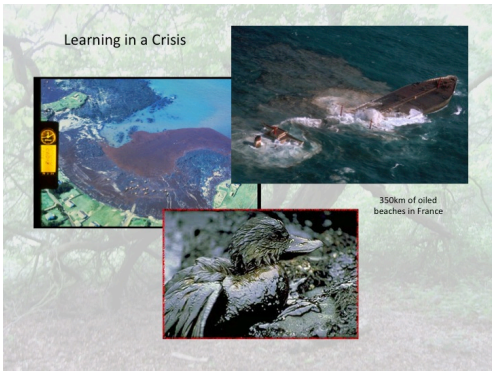
Leadership for Sustainability of Socio-Ecological Systems
"Unity in Diversity – Humanity in Technology"

Dr. John J. Kineman
Incoming Address

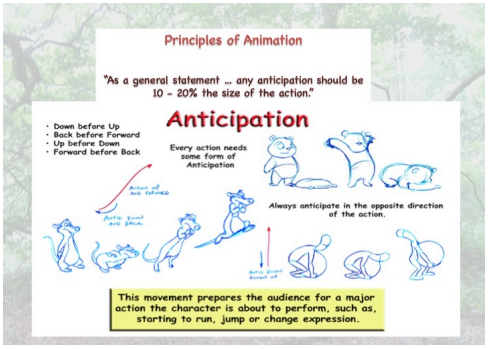
Thank you all for this great honor and quite daunting responsibility. I hope I will be up to the task. But before I continue I want to again thank this year's fabulous team – this is going to be a very hard act to follow. I hope we can carry the momentum of this conference on ***governance*** forward to the next conference which will be on ***leadership***.

Most forecasts agree that we have exciting times ahead. But the world is facing a number of crises, and systems do not change smoothly – they pass through phases of decline and reorganization that might be quite troubling. Success may depend, as Andy Stirling said the first day of this conference, on our ability to be *responsive to the opportunity inherent in crisis*; that is, to see the systemic nature of our circumstances and alternative pathways that make up a complex roadmap with more than one road, as Andy also said. One thing we can do in a crisis, is to always ask *"what can we learn from this."* That's ***"Crisis Science"***, and its lessons can tell us how to do ***"Sustainability Science"***.



Both are really part of ***"Anticipatory Science"***. There's going to be a UNESCO conference on Anticipation in November in Trento Italy which is linked with next years ISSS meeting, so I want to encourage everyone to attend. We seem to be accumulating a lot of new system-oriented sciences, and I think that's a sure sign that society is at the beginning of a major shift in thinking. This next slide shows a cartoonist's view of anticipation.

And now that I've introduc



ed Rosen theory by way of ***anticipation***, let me introduce Judith Rosen, who will be my co-convener, Chair of Science, and VP for Conferences next year. The way I look at it, Robert Rosen produced books and many papers that give us the **syntax** of his thinking; but he also produced a daughter who is the embodiment of his **semantics**. If we walk our talk as systems thinkers we have to recognize that semantics are at least equally important to what is written in words and symbols. I noticed early in my study of Rosen's work that a number of ardent Rosen followers had quite different interpretations of his theories. But of course that's exactly the case throughout science – we inherit the syntax of previous thinkers, and then it diverges according to everyone's own semantics. Judith has kept me on track, and I continue to find that essential. So, with that, here's Judith to give you a few words of her vision.

Thanks, John! Well, I've read that both Abraham Lincoln and Henry Ford are credited with saying: "The best way to predict your future is to create it." Whoever it was that said it, I like that saying. It suits me!

But there IS another way, of course… You could build a really accurate and thoroughly encoded model of the system, and run it forward… That is the essence of ***the modeling relation****—and of the activity of science, itself. This is what happens when you are raised by the guy who created* ***Anticipatory Systems Theory****! Barring black swan events, I'd say the modeling option is the one most likely to be reliable out of the two. But both could work.*

Incidentally, I think it's worth noting that the first option essentially represents "Art". The second one represents "Science". I think both of those activities are important, and illuminate each other. So, I would really like to explore ***the role of creativity in Science*** *as some part of the program for next year's conference. I'll see if I can get David Brin to come and give a Keynote… or perhaps a mix of people who blend both science and art of some kind in their work.*

