Yves A. Lussier, MD, Fellow ACMI

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Physician and Surgeon Permanent License, Province of Quebec

Education and Training

Academic Training

1985 B. Engineering, Faculty of Applied Sciences, University of Sherbrooke, PQ, Canada
1989 M.D., Faculty of Medicine, University of Sherbrooke, PQ, Canada

Predoctoral Research Training

1982-1983 Research Student, Dept. Medicine (Mentor: L. Tétreault, MD PhD), Univ. of Sherbrooke, Canada
1986-1988 Research Student, Dept. Human Physiol. (Mentor: G. Plante MD PhD), Univ. of Sherbrooke

Post-Doctoral Training (traineeship)

1989-1990 Internship, Laval University Hospital, Quebec, Canada
1990-1992 Resident in Family Medicine, University of Sherbrooke Med Ctr (http://www.chus.qc.ca/en/), Canada
1998-2001 Post-Doc. Res. Fellow, Department of Biomedical Informatics, College of Surgeons and Physicians, Columbia University (mentors: James J Cimino, MD and Carol Friedman, PhD)

Licensure

1985 Quebec Professional Engineering License
1989-present License of the Medical Council of Canada
1991-present Full Medical License, College of Physicians of Quebec
1998-2007 Full Medical License, College of Physicians and Surgeons of Ontario
2001-2006 Full Medical License, Office of the Professions, State of New York

Board Certifications

1991-2007 Board Certified, College of Family Physician of Canada

Academic and Clinical Appointments

Academic Departments Appointments

01/1994- 08/2001 University of Sherbrooke, PQ, Canada
• Adjunct Professor of Family Medicine (Professeur Associé), sabbatical leave: 1998-2001
01/1995- 08/2001 University of Sherbrooke Clinical Research Center • Associate Researcher,
09/2001- 12/2005 College of Physicians and Surgeons, Columbia University, New York, New York
• Assistant Professor of Biomedical Informatics (2001-5)
• Assistant Professor of Medicine (2002-5)
01/2006- 12/2007 Columbia University, New York, New York
• Adjunct Professor of Biomedical Informatics
01/2006- 07/2011 The University of Chicago
• Associate Professor of Medicine (Section of Genetic Medicine)
08/2011- 11/2013 University of Illinois at Chicago
• Professor of Medicine, of Bioengineering and of Biopharmaceutical Sciences
12/2013- present University of Arizona
• Professor of Medicine • Statistics and Data Science Graduate Interdisciplinary Program

Medical Centers Employment

01/1992- 12/2000 Attending Physician (hospitalist, ER, and intensive care), Hôtel-Dieu Hospital of Sherbrooke (1992-7), Integrated to the University of Sherbrook Medical Center (Centre Hospitalier Universitaire de Sherbrooke - CHUS; 1997-2000).
01/1992- 09/1999 Medical Staff, Vimy Clinic (’92-96), St-Vincent Clinic (’96-99), Sherbrooke, Canada.
01/1998- 01/2001 Attending Physician, Emergency Medicine Department, Windsor Hospital, QC, Canada.
05/2002- 12/2005 Attending Physician, Medicine Dept, Columbia Un. Medical Ctr & New York Presbyt Hosp

Academic Institutes Appointments

2007-2011	Fellow, Computation Institute, Argonne National Laboratory and The University of Chicago
2007-present	Fellow, Institute for Genomics & Systems Biology (IGSB), The University of Chicago
2008-2011	Member, Ludwig Center for Metastasis Research, The University of Chicago
2013-present	Associate Director for Informatics, BIO5 Institute, University of Arizona
2011-2013	Founding Director, Institute for Interventional Health Informatics (I2HI), University of Illinois at Chicago
2014-present	Founding Director, The Center for Biomedical Informatics and Biostatistics (CB2), University of Arizona
2015-present	Executive founding member, The Center for Applied Genetics and Genomic Medicine (TCAG2M), University of Arizona
2018-present	Member, Data Science Institute, University of Arizona

Academic & Medical Center Leadership and Administrative Appointments

University Governance / Senior Leadership at Universities

1983-1984	Executive Board of the School of Engineering, University of Sherbrooke, Canada
1985-1986	Executive Board of the School of Medicine (reporting to Dean Gilles Pigeon), University of Sherbrooke, Canada
1994-1997	Board Director, "Governance Board of Physicians, Dentists & Pharmacists"; University of Sherbrooke Medical Ctr (http://www.chus.qc.ca/en/; 2535 hospital beds) • Role: governance of the medical center (operation budget & quality of care), six Directors • 1994-7 Centre Hospitalier Hôtel - Dieu de Sherbrooke (HDS) 1994-7, • 1996-7 Co-conceived and led the contractual agreements for the integration of four hospitals. This creative strategy resulted in a 50% cost-reduction of operation budget in 2 years mandated by the Federal and Provincial Governments
2003-2006	Governance Board Member, NIAID Northeast Research Center of Excellence in Biodefense and Emerging Infectious Diseases ↳portal
2011-2013	Chief Research Information Officer (CRIO) & Assist. Vice President for Health Affairs, Univ. of Illinois Hosp. & Health Sciences System (UIHHSS)
2012	Recruitment Committee for 3 Assoc. Vice-Presidents and 2 Assistant Vice-Presidents; UIHHSS
2015	Recruitment Committee for the Dean of Medicine- Tucson, University of Arizona
2013-present	Chief Knowledge Officer (CKO) and Associate Vice President for Information Sciences, Univ. of Arizona Health Sciences (UAHS)

Quality of Care and Patient Safety

2001-2003	member, New York Presbyterian Hospital (http://nyp.org/) Patient Safety Committee
2003-2005	Founding Chair, New York Presbyterian Hospital Clinical Alert Committee (Vigi*LENS* Clinical Event Monitor)
2012-2013	member, Intensive Care Unit Quality Improvement Committee, University of Illinois Hospital System

Data Science, Information Technology and Technology Transfer

- Medical Centers & Hospitals

2007-2011	Service Oriented-Architecture (SOA) Governance Working Group, Univ of Chicago Medical Ctr
2008-2011	The Board of Computing Activities and Services (BCAS), The University of Chicago
2011-2013	Information Technology Governing Council – Research Committee, Un. of Illinois at Chicago
2011-2013	Chief Information Officers Committee, University of Illinois

- Universities

2001-2006	Clinical & Adj. Assoc. Dir., Ctr for Adv. Inform. Mgmt, Columbia Univ. (http://www.cat.columbia.edu/)
2006-2008	Biological Science Division Information Services Advisory Committee, University of Chicago

2008-2010 UChicagoTech Faculty Advisory Committee (http://tech.uchicago.edu/); Un. of Chicago
2014-2016 Research Computing Governance Committee, University of Arizona (RCGC)
2018 President's Strategic Planning Committee on Data Science Grand Challenge, Univ. of Arizona
2018-2019 Strategic Plan Advisory Committee, University of Arizona (UA) Health Sciences
2019 President's Planning Committee for the College of Data, Computing, and Network Science, UA

Translational Bioinformatics, and Clinical Research Informatics

1- Cancer Centers

2006-2011 Associate Director for Informatics, Comprehensive Cancer Center, University of Chicago
2006-2011 Investigator, Program 4: Clinical and Experimental Therapeutics, UCCCC
2006-2011 Member of the Executive Committee , Comprehensive Cancer Center, University of Chicago
2011-2013 Associate Director for Informatics, Cancer Centre, University of Illinois at Chicago
2014-2018 Associate Director for Precision Medicine and Informatics, Comprehensive Cancer Center, University of Arizona
2014-present Member of the Executive Council, Comprehensive Cancer Ctr, University of Arizona
2016-present Member of the Scientific Leadership Council, Comprehensive Cancer Ctr, University of Arizona

