

Since coming to the Graduate School of Library and Information Science, or now the iSchool, at Illinois, a significant role has been related to community engagement in research and practice.

- Since 1995, a key focus has been on effective use of networked information in support of community – what came to be called **Community Informatics**  
But a second half of my time has been in teaching, which over time melded with research and engagement.

Today I would like to take you through that two decade plus journey

In saying moment of change, I can refer to the work happening now, but in a very real sense this has been a repeated moment of change, always seeking to figure out, finally, how to challenge the status quo, the priveleging of the few over the many, a move towards greater agency in support of individual and corporate valued beings and doings.

## Introduction to Networked Systems



Hands-on introduction to social + technical information systems for use in information environments.

- Develop a clear hands-on working understanding of the physical and software layers of computers and networks
- Evolve a more holistic and nuanced understanding of the sociotechnical artifacts we use as a daily part of our professional lives
- Develop a critical approach to sociotechnical artifacts
- Advance community agency in appropriating technology to achieve our individual and community development goals through a reconsidered digital literacy learning and practice



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Let me set the stage:

Class that I first taught in 1997 mostly using the established lecture curriculum and 3 hands-on activities done on student's own outside of class time

1998 added considerable in-class hands-on activities while keeping weekly lectures as well

2000 spring did first online iteration with weekly synchronous lectures, and mid-semester student on-campus visits to do 12 hours of hands-on activities

This is not a course for archivists, although it has been taken regularly by archivists of all types. It is not a course for artists, although some artists have also taken it. It is not a course for community informaticists, although many have taken it to get a certification, as have school librarians to get their certification. It is a starting point for collaboration, and indeed for pluralism.

Throughout, this has been a mentoring work of co-learners from many different areas of specialization and disciplines, and of researchers and practitioners

Next slide...

## Scene 1: The Digital Divide Years



Fall 2000 to 2008



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This brings me to the fall of 2000 and the introduction of a community engagement component to the on-campus section...

## The Call: 21 Years & Counting

*We must rapidly begin the shift from a thing-oriented society to a person-oriented society. When machines and computers, profit motives and property rights, are considered more important than people, the giant triplets of racism, extreme materialism, and militarism are incapable of being conquered.*

Martin Luther King, Jr., *Beyond Vietnam*

April 4, 1967



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King's primary focus of this speech, a speech that literally started the 1 year count down to his death, was primarily about poor whites and poor blacks were both used to provide essential support for a military-industrial complex, in which the Vietnam conflict was but one playing field, and the north and south Vietnamese were used as an opposing side of pawns.

2/3rds of the way through, he quotes John F Kennedy, who argued if we did not build space for peaceful revolution, we would necessitate violent revolution.

King followed by stating we need a revolution of values.

Then he ended this paragraph with this statement.

For almost 2 decades, I don't start teaching the nuts and bolts of technology until I first reiterate this set of statements by King.

**SIDE NOTE: from here on out I will be primarily talking about a PEOPLE orientation. However, because of last year's bicycle accident and traumatic brain injury, I may mistakenly say thing instead of people at times. Please feel encouraged to help correct me.**



In the late 1980's, the East St. Louis Action Research Project, or ESLARP, brought together Illinois faculty and students with community members in East St. Louis, into a participatory action research dialogue and action process.

In 1999, community members put forward a request for action research related to the digital divide. Paul Adams and I, along with several others from Prairienet, joined in conversation regarding the issues and possible pathways forward.

By early 2000, the goal of a community computer lab within 5 minutes walking distance was reached

As one of the outcomes of entering into a champion of this goal, I was asked how "I" would accomplish it. My response, me and what army??? And so began community engagement for my Introduction to Networked Systems students.

My intention throughout was to build off the Reverend Doctor Martin Luther King, Jr.'s shift from thing-orientation to people-orientation, and his call for us to enter into a radical reconsideration of values.

## Service Learning in Postsecondary Technology Education: Educational Promises and Challenges in Student Value Development

Junghyun An: Case Study, 2005-2008

- “Evident in their project evaluations, students often romanticized their actions and project results...”
- “Service experience still was not coherently integrated into promoting student development of critical consciousness or inquiry, but rather deployed as an additional social practice of charity in the process of technical training...”
- “It seemed as if there were two competing intentions that were going on in the course-- one on the technical aspects of computers, and one on literacy/training/empowerment.”



