

Seeking Integrative Science for Integrative Management

Margaret A. Shannon

Associate Dean and Professor
The Rubenstein School of Environment and Natural
Resources
University of Vermont, USA

mshannon@buffalo.edu or m.shannon@ife.uni-freiburg.de

Why need Integrative Science?

- Linguistic naming is not reality – Wittgenstein
- Categories of science are not characteristics of 'reality' (Plato's Cave)
- Social problems are not contained within divisions of scientific disciplines
- Separation between elements (people, natural resources, environment) are fiction of semantics

Why is science fragmented?

- From Alchemy to Analysis
- Accidental discovery of essential elements
- Role of technology in scientific discovery
- Reliance on empiricism as mode of scientific inquiry
- Science as mechanism of social control and social regulation
- Science as means of political power

Why is fragmentation so resistant to change?

- Institutions –
 - Norms
 - Values
 - Rules
- Organizations
 - Universities
 - Scientific funding
 - Policies and management

CHALLENGES

1. Finding Questions
2. Unraveling Mysteries
3. Generating Discourses
4. Inventing Institutions
5. Organizing Organizations
6. Ensuring Accountability
7. Building Relationships
8. Maintaining Knowledge
9. Learning Humility
10. Anticipating Imagination