

In Search of Sustainable Solutions at the Local Level

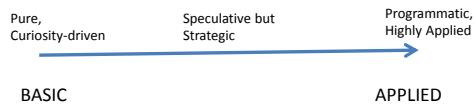
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Two Assumptions about SSI

Dealing with:

- Nature of the research
- Attending to unintended effects

Linear Paradigm of Basic-to-Applied R&D



Premise of Post-WWII University R&D: Basic research precedes and enables application

Quadrant Model of R&D

(Donald Stokes, *Pasteur's Quadrant*)

Is research inspired by:

		Consideration of Use?	
		No	Yes
Quest for Fundamental Understanding?	Yes	Pure basic research (Bohr's Quadrant)	Use-inspired basic R&D (Pasteur's Quadrant) <small>SSI</small>
	No	Taxonomics (Linnaeus's Quadrant)	Pure applied RD&D (Edison's Quadrant)

Accounting for Unintended Effects

- ☐ Transfer of environmental impacts to another medium: e.g.,

Water → Air or Habitat

"The solution causes a ramifying series of new problems, the only limiting criterion being, apparently, that the new problems should arise beyond the purview of the expertise that produced the solution."

-- Wendell Berry

How Unintended Consequences Unfold

- Start with good science
- Strive to maximize a single value
- This value is widely recognized as desirable
- How to achieve the value becomes "conventional wisdom" in governmental policy
- Often measurable, with direct effects well understood, but chain of secondary effects is not
- May achieve the initial value or objective but may compromise others

3 Areas in which Good Science Has Sanctioned Unsustainable Sprawl

- Ground water quality and regulation of minimum lot sizes
- Surface water quality and regulation of urban development
- Highway level of service and regulation of density of development
