

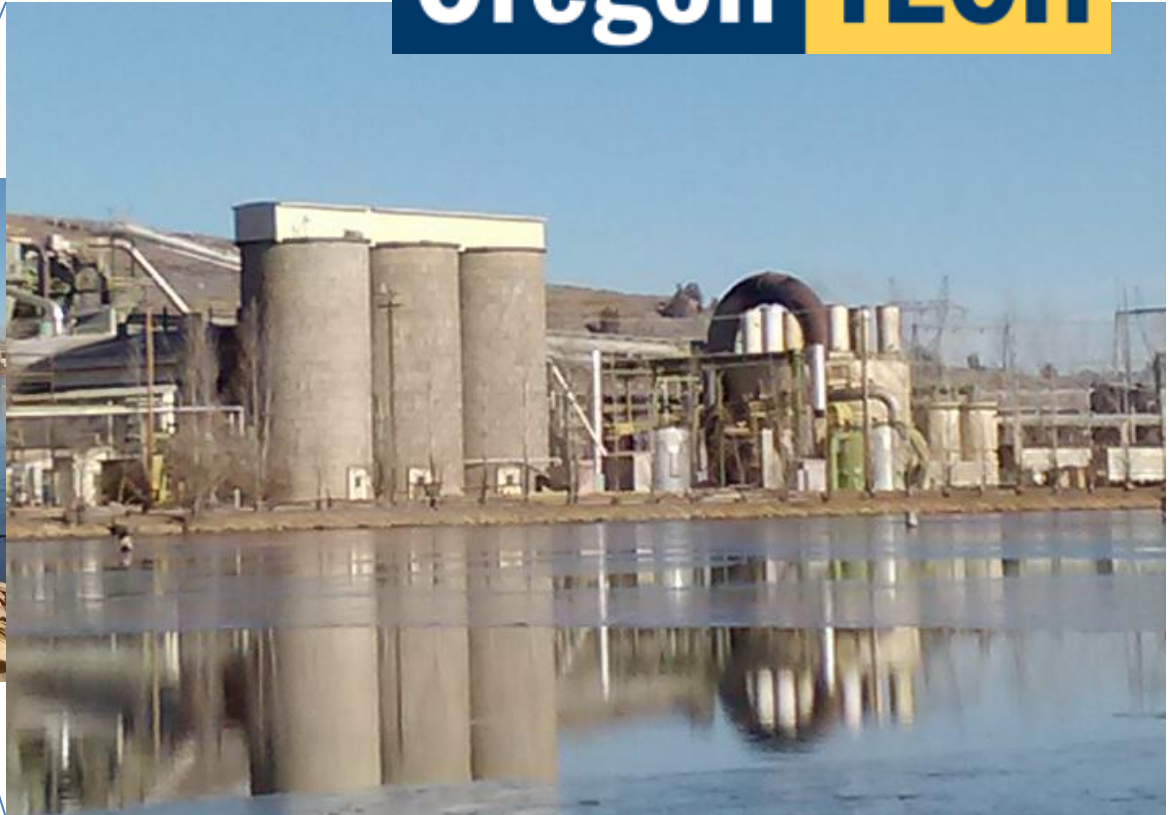
# Working in Interdisciplinary Environments: Bridging Silos, Sharing Grain

*Interdisciplinarity: Status, Scholarly Trends, Reflections, and Prospects*

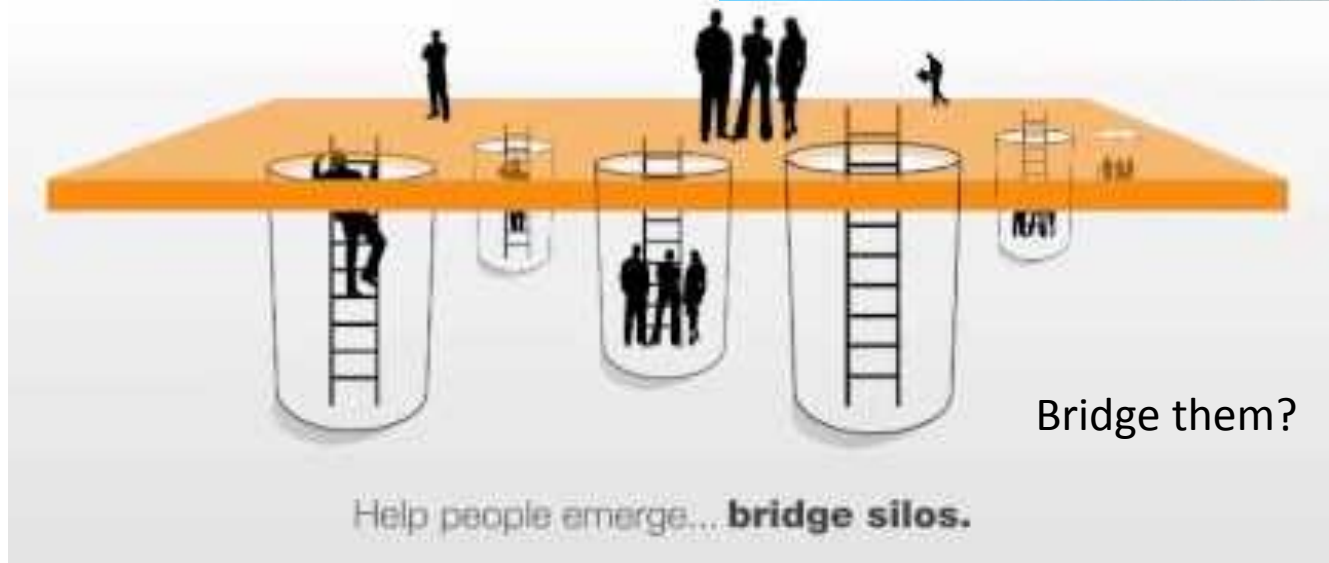
Michael L. Hughes  
Tech Talk  
January 28, 2014