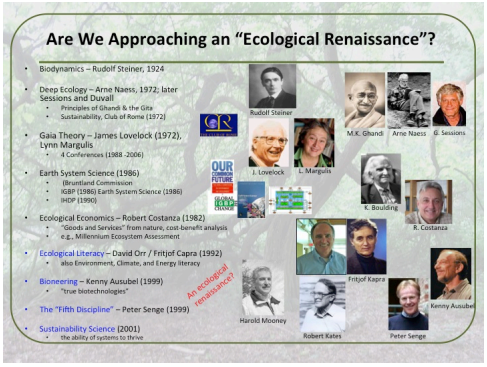
Just to give you some idea of what else I'm thinking for livening up next year's conference in Boulder, Colorado. I broached the idea with Debra Hammond about having a ***Robert Hutchins evening*** *devoted to his concept of* ***The Dialogue****, as he used it at his Santa Barbara Institute: "The Center For The Study Of Democratic Institutions" or CSDI. He felt that experts from many different disciplines could all approach a common problem from different directions and understand different aspects of it, but ultimately the diversity of expertise and perspective should offer the best chance of developing good solutions. So, I'll ask each of you to give a little thought, over the coming year, to* ***what are your "unsolveables"?*** *What thorny problems have you grappled with or maybe your colleagues have? These are problems that have resisted all attempts at solving them but you don't want to give up, yet. Bring them with you to next year's conference and participate in what I hope will become an annual event. You just might finally get solutions, courtesy of the collective efforts of this amazing group of minds.*

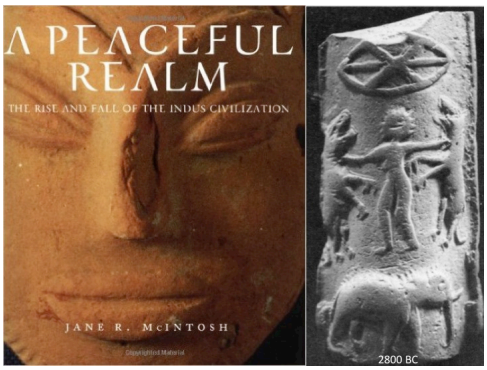
*Another idea I'd like to see realized is one I've mentioned for several years. And since the Boulder conference is a big anniversary—the 60th annual meeting of the ISSS—****a book with all of the past President's addresses*** *ought to be put together. So I intend to do what I can to help shepherd that idea into a reality.*

*I'm also hoping to **build bridges with other systems science based organizations**, like the EcoHealth Society, which would enlarge the networks to which the members of each society belong and have access to. I have a feeling we're going to need a really broad base of knowledge and expertise to deal with what's coming down the pike with rapid global climate change.*

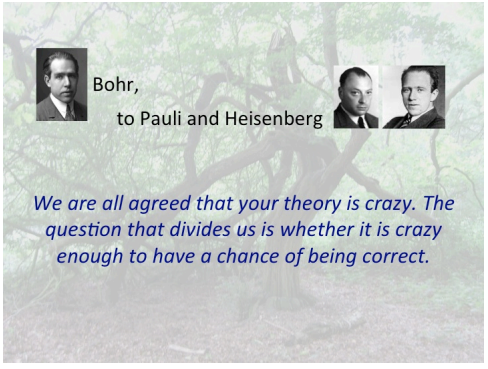
*So these are a few of the things you can expect me to be working on. If you have other ideas or want to **volunteer to help**, get in touch! My email address is in the contact book Delia is putting together. I'm also on Facebook. I can't promise to use every idea that comes through the channels but I can tell you this much: I'll do my best for you. As a Biologist's daughter, my favorite relation of all time is what used to be called a **"Symbiosis"** (and is now called **"Mutualism"** I believe?). What it means is a mutually beneficial relationship whereby both partners to the relationship are able to achieve things—because of their association with each other—that would never be possible for either one, on their own. In other words, it's got to be **Win/Win** or it's not good enough. So, what I'm saying is that… It don't mean a thing if it ain't got that ISSS-swing… IF you know what I mean? I sort of thought you might. ;~D Back to you, John! (Judith Rosen)*

Thank you Judith. I think that the evolution of the ISSS has brought us to the right place, at the right time, with the right ideas. I think, in general, we are on the right track. Everywhere today I see a dramatic shift taking place in which systems and holistic ideas are becoming not only acceptable – where they weren't before – but popular, even with a sense that they are urgent, especially in the area of ***socio-ecological systems***. I'm also convinced that we're at the threshold of an ***Ecological Renaissance***, the likes of which the world has not seen for four thousand years -- and that's according to the archaeological record.





