

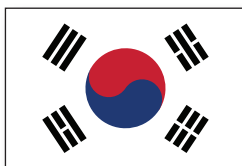
INCF NEWSLETTER

Issue 2, 2010

INCF activities

South Korea joins INCF

INCF is pleased to announce that South Korea has joined the organization as of July 2010, becoming the 16th member country. The INCF National Node of South Korea (K-Node) is located at the Brain Science Research Center (BSRC) of the Korea Advanced Institute of Science and Technology (KAIST). The Chair and Coordinator of the K-Node is Dr. Soo-Young Lee, Professor of Electrical Engineering and Director of the BSRC.



www.incf.org/about/nodes/south-korea

INCF launches new Career section

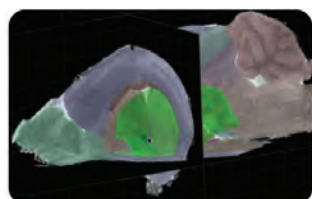
The INCF Portal has undergone some restructuring this summer. We have combined all career-related resources into a new Career section. It includes the Job Board, the Training section, Travel Grants and the new Funding section. The Career section will be continuously updated, and we welcome suggestions about opportunities that could be useful to researchers in the field of neuroinformatics.

www.incf.org/career

Waxholm Space in NeuroImage

The INCF Program on Digital Atlasing is pleased to announce the publication of "Waxholm Space: An image-based reference for coordinating mouse brain research" in *NeuroImage*. The article, authored by G. Allan Johnson and colleagues, provides a detailed description of the work involved in creating the new atlas standard.

[doi:10.1016/j.neuroimage.2010.06.067](https://doi.org/10.1016/j.neuroimage.2010.06.067)



Waxholm Space data viewed in the Allen Brain Institute's software tool Brain Explorer.

INCF Workshop on Digital Atlasing

Directly following the 3rd INCF Neuroinformatics Congress in Kobe, the INCF Program on Digital Atlasing will be holding a day-long open workshop. The workshop will feature the progress towards interoperability between diverse atlasing efforts, including Waxholm Space (WHS) as a spatial standard for the mouse brain and INCF Digital Atlasing Infrastructure (DAI) which supports this interoperability.

bit.ly/DAWHSWS

INCF releases graphical profile guidelines

In response to community requests we have put together a document with guidelines for using the INCF profile, and constructed official INCF logos for all National Nodes and Programs. These files can be found in our new Outreach materials section on the INCF portal. If you have any questions about the use of the INCF graphical profile or logos, you can contact us on styleguide@incf.org.

www.incf.org/about/organization/outreach-materials

INCF Node activities

3rd INCF National Node of Finland Workshop on Neuroinformatics

For the third year running, the Finnish Node arranges a neuroinformatics workshop to bring together researchers and doctoral students interested in understanding plasticity and learning in the brain. This year's event is titled "*How the Brain Learns: Experimental and Computational Perspectives*" and will take place on **September 21 at the Tampere University of Technology**. Experimentally, computationally, and theoretically oriented researchers are all invited.

Workshop attendance is free, but prior registration is appreciated. To register, send an email to neuroinformatics@cs.tut.fi and make sure to indicate in your email if you will present a poster and/or participate in the evening dinner buffet.

Conferences and meetings - the INCF summer in pictures



May: In Sigtuna, the long-ago capital of Sweden, the INCF National Nodes Workshop participants were shown runestones during a guided tour.



June: The Task Force of the INCF Program on Multi-Scale Modeling met at the INCF Secretariat, during Sweden's most beautiful period of the year, to work on model description standards.



June: The Neuroimaging & Datasharing Task Force of the INCF Program on Metadata Standards had their first meeting in Barcelona, directly after the Human Brain Mapping Conference.