Klamath Cogeneration Plant



**Silos** : metaphorical units of organization structure; often equated with “departments”  
Sometimes maligned, viewed as problematic...so what treatment promotes interdisciplinarity?





<http://www.jostle.me/>

## Destroying Silos Isn't Just for Farmers

Posted by Cameron on January 23, 2013  
Culture



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In the past, I've not been shy about my disdain for private offices. I'm a fan of open office environments, and while I was at 1-800-GOT-JUNK?, we lived by it. No one had private offices. In fact, I often sat at desks in other business areas just to keep the pulse.

I have also always worked hard to ensure that silos don't get created inside a company. "Cross Pollinating" can prove to be more successful than imagined.



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Why do we have silos, do we really need them? OSU had an interesting approach...

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# College of Earth, Ocean, and Atmospheric Sciences

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## Academics

Oregon State University's strengths in earth, ocean and atmospheric sciences are global in scope, ranging from coastal ocean dynamics and their impact on ocean ecosystems, to the study of undersea volcanoes and their link to plate tectonics, to how changes in Earth's continents affected ancient climates.


The College of Earth, Ocean, and Atmospheric Sciences also includes internationally known faculty with expertise in high-latitude ice sheets, glaciers, climate change, plate tectonics, volcanoes, earthquakes, snowpack, hydrology and water resources, mineral deposits, cartography and geographic information systems.

OSU is internationally recognized as a leader in the study of the Earth as an integrated system.

**Disciplines**

 ← Formerly departments?

- [Ocean Ecology and Biogeochemistry](#) (OEB)
- [Physics of Oceans and Atmospheres](#) (POA)
- [Geography, Environmental Sciences, and Marine Resource Management](#) (GEM)
- [Geology and Geophysics](#) (G&G)



***Interdisciplinary , Cross-disciplinary, and Multi-disciplinary Studies:***

viewed as necessary for tackling many, if not all, of our big societal problems

Epidemiology  
(AIDS)

biology  
chemistry  
physics

Climate Change  
(bio-sustainability implications)

engineering  
economics  
management  
history

Social justice and equality  
(how to affect change)

geography  
anthropology  
philosophy  
sociology

Environmental restoration  
(blends multiple facets of each of the above)

political science

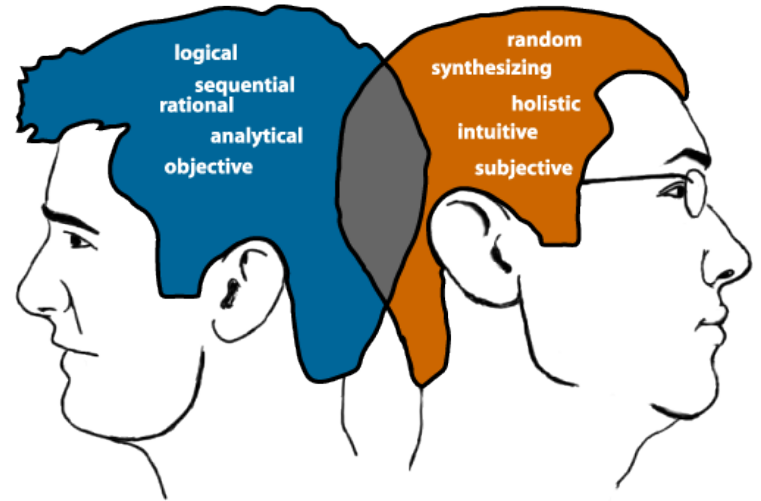
Association for Interdisciplinary Studies  
Miami University (1979)

Center for the Study of Interdisciplinarity  
University of North Texas (2008)

Philosophy of/as Interdisciplinarity Network  
Georgia Tech (2009)

