a difference• PIT organizations – organizations that make a difference• Group project presentations – students making a difference

Tech literacy and social controls



Strategies, preventions and remediations

Responsible
design

Algorithmic
fairness

Public-focused law,
regulation, and
policy

Informed personal
choice / multiple
alternatives

Government
oversight

Adequate
cybersecurity

Data privacy and
access control

Ethical and
sustainable
development

Community
standards

Making choices: how and when should we promote the public interest over individual or private interests?

- How much privacy should we have?
- How much security do we need?
- Should launch first in the market or get out later with a better product?
- Can I depend on this information?
- Who will my policy or practices exclude?
- How will the development and sales of this product impact the environment?

Teaching writing with



- **Fran:** Why is public interest technology important? (≤ 50 words)
- **ChatGPT:** Public interest technology is important because it can help to promote social and economic justice and to address the digital divide. It can also help to ensure that technology is developed and used in a way that serves the public good.

Teaching writing with



- **Fran:** Do you think our class should have a mask policy? If so, what should it be? (≤ 50 words)
- **ChatGPT:** It's important for the school or institution to follow the guidance of public health officials when implementing a mask policy. Masks can help slow the spread of COVID-19. The policy should be part of a comprehensive strategy that also includes measures such as social distancing, hand hygiene, and regular cleaning and disinfection.

ChatGPT as a co-pilot

- Challenge is to help the students value development of their own writing and learn to use ChatGPT to **enhance, rather than replace**, their own writing skills
- Working with ChatGPT is an instance of new challenges for the socio-technical world: **How do we utilize AI to better, rather than replace, human decision-making, analysis, optimization, customization?**

PIT@UMass: Broad portfolio of PIT offerings aimed at *all* students in *all* majors and the UMass community

- **Educational Offerings** (courses, certificates, concentrations)
 - Research Projects (integrating domain methodologies, responsible use of information technologies, and assessment of societal impacts)
- **Practica** (internships, fellowships, partnerships with professionals and practitioners)
- **Community outreach** (Events, short courses, briefings, community engagement)

Public interest
focused curricula

Socially
Responsible
Integrative
Research

Hands-on
Experience

Community
outreach

PIT research can help address these problems



How to use data ethically



How to bridge the Digital Divide



How to use surveillance so it is protective vs. intrusive

Cyberattacks, Hacks and Misinformation: The Many Fronts of Russia's Hybrid War in Ukraine

Before any battalions entered Ukraine, Russia stepped up several destabilization campaigns with short- and long-term impacts

How to distinguish between fake and real



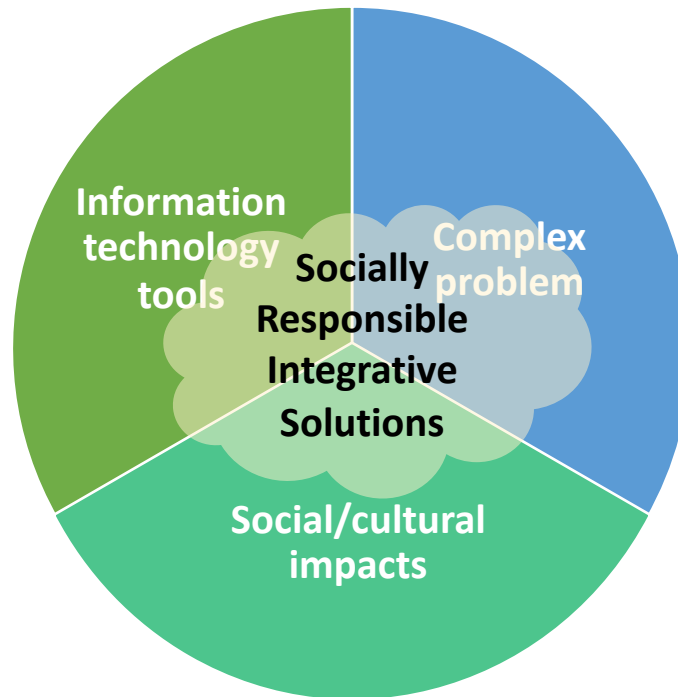
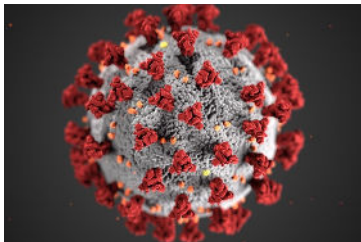
How to adequately protect sensitive data

PIT@UMass Research focusing on integrative solutions



Climate Change

Health and
Well-being



Social Justice

Sustainability



PIT@UMass part of PIT University Network – growing cadre of universities developing PIT educational programs

Developing PIT as a field:

- Need **academic infrastructure** – faculty, journals, conferences, funding
- Need closer **partnerships** with public and private sector
- Inter-sector **bootstrapping**: PIT field development in academia; PIT career and job opportunities in public and private sector

