

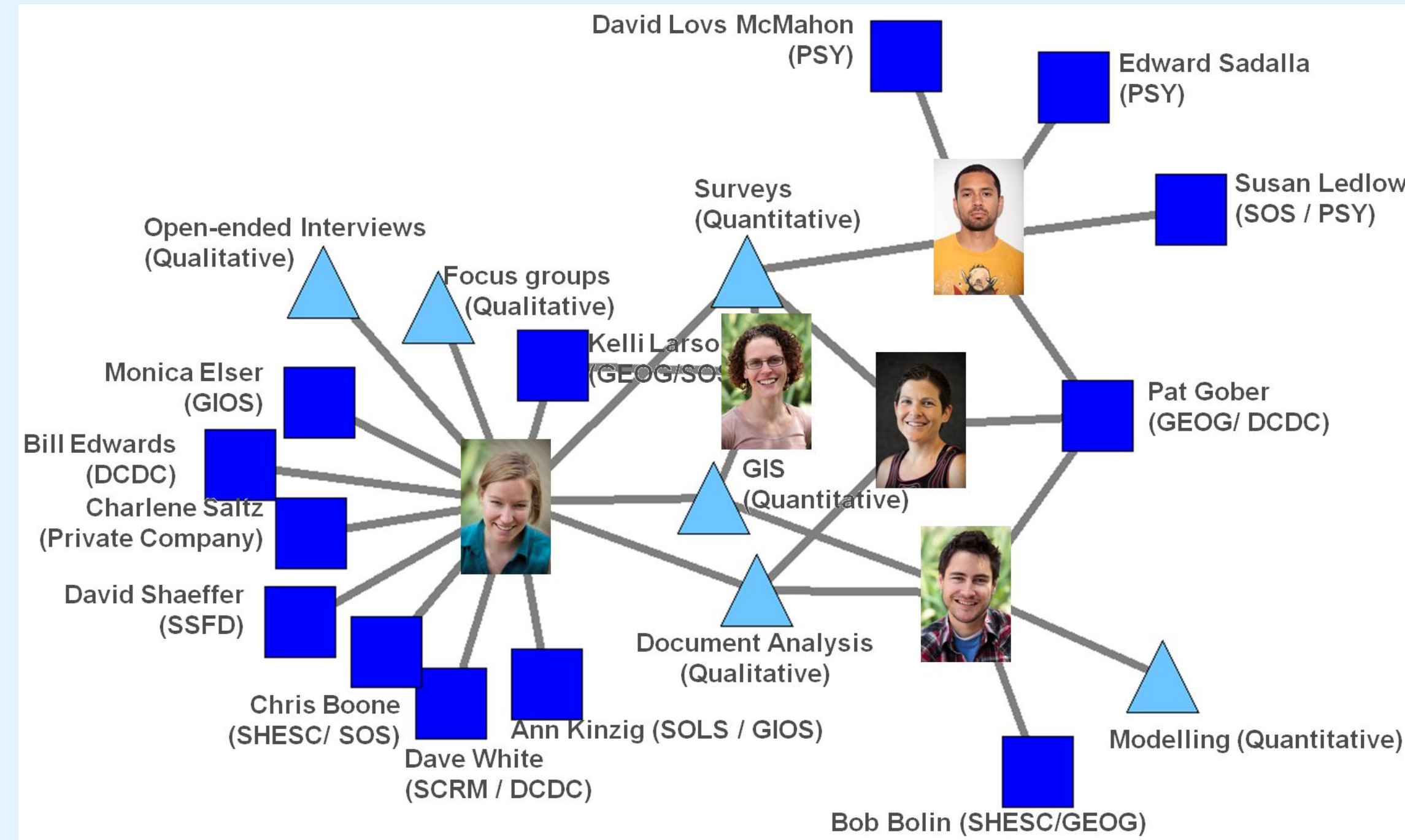
Contributing more than research!

Mapping DCDC's Community of Graduate Research Students (CGS)

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Goal of the project is to present the interactive and interdisciplinary character of DCDC as evident in CGS



Students as connectors to methods and faculty.

