Data Visualization and Analysis Symposium
Thursday, November 21st – Friday, November 22nd, 2013

Call for Submissions

September 3, 2013

The Waterloo Institute for Complexity and Innovation (WICI) is seeking proposals for participant presentations in its data symposium.

Recent years have seen accelerating development of crowd-sourced and remotely sensed "big" data from real-world systems such as urban land markets, global financial networks, epidemic diseases, and the Earth's climate. Concurrently, development of computer simulations designed to model the systems producing these data has also accelerated. As a result of both trends, researchers and policymakers have access to steadily more data that could provide information on the behavior and causal structure of complex systems. Tools and methods are needed to effectively evaluate and interpret these data and present the results in accessible formats to a broad range of stakeholders. However, traditional data visualization and analysis methods have been designed for data that are linear, monotonic, and normally distributed. Complex systems data, on the other hand, are characterized by non-linearities, discontinuities, and non-Gaussian distributions. The development of visualization and analysis methods for complex systems has not kept up with the soaring availability of data.

Recognizing this emerging need, WICI sponsored a Data Challenge competition and subsequently awarded a CDN$10,000 prize for tools and methods designed to improve the exploration, analysis, and visualization of complex-systems data in summer 2013. The fall 2013 WICI data symposium follows the prize award, in order to publicize the work of the winner and

runners-up from the contest and to provide a forum where other interested researchers on campus can present new work, engage in conversation, and coordinate to develop on-campus research in this area.

Proposals should include a summary of no more than 1000 words describing the proposed activity, and should contain a clear statement of the complex systems data visualization and analysis challenge that the activity addresses. Activities can include traditional research presentations (including work in progress), roundtable discussion and brainstorming sessions, and hands-on workshops or tool demonstrations. Innovative topics and forums and participation by students at all levels are welcome. The proposal should also identify the desired length of the activity (likely 30 minutes for research presentations, 60 minutes for roundtable discussions and brainstorming sessions, and 90 minutes for extended workshops) as well as any scheduling constraints for the presenter(s) during the open presentation times. Please also note if your proposed activity would require equipment and facilities beyond those found in a standard seminar room with an overhead projector. Proposals may also include links to relevant publications and/or models.

The open presentation sessions for the workshop will be held **Thursday, November 21st** (**9 AM-4:30 PM**) and **Friday, November 22nd** (**9 AM-12PM**) in **M3-2134**. Within this time slot, Przemyslaw Grabowicz will present the winning Data Challenge project ("Fast Visualization of Relevant Portions of Large Dynamic Networks") and conduct a hands-on workshop to introduce the tool.

The symposium will conclude with a keynote presentation by Dr. Sheelagh Carpendale, Professor of Computer Science at the University of Calgary, at **1:30 PM** on **Friday, November 22nd** in **QNC-1502**, followed by a reception.

Participants will have the opportunity to submit a WICI occasional paper based on their

presentation for possible publication following the symposium. Depending on the scope and quality of the presentations and participant interest, a special issue of a complex systems journal may also be organized.

Please submit proposals to the WICI Administrative Assistant, Ms. Megan Bean (megan.bean@wici.ca), with the e-mail subject header "*WICI data symposium*" by **October 1, 2013**. Please contact Professor Dawn Parker, WICI Director, with any further questions, using the same e-mail header (dcparker@uwaterloo.ca).