The **SANTA FE INSTITUTE** is a private, not-for-profit, independent research and education center founded in 1984, for multidisciplinary collaborations in the physical, biological, computational, and social sciences. Understanding of complex adaptive systems is critical to addressing key environmental, technological, biological, economic, and political challenges.

Renowned scientists and researchers come to Santa Fe Institute from universities, government agencies, research institutes, and private industry to collaborate in attempts to uncover the mechanisms that underlie the deep simplicity present in our complex world.

Criteria

In order to be considered for this teacher workshop, you must be one of the following: a current middle school or high school teacher, a trainer of teachers, afterschool science club provider or currently enrolled in a teacher education program. You must agree to implement the new material in the 2010-2011 school year and continue to be a part of the network of teachers pioneering the curriculum. Teams of teachers from the same school are encouraged to apply.

How to Apply

Apply online by going to **www.santafe.edu**, click on the education link.

Applications are due by **April 4, 2010**.
Notification of acceptance will be by April 19th.

Demystifying Complex Systems

by Thinking about Networks:

FROM METABOLISM
TO THE GENOME
TO SOCIAL CONFLICT

SANTA FE INSTITUTE

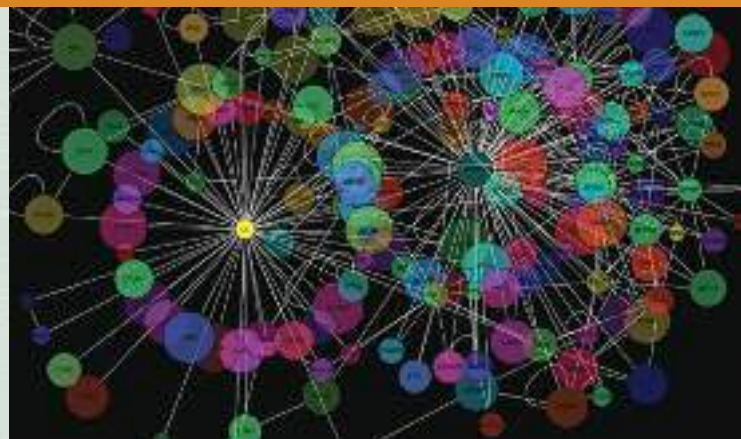
A summer workshop for teachers
June 27- July 10, 2010

SANTA FE INSTITUTE

1399 Hyde Park Road
Santa Fe, New Mexico 87501
www.santafe.edu

For more information, please contact:
Paige Prescott, *Learn@SFI Team Member*
paige@santafe.edu

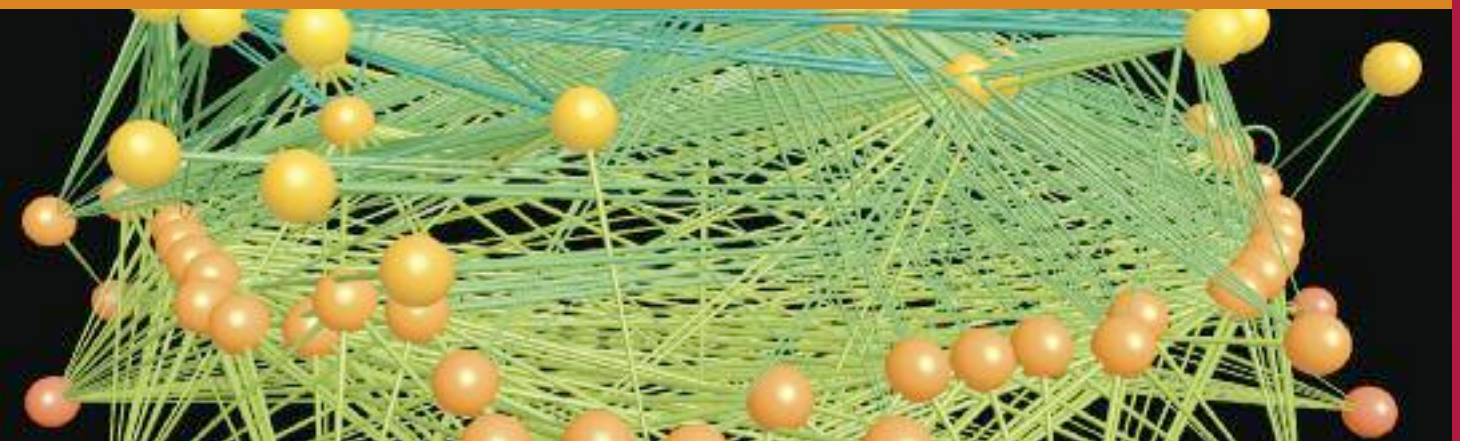
SANTA FE INSTITUTE
1399 Hyde Park Road
Santa Fe, New Mexico 87501



Complex Systems perspective is essential to understanding many of the most pressing issues in science and the humanities. The emergence of life, evolution, epidemiology, food webs, the global economy, wars and social conflict are examples of complex systems that scientists at the Santa Fe Institute are currently studying. The transdisciplinary approach to understanding these systems necessitates finding patterns that underlie these interrelated systems. One of the important breakthroughs in complex systems research is new insights into network structure and dynamics.

Network dynamics aims to define the rules by which networks grow, the patterns they form, and the way in which they drive collective behavior. The science of networks has allowed researchers to shed light on old problems and to create new tools for studying a variety of topics. The understanding of networks has become fundamental to many academic branches that study living and non-living systems such as metabolism, genomics, social influences and transportation networks. It is imperative that we expose our students to these transdisciplinary themes, prepare them to apply network concepts to real-world problems, and inspire them to learn more about these provocative frontiers of research.

We seek teacher participants in the fields of all sciences, including computer science, humanities and mathematics to join us for a workshop on Complex Systems and Network Dynamics. Preference will be given to teams of teachers from the same school. During this two-week workshop, participants will hear directly from a variety of researchers in the field. They will be provided opportunities and guidance for synthesizing the information in order to incorporate the concepts into existing curricula or to create new lesson plans.



Teacher Workshop Schedule

Sunday, June 27th
arrive to Santa Fe
5 - 7pm Welcome Reception

Monday to Friday, June 28 - July 2
9am - 4pm at Santa Fe Institute

Saturday & Sunday, July 3 - 4
free time, trips around Santa Fe and surrounding areas

Monday to Friday, July 5 - 9
9am - 4pm at Santa Fe Institute

Saturday, July 10
departure from Santa Fe

For those outside of Santa Fe:
Included in your attendance of the workshop is all travel. You will stay at St. John's College in a single-occupancy room. All meals included.

Stipend:
All participants will receive an initial stipend of $500 as well as an additional $500 after implementing the curriculum either as part of your curriculum or in a science club.

"By stripping away the confounding details of a complicated world, by searching for the core of a problem, we can often learn things about connected systems that we would never guess from studying them directly."

Duncan Watts