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What Junghyun ultimately found was that for me and for my students who entered already primed to be person oriented, this class served well as a means to further that people orientation.

But for the significant majority who have been encouraged through corporate, government, and educational systems to become more thing-oriented, even if not intended or stated, this class had little or no visible impact in shifting from a thing-orientation to a person-orientation.

The community engagement component's primary goal was seen by the University students as enhancing the essential things needed to improve "their" futures.

## Scene 2: From Bridging The Divide to Community Action + Reflection



2008 to 2015



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In this scene:

- Engagement began to change drastically, to the point that I finally needed to turn Introduction to Networked Systems into a 6 credit class for those who wanted to do the engagement component.
- The rapid development of Community Informatics, and the start of my regular attendance to Prato...
- I also began taking other groups, including church youth groups, to East St. Louis for week long stays.
- In the midst of all this, I also spent extended time in East St. Louis leading a group of us who worked to develop a \$31 Million grant to build a metropolitan area network, plus two smaller grants that would address digital literacy and digital implementation within education, government, businesses, and the community sector.
- In the midst of this moment for change, I was also given awards as teacher of the year from Library Journal/American Library Association, and for community engagement from the University of Illinois.

Dialog – the process of engagement to name reality 

**Love of Others**      **Humility**      **Mutual Trust**

**Faith**      **Hope**      **Courage**

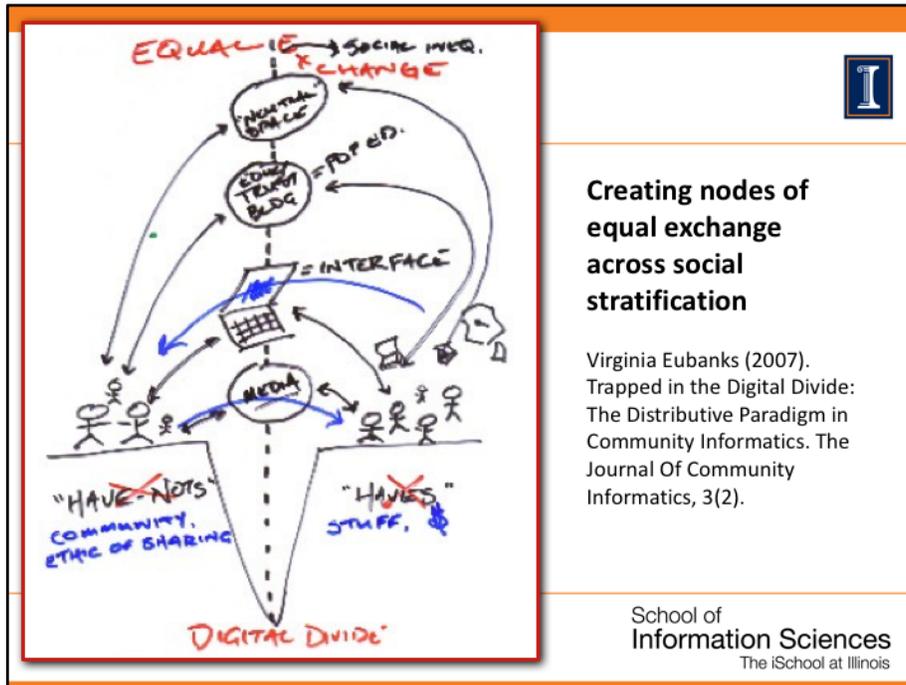
*Freire, Pedagogy of the Oppressed*

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While my start in East St. Louis with ESLARP introduced me to action research and the action-reflection cycle, only in the mid-2000's did I start to learn more about Paulo Freire's lens, and lenses of those who have adopted and expanded his work, regarding a critical pedagogy.

I began to not only learn more myself on this topic, but created a new course, Community Informatics Studio, that was then further developed in collaboration with Colin Rhinesmith, to create space where we could dig more deeply into a new critical pedagogy in our School and in our community engagement practice.