As the premier society for systems thinking, it will be up to us to outline the dimensions of **new science, new governance, new ethics, and new society**. We need to focus our work to do it well. I think we will have to work in a much more collaborative way than we've been used to. For one thing our own response to complexity has resulted in fragmented approaches. Multi-methods research is extremely valuable, but too much fragmentation could also be our worst enemy if we are opposed to integration. This means **we have to collaborate and also engage reasoned discussion across theories, aiming for a synthesis while employing the**

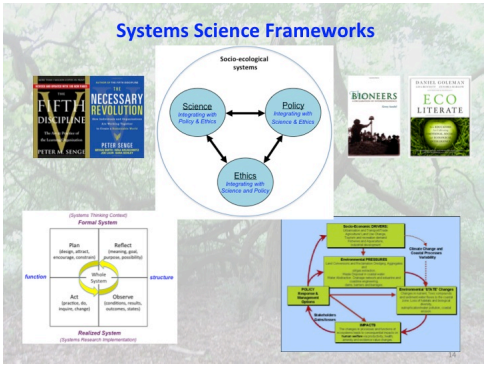


diversity. And we must remember that at the beginning of a new paradigm, different ideas will at first appear to be crazy (this is a real dialogue that took place in the early days of quantum theory).

I personally believe that willingness to engage that dialog is what makes science healthy. Thus I am hoping to have a f**ocused theory integration discussion** at the next conference. I think we need something like the Copenhagen Convention in physics, but for systems science, to provide a reference point for theory development. Again these modes of academic scholarship; describing what we observe from the top down and explaining what we think is going on from the bottom up, do not exist as opposites unless we make them so; they exist as **two aspects of a whole**.

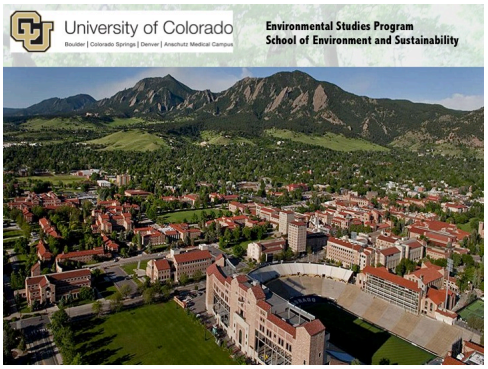
But I believe the way forward is not a compromise: It is a **unity of opposites** that deepens, enriches, and perfects differences while placing them into balanced, natural relation. So one sub-theme we want to adopt is ***"Unity in Diversity."*** Both unity and diversity exist in relation, as complements of a whole. It can apply to humanity and to the very fabric of nature itself. In modern science we forgot this fundamental relationship and primarily studied diversity, taking unity for granted and thus missing how it may be constructed. Today, the global crises we face are driving us to re-explore that unity, which we must do with a **true uncompromising attention to wholeness.**

But at the same time we have to admit that modern science was tremendously successful in bringing us **technology of staggering and wondrous proportions**, and it has an even more promising future where it should continue to exceed and delight the imagination (but not just for humans!). We need to embrace this future with enthusiasm and responsbility. And yet, as systems thinkers we are keenly aware that unilateral advances in only one domain may come at a cost, sometimes a great cost. Those costs are revealing themselves in two domains: **the biospheric environment and our humanity itself.** Therefore, **the principle of ethical unity must also be applied to technology**, and for this reason I want to introduce the concept: **"Humanity in Technology"**. I think you know what that means. Technology will continue to advance, but it is not value-neutral; and as it grows in strength so does its **impact on Human Values**.



These impacts need not be so bad, but they require our attention, and how we manage the situation is not going to be a trivial matter. So, we have our work cut out for us, and I think we know it is the responsibility of Systems thinking professionals to lead us toward ***systems sustainability***, *relating fo*ur aspects of our human culture: **Science, Policy, Ethics, and Society.** We need to find commonality among many **systemic frameworks** to do that.