2-Academic Research Centers and Institutes

2003-2006 Founding Director, Biomedical Informatics Research and Service Core, NIAID Northeast Research Center of Excellence in Biodefense and Emerging Infectious Diseases
2004-2006 NLP & Ontology Lead, Columbia Center for Comput. Biology and Bioinformatics (C2B2)
2006-2013 Fellow, Computation Institute of The Argonne National Laboratory
2007 Recruitment Committee for the Director of the Microarray Facility, Univ of Chicago BSD Cores
2007-present Fellow, Inst. for Genomics & Systems Biol (IGSB), Argonne National Laboratory.
2008-2011 Member, Ludwig Center for Metastasis Research
2012-2013 Member, Tissue Bank Committee, University of Illinois Hospital System
2011-2013 Director of Biomedical Informatics Services, Research Resource Center, Univ. of Illinois at Chicago
2011-2013 Founding Director, Institute for Interventional Health Informatics (I2HI), Univ. of Illinois at Chicago
2014-present Founding Director, Center for Biomedical Informatics and Biostatistics (CB2), University of Arizona Health Sciences. The 2000 sq. ft. Center hosts a team of 11 Faculty, 15 other professionals, and 14 faculty affiliates.
2017-present Member of the Scientific Advisory Board, Bio5 Institute, University of Arizona
2017-present Member of the Business Advisory Board, Bio5 Institute, University of Arizona
2017-present Member of the Deans Advisory Board, Bio5 Institute, University of Arizona
2018-present Member of the Scientific Advisory Board, Pediatric Emergency Care Applied Research Network: PECARN.org

3- Clinical Translational Science Awards (CTSAs)

2006-2011 Founding Director, Biomedical Informatics Core (co-Director from 2006-2010), University of Chicago Institute for Translational Medicine (UC-ITM)
2007 Member, CTSA Biomedical Informatics Core Advisory Committee, UC-ITM
2007-2011 Member, CTSA Executive Committee, UC-ITM
2008-2011 Informatics Director, Committee on Clinical and Translational Science, UC-ITM
2011-2013 Assoc. Dir. for Informatics, Ctr for Clinical and Translational Science (CCTS), Univ. of Illinois

Clinical Informatics

- Medical Centers & Hospitals

1990-1991 Hospital EMR Advisor to the CIO, University of Sherbrooke Medical Ctr (Health Data System Ulticare http://www.healthdatasystems.com/; mainframe capacity plan & laboratory order lists)

1994-1995 Design of the Pathology Module of the Ulticare EMR in partnership with Health Data Systems and Dr. Roger Côté (role: information models development for implementation of SNOMED 3.0 Topology, Morphology & Diagnoses) ; University of Sherbrooke Medical Center

2002-2005 Clinical Event Monitor Leader, IT Clinical Informatics Operations Committee of the New York Presbyterian Hospital (http://nyp.org/) and the Columbia Presbyterian Medical Center.

2003-2005 Founding Chair, EMR Decision Support Development Committee of the New York Presbyterian Hospital (http://nyp.org/) and the Columbia Presbyterian Medical Center.

- University

1991-1992 Planning and Evaluation Committee of the pan-Canadian risk register for primary care led by the Dept. of Family Medicine of University of Sherbrooke (FAMUS).

2006-2007 Ad hoc member (2006) and consultant (2007) for promotion of informaticians faculty, Committee on Appointments and Promotions (CAOP), University of Chicago.

2006-2009 Chair, Velos Clinical Trial Mgmt System Advisory Committee, Univ of Chicago BSD

2006-2009 Chair, Biomedical Informatics Facility Committee, Shared Research Facilities, Univ. of Chicago

2006-2011 Director, Center for Biomedical Informatics, Dept. of Medicine, University of Chicago

2007-2011 Initiative in Biomedical Informatics Committee, University of Chicago BSD

2011-2013 Encore Clinical Trial Mgmt System implementation, University of Illinois Cancer Cetner

2012-2013 Committee for Univ. of Illinois Hospital System (https://hospital.uillinois.edu/) EMR Selection

Senior Leadership Search Committees

2011-13 Core member of four search committees, University of Illinois Hospital & Health Sc. System

- Dean of Medicine,
- Chief Pharmacy Officer,
- Chief Nursing Officer,
- Chief Medical Informatics Officer;

2014-present Core member of nine search committees; University of Arizona Health Sciences

- Dean of Medicine Tucson (CB. Cains, MD; now Dean of the Drexel College of Medicine),
- Dean of Pharmacy (Rick G. Schnellmann, PhD),
- Vice-President for Precision Health Sciences and Director (Kenneth S. Ramos, PhD, MD, PharmD; now assistant vice chancellor for Health Services at the Texas A&M University),
- Comprehensive Cancer Center Director (Andrew Kraft, MD),
- Department Chair of Internal Medicine of the College of Medicine Phoenix (M Fallon, MD),
- Director of the Ctr for Disparities in Diabetes, Obesity and Metabolism (LJ Mandarino, PhD)
- Director of Center for Innovation in Brain Science (Roberta Diaz Brinton, PhD)
- Director of the Center for Border Health Disparities (David G. Marrero)
- Endowed Professor of Pharmacogenomics of the of the College of Pharmacy (QM Chen, PhD)

Education Steering Committees

1986 Undergrad Medical Studies Revision Committee (1st implementation of Problem-Oriented teaching throughout the MD curriculum), School of Medicine, University of Sherbrooke

2002-06 Co-Lead, 1st Biomedical Informatics Curriculum development, Dept. of Biomedical Informatics, Columbia University (Drs. E. Mendon/ca and S. Johnson, co-leads)

2011-13 Transdisciplinary PhD in Health Informatics Planning Committee, University of Ill. at Chicago

Corporate Leadership and Professional Activities

Company Founder

1991 *Development Purkinje Inc*. http://www.Purkinje.com, founder with R St-Arneault, PP Yale & Y Levesque

- 1993 DPI Product: *Dossier* tablet-based CPOE-enabled EMR used in 3000 clinics & hospitals
- 1994 DPI merged with "*Purkinje*"

1994 *Accurate Informatics and Medicine consulting* (AIM)

Senior Leaderships: Board of Directors, President or VP

1992-1995 Board of Directors, *Purkinje Inc.* (pen-based electronic medical records)

1982-1983 President, *Engineering Student Association (*http://www.ageg.ca/); Univ. of Sherbrooke, Canada.

1991-1993 Senior VP of Research and Development and of International Affairs, *Purkinje.com*.

- Conceived and completed 3 investment plans totaling $18,000,000 (2nd -4th rounds of funding).
- Managed $4,000,000 R&D budget over four years (~40 employees; 65,000 term DAG/ontology).

Professional

1982-1984 Analyst & programmer (part time; Dr. L. Tétreault, MD PhD.), DOM, Univ of Sherbrooke. Developed a clinical trial management & statistical system used in 3 distinct trials phase 3.

1982–1984 *IBM Canada,* Comp Analyst & Product Engineer, 16-month (4 internships), Québec & Toronto,

Consulting

1994-1995 Scientific advisor, Hoechst Marion Roussel, Clinidata Division.

1997-1998 Scientific advisor, Purkinje.com.

1983-1998 Consultant, medical and pharmaceutical informatics,

- YAL, Inc. (1983-1993), • Accurate Informatics and Medicine Inc. (1993-1998).

1999-2001 Consultant, Ctr for Advanced Information Mgmt & Columbia Innovation Enterprise, Columbia Un.

Honors (30)

Prestigious Honors (9)

2017 Inducted "**Ambassador for Health Sciences" of The Université de Sherbrooke** (6/1)
https://www.usherbrooke.ca/diplomes/accueil/babillard/babillard-details/article/34564/
http://www.pimamedicalsociety.org/lussier-receives-ambassador-award/
http://deptmedicine.arizona.edu/news/2017/uas-dr-yves-lussier-honored-ambassador-award

2016 Research commitments recognized at the **White House Precision Medicine Initiative Summit** (2/25), among ten invited precision medicine scientists across USA.
https://www.whitehouse.gov/the-press-office/2016/02/25/fact-sheet-obama-administration-announces-key-actions-accelerate
https://uanews.arizona.edu/story/white-house-announces-ua-s-involvement-in-national-precision-medicine-initiative

- Practice-based evidence: on-demand case-based reasoning from Big Clinical Datasets and electronic medical records.
- N-of-1-pathways methods on 2 samples: interpreting the dynamic disease-associated gene expression changes arising from patients' own DNA blueprint.