Virginia Eubanks in her work with women living in an upper New York State YWCA asked what the phrase digital divide meant. In her drawing it, the women began to draw their own copies of it, leading eventually to this equal exchange across social stratification. It also led to the development of Freirean components of critical pedagogy to new digital technology educational projects.

## From Digital Divide -> Digital Inclusion and Digital Equity



- **Digital Equity** is a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy and economy.
- **Digital Inclusion** refers to the activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of ICTs.

National Digital Inclusion Alliance



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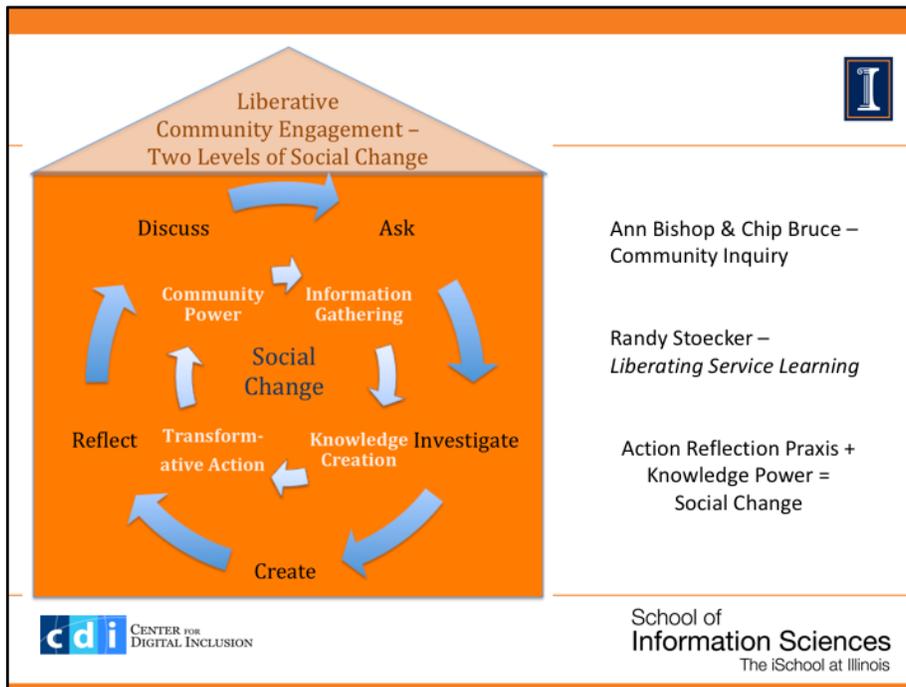
SIDE NOTE: I have already had several wonderful conversations about the US understanding of the central focus on digital inclusion as the key to a better future, as compared to digital inclusion as one component of a larger work towards social inclusion that is being addressed in many other nations. I would value more insights into this.



Men's barbershop in Champaign, IL

Students were to provide a small computer lab for after school work by students But Networked Systems students also discovered a social stratification combined with the prison-industrial complex created unique digital technology challenges, even when the African-American men worked with digital technology and entered into dialogue within the barbershop.

This led to the creation of a new technology workshop as a project that combined a few LIS students in both the Networked Systems course and the Community Informatics Studio course



Randy Stoecker has published a new book *Liberating Service Learning and the Rest of Higher Education Civic Engagement*. I've found it helpful to visualize a part of this by also including Ann Bishop and Chip Bruce's Community Inquiry as descriptor of the outer level of social change



**Demystifying Technology Workshops** = Beginning Thought/Guiding Question + Hands-on Exploration + Core Concepts in Context + Peer-supported Problem-solving + Critical Reflection & Discussion

**Context example** – Kenwood elementary wants to **bridge the historic divide between schools and low socio-economic status households** to better engage and collaborate with parents.

Icebreaker/Guiding Question ... Introduce yourself, tell us one way you've used something you own in a way it wasn't designed to be used to solve a problem

Hands-on...Disassemble and reassemble a computer

Core concepts...Follow the keystroke

Peer-supported problem-solving...What are you trying to do, what have you tried already, what else do you think you can try, what if you tried?

