Collaboration Requires....

- Contribution
- Cooperation
- Coordination
- Communication
- Complimentarity

Learning from each other (in teams & in dialogue)

Harnessing differences in experience and background
Resilience

Preparing for... Adapting to... Learning from...

DISRUPTIONS OF ALL KINDS

Sudden abrupt disruptions

Slowly emerging disruptions

Threat Agnostic Approach

Integrated thinking: Communication across boundaries

Strengthening Resilience = reducing vulnerabilities & precariousness
social infrastructure & physical infrastructure
social innovations & technical innovations

MULTIPLE SCALES

Individual resilience
Community resilience
System resilience
Infrastructure resilience

Caution: Can be used to justify anything depending on scale
Women & Resilience
Collaboration for Community & Climate Resilience

Collective collaborative action required

Resist
- corporate control
- patriarchy & misogyny
- technological optimism

Adapt & learn from climate disruptions

Energy Democracy
Redistributing power through renewable energy transformation
Moving from scarcity & competition to abundant perpetual energy
My Path Toward Transdisciplinary Collaboration

- Born and lived first in Dublin, Ireland
- Dual US-EU citizenship
- BA Harvard in Environmental Science and Public Policy 1993-1997
- MS and PhD Caltech in Environmental Science and Engineering 1997-2002
- Post-Doctoral Research at Harvard Kennedy School 2002-2005
- Clark Faculty in Environmental Science & Policy 2005 – 2014
- Blittersdorf Professor of Sustainability Science & Policy 2014-2016
- The Renewable Energy Transition
- Resilience
- Professor of Sustainability Science & Policy 2016-present
- Water Treatment
- Water, Soil, Carbon
- Energy Technology Innovation
- Socio-technical dimensions of energy & climate
- The Renewable Energy Transition
- Resilience
- Professor of Sustainability Science & Policy 2016-present
- Born and lived first in Dublin, Ireland
- Dual US-EU citizenship
- BA Harvard in Environmental Science and Public Policy 1993-1997
Community Resilience

Growing **inequality** enhances vulnerabilities for us all
Disparities within & among communities

If we are not intentionally working to change our systems to reduce inequality, we are perpetuating inequality

Research on inequality central to resilience

Energy systems (like so many other systems) are often perpetuating inequalities
Climate Resilience

Reducing climate vulnerabilities

Preparing for…
  Adapting to…

Learning from… Climate Disruptions
  Sudden & slow

Concentrated wealth & power creates vulnerabilities

Disparate impacts – multiple injustices
Energy Transformation is Necessarily Disruptive

Resistance from powerful entrenched actors inevitable
Disruption creates opportunity for social/political/economic/cultural change

Fossil fuel based energy systems  Renewable based energy systems

Not a simple technological substitution
Social, political, economic, cultural & institutional change too
Diverse Perspectives on Energy System Change

Tensions:
Social change vs. Technological Change
Centralization vs. Decentralization
Radical vs. Incremental Change

Cambridge University Press
February 2015
A novel concept & emergent social movement

energy system change ↔ social change

envisions an alternative model of...
shared, distributed wealth
new legal & governing structures
community-based rather than corporate control
Energy Democracy Visions & Discourses

A Redefinition and Re-envisioning
Rethinks political power through energy power

energy consumers \(\rightarrow\) energy citizens
energy commodities \(\rightarrow\) public goods
energy infrastructure \(\rightarrow\) public works
corporate control \(\rightarrow\) public/community control
Response to:
- growing inequities
  racial & socio-economic
- unequal distribution of impacts of
  energy & climate
- political power of fossil fuel industry

Alternative vision to fossil fuel dominated systems ....
- most profitable industry in the world
- characterized by income inequality - failure to distribute wealth
  top 5 CEOs make 400X median income
- supported by public resources - $14 billion in tax breaks and subsidies
- intentional misinformation campaign on climate science

Energy democracy movement part of inequality movement, social justice, black lives matter
movement, human rights movement, etc...
Democratization & Decentralization of Energy

- Power is centralized – not just the grid - but control, management, and influence is concentrated among powerful energy companies

- Fossil fuel subsidies 6x renewable subsidies - regressive
  - $409 billion compared to $66 billion (IEA, 2015 World Energy Outlook)

- Fossil fuel industry has strong connections to entrenched actors huge political influence

- Growing social movement for local, community control of energy
  - Like local food movement –
  - Boulder ‘Decentralize, decarbonize and democratize energy’

Mothers Out Front: Mobilizing for a Livable Climate
“It is time for a swift and complete transition to clean energy”

Photo Source: Georgia Mountain Wind
Energy Democracy Policy Goals (Sweeney 2013, 2014)

Resist the dominant energy agenda
- Fossil fuels remain in the ground, halt expansion
- Protect labor and others reliant on fossil fuels

Reclaim the energy sector
- Democratize and localize energy businesses
- More public and community control

Restructure the energy sector
- Community ownership
- Energy governance as commons
- From growth to wellbeing and sufficiency

Energy Democracy vs Energy Dominance

“Together, we are going to start a new energy revolution – one that celebrates American production on American soil. We want to make our goods here, instead of shipping them in from other countries.”

Trump signing an executive order on energy  March 28, 2017

Nationalist, masculinist oligarchy
Aggressive attack on “social justice warriors”
Abuse of power – challenges to democracy
<table>
<thead>
<tr>
<th><strong>Energy Democracy</strong></th>
<th><strong>Energy Dominance</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Future-oriented: focused on transformation</td>
<td>Nostalgic: focused on reclaiming a mythical past</td>
</tr>
<tr>
<td>Community control</td>
<td>Centralized control (oligarchy or corporatocracy)</td>
</tr>
<tr>
<td>The public good (fair and equitable employment, new governance institutions, fewer environmental externalities)</td>
<td>Good for the few (primarily white men of European descent); bastardized meritocracy</td>
</tr>
<tr>
<td>Shared political voice</td>
<td>Unstable voice of masculine power; totalitarianism; doublespeak</td>
</tr>
<tr>
<td>Adaptive</td>
<td>Fixed</td>
</tr>
<tr>
<td>Sustainability, efficiency, conservation</td>
<td>Wanton disregard for the commons</td>
</tr>
</tbody>
</table>

*Adapted from Professor Jen Schneider, U of Idaho 2017*
The Bridge

Auroville and the World

Humanity has Much to Learn From Auroville
Anticipate Change!

Current Systems Not Working

Dynamic time requires responsiveness, flexibility, and more attention to interdependencies and inevitable changes.

Conventional rules, assumptions and disciplines need to be adjusted.

Thank you!
Auroville Governance: Creative Anarchy