

**Marni Goldman Tribute: Contributions to Materials Science Education**

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**Marni Goldman**  
**1969-2007**

## **Obituary**

Marni was born with a severe form of muscular dystrophy that caused her doctors to predict she would not live beyond the age of two. She exceeded that prediction by 35 years, as a result of her amazing family and her own keen intelligence, indomitable spirit, high energy, tenacity, and love of life. Although she spent her life as a quadriplegic, Marni was able to accomplish much with her life. She earned two bachelors degrees from the University of Pennsylvania in Materials Science and Psychology and went on to earn a PhD in Materials Science from the University of California at Berkeley. In addition to her academic and professional achievements, Marni lived to the fullest in her personal life. She was able to independently drive a specially modified car through the help of technology and the reach of her multi-inch fingernails, always decorated in beautiful colors and designs. Marni surrounded herself with an amazing community of people who together shared books, games, theater, music, food, travel and so much more. And those who knew her are aware that chocolate was high on her list of rewards.

Marni was among the very first people to be hired at Stanford specifically for the purpose of designing and carrying out “science outreach” programs. She started her Stanford career in 2000 as Research Associate in Stanford’s Center for Polymer Interfaces and Macromolecular Assemblies, under the direction of Chemical Engineering Professor Curtis Frank. She worked closely on educational outreach with Chuck Wade at IBM, a co-director of CPIMA. Marni later added to her tasks simultaneously jobs as the outreach coordinator for Stanford’s Nanofabrication Facility and the Associate Director of Stanford’s Office of Science Outreach.

Marni cared passionately about attracting students into science and engineering, with a special emphasis on those students who would increase the diversity of these fields by virtue of being an under-represented minority, a woman, or a person with physical disabilities. She directed programs that brought undergraduates from other universities to Stanford during the summers for research experience with Stanford faculty. She helped to create Stanford’s Summer Program for High School Science Teachers that brought local teachers to work as interns in Stanford faculty members’ labs. She worked tirelessly to help local middle school students in underserved areas on their science fair projects, and she helped to place disadvantaged high school students in internship positions in Stanford labs. She created an annual program that brought community college students – primarily under-represented ethnic minorities -- from throughout California to Stanford for day-long tours of Stanford labs and talks with Stanford faculty and students about science and engineering. Marni also was instrumental in creating a sense of community throughout the University among all of the faculty, staff, and graduate students engaged in various kinds of “science outreach” activities.

Marni was an amazing individual who touched the lives of all people who had the privilege of knowing her. She was an inspiration to all.

Curt Frank  
Charles G. Wade

## **A Personal Memory of Marni**

I'm one of the lucky ones-I got to work closely with Marni Goldman from 2000 until her death in February 2007. I marveled at her skills and determination from my first interaction with her (an impromptu interview at the MRS spring meeting in San Francisco) until our last phone conversation (just before the family vacation during which she died). The interview was for the role of education outreach director of the NSF Materials Research Center on Polymer Interfaces and Macromolecular Assemblies (CPIMA) at Stanford. CPIMA is an academic/industrial collaboration, the only one of the nearly 30 NSF MRSECs with an industrial lab as a true partner. Curt Frank at Stanford is the P.I. of this grant, and the organization of the center is such that the industrial co-director (me) has responsibility for educational outreach while the academic members have responsibility for industrial outreach.

Thus in our first encounter I interviewed this wisp of a woman sitting in a wheelchair and armed with an impressive resume, a soft voice, and probing eyes. The interview took place in a hotel near the Moscone Center in San Francisco. Since there were four sites in the center (UC Berkeley and UC Davis being the other two) I mentioned at one point the need to visit those, and asked how she'd come to the conference. "I drove from Berkeley." In what? "A van modified for my use." Where did you park? "On the street." The driving that she did around Berkeley was impressive enough but to fight traffic in mid-day in San Francisco and park at a hotel near the Moscone center - now that was a feat that would challenge the most fearless driver. I mentioned at one point that a primary requirement was organizational skills since the position required supervision of several programs, with many locations, many grants, and many deadlines. "If I didn't have superior organizational skills, I wouldn't be alive today". In short order Curt Frank, Brenda Waller (at the time the current educational director) and I hired Marni Goldman as education director, and my respect for her continued to grow.