2012 **Chicago Innovation Mentor** awardee, https://matter.health/programs/chicago-innovation-mentors/

2005 Inducted **Fellow American College of Medical Informatics** (ACMI)
http://www.amia.org/about-amia/leadership/acmi-fellow/yves-lussier-md-facmi

2004 1st recipient, **Columbia University Faculty Mentoring Award,** Biomedical Sciences and Graduate School of Arts and Science, http://home.uchicago.edu/~lussier/FacultyMentoringAward-Lussier.jpg

2003-2004 Three **IBM Faculty Awards** for the Vigi*LENS* event monitor (6/15/2003; 12/22/2003, 6/9/2004)
http://www.cumc.columbia.edu/news/in-vivo/Vol3_Iss08_july_04/around_and_about.html

1998 Competitive Research Fellowship (3 awardees), **Medical Research Council of Canada**

Scientific Publication Awards and Publication Highlight at Conferences (16)

2007-16 (ISCB / ISMB) "*Highlights of the Year*" paper recognition, International Society for Computational Biology (ISCB) at their Annual Meeting (ISMB)

- *Nature Publishing Journal Genomic Medicine* 1: 16006 (2016)
- *PLoS Comput Biol* 2012;8(1):e1002350. http://www.iscb.org/cms_addon/conferences/ismbeccb2013/highlights.php
- *PLoS Comput Biol* 2010;6(4): e1000730. http://www.iscb.org/cms_addon/conferences/ismbeccb2011/highlights.php
- *PLoS Comput Biol*, 2006;2(11):1419-35. http://www.iscb.org/cms_addon/conferences/ismbeccb2007/program/highlights.html

2010-14 (AMIA/ STB)
- *one of 25 Best Translational Bioinformatics Papers of the Year*" recognition, from the Closing Keynote of the American Medical Informatics Association's Summit on Translational Bioinformatics
- 2014/3: *J Am Med Inform Assoc.* 2013 Jul 1;20(4):619-29. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3721168/
- 2013/3: *J Am Med Inform Assoc.* 2012 Mar-Apr;19(2):306-16 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3277633/
- 2010/3: *PLoS Comput Biol* 2010 6(4): e1000730. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2848541/

2012-13 (TBC) Two "*Best Paper*" Awards, Translational Bioinformatics Conference (TBC)
- 2013/10: "N-of-1-pathways" unveils personal deregulated mechanisms from a single pair of RNA-seq samples: towards precision medicine. *J Am Med Inform Assoc 2014 online* http://www.lussierlab.net/publications/Lab-Awards/Award_TBC.pdf
- 2012/10: *J Am Med Inform Assoc 2013 Jul 1;20(4):619-29.* http://www.lussierlab.org/publications/Lab-Awards

2012
- American Medical Association (AMA) Research Symposium, "overall winner" (K. Regan's poster) *Later published in AMIA Annu Symp Proc*. 2012;2012:1040-9.

2008-12 (AMIA) Five "Outstanding/Distinguished Paper" Awards, American Medical Informatics Association (AMIA)
- 2011/10: *J Am Med Inform Assoc.* 2012 Mar-Apr;19(2):295-305 http://www.amia.org/news-and-publications/amia-enews/e-news-november-17-2011
- 2010/3: *BMC Bioinformatics.* 2010 Oct 28;11 Suppl 9:S11http://lussierlab.org/publications/Lab-Awards/AMIA-2010.pdf
- 2009/3: *BMC Bioinformatics.* 2009 Sep 17;10 Suppl 9:S6 http://lussierlab.org/publications/Lab-Awards/XinanYang.pdf
- 2008/3: *BMC Bioinformatics.* 2009 Feb 5;10 Suppl 2:S11 http://lussierlab.org/publications/Lab-Awards/Lussier-2008-award.pdf
- 2008/3: *BMC Bioinformatics.* 2009 Feb 5;10 Suppl 2:S8 http://lussierlab.org/publications/Lab-Awards/Lee-Sam-amia_award.pdf

Corporate awards

1994 Two awards, **Fédération de l'Informatique du Québec** (>2,500 members, > 1,100 organizations). As VP of clinical R&D at Purkinje Inc. for the Innovation and excellence of the electronic medical record: *Dossier*
- "Octas of Excellence", http://www.actionti.com/octas-1994
- "Octas of Innovation", http://www.actionti.com/accueil/octas/historique-des-octas/octas-de-l-excellence

Student Scholarships & Awards

1986-7 Twice "best graduate research scholar" at Univ. Sherb. (1986,1987, *Fond Recherche Sci. Québec* – FRSQ)

1984 Best mechanical engineering student (*Quebec Iron and Titanium Corp.*)

1983 *IBM* engineering student award

Commencement and Conference Keynote Lectureships (28)

2020
- *17th Annual MidSouth Conference on Computational Biology and Bioinformatics (MCBIOS '20)* – Dallas, TX; https://mcbios.org/
- *Precision Medicine Leaders Summit ('20)* –Merck Research Laboratories Public Auditorium, 33 Avenue Louis Pasteur, Boston, *MA 02115*Boston, MA; March 24th -25th

2019
- *Bloomberg Health Initiative and United Nations Big Data Science Conference,* Opening Keynote, Dhaka Feb 11-13 https://4bc2uf19brcm1pkdac2xn09m-wpengine.netdna-ssl.com/wp-content/uploads/2019/04/ConferenceReport_Big-Data-for-Health.pdf
- *Mayo Clinic Conference on Artificial Intelligences and Medicine*, Philip Hall, May 23rd "Smaller sample size for better precision medicine with machine learning pathway biomarkers across multiple single-subject studies", https://ce.mayo.edu/research/content/mayo-clinic-artificial-intelligence-symposium#group-tabs-node-course-default2
- *6th International Translational Bioinformatics Conference,* Keynote, "Novel precision clinical trials designs enabled by machine learning applied to genome dynamics across single subjects' studies". Chengdu June 20th http://www.cd120.com/thirdparty/ueditor/jsp/upload/20190527/12981558939816406.pdf
- European Bioinformatics Institute / European Molecular Biology Laboratory (EBI/EMBL) workshop *pharmacogenomics in drug discovery,* Keynote, *Merck Auditorium,* Boston, June 17 https://www.ebi.ac.uk/industry/workshops

2017
- *Annual Nutrigenomics Meeting and European Commission funded FP7 Nutritech,* Opening Keynote,

"Dynamic changes of RNA-sequencing expression for precision medicine: the n=1 pathways approach", Medical University of Varna, 8/28-31/2017, http://press.mu-varna.bg/conferences/nugo/nugo-2017 http://nutrigenomics.topshare.com/nutritech/

- *Precision Medicine Day, Texas Medical Center (TMC) and University of Texas Center for Precision Health*, Opening Keynote, Houston, "Delivering better treatments through data-driven science: Post-genomics advances in precision medicine", Houston, 4/13/2017 https://www.uth.edu/cph/pmd/
- *American Medical Informatics Joint Summit 2017*, "Why Informatics?", Opening Video, San Francisco, 3/27/2017 https://www.youtube.com/watch?v=VuCq4cw5I-k&feature=youtu.be

2016
- *Shanghai Association for Science & Technology (SAST)*, The personalome era: automated practice-based reasoning in big clinical datasets and precision medicine of the dynamic transcriptome" 7/15/2016 https://twitter.com/ua_cb2/status/754086927234576385
- *6th Translational Bioinformatics Conference (TBC 2016*), "Integrative genomics analyses unveil downstream biological effectors of disease-specific polymorphisms buried in intergenic regions" Jeju, Korea, Oct. 16-18th. Keynote
- *4thWorldwide Innovative Networking in personalized cancer medicine (WIN Consortium Symposium).* Closing Keynote: "Is Big Data ready to improve outcomes or is it a new generation of garbage in/garbage out?" Paris, June 28th 2016. Jointly with Dr. Gordon B. Mills, UT MD Anderson Cancer Ctr.