Reflection and discussion...**What is it** (Droid smartphone); **Why is it** (Google, Motorola, Verizon, Federal use policies; time and inclination to modify; financial resources); **How might it** (support or interfere with educational goals)

In one workshop, a parent commented to a small group that she was frustrated that

teachers and administrators criticized her for not purchasing a laptop, but instead a cell phone. She went on to describe how her children are taught to use the smartphone to call a trusted other if they feel unsafe, including when police look at them threateningly

## Scene 3: Beyond Digital, Beyond Technology

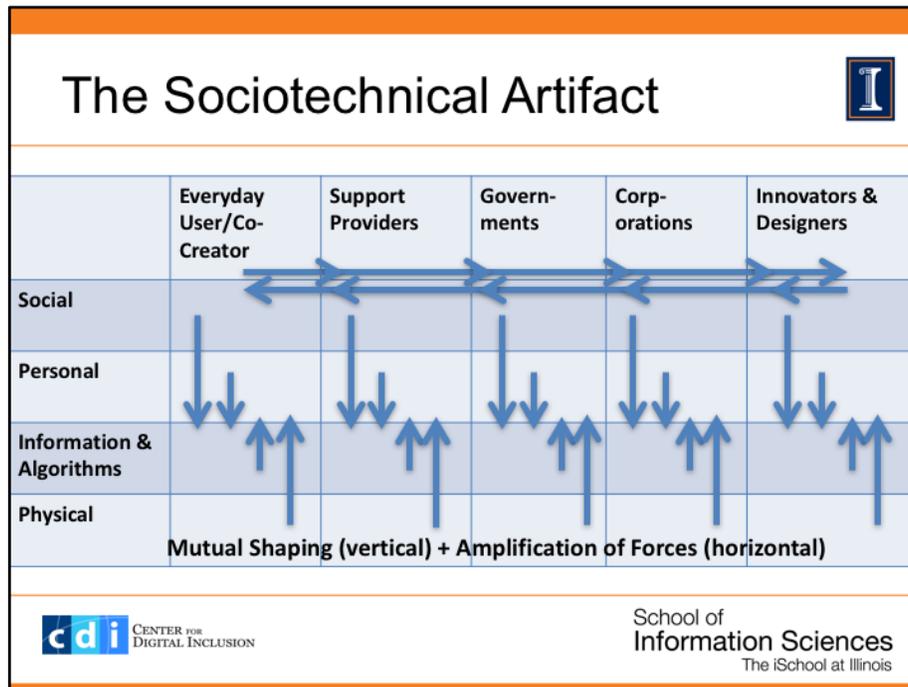
2015 to present

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In this scene:

- With the support of Anne Gilliland and Kelvin White, and through the many contributions of CIRN attendees during 3 years of workshops at past conferences, Colin Rhinesmith and I put forward a published draft regarding ethical community informatics practice, itself which complements many CIRN presentations and colleague papers
- Center for Digital Inclusion research further challenged thinking regarding the work of primarily white, primarily cisgender, primarily academic and corporate research and practice on digital technology, smart cities, and pressing social issues around racial and ethnic inequality, climate change, food and health insecurity, etc.
- A rapidly growing body of research with regard to many core issues beyond the digital realm
- But I'm not yet convinced I have sufficiently worked to create the needed space for radical activist technology innovation



An artifact is more than just the physical and algorithmic layers

- Technology improved in the 1960's and 70's when engineers and computer scientists realized they should coordinate their innovations
- Technology improved further in the 1980's and 90's when behavioral scientists joined in development
- But oft missed is the way our historical, cultural, economic, political, and other social contexts also shape design, development, manufacturing, marketing, distribution, support, and use

Gerhardt Fischer & Thomas Hermann – user-as-designer; Bruce, Rubin, and An – innovation-in-use

Social shaping of technology – the social and the technical are co-constructed and cannot be separately analyzed

Kentaro Toyama – Amplification of forces (while drawn linear, the power relationships are much more complex and intersectional)