International Network of Inter- and  
Transdisciplinarity (2010)

## Interdisciplinarity



**[ the center for interdisciplinary studies: ]**  
for those who occupy the middle



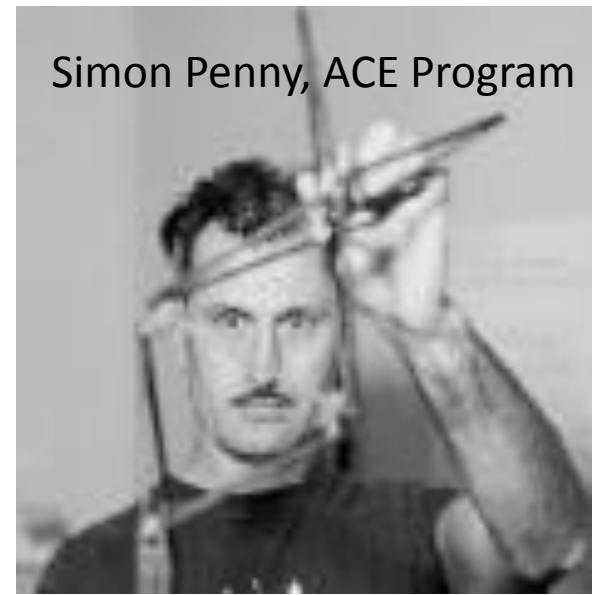
Trans- or Cross-disciplinarity



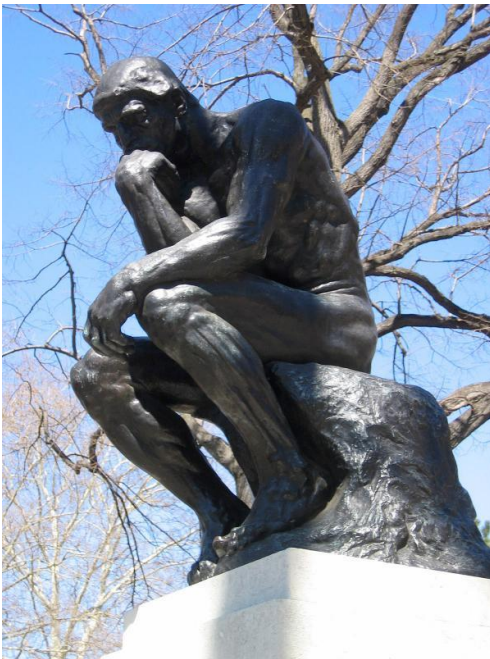
<http://interdisciplinary.duke.edu/about>

Traits of an interdisciplinarian (Simon Penny)  
“Rigorous Interdisciplinary Pedagogy”

- Humility: validity of assumptions, mindsets
- Intellectual rigor: the need for aggressive questions and integration of perspectives, methods, mindsets
- Courage: to admit that you or your discipline does not have all the answers; invest in other fields
- (Curiosity): you must want to know to progress



<http://simonpenny.net/texts/rip.html>



# MIT Sloan Experts



## Going Outside of Comfort Zones to Bridge Silos — Ray Reagans

May 28, 2013 – 3:53 pm



*MIT Sloan Prof. Ray Reagans*

Silos are fairly common things in large organizations. While bridging those silos can lead to innovation and increased productivity, making those connections can be a tough thing to do. It's easier to develop networks within the familiar silos than reach out to people in disparate areas.

And even if you do decide to reach out to new people, who do you select and from how many departments? It's not like you can say you will have strong ties only with people who matter because you don't know who those people will be and, even if you do know, there will be so many of them that you still will have to make choices.

In research focused on this issue, I studied the knowledge transfer relationships among several hundred scientists and found that when it comes to creating the right network for facilitating knowledge transfer, not all networks are equal.

It's important to develop a network that gives you a capacity for sharing knowledge in general. This means creating a smaller, more diverse network because it's more beneficial to develop fewer ties with people in more areas than multiple ties with people in the same area.

<http://mitsloanexperts.mit.edu/going-outside-of-comfort-zones-to-bridge-silos/>

- creating the “right network” for facilitating knowledge transfer
- smaller, more diverse network promotes knowledge transfer with people in more areas rather than lots of linkages with people in similar areas



## Practical implications for those who wish to “brew (bake) interdisciplinarity”

- Co-teaching
- Split sections  
(Wtr 2014: Civil Engineering and Environmental Sciences, Treatment Wetlands)
- Teaching exchange  
(Spr 2014: Natural Hazards and Communication of Science)
- Collaborative student-led projects, invite participation of faculty experts in other silos
- Office hours...\*for other faculty\*: invite colleagues in for discussion
- Invite a peer review of your teaching from someone with a different perspective
- Find your community partners, interdisciplinarity can thrive in the external environment
- Scale-up classrooms?

