

1995

Marianne Bronner-Fraser

The surf-city tranquility of Marianne Bronner-Frasers Newport Beach home stands in stark contrast to her preschool years in her native Budapest, Hungary, when at the age of four her mother and father tried to sneak her family out of the country during the failed 1956 Hungarian uprising. A blizzard prevented them from leaving at that time, but the following year the Bronner family, parents, daughter and infant son found their way to Vienna and eventually to the United States.

Bronner-Fraser's father was an engineer and his daughter always knew she would become a scientist. She graduated from Brown University in 1975 and received her Ph.D. from Johns Hopkins in 1979. Bronner-Fraser, now Professor of Biology at the University of California at Irvine has lived near Irvine since 1980 where she is settled with her husband Scott Fraser, a developmental neurobiologist at CalTech, and their two children, seven-year-old Paige, and four-year old Ryan.

In spite of the lure of the sunny coast, Bronner-Fraser spends much of her time indoors where she has had her own lab since age 27. She and her colleagues are analyzing the cellular and molecular events underlying the migration and cell lineage decisions of neural crest cells. Her lab is focusing on what controls the precise and stereotypic pattern of neural crest migration and what dictates the cell lineage decisions of these cells into one of numerous possible derivatives?

The goal of her research is to understand the molecular mechanisms underlying neural crest development. In identifying the important genes involved, Bronner-Frasers lab is using an integrative approach combining over-expression and under-expression of molecules of interest with experimental embryology to target selected populations of cells. Bronner-Frasers studies shed important new light on the mechanisms of neural crest cell migration, differentiation and the formation of peripheral ganglia in avian embryos. Because neural crest cells are involved in a variety of birth defects and numerous cancers, the labs results on the normal mechanisms of neural crest development provide important clues regarding the mistakes that may lead to abnormal development or loss of the differentiated state.

Bronner-Fraser enjoys interaction with her students: she teaches Developmental Neurobiology, Developmental and Cell Biology, and Medical Physiology. She also is an instructor in the Embryology course at the Marine Biological Laboratory at Woods Hole every summer, which is a particularly rewarding experience.

Her colleague at UCI, Catherine Krull, says that Bronner-Fraser has been a terrific mentor for me, providing Krull with frequent opportunities to attend meetings and develop an even wider network with other scientists. Krull notes that Bronner-Fraser is a highly productive person who serves as a solid role model for women: its amazing to me just how much time she can spend at the bench; this is truly what she enjoys most. Her enthusiasm for science is high, easily conveyed to others and generally contagious. In the

fall of each year, she teaches singlehandedly an undergraduate developmental neurobiology course. I have observed her teaching in this course several times and can tell you that the undergraduates strongly appreciate her ability to make this complex area more understandable. She is able to explain complicated processes in a clear, crystallized manner. Bronner-Fraser has also been an active member of the ASCB for over ten years and currently serves on Council and as Chair of the Publications Committee. Her involvement on the Publications Committee came as a result of her interest in having a developmental biology perspective in the Societys journal, *Molecular Biology of the Cell*, and in the *Journal of Cell Biology*. In the near future she hopes to encourage the Publications Committee to engage in joint projects with other ASCB Committees, notably the Women in Cell Biology Committee. Elected to Council in 1992, Bronner-Fraser lauds the Society for its proactive role in science policy issues and in supporting women and minorities.

Circumstance and good fortune have helped Bronner-Frasers career and she realizes that having a scientist-husband helps a great deal. She met Scott while both were graduate students at Johns Hopkins, after which he was offered a tenured position at UCI. She went to UCI in a non-tenure track, a decision she does not regret. Her advice to women is that you can balance a career and family and that the two should be intimately related to each other. It is essential to develop a good support system with day care and friends who can help with the children and it helps to be extremely efficient. Important proponents of her career include Malcolm Steinberg, Peter Bryant, Hans Bode, and Susan Bryant.

Bronner-Fraser is also an active member of the Society for Neuroscience, and the Society for Developmental Biology, and the American Association of for the Advancement of Science.