



Innovation in Science and Education for Sustainability

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- Strategy that is highly adaptive and forward-looking
 - Develop sustainability knowledge
 - Transform the way we develop that knowledge
- Simultaneously further 1st and 2nd order SS
 - Reactive to anticipatory
 - Causality to emergence
 - Reduction to complexification

- More and better general education on SS
- Workforce that can create a sustainable economy
- Innovative researchers that can underpin that economy
- Other academic disciplines
- Non-academic communities
 - Question-driven vs. goal oriented

- New ways of formulating topics and questions
 - Continued interactivity with wide community
 - From ‘push’ to ‘pull’ (Seely Brown)
- New kinds of research teams
- New ways of collecting data
 - More re-use of data; higher data volumes
 - Importance of meta-data
- Identifying ‘blank spots’ on intellectual map

- What do we want our future to look at?
 - What do we need?
- What do we know?
- What do we need to know?
- What are the potential solutions to our challenges?
- What strategies to put into place?
- How to implement them?
- How to educate about them?

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- Shift from a posteriori to a priori perspective
 - Linear explanations to probabilistic predictions
 - ‘Causalities’ to ‘generative descriptions’
 - Explanation of change to assumption of change
 - Assumption of stability to explanation of apparent stability
 - Reduction to complexification
 - Fewer dimensions to more dimensions
 - STWM limited, computational thinking (and computers) necessary
 - Role of narrative and myth

- From three scales to scalar infinity and interaction
 - Scales determine phenomena observed
 - Allometric scaling as one way into understanding (cities and innovation)
- Accelerating the feedback cycle
 - The innovation society
 - How do we regain control
- How do we integrate unanticipated consequences?

- How do we make academia more suitable?
- University structures
 - Boundary-spanning units
 - Wider scope
 - Change University culture
- Career structures
 - Other means of evaluation
 - Stimulate other activities
 - Other means of compensation
- Research funding
 - Longer term
 - Change peer review system
 - Diversity of funding sources