- Bethany Cutts
Information as Recognition Justice Issue
- Brian Pompeii
Water Resources, Climate Change, and Urban Vulnerability: The Case of Phoenix
- Stephanie Deitrick
Mapping Uncertainty for Decision Support
- Dorothy Ibes
Sustainable Urban Water Use
- Edgar Cardenas
Necessity & Luxury in Residential Water Use

Students and their research themes.

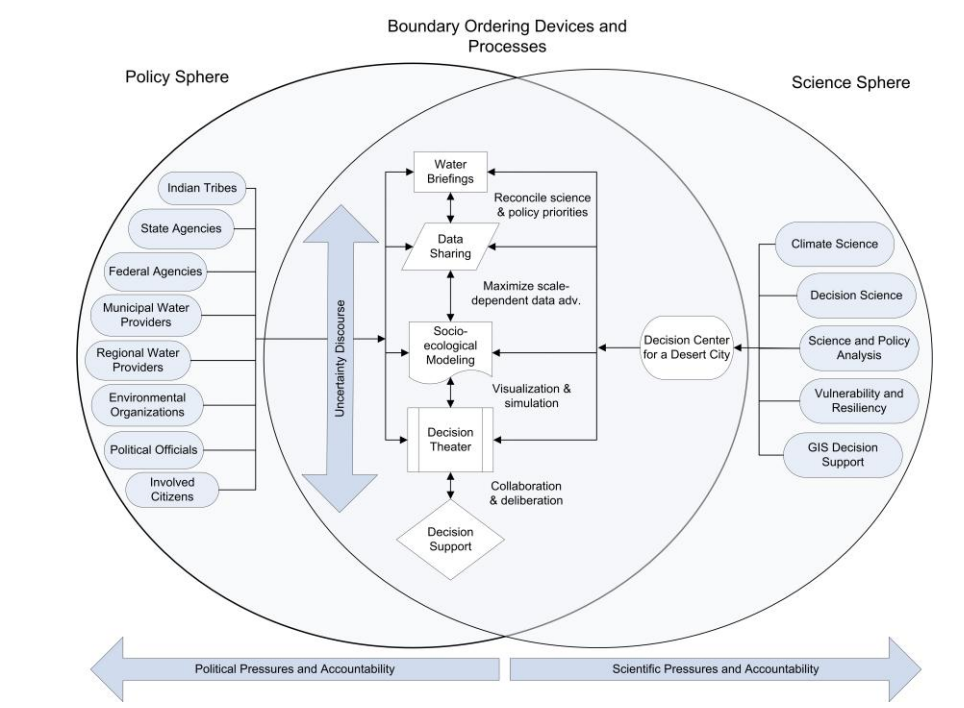
3) Networks are drivers for students career visions

Building on core concepts of ASU's New American University, CGS strive

- to conduct use-inspired basic research that is relevant to both, to science and society (c.f. Pasteur's Quadrant, Stokes, 1997);
- to develop the knowledge and skills necessary to work at and across boundaries of science and society (c.f., Boundary work, Guston, 2001).