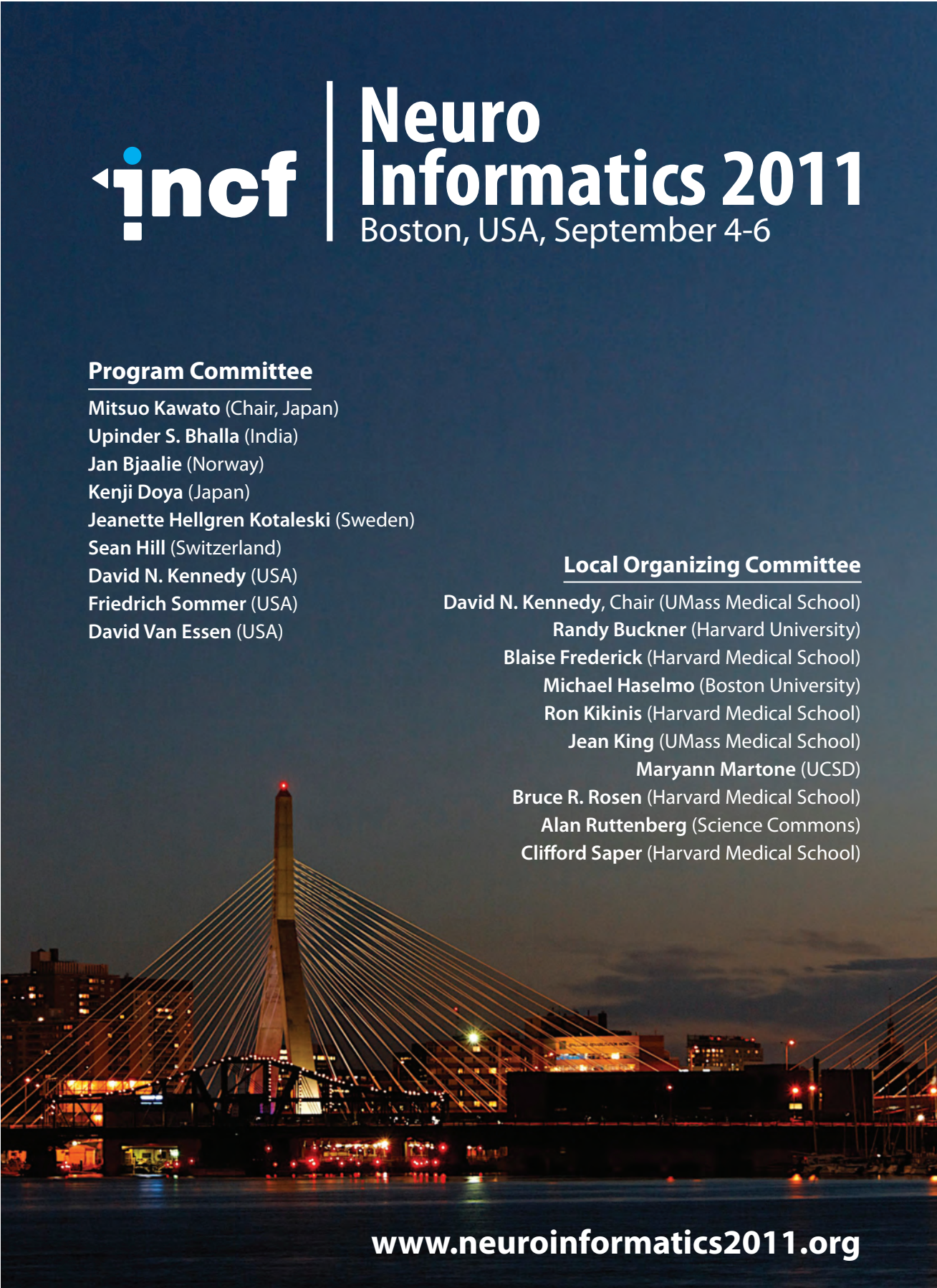
July: At the FENS conference in Amsterdam we hosted community neuroinformatics demos in the INCF booth, as usual. But our booth neighbours CARMEN briefly got to host something much more colourful - carnival stilt walkers!



July: At the CNS conference in San Antonio, we listened to many interesting talks, and arranged a workshop on neuroinformatics tools for computational neuroscientists. But the moment we were all waiting for was the announcement of next year's CNS venue - Stockholm, the hometown of the INCF!

