

Welcome

Welcome everybody:

Dear Students/faculty/staff

Congratulations! There you are, you have made it all the way to the CSSS 2015!

I am your Director Sander Bais and I have the pleasure to speak a word of welcome to all of you. This will only be just that, no lecture, no practicalities, no users manual of this college/school yet.

Immerse in the SFI environment

You have come here to the CSSS to immerse yourselves in Complexity science, and indeed then the Santa Fe Institute is the Mekka: it is the BIG node in that ever-growing network of institutions around the world that are getting involved in trans-disciplinary research from a -- may I say-- analytic point of view exploiting all the tools that sciences have brought us to probe complex systems, to gather data, to process that data, and to model it with evermore sophisticated mathematical and computational tools.

Carriers of the future

Churchill: I feel tremendous forces in this room. I have not won a world war but I agree.

I feel tremendous forces in this room!

I don't want to turn this group into a *mutual admiration society* in spite of that we do have a collection of bright young people by all means, that represents in many ways the hope of our nations where it comes to the future of our planet, our economy, our fragile peace, our need for permanent innovation: scientifically, technologically, culturally.

You all are gifted individuals, that's great but not your achievement, that is what you do with it. Talent generates choices and freedom and certainly needs nurture, but more than anybody else you will be held responsible for those choices. (Daniel Dennett)

Indeed many believe this world is in need not only of some serious refurbishing, but also in need of far more fundamental changes, and such changes can only be achieved if we are able to propose viable evidence based scenarios to attack the problems we encounter. And even when we produce overwhelming evidence, the sobering reality is that an inconvenient truth usually attracts powerful opponents, as we see all around us in the political arenas. It requires patience or better endurance and collaboration. So far my moral excursion.

How nice: cultural diversity

How nice to be here for four weeks to join forces, with such a variety of backgrounds, it is this diversity that forms the basis for mutual interest and inspiration and it has always been a basic condition for successful evolution. Natural selection, great, but you need that diversity to select from and to maintain the innovative potential of the intellectual ecosystem we are part of.

Participation: we span a space to expand in; be critical and creative

Of course we as organizers have tried to create an inspiring curriculum reflecting that diversity and we are very happy and grateful that we could bring together such a set of outstanding lecturers. These lectures are not just there to be consumed but will span a space of intellectual achievements and opportunities. I want to emphasize that the school has been designed in a way for you to explore that high dimensional space. That requires not just individuals, that will be only critical but also be creative, in thinking up solutions and taking the opportunities that this school offers you.

The student activities we have planned reflect this point of view, in that there is ample time to create productive collaborative teams that work on projects of common interest.

projects to be sure that you have to create yourselves.

We made sure that there all ways to communicate are facilitated.

Juniper has produce this incredible cell-phone App called YAPP, where you always can find all up to date schedules and many other things etc.

We have also installed a wiki where you can deposit your own “who is who in what land” page , blogs , links etc etc. there are also Facebook pages connected to that. Lots of opportunity to get to know each other better, to network! So please put photographs and please more then minimal comments as to who you are; please make yourself known! (make a selfie).

Extra curriculars:

By the way talking about important extra curriculars, we are at a respectable elevation of some 7000 ft (2300 meters) , it's very dry, the air is thin, and that makes that you have to adapt in many odf the usual good habits but one stands out and that is *the consumption of alcohol*. If you know how to behave under normal circumstances, we advise you to regauge your norms as to remain equally well behaved at high altitude. (I come from – 30 ft, so imagine what this means for me)

A broad experience: the jargon jungle.

We envisage this school as a broad experience. Of course you will have to try and understand what is going to be explained and taught, chew it until it becomes a piece of cake. But that is only part of the challenge.

Maybe that at this very moment we are still a collection of individuals, an ideal gas of individual talents and excellences. But what we hope to achieve is that you guys will interact. In multi- inter- transdisciplinary research isn't always easy also because of the Jargon Jungle. Easy talking using well known concepts like Amyloidosis, proteome, montague grammar, the wrapper method, NP complete, SNP, syntagmatic plane, critical exponent, exfoliation threshold, entropy principle—you name it. We hope you will be motivated to cross many jargon barriers to get to the structural content and richness of other disciplines. We hope that this collection of individuals will become a strongly interacting medium with a whole spectrum of collective excitations and behaviors. We are like an infants brain: ready to go, to grow zillions of connections at a tremendous speed. A minimally hierarchical network with many bidirectional links. Due to such strong and hopefully also long range interactions (both in space and time), this group may go through some transitions and end up in a novel phases that may surprise you and probably also us.

We are the complex system we work on.

In short: we as we sitting here, we are one of the complex systems that we'll be working on. A community, an interacting collective, a complex adaptive network, an agent based network subject to a social interactions that is to say a nonlinear dynamics, and if the agents play their strategic games right, I am confident that new opportunities will emerge for all of us.

Ultimately it seems that we live in a universe, and a world that is very much in search of itself.

I call on you to share your insights altruistically with your fellow students of different scientific and cultural backgrounds, to make this school a wonderful experience for all.

Thank you for coming to this school.

Now let me before closing, here introduce some of the important people for you these coming weeks. Let me first mention the team of organizers:

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But I also want to mention one more person with an important role in this school:

Josh Garland will be coordinating and guiding and helping with the projects you'll be working at during the full period of the school. And tomorrow you will hear more from them about what that means.

Thanks again, have a nice dinner!