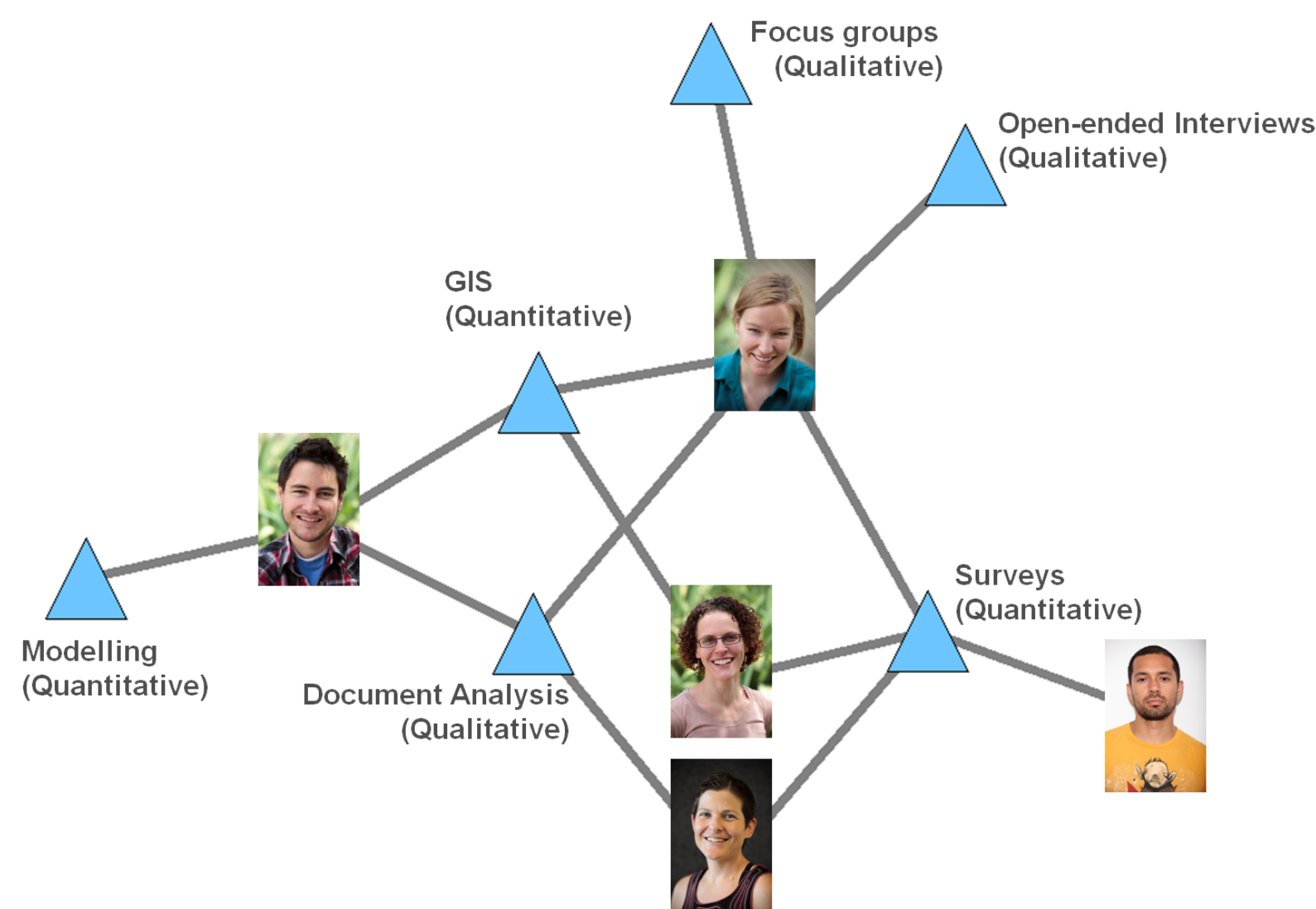
Quest for fundamental understanding?	Consideration of use?	
	No	Yes
Yes	Pure basic research (Bohr)	Use-inspired basic research (Pasteur)
No		Pure applied research (Edison)