We are now on Twitter!

twitter.com/INCForg



incf | **Neuro Informatics 2011**

Boston, USA, September 4-6

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www.neuroinformatics2011.org

Photo: David Kennedy & Blaise Frederick

Neuroinformatics Profiles

A conversation with Sharon Crook

*During the recent computational neuroscience conference CNS*2010 in San Antonio, the INCF Newsletter took the opportunity to talk to Dr. Sharon Crook about reproducibility in modeling.*

What is your background - how did you get started in modeling?

I did my undergrad in math then went to the University of Maryland for a PhD in applied math, where I also obtained formal training in computer science. This was the era of artificial intelligence and artificial neural networks. I found these areas interesting but not compelling as a research subject. When I took a mathematical neuroscience course from John Rinzel and a computational neuroscience course from Avis Cohen, I was hooked! I was able to attend the Woods Hole course in computational neuroscience, which provided the basis for my training in neural modeling.

So, how did you become interested in standards?

Due to my math background, I was used to being able to publish a model easily in a rigorous way - it was possible to write down every differential equation, function and parameter. When I started a postdoc at Montana State with Gwen Jacobs and John Miller, I started exploring more complex models, and I was really bothered by the fact that I couldn't write down all the equations for the model. Gwen was heavily involved in neuroinformatics research, and she had a large influence on my thinking. She told me about the initial efforts that were leading to the first paper on NeuroML, which appeared in 2001.

At the next CNS meeting in Chicago in 2002, I sat down and talked to Robert Cannon and Fred Howell about how my group could get involved. At that point more people were becoming interested in simulator interoperability. It seemed to me that descriptions of neuroanatomical reconstructions would be a good starting point since there were so many different formats for morphologies. The following year, we presented a poster at CNS 2003 on MorphML, which was the first effort within NeuroML to create a tool-independent description of some of the elements used in complex neuronal models. Shortly after that, we teamed up with Padraig Gleeson from Angus Silver's lab who was working on neuroConstruct and was interested in using XML for simulator independent description of neuronal network models.

How do you think standards, assuming they are widely adopted, will affect modeling?

I think standards will have a huge effect on modeling and publishing. The field will become more collaborative - in a good way - and there will be more sharing of models and faster progress. But one thing I have learned from my work in this area is that the development and adoption of standards is a slow process that requires engagement, input and collaboration from many different people.

Affiliations:

School of Mathematical and Statistical Sciences, School of Life Sciences and Center for Adaptive Neural Systems
Arizona State University



Sharon Crook

What do you see as the biggest barrier to adoption of standards and tools for standards?

It is clear that adoption of model description standards will only happen if we make it easy for modelers, which means that the software development community will need to work hard to streamline the work flow for creating and sharing models and create very modular tools that work together seamlessly. My impression is that the community is committed to doing this but that it will require resources: money, people and time.

"I believe that replicability should be a requirement for every published model"

It seems that the wide interest in standards has not been there until quite recently - what do you think has made the difference?

Yes, when I first became interested in standards, there was not much interest in the computational neuroscience community at large. It was not until the last few years that there has been broader recognition of the problem of model reproducibility and the need to devote more resources to this area. I think the shift was a gradual process building up over the years due to discussions and workshops at many meetings.

In your talk at CNS*2010, you mentioned the field's view on reproducibility. Do you think it is good enough?

As others have pointed out, there is a continuum of approaches that range from replicability to reproducibility, where by replicability we mean exact reproduction of a computational simulation and reproducibility refers to the scientific process of independent demonstration of major, robust phenomena. Obviously, reproducibility is the ultimate goal, but if we can't replicate modeling results, then we don't have a starting point for reproducibility. I believe that replicability should be a requirement for every published model, and we need to be sure that we are training our PhD students about the numerical issues involved in replicability and the need for very precise model descriptions.

How do you see the role of INCF in all this?

The INCF plays an important role in many ways; the fact that the INCF supports the development of standards adds visibility and legitimacy to this area of research. Also, the contributions of INCF resources to workshops and other collaborative activities will make a big difference.