



Georgia Institute of Technology
SCHOOL OF PUBLIC POLICY
A Unit of the Ivan Allen College

Science, Technology, and Inequalities: Designing Effective Policies and Programs

Susan E. Cozzens

Technology Policy and Assessment Center
School of Public Policy
Georgia Institute of Technology
scozzens@gatech.edu

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- Graduate students: Kamau Bobb, Isabel Bortagaray, Albert George, Kendall Deas, Sonia Gatchair, Gonzalo Ordonez
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Science, technology, and inequalities

- Question: What are the connections between S&T policies and programs and inequalities?
- Goal: Find ways to design and evaluate S&T policies and programs so that they reduce rather than increase inequalities.



Outline of presentation

- Issues of scope
- Descriptive summary: what are the connections now?
- Workshop examples
- Options and issues
 - for program design
 - for evaluation



Inequality is deep and growing

- In the United States
 - Income inequality has been rising steadily for several decades.
 - Health disparities persist.
- Globally
 - Gap between rich and poor nations is growing.
 - Life expectancies can be twice as much in rich nations as poor ones.
- Wealth is accumulating fast in some parts of the global economy and not in others.



What dimensions?

- Economic inequalities (goal: reducing inequality)
 - High, middle, and low income regions
 - High, middle, and low income individuals and families within regions
 - Poverty vs. inequality
- The identity inequalities (Goal: achieving equality)
 - Gender
 - Ethnic
- Creates three-dimensional space



Who cares?

- Inequality is a multi-dimensional space
 - We have been focusing on inequalities in basic needs areas: health, food, environment
- Distributional ethics
 - Libertarian theory – rights based
 - Utilitarian – maximize the Good
 - Rawlsian – benefit the least advantaged
 - Communitarian – decrease inequality for the sake of community



Types of S&T Policies

Government actions to ...

- Research: stimulate production of new knowledge
- Innovation: stimulate new products or processes
- Human Resource: recruit and educate a scientific and technical workforce
- Regulatory: setting the ground rules for new technologies



Central hypothesis

Unless they are specifically designed to reduce inequality, these policies probably increase it.



Human resource policies

- Recruitment to S/E careers is not neutral on gender or ethnic status – witness the results.
 - Causes lie up and down the education and career chain
- Within countries:
 - Gender and ethnic status are rising as conscious goals in this area.
 - Economic status gets little or no attention.
- Between countries:
 - International mobility of S/E – the world is flattening.



Innovation policies

- Income inequality within rich countries attributed to skill-biased technological change
 - Education seen as the panacea solution
- High technology development strategies focus on growing the upper end of the distribution.
 - But may provide new entry points for under-represented groups.
- Intellectual property laws protect the accumulation of wealth.
 - And therefore limit access to products, sometimes ones that are essential for basic needs.



Research policies

- Often seen as both “the problem” and “the solution” to inequality problems
 - Relatively accessible to civil society
- The content of the research agenda is the issue.
 - Orientation to industry makes this a subset of innovation policy.
 - Organized public has an influence – in some areas, but unlikely to work very effectively on global gaps.



Summary

- S&T policies are part of the problem.
- They are also seen as part of the solution.
- Our analyses have moved in two directions:
 - Technology-based economic development strategies
 - Case studies in research and innovation policies.
 - Prospective frameworks for distributional assessment of policy options



Access to Essential Medicines

- T'Hoën, Médecins sans Frontières (MSF)
 - Negotiated reduced prices
 - Patents not the answer
 - Sue march-in provisions of TRIPs
- Kremer
 - Purchase commitments
 - Public pays nothing unless drug is developed.



Health Disparities Research

- National Center for Minority Health and Health Disparities
 - Priorities: six key disease areas
 - Building capacity
- Rowley and Jenkins (Morehouse)
 - Community participatory research
 - Addresses all the causes at the same time



African Agriculture

- Africa Rice Center (WARDA)
 - Looking for breakthroughs in crop varieties
 - Political leaders must work for stability, remove unfair subsidies, and improve infrastructure
- ETC Ecoculture, Prolinnova
 - Experiment and innovation by farmers themselves



Generic approaches

- Derived from case studies; see summary available
- Vary in breadth of participants and control over solutions
 - Participatory
 - Capacity building
 - Public research
 - Private sector stimulation



More hypotheses

- The more involved the affected community, the more likely the approach is to set priorities that reduce inequality.
- The more empowering the approach, the more likely it is to lead to long-term, sustainable inclusion.



Implications for program design

- Need to take inequalities explicitly into account.
- Need to think about process as well as product.
- Total outcome should look more equal on several dimensions.



Conclusions so far

- The key step is paying attention to inequalities.
 - The benefits of S&T are not automatically distributed equally.
- Consideration can be built into strategic planning and performance assessment.
- Need to accumulate knowledge from specific programs into overall principles of distributional impacts.