Pasteur's Quadrant (blue), Stokes, 1997



Boundary Work White et .al., 2008

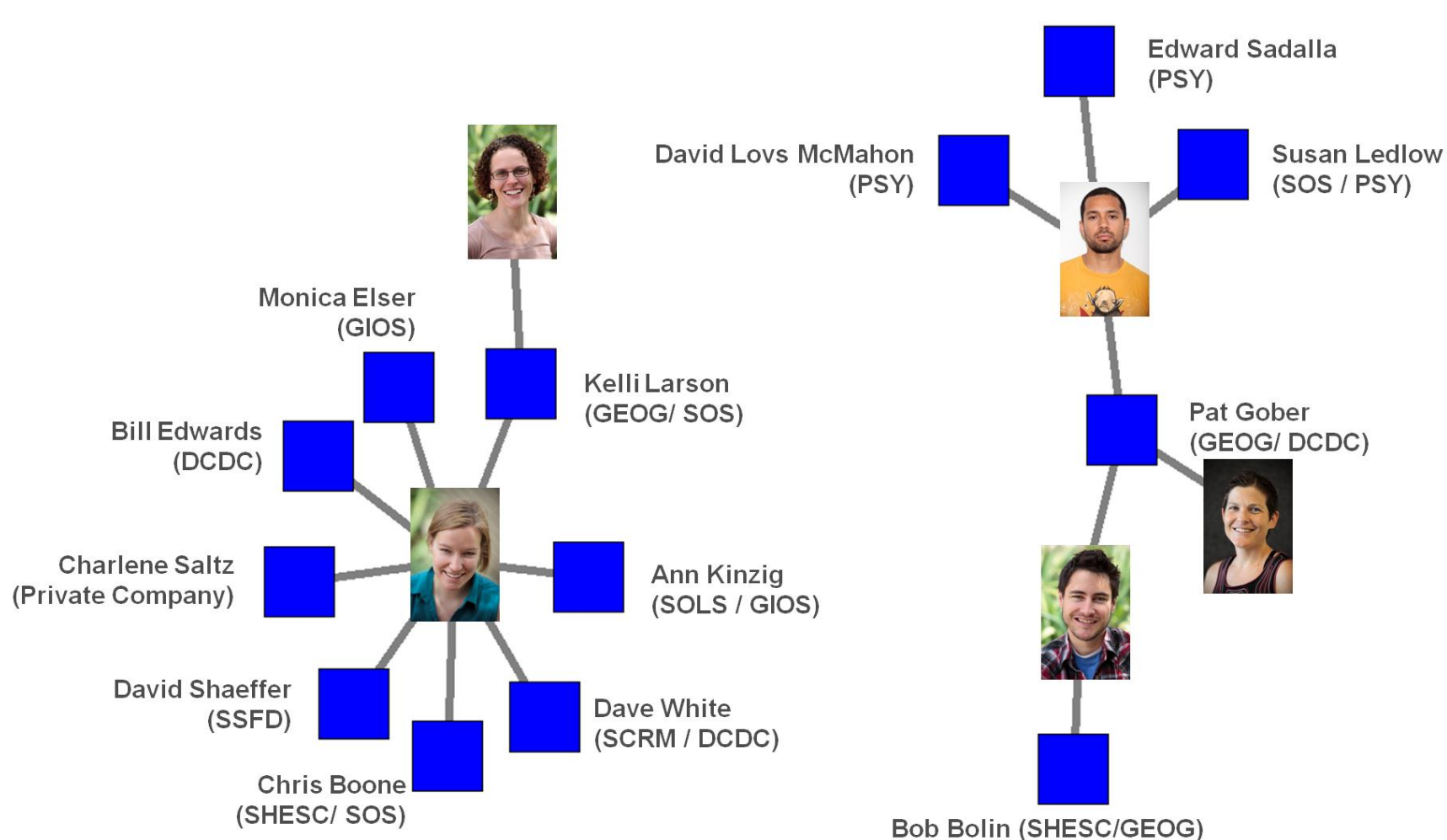
1) Network visualization supports interdisciplinary exchange among students regarding topics, methods, theoretical approaches, and institutions



Students connected to each other through methods.

