Complex Systems Summer School

The Santa Fe Institute is an acknowledged leader in transdisciplinary scientific research and the founding institution of complexity science. The Complex Systems Summer School (CSSS)—now in its 28th year—is the premier program in training graduate and postdoctoral fellows in the fundamentals and practice of complex systems scholarship. It offers an intensive four-week introduction to complex behavior in mathematical, physical, living, and social systems. It is designed for those who seek hands-on experience in transdisciplinary research of complex adaptive systems.

How your students will benefit:

- Lectures, laboratories, and discussion sessions focus on foundational ideas, tools, and current topics in complex systems research, including nonlinear dynamics and pattern formation, scaling theory, information theory and computation theory, adaptation and evolution, network structure and dynamics, adaptive computation techniques, computer modeling tools, and the specific application of these core topics to various disciplines.
- Participants formulate and carry out team projects related to topics covered in the program.
- The faculty, representing some of the top minds in complexity science, is drawn from resident SFI researchers and other scientists from around the world.
- Participants come away with a working tool kit of complex systems methods; familiarity with foundational literature; insight into fundamental research themes within the field; and an introduction to annually selected topics at the cutting edge of complex systems.
- Students experience the challenges and rewards of collaborative research in project-based working groups, gain teaching experience during peer presentations, and have the opportunity to interact directly with the scholarly community at the Institute.

Ongoing scholarly collaboration with CSSS peers often result in refereed publications. Beyond these relationships, summer school alumni automatically join a cohort of elite complexity scholars who number 2,000 scientists throughout the world. CSSS alumni have an opportunity to continue to actively engage in SFI activities as workshop participants, as visiting fellows, and as faculty in the Institute’s educational programs.

The majority of CSSS graduates are still in academe; many are tenured faculty holding leadership positions within their institutions. Nearly two dozen CSSS graduates have gone on to become postdoctoral fellows at SFI. Here are just a small sample of some CSSS success stories. We hope that your institution will support participation in this unique program. Should you require further information, please contact education@santafe.edu or 505-946-2724.

Attending the CSSS 2001 had a profound influence on my research and educational career, writes First, I was able to assess my strengths and weaknesses in my educational background. Secondly, some ideas I had during the summer school, together with our final project, were the basis of several research projects I am carrying out right now, both continuing a collaboration with another CSSS alumnus, and also incorporating another collaborator. We expect to publish 2-3 papers from this project. Finally, the experience of working together and discussing various issues with people from many different areas was enlightening and stimulating.

Marcio Pie, CSSS 2001 (now Zoology, Federal University Parana, Brazil)