2015
- *2nd SIBET International Symposium on Advanced Bio-Medical Diagnostics (SIS-ABMD BMESIS 2015), "*Beyond molecular biomarkers: precision therapy informed by dysregulated pathways" Suzhou, China, Sept 17th-20th. Keynote http://sis2015.csp.escience.cn/dct/page/65580
- *5th Translational Bioinformatics Conference (TBC 2015*), "The personalome era: precision therapy with dysregulated molecular networks" Tokyo, Japan, Nov 7-9th. Keynote http://tbc2015.jp/keynotes.html

2013
- *4th International Conference on Biomedical Ontology (ICBO 2013), "*Personalised therapeutics powered by ontology transforms*",* Montreal, 8 & 9 July http://www2.unb.ca/csas/data/ws/icbo2013/keynote.html
- *3rd Translational Bioinformatics Conference (TBC 2013*), "Personalome: clinically actionable 'Omics " Seoul, Korea, Oct 3-5th. Keynote http://www.snubi.org/TBC2013/

2011
- *Asia Pacific Bioinformatics Conference (APBC 1/2011)* Seoul, Korea http://www.snubi.org/workshop
- *Network Tools and Applications in Biology (NETTAB 10/2011*); http://www.nettab.org/ Pavia, Italy. "Network Models of Mesophenotypes in Personal Genomics and Targeted Therapies"
- *Ann. Symp. on Syst. Biol*., Korean Society for Mol. & Cellular Biol., Jeju, Korea http://www.ksmcb.or.kr/eng/

2010
- *1st Congress of Personalized Medicine*, Shanghai. Keynote Speaker, http://www.bitlifesciences.com/mdpm2010/
- *Wellcome Trust Sanger Inst. & EU Bioinform. Inst.(EBI) 1st CALB Workshop on the Collaborative Annotation of a Large Biomedical Corpus Challenge*. "Quantized phenotypes emerge as multiscale mechanisms underpinning complex traits". Cambridge, UK. http://www.ebi.ac.uk/Rebholz-srv/CALBC/workshop1/

2009
- *IEEE International Workshop on Genomic Signal Processing and Statistics* (GENSIP) "Using Phenomic Networks for Therapeutic Target and Biomarker Discovery". http://syen.ualr.edu/gensips2009/

2006
- *NIH National Library of Medicine,* Annual Investigator's Address to the Board of Regents. "Collecting Phenotypic Information from Multiple Databases for Correlation with Genomics". http://www.nlm.nih.gov/od/bor/2-06bor.pdf

2004
- *Columbia University PhD Convocation Faculty Address*, "The Subculture of One's Specialty in Graduate Studies", 5/17/2004. http://www.columbia.edu/cu/gsasalumni/PDF/2010_Convocationspeakers.pdf

2003
- *Special Libraries Association Conference,* Keynote Speaker, New York, NY.

2002
- *Annual Meeting of the Canadian Institute for Health Information* (CIHI), Opening Keynote, Quebec.

2001
- *State University of New York Downstate Medical Center,* Commencement Speaker, Medical Information Systems Technology (MIST) Program, New York, Oct 16

Press Coverage

2006
- "Bioinformatics Tool-Related Papers of Note", October 2006 (published Nov 17th), *BioInform* http://www.genomeweb.com/informatics/bioinformatics-tool-related-papers-note-october-2006

2008
- Some Diabetics Don't Have What They Thought They Had" by Andrew Pollack, ***The New York Times***, May 6, http://www.nytimes.com/2008/05/06/health/research/06hist.html?ref=research

• "Phenotype Lookup and Linkup: New Methods Arise to Mine Phenotypes for Gene Function", *BioInform*, Sept. 5, Vivien Marx. http://www.genomeweb.com/informatics/phenotype-lookup-and-linkup-new-methods-arise-mine-phenotypes-gene-function

2009 •"A cancerous melody" by Jet Akst, *The Scientist,* Sept. 25. http://www.the-scientist.com/blog/display/55998/

•"Talks at AMIA Summit Signal Progress in linking Clinical and Biomedical Informatics" *BioInform*, March 20, Vivien Marx. http://www.genomeweb.com/talks-amia-summit-signal-progress-linking-clinical-and-biomedical-informatics?page=3

•"Streamlining the Language of Genetic Medicine" by Robert Mitchum, *University of Chicago Faculty Focus,* Oct.19, 2009. http://pages.exacttarget.com/page.aspx?QS=472529ec60bdf32a666588374c54c4f033b3dcda813a7f4b

2010 • "Researchers Show Gains in Finding Reusable Drugs", ***Wall Street Journal***, Aug. 18th 2010. Amy Dockser Marcus. http://online.wsj.com/article/SB10001424053111903639404576514542144726276.html

• Computer Analysis Could Find New Uses for Existing Drugs, *iHealthBeat*, Aug. 18th 2011 http://www.ihealthbeat.org/articles/2011/8/18/computer-analysis-could-find-new-uses-for-existing-drugs.aspx

2011 •"Studies Describe Expression-based Strategy for Finding New Uses for Existing Drugs" *GenomeWeb Daily* , Aug. 17th. http://www.genomeweb.com/informatics/studies-describe-expression-based-strategy-finding-new-uses-existing-drugs

2013 •"Seasoned Drugs Offer Therapeutic Gold Mine / Drug repositioning", Genetic Engineering & ***Biotechnology News***, Vol 33, No 10, p.1,18-19. May 15. Caitlin Smith http://gen.epubxp.com/i/127418/19

• Sequencing papers of note, *In Sequence*, March 05, http://www.genomeweb.com/sequencing/print-last-weeks-sequencing-related-papers-note-57?page=2

• >4,600 Clinical Societies portals and news portal citing JAMIA 2013 paper on ICD10.

2016 • **White House Precision Medicine Initiative Summit 2/25** recognizes the commitments of the Lussier group within the Center for Biomedical Informatics and biostatistics. https://www.whitehouse.gov/the-press-office/2016/02/25/fact-sheet-obama-administration-announces-key-actions-accelerate https://uanews.arizona.edu/story/white-house-announces-ua-s-involvement-in-national-precision-medicine-initiative

2017 • "Bioinformatics: Synergy between disease-linked gene variants", Frontline Genomics 8/20/16 Liz Harley. http://www.frontlinegenomics.com/blog/6452/bioinformatics-synergy-disease-linked-gene-variants/

Conference Founder

1996 **Workshop on Computer and Internet Literacy for Physicians,** Royal College of Surgeons and Physicians of Canada**.** • Halifax, 9/26/1996 • Vancouver 9/25/1996.

2007 **MSCBB** - *Midwest Symposium on Computational Biology and Bioinformatics*

• Founding co-chair and member of the Scientific Program Committee in 10/6/2007.

2008 *Ontology of Cellular Networks,* Newark, NJ 3/26-27 (with B Smith & A Ruttenberg), NIH funded

2008 *Cancer Informatics Symposium*, University of Chicago Comprehensive Cancer Center

2008 **AMIA STB-** *AMIA Summit on Translational Bioinformatics* (Founding Session Chair)

• 2009: Conference Chair and Chair of the Scientific Program Committee

• 2010-2013: Conference Advisor and Ramoni Award Committee Member

2009 **ICBO** - *International Conference on Biomedical Ontology (*Founding Scientific Committee) ↳portal

2011 **TBC**- *Translational Bioinformatics Conference (*Founding Organizing Committee Member)

Boards: Editorial Boards, Scientific Review Boards

NIH

-National Library of Medicine (NLM)

2005-2006 Long Range Plan 2006-16 (Panel 4): Support for Genomic Science of the 21st Century, ↳portal

2009 Ad Hoc Committee reviewing the EUREKA grants (RFA-GM-09-008.html)

2011-2015 Standing member, Biomedical Library and Informatics Review Committee (BLIRC)

2014-2015 Chair of the NIH/NLM/BLIRC Committee (2014-15)

2016 Chair of the NIH/NLM Training Program Review (2016-2021 period)

-Center for Scientific Review (CSR)

2006 Biodata Management and Analysis (BDMA), 6/12-13/06 6/4-5/07

2017-present Standing member, Biomedical Computing and Health Informatics (BCHI), Oct 2017-TBD

-Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI)

2014-2015 *Office of Research Infrastructure Programs (ORIP) Division of Comparative Medicine (DPCPSI/OD).* Organizing committee member: NIH Symposium on "Linking Disease Model Phenotypes to Human Conditions". Chairing: Clinical and Experimental Biology Data Integration in the Emerging Field of Precision Medicine.