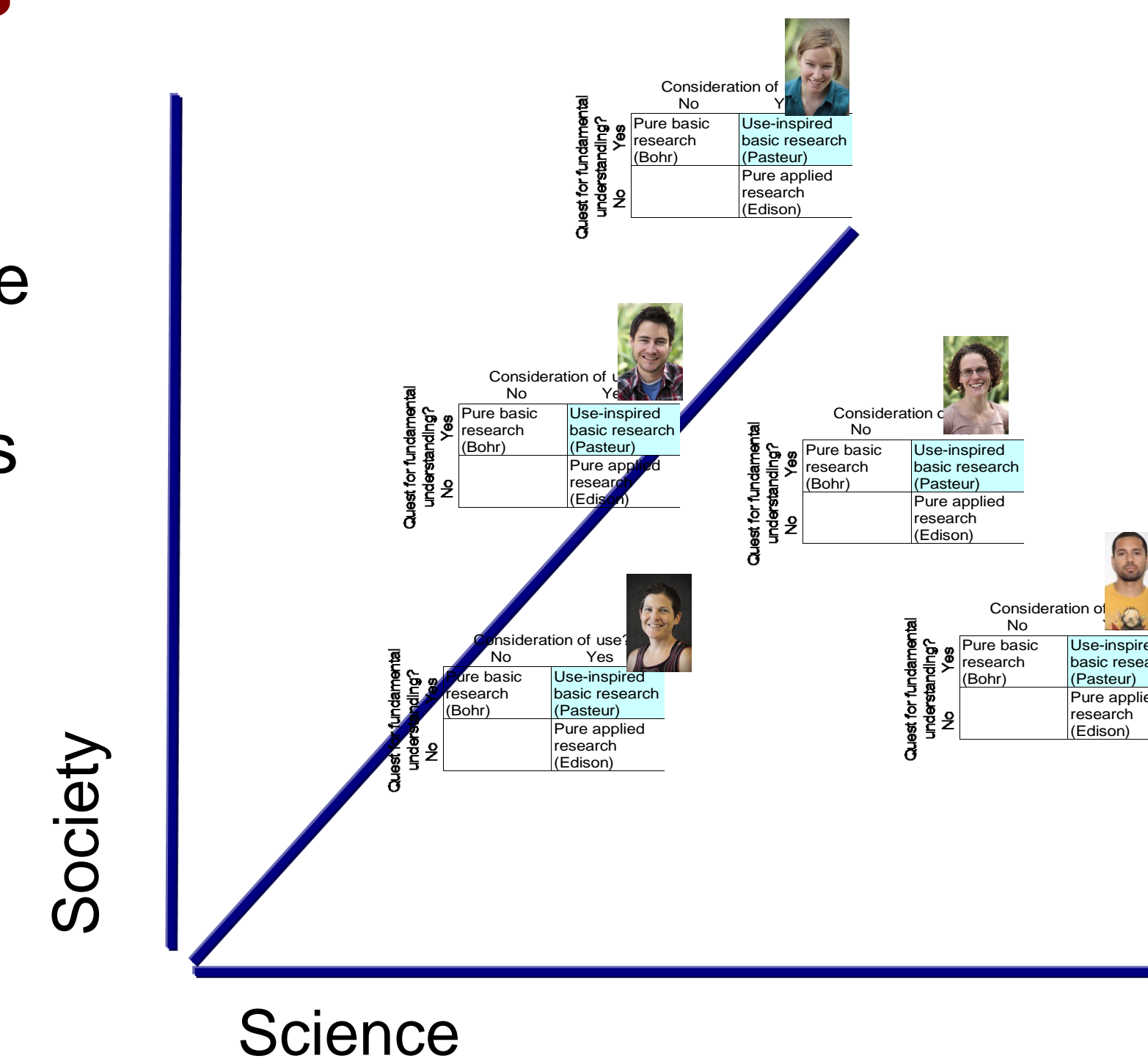
- NSF defines Inter-Disciplinary Research (IDR) as a research mode integrating data, techniques, tools, concepts, and/or theories from multiple disciplines to advance understanding or to solve problems whose solutions are beyond the scope of a discipline or area of research practice.
- Students can use the mapping method; (1) to make connecting points visible; (2) to discuss them without the challenge of integration, yet transforming their information into knowledge; (3) to indicate collaboration (regarding content, institution).

2) Students' research networks can pave the way for faculty to explore and foster connections across disciplinary and institutional boundaries



Students connected to each other and other areas through supervising faculty.

- Students are portrayed as connectors and innovators, facilitating IDR among faculty. To be effective in this role and rewarded for their effort, students need to be empowered and put in charge by faculty.
- Students can use the mapping method (1) to substantiate their proposals for connections; (2) to develop contacts for their own career; (3) to manage the emerging network and keep track of its dynamics.



Students use the mapping method to visualize, trace, and analyze:

- conceptual relations between basic and use-inspired research parts of their projects;
- contributions of their research for science and/or society users.

Future network mapping

An interactive web-based bio would be beneficial, because it

- allows you to select the type of relations to be visualized
- displays IDR in a relational perspective, providing an overview
- discloses text-based background information, explaining the nodes in a network, available only when clicking on the interactive blurbs
- offers additional side effects that the CGS as well as student-supervisor teams can adopt and use for their own purposes
- could be extended to other DMUUs to intensify existing (e.g. students conferences) or identifying useful new forms of collaboration

References

Committee on Facilitating Interdisciplinary Research; Committee on Science, Engineering and Public Policy (2004). Facilitating interdisciplinary research. National Academies. Washington: National Academy Press (p.2)
 Guston, D. (2001) Boundary Organizations in Environmental Policy and Science: An Introduction. Science Technology Human Values, 26: 399-408
 Stokes, D.E. (1997) Basic science and technological innovation. Brookings Institution Press // White et.al., (2008) Water Manager's Perception of the Science-Society Interface in Phoenix, Arizona. Society & Natural Resources.