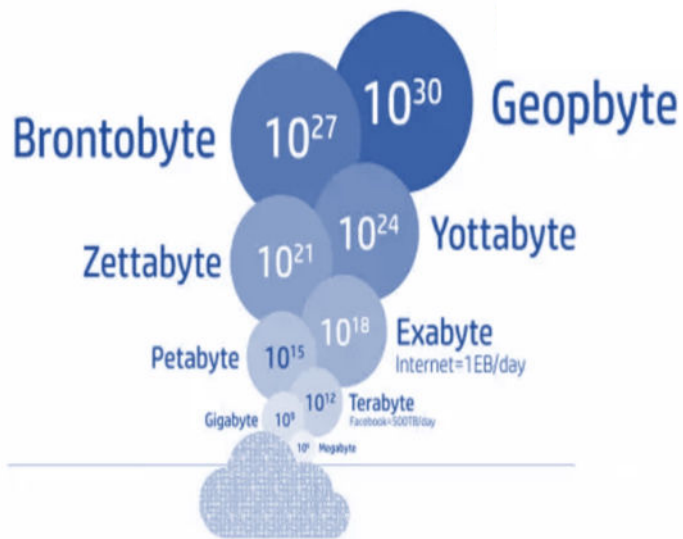
Public interest
focused curricula

Socially
Responsible
Integrative
Research

Hands-on
Experience

Community
outreach

What does the Future look like?



Smart autonomous systems = critical infrastructure

Mass social polarization / unification common and in accelerated timeframes

Hybrid humans

Ubiquitous surveillance, “hellabytes” of data

Gen Zers (first digital natives) are elderly

Dozens of next-generation smartphones and computers

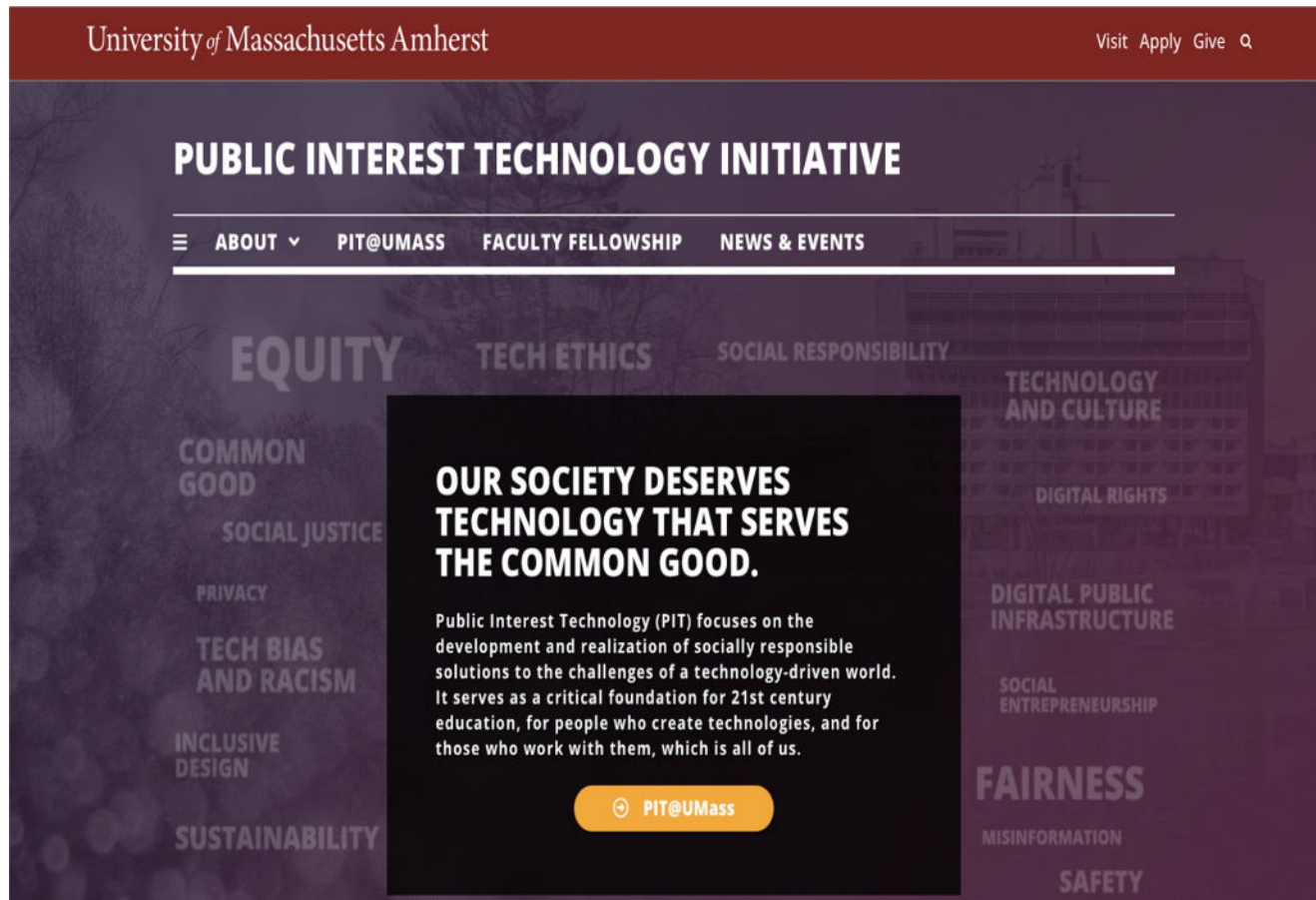
New computers that break the mold -- quantum, biological, etc.

Public Interest Technology in higher education needed to help students meet the challenges of the 21st century

- PIT provides the skills, knowledge, and experience to
 - Think critically about technology and society
 - Problem solve for today's world
 - Develop strategies and remediations that promote the public interest and the health and well being of the communities in which we live



Thank you!



<https://groups.cs.umass.edu/pit/>