2015-2018 Committee member, "Innovate to Accelerate: Strategic Planning for the NIH Common Fund"

-National Center for Advancing Translational Sciences (NCATS)

2018-present Committee member, "Rare Diseases Clinical Research Network (RDCRN)" special emphasis panel 2019/05 ZTR1 RD-8 (01)

-National Institute of General Medical Sciences (NIGMS)

2003 MIDAS, Pilot projects for models of infectious disease agent study, 11/12-3/03

2011 GLUE Grants

Editor of Journals

2005-2007 Associate Editor, CBM, Computers in Biology and Medicine, Elsevier

2008 Guest Editor, *BMC Bioinformatics 10(2008)*,Proc.. of the 2008 Summit on Translat. Bioinform

2009 Guest Editor, *BMC Bioinformatics 10(2009)*, Proc. of the 2009 Summit on Translat. Bioinform

2009-2010 Guest Editor, *J of Biomed Inform 42(2009),* Special Issue on Method. for Transl. Bioinformatics

2012-present Associate Editor for **Network Science**, BMC Bioinformatics ↳portal

2014-2015 Guest Edit., IEEE Journal of Biomedical and Health Informatics, issue on " **Big Data in Health**"

Editorial Boards

1993-1995 CMI - *Canadian Medical Informatics Journal*

2003-2007 SNOMED International Editorial Board, College of American Pathologists

2006-2014 JBI- Journal of Biomedical Informatics, Elsevier

2007-2009 IHTSDO (SNOMED)- Internat. Health Terminology Std Develop.Org ↳portal

2008-present Genomics Insights, SAGE Publishing

2010-present JAMIA- Journal of the American Medical Informatics Association (British Medical J Group)

2010-present JPM - Journal of Personalized Medicine ↳portal

2011-present In Silico Biology (IOS Press), ↳portal

Scientific Advisory Boards

2002-2004 Board of Directors, NASA/MITAC Med Inform & Technol Applications Consortium

2002-2004 McGill "Infostructure de Recherche Intégrée en Santé du Québec" (IRIS)

2003-2005 First Genetic Trust

2004-2007 Cerner Corp. (Clinical Bioinformatics Ontology Board) ↳portal

2005-2006 IBM Healthcare & Life Sc., Primary Academic Partner of IBM Center for Computat Medicine

2006 University of Chicago Lung SPORE application

2008-2011 Consortium Neuropsychiatric Phenomics (annual review) ↳portal

2009 Collaborative Annotation of a Large Biomedical Corpus ↳portal

2010 Elect. Med. Record Peer Review Panel; for: President, Univ. of TX M.D. Anderson Cancer Ctr.

2010-present Worldwide Innovative Networking (WIN) in Personalized Cancer Medicine ↳portal

2013 Genome Canada & Genome BC Research Oversight Committee (Andrew Peen & Francis Lau PIs)

2013-2015 IPSEN Pharmaceuticals, ↳portal

2013-2017 Mouse Genome Database (MGD) Advisory Board (Janan Eppig, PI;) ↳portal

2018-present Genpact Pharmacovigilance Advisory Board (Armen Kherlopian, Chief Science Office)

2019-present Founding Board member (Editorial Board), Health Data Science Association HealthDSA.org

Service to Organizations and Societies

Conference Co-Founder

2008 American Medical Informatics Association (AMIA)Summit on Translational Bioinformatics (Informatics Summit)

Conference Chair

2009 Conference Chair and Chair of the Scientific Program Committee; AMIA Summit on Translational Bioinformatics (Now: Informatics Summit)

PhD Thesis Defence Committee

2007 Ying Tao, Columbia University
2011 Lee Sam, University of Michigan
2017 A. Grant Schissler, University of Arizona
2017 Qike Li, University of Arizona

Honours Thesis Defence Committee

Columbia University (2001-2006): A dozen candidates to the MSc and MA programs.
University of Chicago (2011): Ah Rume (Julie) Park, Kelly Regan (5/5/11).

Conference Session, Track Chair, and Workshop Chair

2005 American Medical Informatics Association (AMIA) Annual Symposium, Session 28-Natural Language Processing, 10/24. ↳portal
2006 Pacific Symposium in Biocomputing (PSB), Session "Towards a Semantic Web for Biology" ↳portal
2008 Founding Session Chair, AMIA Summit on Translational Bioinformatics, ↳portal
2008 PSB, Session Chair "Molecular bioinformatics for diseases: protein interactions and phenomics" ↳portal
2009 PSB, Session Chair "Molecular Bioinformatics for Disease" ↳portal
2015 TBC, Session Chair: “Publishing Translational Bioinformatics Papers in Peer-reviewed Informatics Journals”
2016-18 Precision Medicine Leaders Summit, San Diego ↳portal
2018 PSB, Session Chair "Reading Between the Genes: Computational models to discover function and/or clinical utility from noncoding DNA" ↳portal
2019 Precision Medicine Leaders Summit, Philadelphia
2019 PSB, Workshop Chair "Reading between the genes: interpreting non-coding DNA in high-throughput " ↳portal
2019 PSB, Workshop Chair "Translational informatics of population Health: How large biomolecular and clinical datasets unite " ↳portal
2019 Precision Medicine Leaders Summit, Pennsylvania June 11-12 ↳portal
2019 International Congress on Precision Medicine Beyond Cancer, “ Data Science in Multi-Omics”, Munich, Oct 14, ↳portal

Ad Hoc Grant Review Committees

2002-05 CAT Grant Review Committee, Columbia Center for Advanced Technology
2003 NSF TATRC Grant Review Panel, “Information Technology Research” Panel, 4/28-30/03
2003 TATRC Homeland Security Product Line Review, Telemed Adv Technology Res. Ctr 8/5/03
2007 The Israel Science Foundation (ISF), Phenomic Applications
2009 Mail Reviewer. ZRG1 OTC-K (58) RC1 COI
2009 Risk, Prevention & Health Behavior IRG , National Institutes of Health CS 11/13/09
2011 Indiana Ctr for Syst. Biol. & Personal. Med., for: Vice Chancellor Res., Indiana Univ. (IUPUI).

Workshops Organizer

RCSPC Royal College of Surgeons and Physicians of Canada. Chair and Organizer: 8 hr Workshop on Comput & Internet Literacy for Physicians. Annual meetings: • Halifax, 9/26/1996 • Vancouver 9/25/1996.

Scientific Program Committees Memberships

AMIA American Medical Informatics Association (Yearly Conf.: Fall & *Summit on Transl. Bioinformatics)*
- 2007, SPC Member, Foundations of Informatics Track, Chicago, Fall Symposium
- 2010 SPC Member, AMIA Fall Annual Symposium, Wash DC
- 2010,-11,-12: member of the STB Senior Advisory Committee
- 2014 Steering Committee Member for AMIA's 2014 Health Policy Invitational: *Personalized Medicine: Next Generation Informatics Opportunities and Challenges*

ACMI American College of Medical Informatics
- 2017, SPC Precision Medicine

BIOKDD 8th Internat. Wrkshp Data Mining in Bioinform, 2008, Las Vegas ↳portal

BOA Biomedical Ontology in Action, 12/8/06, Baltimore.

