

Biographical Sketch

Yves A. Lussier is the Associate Director for Informatics of the University of Chicago Cancer Research Center (UCCRC), co-Director for Biomedical Informatics of the UC Clinical and Translational Science Award (CTSA), and Director of the Department of Medicine (DOM) Center for Biomedical Informatics. He is an Associate Professor in the section of Genetic Medicine, DOM. From 2001-6, Dr. Lussier has been an Assistant Professor in the Departments of Biomedical Informatics and Medicine of Columbia University where he has mentored or co-mentored 26 graduate students. During his tenure at Columbia University, he was the first recipient of the “Columbia University Faculty Mentoring Award for faculty member in the Biomedical Sciences and GSAS affiliated professional schools”. Yves Lussier has served or is serving on more than a dozen boards (governance, technology transfer, scientific and editorial). A member of the American Medical Informatics Association (AMIA) since 1990, he was inducted fellow of the prestigious American College of Medical Informatics (ACMI) in 2005. He cumulates over 250 publications, communications and invited lectures.

The Lussier Research Group is conducting hypothesis-driven translational research in biomedical informatics that focuses on the use of knowledge technologies to accurately individualize the understanding, prediction and treatments of diseases. More specifically, he has developed computational methods that bring together molecular network modeling, genomics, bioinformatics, ontologies, natural language processing, and heterogeneous data integration to analyze an increasingly large and complex wealth of textual and semi-structured phenotypic, clinical, genomic, and molecular databases. Using phenomic- and systems biology approaches, his team has recently predicted: (i) a novel tumor suppressor gene (PLoS Comput Biol. 2010, 6:4) and (ii) a network-targeting therapy to sensitize head and neck cancers resistant to anti-EGFR therapy, that have both been validated in vitro and in vivo by colleagues (under review in PLoS Biol).

Lussier co-founded and chaired the 2009 Summit on Translational Bioinformatics of the American Medical Informatics Association. He has established a track record in funding, building and leading teams that develop and “translate” valuable leading-edge informatics solutions to clinical problems, within budget and ahead of schedule (e.g. NIH-funded clinical trial on a novel combination therapy developed from network targeting, Greene Lab’s *Panmicrobial Array*, New York Presbyterian Hospital’s *Vigilens*, Purkinje.com’s *Dossier*):

1. **NIH-funded network-targeting combination therapy:** A T1 translational multicenter randomized phase II study of Temezirolimus versus Cetuximab plus Temezirolimus in patients with recurrent/metastatic head and neck cancer, who failed prior EGFR based therapy (3UL1RR024999-03S3). Hypotheses: the combination of mTOR inhibition and EGFR inhibition prolongs progression free survival in patients, who have failed EGFR based therapy, whereas mTOR inhibition alone does not provide benefit. The combination of mTOR inhibition with temsirolimus and EGFR inhibition with cetuximab is synergistic in oral cancers and overcomes their respective primary and/or secondary resistance. Furthermore activity is driven by tumors with a myofibroblast (+) phenotype.
2. Lussier’s team co-designed the first comprehensive **panmicrobial microarray** for human diagnosis. In spite of its large coverage of 1,200 distinct vertebrate viruses, it remains compact because less probes are required per organism as they have been designed in “essential protein domains” that are less likely to mutate (Nucleic Acids Res. 2008 Jan;36(1):e3). Since 2003, the array has been used in Australia, China, and Africa and has since established the diagnosis of a patient that eluded traditional methods of investigation (Emerg Infect Dis. 2007;13(1):73-81). The *panmicrobial array* also has served to rule out known human pathogens in the discovery of novel ones (N Engl J Med. 2008 6;358(10):991-8).
3. During his tenure at Columbia University, he researched and developed *Vigilens*, a web-accessible, server-based and ontology-driven clinical decision support system that has been in operation since 2003 at the New York Presbyterian Hospital (Decision Supp Syst 2007 43(4):1274-86). Every year, ***Vigilens monitors over 25 million laboratory results/yr*** and sends alerts pertaining to 130,000 life-threatening events/yr.
4. During his residency in medicine, in 1990, he co-founded the company “Purkinje.com” and, as the senior vice-president of R&D, produced the award-winning “*Dossier*”, an electronic medical record (**EMR**) operational in more than 2,000 clinics and hospitals in North America. *Dossier* was the first pen-based (tablet-based) information system for physicians (1992) and probably the first commercial electronic medical record anchored on a substantial clinical ontology organized as a semantic network (60,000 terms).