The **IEEE Ottawa Joint Chapter of Communications Society, Consumer Technology Society, and Broadcast Technology Society** (**ComSoc/CTSoc/BTS**), IEEE Ottawa Educational Activities (EA), IEEE Ottawa Women In Engineering (WIE), IEEE Ottawa Young Professionals (YP), and Algonquin College Student Branch (ACSB) in conjunction with School of Advanced Technology, Algonquin College are inviting all interested IEEE members and non-members, engineers, technologists, and students to ComSoc Distinguished Lecture on:

High-speed molecular communication: a solution for 6G

Dr. Andrew Eckford,

Associate Professor, Electrical Engineering & Computer Science, York University

DATE: Monday May 6, 2024
TIME: Refreshments, Registration and Networking: 6:00 pm; Seminar: 6:30 pm – 7:30 pm
PLACE: Ciena Optophotonics Lab, Room T129, T-Building, School of Advanced Technology, Algonquin College, 1385 Woodroffe Ave., Ottawa, ON Canada K2G 1V8.
REGISTRATION: Registration required. To ensure a seat, please register https://events.vtools.ieee.org/event/register/418255 .
ADMISSION: Free
MORE INFO: Ottawa ComSoc/CESoc/BTS Chapter website.
For any additional information please contact: Wahab Almuhtadi

Abstract

6G wireless systems are expected to offer ubiquitous connectivity in presently under-served areas, potentially provided by satellite- and space-based internet-of-things applications. In the search for enabling technologies to achieve these expectations, molecular communication is an important alternative to conventional electromagnetic-based wireless communication. In this talk, we give a brief introduction to molecular communication, and discuss how it may be used to communicate in "wave-denied" environments, where connectivity is desired but wireless cannot be used. We also show that molecular communication can achieve surprisingly high information rates, theoretically unlimited and practically in the gigabit-per-second range, making it a compelling technology for 6G. We finish with a discussion of the current state of the field and propose some experimental next steps.

Speaker's Bio

Dr. **Andrew Eckford** is an Associate Professor in the Department of Electrical Engineering and Computer Science at York University, Toronto, Ontario. His research interests include the application of information theory to biology, and the design of communication systems using molecular and biological techniques. His research has been covered in media including The Economist, The Wall Street Journal, and IEEE Spectrum. His research received the 2015 IET Communications Innovation Award and was a finalist for the 2014 Bell Labs Prize. He is also a co-author of the textbook Molecular Communication, published by Cambridge University Press.