

A Good Place to do Science: A Case Study of an Academic Science Department

STUDY PURPOSE

We studied a successful academic science work environment that has been conducive to the advancement of women faculty and students. We were interested in identifying factors that have facilitated high quality science, cooperation and inclusion. Thus, we sought to answer the following research questions:

How did this work environment that has been conducive to the advancement of women at all levels develop?

How do people interact?

What cultural processes and practices operate in this academic science environment?

METHODS & ANALYSIS

We used several qualitative methods including document & archival research, direct observation, and 29 semi-structured interviews of departmental members (faculty, staff, post-docs, and doctoral students).

We recorded interviews by hand or audio recorder, depending on the wishes of participants. In addition, the interviewer took notes after each interview regarding ideas, emerging concepts and open questions. These notes guided the unstructured questions in subsequent interviews. These notes also guided the initial coding of a subset of transcribed interviews into topic areas, ideas and examples (Knight, 2002). The remaining interviews were analyzed to confirm or test emerging concepts or relationships. The observations and archival data were used to provide examples of concepts and identify relationships. Finally, all quotes used as examples of concepts were provided to participants for review and comment. This served to verify the meaning of the comments and provided confirmation of the link between examples and concepts.

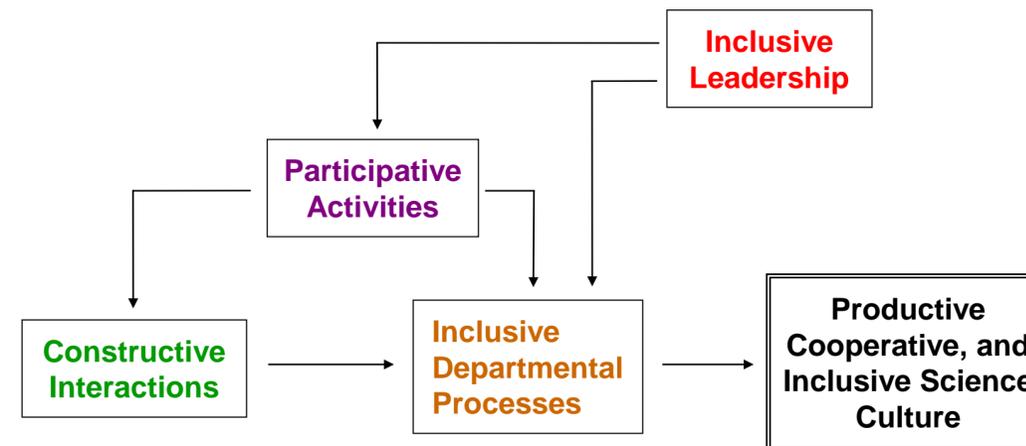
CASE STUDY SETTING

This case study took place within a basic science research department at a Tier 1 research university in the United States. The department was about 15 years old at the time of the study. There have been two chairs of the department over the course of its history, both female. The department achieved top program and NIH funding rankings among departments in its field during the tenure of the first chair. It maintained its high rankings as it continued to grow in size under the second chair.

The department was ranked above average in terms of number of women faculty and number of female students. Two women faculty members joined the department at tenure ranks. One woman has advanced from assistant (junior) to associate rank. Women comprise about 56% of the students in the graduate program, which awards M.S. or Ph.D. degrees. The department attracts top students as indicated by higher than average student GRE scores for the field.

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A Model of a High Quality, Interactive Science Culture



FINDINGS

Constructive Interactions

Collegial Interactions – basic respectful, civil, and congenial interactions.

Tacit Learning Interactions – interactions that convey and promote learning of the work and norms of the department.

Relational Interactions – interactions through which close professional and or friendship relationships are formed and maintained.

Generative Interactions – interactions through which resources are provided, received / generated between individuals & groups.

Participative Departmental Activities

Team Teaching with participation across faculty ranks.

Department Wide Social Events, some of which occur after hours and others, which are family friendly.

Participative Faculty Meetings in which information important to all faculty members is shared and the opportunity for decision-making input is provided.

Participative Faculty Recruiting through which all faculty members have input into the selection of new faculty. Broad support for the new faculty member is established through this activity.

Regular, Meaningful, Engaging Research Presentations & Seminars that stimulate ideas and provide feedback and modeling of approaches to research and effective presentation of ideas.

Inclusive Departmental Processes

Valuing of high-quality, interactive science provide a shared orientation to science & expectations for behavior that determined department membership

Transparent decision-making processes provide opportunity for input & removed the mystery around important decision and provided opportunity for input

Engagement of faculty across ranks facilitates more equitable teaching loads and opportunities for disseminating learning between experienced and newer faculty

Professional respect, trust, and caring relationships reflect the enculturation of constructive interactions

Helping, cooperative behaviors facilitate productive science

Inclusive Leadership Practices

Promoting Good Science – support the advancement of high quality science, regardless of whose lab it emerges from

Being Fair & Forthright - treat everyone fairly and equitably; being forthright and good to one's word

Participative Decision-making - Seek input from faculty in decision-making

Encouraging Interaction – Promote/ support meaningful opportunities for interaction

Attention to Developing Others - Use the role of chair in service of the development of others and the advancement of science

CONCLUSIONS

This study identifies factors that facilitate the development of a cooperative, inclusive and productive work environment and work culture. A science environment that is both cooperative and scientifically productive begins with constructive interactions. Constructive interactions support inclusive departmental processes. The leadership practices of the chair can support or drive implementation of activities and inclusive processes that bring people together and create norms that embed cooperation, inclusion and productivity into the culture of the department.

Academic departments often produce high quality science in competitive, isolating, and male-dominated work environments. However, the academic science department studied for this report demonstrated that high quality science could also be achieved in a cooperative, inclusive, and interactive environment. Such an environment facilitates the advancement of all scientists, regardless of gender. In the words of a male associate professor, the cooperative science culture made the department simply “a good place to do science” for all.

REFERENCES

- Bouty, I. 2000. Interpersonal and interaction influences on informal resource exchanges between R&D researchers across organizational boundaries. *Academy of Management Journal*, 43(1): 50-65.
- Etzkowitz, H., Kemelgor, C., & Uzzi, B. 2000. *Athena unbound: the advancement of women in science and technology*. Cambridge, U.K. ; New York: Cambridge University Press.
- Gersick, C., Bartunek, J., & Dutton, J. 2000. Learning from academia: The importance of relationships in professional life. *Academy of Management Journal*, 43(6): 1026-1044.
- Knight, P. T. 2002. *Small-scale research : pragmatic inquiry in social science and the caring professions*. London ; Thousand Oaks, CA: SAGE.
- Patton, M. Q. 2002. *Qualitative Research & Evaluation Methods* (3 ed.). Thousand Oaks: Sage Publications.
- Pelled, L. H., Ledford, G. E., & Mohrman, S. A. 1999. Demographic dissimilarity and workplace inclusion. *Journal of Management Studies*, 36(7): 1013-1031.
- Rosser, S. V. 1999. Different Laboratory/Work Climates: Impacts on Women in the Workplace. *NY Academy of Science*, 869(1): 95-101.
- Schein, E. H. 1992. *Organizational culture and leadership* (2 ed.). San Francisco: Jossey-Bass.
- Sonnert, G., & Holton, G. J. 1995. *Who succeeds in science? : the gender dimension*. New Brunswick N. J.: Rutgers University Press.
- Yin, R. K. 2003. *Case Study Research: Design and Methods* (3rd ed.). Thousand Oaks: Sage.
- Zuckerman, H., Cole, J. R., & Bruer, J. T. 1991. *The outer circle*. New Haven: Yale University Press.