## Digital Equity Through a Social Justice Lens – Suguna Chundur, 2017



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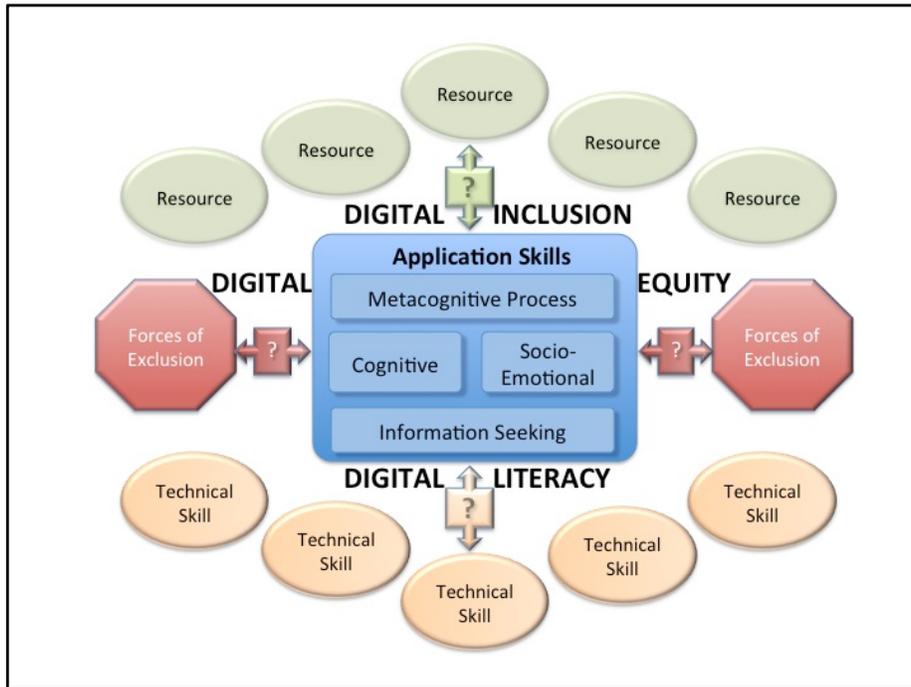
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Rawls’ first principle – each person is to have equal right to an extensive system of civil and personal liberties and these liberties should be distributed equally and must be compatible with the rights of others.

Rawls’ second principle – allows for social and economic inequalities provided such inequalities are of the greatest benefit to the least advantaged and attached to offices and positions that are open to all based on equality of opportunity

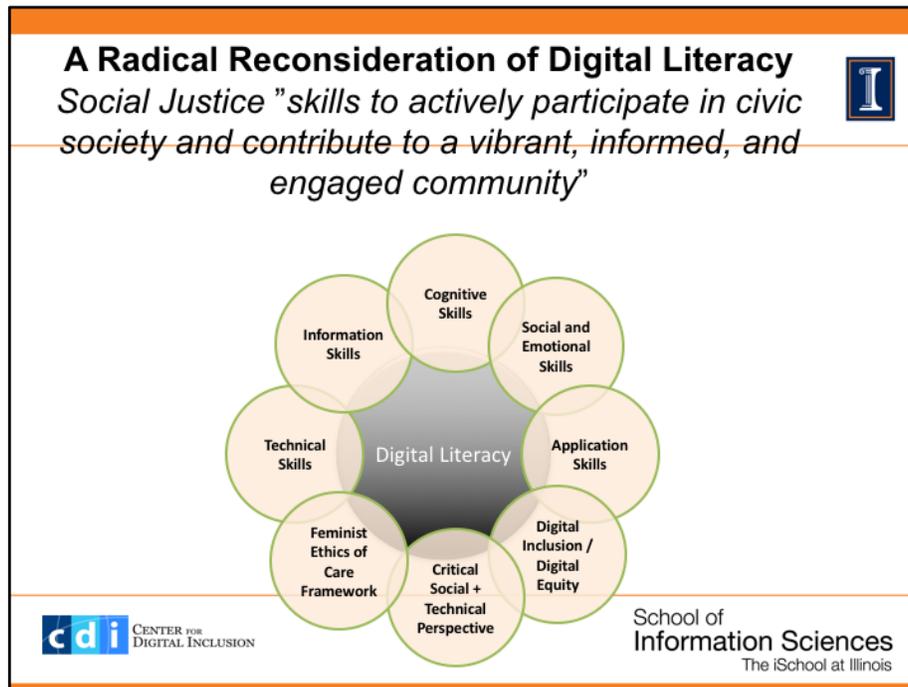
Sen – diversity of human rights based on an individual’s valued beings and doings. Dorethia Kline pushed further to assure not only existence, but sense of choice, is needed to assure execution and accomplishment of choice so as to achieve valued beings and doings.