The program was already successful. It had been in existence several years under other very able coordinators, but Marni built improvements over the next 6 years. She expanded the program with additional grants, formed a partnership with the Exploratorium Museum in San Francisco (for teachers), aggressively pursued Research Experience for Teachers grants, became active in national organizations supporting educational outreach, worked to increase minority participation in science with local high schools and community colleges, and established a niche program to encourage students with disabilities to participate in internships. Her responsibilities increased at Stanford, including involvement in the NSF Center for Nanotechnology Instrumentation and with the Stanford Nanofabrication Facility. She soon assumed a part time position in the office of Science outreach in the office of the Vice President for Research. In short, Marni was a dynamo and an impact player.

Over this time our interaction remained dominated by the student undergraduate research experience (SURE) program which brought 25 undergraduate students from across the US to do research at Stanford, UC Berkeley, UC Davis, MPI Mainz (Germany), and IBM. Selecting and assigning the students was a heavy load. Annually each of us would read and rate every one of the 160 to 180 applications, then meet to select the participants and match up projects. Marni then took over: contacting all the students, making changes in the assignments as necessary, arranging housing and stipend payments, disbursing travel money, planning the summer programs and arranging the other summer activities. At the annual CPIMA technical meetings she organized a poster session with perhaps 80 presenters (summer students participated along with graduate students and postdoctoral fellows). Marni became a thorough professional in all this. She had strong opinions about the purpose of the program and took it

very seriously. Her goals were to encourage the participation in science of women, of members of underrepresented groups, of the disabled, and of students from small colleges. All of these groups benefited from her efforts.

Marni's success evolved from fierce drive and determination, and she could be a tough lady. For example, she insisted that any application for the summer program had to be complete before it would be considered. When I protested that the students shouldn't be penalized if one of the three professors asked to provide reference letters were delinquent, she disagreed. Her point was that part of the process was to get *all* that in order, and the students had to have, or should develop, the responsibility to see that the letters arrived. She expected them also to live by the rules she established for the program. A running joke developed between us that I was a softie since I always supported the students in our discussions.

In the years I worked with Marni we experienced many successes. Because of our close interaction, I was also afforded a long term view of how she reacted when life wasn't so successful. She certainly experienced down times, from setbacks in the program funding to automobile accidents to periods of hospitalization. One of the more remarkable talents that Marni possessed was the ability to keep such setbacks in perspective. Nothing seemed to upset her; she took all those problems in stride and dealt with them. She would express irritation when frustrated but usually it was accompanied by a chuckle. I cannot recall a single time in those six years when she complained or was in a bad mood or was irritable or was depressed. This is a special memory of Marni that I will always carry—that remarkably stable personality. It had a big impact on me and on others she encountered. There was no way one could complain when you considered what she dealt with on a daily basis.

Marni had a very active life, many friends, and many interests. She had an apparently inexhaustible supply of colleagues from the technical community whom she recruited for the career day sessions or other activities for CPIMA. Her family was very active and supportive, and they came up frequently in both action and conversation. Chocolate was her only admitted vice, and she arranged to have it at many sessions. Marni kept her nails long and multi-colored. They created an immediate visual impact and clattered as she did tasks. She told me once that she kept them long because they provided a discussion item for people who were hesitant to approach her because she was in a wheelchair. Her nails were often the first topic of discussion. She used these with great success in handling not only people but also pushbuttons, even ones as crucial as those in the computer interface with which she piloted her van. Finally, she drove the fastest wheelchair on campus and keeping up with her was an effort.

Indeed a most remarkable woman.

Charles G. Wade