Science and Friendship—the North Meets the South

A developing collaboration between the University of California, San Francisco (UCSF) and Fundación Ciencia para la Vida (FCV) in Chile has begun to connect these two diverse institutions in an unprecedented way. Students and faculty from the two countries have been meeting and discussing their research projects and sharing their experiences in science.

Seminars, Courses, and an Exchange Program

To date, the primary basis for the program has been annual scientific meetings in Chile. In 2002 and 2003, faculty from both institutions conducted seminars. A 2004 microarray course—and 2005, 2006, and 2007 very successful UCSF/Chile Exchange Programs—involved faculty and graduate students from both countries.

The 2005 contingent of UCSF researchers and graduate students was led by Bruce Alberts, Professor of Biochemistry; Peter Walter, Professor and Chair of Biochemistry and Biophysics; Keith Yamamoto, Executive Vice Dean of the School of Medicine and Professor of Cellular and Molecular Pharmacology and Biochemistry and Biophysics; and Patricia Caldera, Academic Coordinator of the Science & Health Education Partnership (SEP). The 22 UCSF graduate students represented six different academic programs.

The success of the meeting attracted increasing numbers of applications from graduate students to participate in the 2006 and 2007 programs. The UCSF/Chile Exchange Program has, in Alberts's words, "enable[d] our graduate students to experience how science can contribute, as well as how it might best be structured, in developing national environments. For many students, this may profoundly affect future career directions."

For their Chilean counterparts the meetings present a rare opportunity to interact closely with top international scientists and colleagues, as well as to arrange collaborations or training positions in the U.S.

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Promoting the Exchange of Ideas

Sebastián Bernales, a Chilean scientist who recently received his Ph.D. in cell biology at UCSF, created the 2005 meeting and developed the UCSF/Chile Exchange Program. Inspired by the high level of collaboration that exists among laboratories at UCSF, he thought that such collaboration could be extended to two different institutes, even countries. With the goal of promoting the exchange of ideas and technologies between the two institutes, more than 70 students and 14 professors from UCSF have participated in these scientific and cultural meetings in the past three years.

Having been a participant for the first two years and co-organizer in 2007, I can truly say how wonderful the meetings are. For one week, students and professors from multiple UCSF programs interact with students and professors from universities that make up the Millennium Institute for Applied Biology (MIFAB). These include the Catholic University of Chile, University Andrés Bello, and University of Chile. Interactions include scientific talks and poster sessions, as well as day trips in Santiago and surrounding areas.

Another aspect of the conference is one that is very dear to me: For the past three years, I have taken a group of the visiting students to a Chilean middle school to teach hands-on science classes. This idea was shaped by Patricia Caldera's visit in 2005 and by my personal experience in the SEP program with UCSF scientists and San Francisco Unified School District teachers.

Tangible Success

The meetings led to many friendships and collaborations. A tangible success story is the

installation of a DNA microarrayer under the supervision of Joe DeRisi, Professor of Biochemistry and Biophysics, and members of his UCSF laboratory. This equipment has been invaluable for many projects at the MIFAB. Other significant results have been the temporary employment of some Chilean students as technicians or interns at UCSF and other research labs, as well as acceptance into Ph.D. programs as a result of such work experience.

Acknowledging Supporters

This meeting would not be possible without the support and generosity of Pablo Valenzuela, co-founder of Chiron and current director of the MIFAB. After stepping down from Chiron's leadership, Valenzuela founded Bios Chile, a biotechnology group, as well as the FCV, a nonprofit research institute. His vision for the future of Chilean science was shaped by his experiences as a postdoc at UCSF. He wanted to create a high degree of collaboration between Chile and the rest of the world; what better place to start than with UCSF? He recruited Bernales, then a graduate student at UCSF and now a junior researcher at the FCV, to help him realize his vision. Walter, Bernales's graduate advisor at that time, was also essential in developing this program and in validating these ideas from the beginning. Without these three individuals, the UCSF/Chile Exchange Program meetings and subsequent interactions would not have been possible.

This network of interactions allowed the FCV to organize a unique meeting in January of 2008. For the first time ever, a new edition of the textbook *Molecular Biology of the Cell* was released outside the U.S.; all the authors (Alberts, Sandy Johnson, Julian Lewis, Martin Raff, Keith Roberts, Walter, and Tim Hunt) met with several hundred students, professors, and medical doctors in Santiago. Then the authors visited a research station in Antarctica, where they symbolically released the book.

Reflecting on Differences

Overall, awareness of the significant differences between the two communities has encouraged self-reflection on the position of scientists in the global community. At the same time, participation in the program has inspired a feeling of belonging, not only as a scientist in a particular university, but as a scientist in a much bigger community—one without boundaries and united by common goals of knowledge and discovery. Few scientists have an opportunity to experience this early in their careers, at a time when it could affect their outlook on science. I believe that the experience provided by the UCSF/Chile Exchange Program gives the participants a unique perspective on our global community. Since most participants are graduate students, and future scientific leaders of the world, the benefits from this one-week exchange will be felt for years to come. Any program with the potential for such a significant impact should be embraced everywhere. One might go as far as to say that it should be part of the scientific training of students everywhere. ■

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