But while both of these are essential, the more ground-floor daily activities require the lens of folks like Freire and Eubanks mentioned above, as well as Miles Horton and others.



My initial reconsideration of digital inclusion, digital equity, and digital literacy began with this diagram.

After almost a year of conversations from researchers, lecturers, and students, presentations nationally and internationally, and feedback on my paper "A radical reconsideration of digital literacy", this summer I developed the next image...



**Technical skills** – the ability to appropriately select, (co-)create, and effectively use a range of technologies;

**Information skills** – the ability to seek, evaluate, interpret and apply relevant and trustworthy information across multiple media;

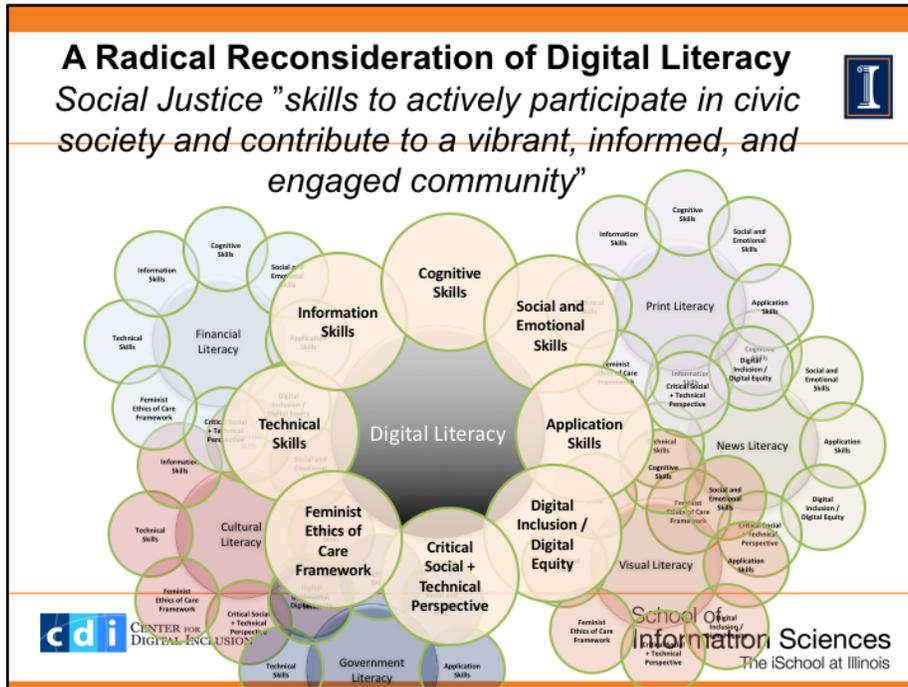
**Cognitive skills** – the ability to logically analyze and organize problems in ways that allow use of digital and other tools to help solve them, and to generalize new processes to other problems;

**Socio-emotional skills** – the ability to communicate and collaborate with others, along with the personal confidence, persistence, and tolerance, in order to tackle complex, ambiguous, and open-ended problems; and

**Application skills** – the ability to integrate the above skills into our everyday experiences in order to advance our professional, personal, and civic interests and responsibilities