DILS Int.Conf. Data Integr. Life Sciences , ↳portal • 2012, • 2013

ECCB European Conf. on Computational Biology • 2005 ↳portal

GIW Language Biol & Med & 18th Genome Inform.
- Singapore 12/5-6 2007 ↳portal
- Kunming University of Science and technology 12/3-5 2018↳portal

HEALTHINF HEALTHINFO 2012

HISC IEEE-Healthcare Inform., Imaging and Syst. Biology, • Prog. Committee (SystBiol track), 27/9/2012

ICBO International Conference on Biomedical Ontologies ↳portal
(formerly SOFG: Standards & Ontologies for Functional Genomics)
- 2009 Member of the Founding Organizing Committee and Scientific Committee
- 2010 Scientific Committee

ICMLA Int. Conf. on Machine Learning and App.: Machine Learning, App. Bioinformatics & Comput. Biol,
- 2009, -10, -11, SPC Member

InCoB 12th Intern. Conf. on Bioinform. of the Asia-Pacific Bioinform. Network • 2013, SPC Member ↳portal

ISMB International Conference on Intelligent Systems for Molecular Biology
- 2007 ↳portal • 2008, ↳portal • 2018 • 2019

KRMED "Representing and sharing knowledge using SNOMED" Int.l Health Terminology Stds Devel. Org.(IHTSDO) & KRMED Wrk Grp on Formal (Bio-)Med. Knowledge Repr.of AMIA. Phoenix, 2008

MEDINFO

NETTAB Network Tools and Applications in Biology
- 2011 Clin. Bioinform., Pavia • 2012 Integrated Bio-Search, Milan ↳portal
- 2017 Methods, tools and platforms for the Personalized Medicine in the Big Data Era, Palermo

PSB Pacific Symposium on Biocomputing
Track Chair • 2005, • 2008, • 2009 • 2018; Review Committees: 2005, 2008, 2009, 2012, 2018

RECOMB RECOMB DREAM-SB; Conf. Syst. Biol., Regul. Genom. & Reverse Engineer., ↳portal • 2010 • 2012

TBC Translational Bioinform. Conf., Founding Editorial Board Member, SPC member: • 2011-present

Conference Committee Membership

1991-2003 PSG-06 Committee of the Computerized Patient Record Work Group of AMIA

1994-2003 Family Medicine Informatics Committee of AMIA

1999-2003 Inform. Work. Party the World Org. of Nation. Colleges, and Acad. Assoc. Fam. Phys. (WONCA).

2003-present Clinical genomics working group, AMIA

Journal Manuscript Review

- Clinical Journals: • Alzheimer's & Dementia • Alzheimer's & Dementia: Diagn, Assess, & Monitor (DADM)
• Alzheimer's & Dementia • Annals Internal Med • Am J Respir Crit Care Med • Clin Pharmacol & Therap
• Drug Discov. Today • Expert Rev. Mol. Diag. • J Clin Oncol • J of Pain • Lancet • Lancet Diabet & Endoc

• Lancet Infect Dis • Lancet • Lancet Diabetes & Endocrinol • Lancet Gastro & Hepato • Lancet Haematol
• Lancet HIV • Lancet Infectious Dis • Lancet Neurology • Lancet Oncology • Lancet Psychiatry
• Lancet Respir Medicine • Respir Med • New England Journal of Medicine (NEJM)
• Science Translational Medicine (STM) • Transl Res, & Clinical Interv (TRCI)

- Biological Journals: • Cancer Research • Journal of Molecular Biology • Molecular Systems Biology
• Nature Biotechnology • PLoS ONE • Proceed. National Academy of Science (PNAS) • Protein
• Translational Research

- Genetics, Genomics and other molecular scale Journals: • BMC Medical Genomics • BMC Genomics
• Cancer Genetics • Drug Discovery Today • Genetic Epidemiology • Genome Biology • Genome Medicine
• Genomics • Genome Research • Genomics, Proteomics, & Bioinformatics • Human Molecular Genetics
• Nature Genetics • Nature Genomic Medicine • Nucleic Acids Research (NAR) • Physiological Genomics
• Pharmacogenet. & Genomics • Proteomics

- Informatics (Bio- and Clinical), Computational Biology and Computer Science Journals: • Applied Ontology
• Artificial Intelligence in Medicine • BMC Bioinformatics • BMC Medical Informatics and Decision Making
• Bioinformatics • Briefings in Bioinformatics • Canadian J. Med Inform • Cancer Informatics
• Computers in Biology and Medicine • Cancer Informatics • Internat J Medical Informatics (IJMI)
• Computer Methods and Programs in Biomedicine • J Am. Medical Informatics Assoc. (JAMIA)
• J Biomed. Informatics (JBI) • JCO Clinical Cancer Informatics
• J Bioinf. & Compt. Biol. (JBCB) • J Decision Support Systems
• PLoS Computational Biol. • PROTEINS: Structure, Function & Bioinf

- Population Health Journals: • Health Policy and Technology • Lancet Global Health

Membership to Societies and Associations

1985-1989	CCPE	Canadian Council of Professional Engineers
1992-1996	CRCQ	Clinical Research Society of Quebec (Club de Recherche Clinique du Quebec)
1991-1998	COACH	Canadian Medical Informatics Association
1993-5, 2012-present	IEEE	Institute of Electrical and Electronics Engineers
1989-2007	CMA	Canadian Medical Association
1990-present	AMIA	American Medical Informatics Association
2005-present	ACMI	American College of Medical Informatics (Inducted Fellow)
2007-present	ISCB	International Society for Computational Biology
2010-present	SCTS	The Society for Clinical and Translational Science
2011-present	AACR	The American Society for Cancer Research
2012-present	HIMSS	Healthcare Information and Management Systems Society
2012-present	AAPS	The American Association of Pharmaceutical Scientists
2012-present	AAAS	The American Association for the Advancement of Science
2012-present	ASHG	The American Society for Human Genetics

Intellectual Property

- Patent application 2016. Pharmacogenomics of Intergenic Single-Nucleotide Polymorphisms and in Silico Modeling for Precision Therapy. Arizona ref. no. UA16-224; L&G ref. no. 582806: 55-16P; Y.A. Lussier, H. Li, I. Achour, J. Berghout.
- Patent application. System and method of predicting personal therapeutic response (WO 2015/051192 A1). Publication Date 09.04.2015. Y.A. Lussier, V. Gardeux, I. Achour.
- Patent US20100010804A1 12/498,898: methods and systems for Extracting Phenotypic Information from the Literature via natural Language processing (C Friedman, YA Lussier, L Ena) -2009/7/7 (Baker Botts LLP file# 070050.3791)
- Patent 20060074991 - System and method for generating an amalgamated database. Clinigene. Internat. Patent App. PCT/US03/35470, filed 11/6/03, published as WO 2004/044818 on 6/2/04, priority claims to provis. U.S. app.#60/424,728, filed November 6, 2002. Lussier YA, Cantor M, Sarkar IN. App#: 11/120,715
- Terminological Map. Continuation-In-Part of Internat.Patent App#PCT/US03/35470. Lussier YA, Li J (2003).
- Invention report on DynaTreeviewer, Liu HF, Lussier YA, Friedman A (2002).
- Invention report on Phenogene Discovery System, Friedman A, Lussier YA, (2004).
- Invention report on viral database Palacios, Liu, Jabado, Briese, Hegi, Lussier, Lipkin WI. (2004). (GreeneChip).
- Invention on an oligonucleotide microarray for the detection of all known vertebrate viruses. Palacios G, Liu Y, Briese T, Lussier YA, Lipkin WI (2005).
- Invention report on Phenogene Viewer, Tao Y, Lussier YA, Friedman C (2004).
- Invention report on Nondeterministic Model Theoretic Mapping between Heterogeneous Databases, Lussier YA, Li J (2004).
- Invention report on Flat Treeviewer. Sam L, Lussier YA. (2005)
- Invention report on User-Directed Pearls of Knowledge. Lussier YA, Sam L, Borlawsky T. (2005).
- Invention report on Vigi*LENS* server-based and ontology-driven event monitor (2005), Lussier YA, Shortliffe EH, Li J, Kamasumadram N, Hripcsak G, Cimino J, Forman B, Wajngurt D, Johnson J, Sengupta S.