The main meeting next year will be in Boulder, Colorado**;** which is a beautiful place in the summer with a lot going on. We will be officially hosted by the **Environmental Studies Program and School for Environment and Sustainability at the University of Colorado**, and I am hoping this on-campus affiliation will afford opportunities to build lasting education and research relations at the University and with other Partner universities, for example with the four institutions in India which whom we have established Agreements over the past 7 years. We know at this time that there will be a parallel venue at Vignan University, and possibly other locations in India, bringing **East and West** together to share our unique perspectives.



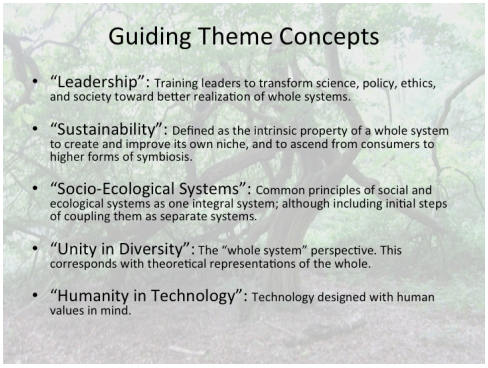
One of the ways we will attempt to share will be through the wonders of digital communications organized by Peter Tuddenham and Delia McNamara, as you've seen here this past week, but hopefully much expanded to provide full-conference coverage. We want to thus facilitate a **"Global Virtual Roundtable"** with Sue Gabriel that can include participants on two sides of the planet. That will require a new level of technology support that we have not yet seen, so we are working with possible Corporate supporters who may be able to showcase advanced capabilities for this venue.

So then, in the meeting we want to consider **how to train leaders** to take us into the future through **transformational changes in many sectors of society and institutions**. The change has to become real change in society through reflection on **values, scientific research, education, and policy making**, and **especially the unity of those**. We especially want to consider this in **collaboration with the Earth System Science community**, **bridging disciplinary and institutional gaps** by working with groups already straddling this boundary, as Judith mentioned: EcoHealth, the Center for Process Studies, Future Earth, the Resilience Alliance, and others, and certainly various systems societies.

So now I'll give a brief summary of the current program planning. Here is draft flyer we created to advertise the conference. You can see the main theme, which reads **"ISSS2016 Leadership for Sustainability of Socio-Ecological Systems"**, and the two sub-themes mentioned above. We are making a major effort to reach out to other organizations with similar interests, and to try to **rebuild the bridge between the natural sciences and the systems sciences**, where these have become separated in recent years. As we form these agreements we will add the institutional logos to the flyer and conference material, while also discussing how we can best collaborate on components of the program and/or both **prior and following activities**.

So, let's take a closer look at the guiding themes:

- **"Leadership"**: Training leaders to transform science, policy, ethics, and society toward better realization of whole systems.
- **"Sustainability"**: Defined [more ambitiously] as the intrinsic property of a whole system to create and improve its own niche, and to ascend from consumerism to higher forms of symbiosis.



I want to point out that our current definition of sustainability that's employed by the US National Science Foundation, which was taken from the Gro Harlem Bruntland Commission Report, "Our Common Future", is a perfect definition of a parasite. It says that we want to maximize our benefit and preserve the opportunity for future generations to do that; in other words, to thrive and not damage the host. So we've gone from consumer, and now we're trying to be good parasites. But the next stage is to see if we can achieve some sort of symbiosis. And, you see, this is why I think that technology isn't necessarily bad. From the beginning of evolution we've been technical. These things [arms and hands] are technology, it allows us to do stuff. And just as a bacterium invaded the cell and became mitochondria, which allowed Eukaryotic organisms to thrive and expand and eventually produce humans, we don't know what possibilities are out there. There are groups like the Bioneers who are trying to learn from nature and see what new possibilities might exist. I think this is a much more positive vision than what we're accused of sometimes, as making "gloom and doom" predictions. So, Socio-Ecological Systems are the combination, of course, of human systems and natural systems: that is:

- **"Socio-Ecological Systems"**: Common principles of social and ecological systems as one integral system; although including initial steps of coupling them as separate systems.

I mention that last part because that's where we're at today, as we're trying to be good parasites. We see social systems separately from natural systems, and the NSF, as far as we can go in mainstream science, is to see if we can couple those as different systems and different models. But I think as a systems society we want to do that, because that's where we're at – we can only go ahead from where we are today – but we also want to look at integral theories where we can begin to see them as one system, with common principles that apply across nature [including humanity].

