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A Gift That Keeps On Giving

Sarah Webb
United States
8 February 2008

A few years into her physics Ph.D. at the University of California, Berkeley, Joan Hoffmann still hadn't found her grad-school groove. During her undergraduate work in physics and math, at Swarthmore College in Pennsylvania, she'd developed close relationships with faculty members. But a research university didn't foster the connections she'd cherished as an undergraduate. The focus on lab work was also new.

"I didn't think, 'I definitely need a mentor,' but I did think, 'I definitely need some advice.'" --Joan Hoffmann

"I was a little surprised that doing well in graduate school and staying on track was mostly about things other than doing well in your classes," she says. But one day, she walked by a department bulletin board and noticed a flyer for MentorNet, an online mentoring program founded in 1997 that matches science and engineering students with more experienced professionals. "I didn't think, 'I definitely need a mentor,' but I did think, 'I definitely need some advice,'" Hoffmann says. She signed up.

Many U.S. Ph.D. students consider their graduate adviser their primary mentor, and sometimes research advisers can play that role in satisfactory, even exemplary, fashion. But someone who doesn't have a personal stake in the success of a project or laboratory offers advantages, not least a fresh perspective on coping with research difficulties and interpersonal challenges. There are even advantages to having a mentor from outside academia, someone who can open the door to career opportunities away from the bench, free of the bias toward academia that many professors display.

AN OUTSIDE PERSPECTIVE--BUT SIMILAR EXPERIENCE

A "disinterested outsider" was exactly what Hoffmann was looking for. She requested a female physicist, someone who had traveled the same path she was trying to navigate. "I figured it was unlikely that they would match me with anyone," she remembers. But it didn't take long for MentorNet to match her with Liesl Folks, a physicist at IBM's Almaden Research Center in San Jose, California, in a division that's now a part of Hitachi Global Storage Technologies. Folks, who is Australian, had moved to the United States in 1997 to work for IBM following a few

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years in an academic position at the University of Western Australia in Perth.

Hoffmann's initial questions for Folks weren't technical. They were about the interpersonal side of getting a Ph.D., specifically, managing the relationships with both her adviser and her "lab siblings," especially postdocs. Early e-mails to Folks contained questions such as "I'm not communicating well with my adviser. What should I do?"

Hoffmann faced the terrain issues that come up in all labs, says Folks, who helped her work through her situation partly by encouraging her to examine the perspective of the people working around her. "Your supervisor's interests and your interests as a Ph.D. student are not identically aligned," Folks says. The trick is to figure out "how to get those two things more aligned so that you're pleasing your supervisor but doing all that you need to do to get all the skills that you need before you graduate."



Liesl Folks

MentorNet's program is designed to work over the Internet, matching partners who could be thousands of miles apart. But, coincidentally, Hoffmann and Folks both lived in the San Francisco Bay area. After many e-mail exchanges, Folks suggested they meet for dinner. "I've always found that when you're talking directly with a person, then a lot more of the subtlety and nuance comes out of it, and people offer much more specific perspective and advice," Hoffmann says. Meeting in person also helped cement the personal relationship, Folks adds. "If you have a mental image of a person and you can hear their voice when you read their e-mail, that's invaluable."

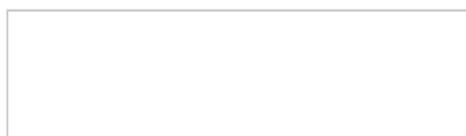
BENEFITS ON BOTH SIDES

The benefits seem obvious for Hoffman, the protégé, but for Folks, the idea of serving as a mentor seemed like a burden—at first. Mentoring takes time, and the load is disproportionately carried by women and underrepresented minorities, or so it often seems. When her managers at IBM first started recruiting MentorNet mentors, particularly women, "I groaned mightily," Folks admits. Hoffmann was her first MentorNet protégé but not the last. "They were right, and I was wrong," she says. "It's a feel-good thing, isn't it?"

Folks sees mentoring as a way to fill a gap in the U.S. system of science education. "U.S. universities turn out easily the best graduate students in the world in many, many, many, many subject areas, but many fall by the wayside through a lack of even minimal mentoring," she says. Folks benefited from mentoring as a graduate student in Australia; the Australian system, she says, provided support that's not available to students in the United States. "So to be able to help in some small margin not just women and minorities but any students get through that process without losing their sanity seems like a worthy goal to me," Folks says.

GRAD-SCHOOL CROSSROADS

After her 4th year in her Ph.D. program, Hoffmann's graduate adviser decided to move his laboratory from Berkeley to Cornell University and to end the project Hoffmann was working on. Hoffmann was left with a difficult choice. She could try to get a master's or Ph.D. with her current data, find a new adviser at Berkeley to continue the project, or follow her supervisor to Cornell and begin a new project. "It was clear to me that [Liesl] had opinions of what she thought were the best things for me to do, but she didn't tell me what to do," Hoffmann says. "In the end, I made some decisions that were not the ones she would have made, and she never held that against me."



With the move, Hoffmann faced the challenge of learning nanofabrication techniques for her new project. One evening before she left Berkeley, Hoffmann mentioned this added difficulty during dinner with Folks, who immediately suggested

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Tying the knot. Liesl Folks (center) joined Joan Hoffmann and Tom Haard at their wedding in 2004.

that one of her IBM colleagues, Chuck Black, might be able to help. Folks encouraged Hoffmann to apply for one of IBM's graduate fellowships, which included a year's stipend and an industrial internship. Hoffmann received the fellowship and spent the summer of 2003 working with Black at IBM's T. J. Watson Research Center in Yorktown Heights, New York. In 3 months, "I got done everything I needed to get done as far as nanofabrication, which was just amazing," Hoffmann says. "I met terrific people and had a fabulous time working with Chuck."

Hoffmann moved to Cornell and within a year transformed an empty room into a functioning low-temperature lab. "Every step of the way, she's taken on projects that involved a lot of engineering work as well as a lot of

understanding of basic physics," Folks says. "[Joan] certainly doesn't lack courage."

A MENTORING FRIENDSHIP

While Hoffmann was finishing her Ph.D. at Cornell, Folks coincidentally decided to go to Cornell to pursue a master's in business administration. This time together cemented their friendship. Folks was able to see Hoffmann's new lab, and Folks introduced her to colleagues in the area whom she had worked with before. Folks attended Hoffmann's wedding in October 2004.

Since completing her Ph.D. in 2005, Hoffmann has continued to ask Folks for advice as she worked through her postdoc and her job search. But today, their relationship is mostly personal; they now trade e-mails every couple of months to catch up on their lives and work.

Last November, Hoffmann took a job as a staff physicist at Johns Hopkins University's Applied Physics Laboratory in Laurel, Maryland. Looking back on her training, Hoffmann notes the critical roles Folks and MentorNet played in her success. "The most helpful things to me overall in graduate school were having a mentor outside of my graduate program and having this industrial internship," Hoffmann says.

Today, she enjoys working with and mentoring undergraduates and junior graduate students, and she plans to become a MentorNet mentor once she is settled in her new job. "I always feel like I'm trying to pass a little bit of Liesl along when I do that," she says.

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| Images. Top: John Wigham. Middle, bottom: courtesy of Joan Hoffmann | DOI: 10.1126/science.caredit.a0800022 |

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