THE FIELD OF CITIZEN SCIENCE

ORIGINS, EVOLUTION + WHERE WE ARE TODAY

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EMBRACE THE BUREAUCRACY

Quality? Privacy? Just a Niche?

OPEN SCIENCE · CITIZEN SCIENCE

contributions of the public

FUTURE = SOLVING COMPLEX PROBLEMS

local communities · relevant problems

BENEFITS: Solving challenging scientific problems · scale · speed · human eye · literacy awareness · REDUCED COSTS

DIRECTIONS: low cost sensors · wearables, social media · AI · big data

"BE WATER ON STONE"

SILOS → FORMAL COMMUNITY PRACTICE

"the WORRIES"

liability, security, evaluation, etc GOVT ACTS

the BRIDGE

- meetings
- champions
- best practices
- case studies
- alignment (with decision maker priorities)
- high Level support (heavyweight endorsement)

TOOLKIT

- knowledge
- resources
- library

MEMORANDUM

data quality · openness + transparency · meaningful participation

- HIGH PROFILE EVENTS
- LEGAL ISSUES / LEGISLATION
- EDUCATE · COLLABORATE
- FUNDING
- POLICIES · strategy + priority

USING CITIZEN SCIENCE WHEN YOU CAN'T DO IT OTHER WAYS

SHOULD BE IN POLICY

DATA QUALITY

DR. JENNIFER SHIRK

DEEP ROOTS. BROAD BRANCHES

citizenscience.org

30000 ft. view

PRINCIPLES FRAMEWORKS CONNECTIONS

DEEP ROOTS: Amateur Experts

- skilled + novice observers
- suite of tools developed over decades
- ie: water quality monitoring
- ARISE FROM URGENCY

COMMUNITY DRIVEN EFFORTS

↳ Criminal Conviction

"RUN UNTIL APPREHENDED"

Participatory Community-Based Research

BROAD BRANCHES: citizen science: COMPELLING and CONTENTIOUS

classification → observers → large data sets

ie. SNAPSHOT SERENGETI

OPPORTUNITY: MAKING + SOLVING

INNOVATIONS:

Work had meaning · needs meaning to ensure participation

STRONG CORE [everyone values, evidence indicates advances]

MORE COLLABORATION · MORE DATA · MORE TRUST

JADE CAWTHRAY-SYMS

HOW PARTICIPATORY IS OUR CITIZEN SCIENCE?

TYPOLOGIES: extent to which citizens are involved

CONTRACTUAL — involvement → COLLEGIAL

CONTRIBUTORY

data collection

- increased capacity for scientists
- increased knowledge + behavior change for scientists

COLLABORATIVE

refine methods · analyze data · disseminate findings

"CONSULTATION"

- capitalizes on local + place based knowledge
- increased understanding of place + stewardship
- influences mgmt policy + practice

CO-CREATED

In collaboration with scientists

- intense involvement = smaller scale
- focuses on local issues
- ownership + agency
- stronger relationships = greater capacity

INFLUENCE OF SHAPE + DESIGN of PROJECT

WILLING · OPEN · EXPERIMENTAL · DARING · CREATIVE

IT'S AS SOCIAL AS SCIENTIFIC

need to be aware of cultural + social barriers

MOTIVATIONS · RELATIONSHIP DYNAMICS · REFLECTIVE PRACTICE

willing to let go? · energy, evaluation

CONTRIBUTORY has EXPLODED

missed opportunities?

BARRIERS

PROFESSIONAL CAPACITY

skills · knowledge · Practice

– Be Aware –

CULTURE + ENVIRONMENT

resistance of scientists · institution: objectives, strategies – ALIGNMENT?

socio-political, citizens don't think they should be there

RESOURCES

funding

DIFFERENTIATE SCIENTIST FROM CITIZEN:

"it's fluid" · "all citizens are scientists"

Level playing field: what is the knowledge + expertise in the room?

CLOSING THE LOOP INFLUENCING POLICY:

"INFORMING not INFLUENCING"

mobilizing constituents is complicated · can be CATALYST · can EMPOWER

What is the PROCESS that actually affects CHANGE? Where's the gap? PUSHBACK from industry

ONGOING CRITIQUE FROM CITIZENS:

citizens as free resource → CO-CREATED

dynamics of relationships · honoring motivation · dialogue

CREDIBLE + LEGITIMATE reason for participating

What EFFORTS are taken?

COMMUNICATION · CONNECTION

Best vs. Promising / Evidence Based Practices

Listen to the Community from the Outset

"free like a PUPPY"

ACQUIRING KNOWLEDGE:

expanding what we think of as possible in science

who holds knowledge

SHARED UNDERSTANDINGS TAKES TIME

ALIGNING WITH GOALS OF INSTITUTION + DECISION-MAKERS:

Institutional priorities are key

find out what they are and articulate them

PERSISTENCE · INFLUENCERS · GO WHERE THE GATEKEEPERS AREN'T

WORK YOUR NETWORK

USE A PLATFORM (ie. IDEAJAM) · jog ideas · cocollaboration

QUESTIONS

GRASSROOTS INITIATIVES:

When is a project SHORT TERM? vs. ending it + leaving participants in a lurch

TRANSPARENCY

not always better · depends on GOALS + ACHIEVEMENTS

TIMESCALES are different for academic community

bring in BOTH SIDES

LEGAL / JUDICIARY:

awarded in settlement via citizen science data

LIABILITY? Case law

no evidence of citizen science as liability

DATA: needed for legislation

"FITNESS FOR PURPOSE"

Projects collecting data for Legal purposes

standards met and raised

LEVELS OF PARTICIPATION: LITERATURE REVIEW:

in science, method is important

not happening in citizen science

Content of methods

"ALL MODELS ARE WRONG, SOME MODELS ARE USEFUL"

engagement with a project or amongst individuals can be different

WHAT IS THE SOCIAL CONTRACT?

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