So, I mentioned:

- **"Unity in Diversity"**: The "whole system" perspective. This corresponds with theoretical representations of the whole.

And

- **"Humanity in Technology"**: Technology designed with human values in mind.

I think we all know what that means.

So next are the **Sub-Themes** I mentioned. This is entirely open to modification and improvement as we go down the road. There's a Web Site and you will get an email from ISSS giving you instructions on how to get to it. I want to open this up to inputs and comments and suggestions – there's an ideas place in the Blog – but you'll get information about those facilities, and we really want your input.

Highlights of the conference: This will be our 60th Annual Meeting. The 60th birthday in India is a very special event, called **"Shasthi Poorthi"**, which means, well, "60th Birthday"! … but indeed, it does have a lot of meaning. It means the transition from a worldly life to a spiritual life. It's the coming of age and gaining of responsibility, and I think that's very appropriate for us at this time. So the dual venue and dialogue with India I think is going to be very valuable as well. I think there's lots of meaning in connecting two sides of the planet. They're 12 ½ hours apart from us. The different cultural views are amazing, and even in my own work I've traced holism back to 5000 years ago [in India]. They may be losing that cultural heritage. Modern India wants to emulate the West, already has, and are ahead of us in many ways. So, we'll have a cultural program around this Shasthi Poorthi, and also other traditions. I would like to have a nice mix between science and culture.

I'm also proposing a **"Policy Congress"** for the first time. I got the idea from the WILD Foundation. Vance Martin runs these wonderful conferences every four years on wilderness, and they've always had a "Congress" where they draft statements as to what they feel are problems in the world and what should be done about it. So we can do that as Systems Scientists just like the Union of Concerned Scientists: What do we

see are the issues and what do we want people to do about it? Those statements will go as a Press Release to the public, to governments, and to international bodies.

Of course we're trying to **form partnerships** with the groups you already saw.

And I would like to do more of a **thematic matrix in the paper sessions**, so we're working on that. In other words, I see the **SIGS as being the long-term interests of the Society** that form its foundation and can continue from year to year and also between conferences with activities; and the conference can be an opportunity to cross talk, so I would like to take the abstracts as they come in – possibly get them early – and organize them according to the topics that people have submitted and want to talk about; and if there are papers from three or four different SIGS talking about the same thing, let's put them in the same room so they can talk to each other. We might get a little more cross-fertilization, perhaps **understand when SIGs have common interests** and maybe want to merge. So, we'll try it and see. I think its been done before.

Education and outreach programs, Peter Tuddenham is working on that. We're very hopeful. The conference is already endorsed by the University of Colorado and the new School for Environment and Sustainability, so we have an academic endorsement that we can build on.

This is a little bit speculative, but if I can get funding -- I was at a conference in Claremont California that had a **public lecture program**…and it was wonderful because you had 2500 people from the pubic coming in the evening to listen to these wonderful talks, like some of the talks we've just heard, by well-known people who can draw in a crowd. And it really highlighted the whole conference, and that continued into the conference discussions. So maybe we can do something like that, but its expensive, so we have to see if we can get a sponsor for it.

Maybe an **Exhibit Hall**, again it depends on size. If there's a partnership and the conference is large its worthwhile for people to set up booths. But I think again, because we're hosted on Campus, that could be an advantage to people deciding to set up a booth – if they have access to professors and students, and the whole Boulder community.

And then also we're talking about a **24hr Virtual Roundtable**. Since there will be a parallel program in India. We're 12 ½ hrs. apart. We can have an hour in the morning and an hour in the evening, where the people waking up can hear what happened overnight on the other side of the world. So I think that's going to be an exciting thing to do. Its going to take massive technology support, because in experimenting with this in a class last Fall I learned that it isn't just a technical issue, the technology has to be so seamless, so invisible, so transparent that you can **communicate semantic and cultural meanings**, and get past a lot of the barriers that will prevent people from sharing.

We're setting up some very **strong and committed teams**. Most of these are already in place. There may be some important people I left off the list: my apologies, I'll correct it

before it goes to print. Many of these are continuing from now, so a line-up of the usual suspects, but some new people as well.

So that's all I really want to share. I'll leave you with this; my impression of **the living matrix**, which is a far more organic fractal design than we saw in the movie version, and I think with far more creative possibilities.

Thank you!