Teaching Experience and Responsibilities

Clinical teaching

1991-6 Clinical Instructor in Family Medicine, Ctr Hospital. Hôtel-Dieu de Sherbrooke, *University of Sherbrooke*,

1994-8 Clinical Instructor, Department of Family Medicine, *University of Sherbrooke*, Canada.

2002-5 Clinical Instructor, Department of Medicine, *Columbia University*

Informatics Courses

- Columbia University *(Dept. Biomedical Informatics)*

1999 Invited Lecturer. History of standard coding systems, G4020 Representation of Medical Data, 1/29/99

1999 Invited Lecturer. "Software Project Management", G4098 Topics In Medical Informatics, 11/99

1999 Invited Lecturer. "Basic Web Design Techniques", G4030 User Interfaces in Medicine, 8/4/99

1999 Invited Lecturer. "Advanced Web Design Techniques", G4030 User Interfaces in Medicine, 8/11

2001 Invited Lecturer. "Pen-based Computing", G4030 User Interfaces in Medicine**,** April 27

2001-4 Course Director, G4099. Research Seminars, Department of Biomedical Informatics (50 students).

2003-5 Course Director, G4055 Decision Support in Biomedicine, (24 students).

2003-4 Module Instructor: Intro to Biomed. Informatics, BMEN E1001x Engineering In Medicine, Dept. of Biomed. Engineer., Fu Foundat. School of Engineer. & Appl Sc, *Columbia University,* 10/27/03, 11/ 8/04.

2004 Module Instructor: G4099. "Computational approaches to high throughput analyses of non-molecular phenotypes" Research Seminars, (55 students), 2/17/04

2004-5 Course co-Director: Methods in Biomedical Informatics (G4002), (25 students). 4 Modules: Theories on Biological Data, Reasoning and Logic, Biological Ontologies, Knowledge Engineering.

- The University of Chicago

2007 Module Instructor: "Genomic approaches to accelerate the discovery and translation of biomedical knowledge" 10/4/07, BIOS 25406 "Translational Biomed Research, from bench to bedside".

2008 UCCRC Research Seminars in Cancer Informatics, Lecturer: Dr. Lynn H Vogel (CIO of MD Anderson) [2008/9/26). http://uccrc.uchicago.edu/docs/Aug%20Sept%208-12%20(3).pdf

2009 Module Instructor: "Translational Molecular Bioinformatics" 5/14/09, BIOS 25406 "Translational Biomedical Research, from bench to patient bedside".

2009 Module Instructor: "genomics in Cancer" 12/2/09, "12/7/09" Bioinformatics Analyses in Cancer" CABI 30800 "Cancer Biology 1: Human Cancer Presentation and Modeling".

2010 Seminar. Computational Phenomics and Thorough Biological Characterization Uncovers a Novel Tumor Suppressor microRNA and its Regulatory Network. The IGSB Fellows Series. 5/20/10.

2010 **Course Director.** Personal Genomics and Translational Bioinformatics. (BIOS 27100, CCTS 42100)

2011 Module Instructor: "Bioinformatics in Cancer" 24/5/11, Cancer Biology 3: Signal Transduction and Model Organisms (CABI 31200; NPHP 31200; CPHY 31200). .

- The University of Illinois at Chicago

2012 Seminar, Medical Scientist Training Program

2012 Informatics Colloquium of the Dept. of Health Informatics,

2012 UIC Bioengineering Seminar,

2013 Center for Pharmaceutical Biotechnology Seminar Series,

2013 Institute for Pulmonary Respiratory Medicine Seminar Series,

- The University of Arizona

2014 Problems in complex disease biology (CMM595H), Instructor for " Computational and system approaches to precision therapy of complex diseases" .

2015 Problems in complex disease biology (CMM595H), Instructor for " Computational and system approaches to precision therapy of complex diseases".

2018 What's in a genome? (195 Honors Professor Seminar), Instructor for "The role of single molecule biomarkers and biologic systems classifiers in Precision Medicine and Nutrigenomics."

-Other

1986 Module Instructor. Tétreault L, Lussier YA, Biostatistics Course - Masters in Experimental Medicine, School of Medicine, University of Sherbrooke

1991 Invited Course Director (3 weeks, 6 days/wk) to Faculty members. "Designing & programming databases". School of Medicine, University of Bangui, Central African Republic.

Faculty Advisory Committee and/or Mentorship

K-award Mentorship

-- Designated Mentor in funded K Awards--

• Jason H. Karnes, PharmD, PhD, (K01 HL143137 GENOMIC AND TRANSCRIPTOMIC INFLUENCES ON HEPARIN-INDUCED THROMBOCYTOPENIA; 2019-2024)
- Now: Associate Professor of Pharmacy, University of Arizona, 2016-present (funded in 2019).

• Ankit Desai, MD, (K awarded 2011-2016),
- Now: *Associate Professor of Medicine* Un. of Indiana (2018-present)

• Julio Duarte, Pharm D, 2013-2016;
- Now: *Dir., Pharmacogenomics Lab & Assist. Prof Pharm. Sc*, Univ Ill Chicago, 2013 (K awarded in 2015)

• Roberto Machado, MD, (K-awarded 2009-2012),
- Now: *Associate Prof. of Medicine,* Univ of Illinois at Chicago

• Younghee Lee, PhD, trained from post-doc to Res Assoc 2008-2013 (K awarded in 2011);
- Now: *Associate Professor of Biomedical Informatics*, University of Utah

• Huiping Liu, MD, PhD R. Assist. Prof. Univ of Chicago (K99 CA160638-01, 2012/9-2013).
- Now: *Assistant Professor,* Case Western University

• Frederico Innocenti, MD, PhD, (K awarded 2008-10),
  - Now: *Assoc. Prof. Pharmacotherapeutics*, UNC Eshelman Sch. Pharm.

-- in application for K Awards and young investigator awards by tenure-track Faculty members --

• Melinda Sun, M.D., Ph.D., Clinical Assistant Professor of Pathology, University of Arizona, A Breath of Hope Lung Foundation Research Fellowship awards 2020-present
• Franz Rischard, M.D., Associate Professor of Medicine, University of Arizona, K-24 2019-present
• Michael B. Insel, M.D., Assistant Professor of Medicine, University of Arizona (award other than K, 2020/1)
• Anita Koshy, M.D., Assistant Professor of Immunology and Neurobiology, University of Arizona, 2015-2016.
• Jenny Lo Ciganic, Ph.D., Assistant Professor of Pharmacy, University of Arizona 2014-2015.
• Jin Zhou, Ph.D., Assistant Professor of Epidemiology & Biostats, University of Arizona 2014-2015/12.
• Kain Khalpey, MD, PhD, Assoc Prof of Surgery, University of Arizona, K23 ; 2014-2015.
• Pritesh Patel, MD, Assist. Prof., Dept. of Medicine, Univ Ill Chicago, 2012-2013
• Lucy Chen, MD, Assist. Prof., Dept. of Medicine, Univ Ill Chicago, 2011-2013
• James Chen, MD, 2011-12 (Now: *Assist. Prof of Biomedical Inform. and Oncology* Ohio State University)
• Yang Xiang, PhD, 2012-13 (Assist. Prof of Biomedical Inform., College of Medicine, Ohio State University)
• Xinan "Holly" Yang, PhD, 2012-13 (Res. Assist. Prof, The University of Chicago)
• Peter H. O'Donnell, MD, 2010-11, Assistant Professor of Medicine, Univ of Chicago
• Dana Elderson, MD, 2009-11, Assist, Prof, of Med,, University of Chicago (Advis. Commit.; K award appl.)
• Sam Volchenboum, MD, PhD, 2007-11, Assist Prof Hem-Onc, Now: CTSA *Informatics Dir.,* Univ. of Chicago
• Michael Grassi, MD, 2006-2010, Now: *Assoc. Prof. Ophthal*., Univ. Ill.at Chicago
• Liliana Moreno, PhD, 2008-10, Now: Res. Assist. Prof., Northwestern University
• Andy Minn, MD, PhD, 2007, Assist. Prof. Rad. & Cell. Oncol., Univ. of Pennsylvania, (mentor, K award appl.)

