

**IEEE Globecom 2015**  
**Selected Areas in Communications Symposium**  
**Molecular, Biological, and Multi-Scale Communications Track**

**Call for Papers**

**Track Chair – Professor Andrew W. Eckford, York University, Canada**

**IEEE GLOBECOM** is one of two flagship conferences of the IEEE Communications Society (ComSoc), together with IEEE ICC. Each year the conference attracts about 3000 submitted scientific papers and dozens of proposals for industry events. A technical program committee of more than 1,500 experts provides more than 10,000 reviews, and from this a small fraction of the submitted papers are accepted for publication and presentation at the conference. The conference meets once a year in North America and attracts roughly 2000 leading scientists, researchers and industry practitioners from all around the world. IEEE GLOBECOM is therefore one of the most significant scientific events of the networking and communications community, a must-attend event for scientists, researchers and networking practitioners from industry and academia. For more information please see <http://globecom2015.ieee-globecom.org>

**Track Scope and Topics of Interest**

As a result of recent advances in MEMS/NEMS and systems biology, as well as the emergence of synthetic bacteria and lab/process-on-a-chip techniques, it is now possible to design chemical “circuits”, custom organisms, micro/nanoscale swarms of devices, and a host of other new systems at small length scales, and across multiple scales (e.g., micro to macro). This success opens up a new frontier for interdisciplinary communications techniques using chemistry, biology, and other principles that have not been considered in the communications literature.

This track is devoted to the principles, design, and analysis of communication systems that use physics beyond classical electromagnetism, particularly for small-scale and multi-scale applications. This includes: molecular, quantum, and other physical, chemical and biological (and biologically-inspired) techniques; as well as new communication techniques at these scales.

Original research articles on one or more of the following topics are within scope:

- mathematical modeling
- information/communication-theoretic or network-theoretic analysis
- networking
- implementations and laboratory experiments
- industrial applications
- information/communication theory for analysis of biological systems,

- experiment-based studies on communication processes or networks in biology

Contributions on related topics would also be considered for publication. Contributions from researchers outside the IEEE's typical audience are encouraged.

### **Submission Guidelines**

Prospective authors are invited to submit original technical papers by the deadline 1 April 2015 for publication in the IEEE GLOBECOM 2015 Conference Proceedings. All submissions should be written in English with a maximum paper length of Six (6) printed pages (10-point font) including figures without incurring additional page charges.

Templates for Microsoft Word or LaTeX formats found at <http://www.ieee.org/portal/pages/pubs/transactions/stylesheets.html>

All submissions must be done through EDAS at <http://edas.info/>

### **Chair Biography**

Andrew Eckford is an Associate Professor in the Department of Electrical Engineering and Computer Science at York University, Toronto, Ontario. He received the B.Eng. degree from the Royal Military College of Canada in 1996, and the M.A.Sc. and Ph.D. degrees from the University of Toronto in 1999 and 2004, respectively, all in Electrical Engineering. Andrew held postdoctoral fellowships at the University of Notre Dame and the University of Toronto, prior to taking up a faculty position at York in 2006.

Andrew's research interests include the application of information theory to nonconventional channels and systems, especially the use of molecular and biological means to communicate. Andrew serves as Chair of the IEEE ComSoc Emerging Technologies Subcommittee on nanocommunications, and is the vice-chair of the IEEE 1906.1 standards working group, the first IEEE standard on nanoscale networking. Andrew was also the General Chair of the 2013 13th Canadian Workshop on Information Theory, and served as a track editor on the IEEE JSAC 2013 special issue on emerging technologies. Andrew is also a co-author of the textbook *Molecular Communication*, published by Cambridge University Press, and his research on molecular communication has been covered in media including the *Wall Street Journal* and *The Economist*.