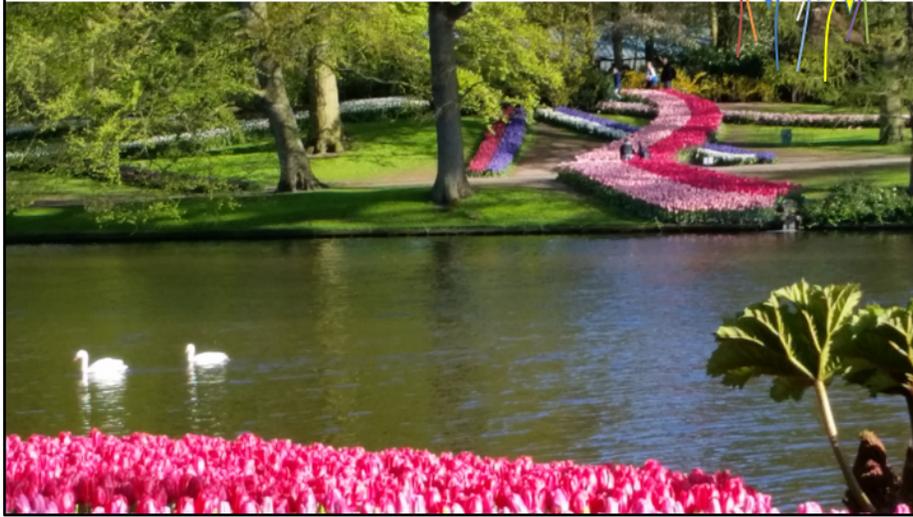
**Critical sociotechnical skills**– considers the various human forces being amplified, how these might contribute to more just or unequal society, and action to amplify knowledge power

But a couple of weeks into class, the next two images came forward within my Introduction to Networked Systems class this fall



But as I've moved into fall, I've been challenging my own consideration as I realize Digital Literacy isn't the most essential form of literacy, no more than digital technologies are more important than other forms of technology. Indeed, digital literacy is also too often a thing-oriented issue as much as any other literacy can be.

## A Radical Reconsideration of Literacies Within Diverse Ecosystems



Where does digital technology, digital inclusion, digital equity, digital literacy, or any literacy for that matter, fit within this image?

Social awareness and cultural understanding

Global consciousness affecting and affected by local identities and ethical choices

The more-than-human persons

Land Ethic

How will your culture, ethnicity, religion, values, etc. affect/be affected by those of others in this class, School, campus, community, and beyond?

## Introduction to Networked Systems as Community Engagement Precursor

- Action & Reflection + Rapid Prototyping + Design Thinking to Advance:
  - A reconsidered digital literacy
  - A more holistic and nuanced understanding of the social + technical artifacts we use as a daily part of our profession
- Deliverables
  1. Interactive Counter-Story Project
  2. Internet of Things Information System


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For the first time since 2000, this fall I dropped completely community engagement within Introduction to Networked Systems.

- Pre-cursor to more holistic community engagement & community inquiry:
  - Maximizes benefit, minimizes harm
  - Seeks broader participation and pluralism
  - Advances a better philosophy of technology
- The first project, rather than being a quick intro to programming code and networked systems, now advances students work with counter-story of women, minorities and tech
  - Nicole Cooke, in her 2017 book *Information Services to Diverse Populations: Developing Culturally Competent Library Professionals*
    - Concealed Stories – stories about overcoming and survival
    - Resistance Stories – call into question the ahistorical and individualized representations of reality
    - Emerging/Transforming Stories – (re)constructed knowledge built on concealed and resistance stories
- The second is to challenge our thinking about white male, hyper-individualized, utopian technology. How does IoT impact information systems, and thereby the data, information, knowledge power pathway.

## Recent Week



- Select from 1994, 1997, or 2013 article regarding Cyberlibertarianism, or 2016 Digital Divide article
- In class:
  1. 15 min discussion w/ others who read same
  2. 20 min discussion w/ those who read other
  3. 90 min hands-on intro to Python and Flask web server on Raspberry Pi; Local Area Network
  4. 30 min discussion readings + hands-on

....

# How would you draw this in this week's Professional Journals???



## Cyberlibertarian Digital Inclusion and Digital Equity



## Group Difference as a Necessary Resource



1. "Plurality of perspectives motivates claimants to express their proposals as appeals to justice rather than expressions of mere self-interest or preference."
2. "Confrontation with different perspectives, interests, and cultural meanings teaches individuals the partiality of their own, and reveals to them their own experience as perspectival."
3. "Expressing, questioning, and challenging differently situated knowledge adds to social knowledge."

Iris Marion Young (1997) *Difference as a Resource for Democratic Communication*. In *Deliberative Democracy: Essays on Reason and Politics*.

## The next episode...



What should my next scene be if it were to facilitate art <-> archive??? Should it???