- in application for K Awards by Fellows --

• Natalie Scholpa, Ph.D., Post Doctoral Fellow of Pharmacy, University of Arizona (K01) ; 2019.
• Tomas Nuño, Ph.D., Post Doctoral Fellow of Pharmacy, University of Arizona (K01) ; 2014.
• Joel Pekow, MD, Fellow, Section of Gastroenterology, 2009-2011, Univ of Chicago (K8 award).
• Ankit Desai, MD, 2006-10, Resident in Cardiology, Univ of Chicago (prelim. studies, K-award)

Faculty Advisory Committee or Faculty Mentorship for Independent Researchers

• Michael Maitland, MD, 2007-2011 (redaction of grants), Now *Assist Prof of Medicine*, University of Chicago
• Eneida Mendonça, MD, PhD, (2007-10); Now: *Assoc Prof of Stats & Med Inform*, Un. of Wisconsin Madison
• Sameer Badlani, MD/MBBS, (2007-8; Un of Chicago) ; Now: *CHIO*, Intermountain Healthcare Utah
• Edwin Posadas, MD, (2007) ; Now: *Medical Director of Urology & Associate Professor at* UCLA
• Savitri E. Fedson, MD, (2006-8); Now: *Associate Professor of Cardiology*, University of Chicago

Mentorship of Visiting Scholars

• Sung Hak Lee MD, PhD, 2017-2019, Prof of Pathology, College of Medicine, The Catholic University of Korea, Banpodaero 222, Seocho-Gu, Seoul, Korea, 137-701.
• Xiaomei "Carol" Wei PhD, 2016-2018, Associate Prof, College of Informatics, Huazhong Agricultural University, China.
• O Kyu Noh PhD, 2013-2014, Assistant Prof of Radiation Oncology, College of Medicine, Ajou University, Seoul, Korea.

Mentorship of Research Professors

• Darren Cusanovich, PhD, Now: *Res. Assistant Professor*, Dept. Cellular and Molecular Medicine, U of Arizona
• Alvaro Moreira MD, MSc (2019-present), Asst Professor-Tenure track in Neonatal/Perinatal Medicine University of Texas Health San Antonio (UTHSA; PRIDE mentorship grant)
• Francesca Vitali PhD (2016-2020), Now: *Res. Assistant Prof.,* Dept. of Medicine, U of Arizona
• Jung Wei Fan PhD (2016-2019), Now: *Res. Assistant Prof.,* Dept. of Medicine, U of Arizona
• Joanne Berghout PhD (2016-2020), Now: *Res. Assistant Prof.,* Dept. of Medicine, U of Arizona
• Haiquan Li PhD (2010-2016), Now: *Assistant Prof.,* Dept. of Medicine, U of Arizona

• Andrew Boyd MD, Res. Assist. Prof., Dept. of Medicine, U of Illinois at Chicago, 2010-2012
  - now*: Assist Prof of Biomedical and Health Information Sciences*, University Illinois at Chicago
• Younghee Lee PhD, Res. Assist. Prof., Dept. of Medicine, U of Chicago, 2007-2011
  - now*: Associate Prof of Biomedical Informatics*, University of Utah
• Xinan Yang PhD, Res. Assist. Prof., Dept. of Medicine, U of Chicago, 2010-2011
• Yong Huang MD, Res. Assist. Prof., Dept. of Medicine, U of Chicago, 2007-2011

Pre-Doctoral Research Advisor for

• Dillan Thomas, *PhD candidate in Statistical Informatics*, 2017-present (Lussier –main advisor)- Dept. Mathematics Univ. of Arizona.
• Samir Rachid Zaim, *PhD candidate in Statistical Informatics*, 2016-present (Lussier-main advisor)- Dept. Mathematics Univ. of Arizona.
  - Inducted Ambassador for Data Science , NSF-funded Data7 Institute, University of Arizona
• Maria Louise Adelus, *MD-PhD candidate*, (Lussier –main advisor; pending admission to biostatistics in Fall 2018)- College of Medicine- Tucson; Univ. of Arizona.
• Pradeep Chowdary Koripella, *MD candidate*, 2017-18, College of Medicine Tucson, Univ. of Arizona.
• Grant Schissler, *PhD in Statistical Informatics*, 2014-2017 (completed; Lussier & W Piegorsch co-main advisors) - Dept. Mathematics Univ. of Arizona.
• Qike Li, *PhD in Statistical Informatics*, 2014-2017 (completed; Lussier & H Zhang co-main advisors)- Dept. Mathematics Univ. of Arizona.
• Peter LoPresti, MD/PhD candidate, 2012-2013- Dept. Bioengineer. (Sect Bioinform.) Univ. of Ill. at Chicago.
• Alan Perez-Rathke, MD/PhD candidate, 2012-2013- Dept. Bioeng.(Sect Bioinform.) Univ. of Ill. at Chicago.
• Gurunadh Parinandi, MSc, 2012-2013 Dept. Bioeng. (Sect Bioinform.) Univ. of Ill.at Chicago.
  -now *PhD candidate in mathematics* - Univ. of Ill.at Chicago
• Kelly Regan, 2011-2012 – Univ.of Chicago Honors Grad.
  - now *MD/PhD candidate in Biomedical Informatics* , College of Medicine Ohio State University
• Kanix Wang, 2011 – PhD candidate, University of Chicago- Committee on Genetics and Systems Biology.
• Ying Tao, M.D., PhD (PhD completed in 2006 –Lussier main advisor)., Columbia University.
• Matthew Crowson, 2008, Hamilton College student (summer research staff)
  - Now: *Surgery Fellow,* Duke Univ.
• Sascha Goonewardena, MD, 2007-9, research rotation, Resident in Medicine
• James Chen MD (2004-2012), (i) Fellow, Hematology/oncology, The University of Chicago (2008-2012) (ii) Resident in Internal Medicine Georgetown University , Rotation, Univ. of Chicago 11-12/2006, (iii) 2 rotations at Columbia University as MD Candidate at NJ School of Medicine (2004-2006).
  -Now: *Assistant Professor of Oncology and Biomedical Informatics* @ Ohio State University
• Spiro P. Pantazatos, M.Sc., Ph.D. Candidate (rotation) –Columbia University 2004-6 .
  -Now: *Post-Doctoral Fellow* @ Columbia University (Advisor: Joy Hirsch)
• Lee Sam, M.A., 2004-6, Now: *preparation of PhD dissertation* @ University of Michigan
• Michael Bales, Ph.D. Candidate, research rotation, 2005-9, Columbia Univ (PhD Committee),
• Tzu-Lin Hsiao, M.D., PhD (rotation) – Ontology-Anchored Phenomics & Anatomic, 2005, Columbia Univ
• Chintan Patel, M.Sc., PhD (rotation) –Graph theory approaches to phenotypic integration, 2004, Columbia Univ
• Paola Karina Tulipano, M.A., Ph.D. Candid., res. rotation, 2003-4, Columbia Univ- Now Scientist Philips labs.
• Xiaoyan Wang, Ph.D., 2003-4, Columbia Univ.; Now: *Assistant Professor* @ University of Maryland
• Neil Sarkar, Ph.D.(rotat., 2002-4) Columbia Univ;
  -Now: *Associate Prof. & Dir.* Biomed. Inform., Duke Univ.
• Jeeyai Choi, research rotation, Ph.D., 2002-3, Columbia University
• Matthew A. Neimark, M.D. Ph.D. candidate (rotation) –Individualized Medicine, 2002, Columbia Univ
• Chani Weinreb MD, (rotation)–Biomed. Database Interoperability, 2001, Columbia Univ

Post-Doctoral Fellowship Research Advisor for

--Primary Advisor—

• Yuan Raymond Shang, PhD, *Res Assoc* The University of Arizona (2017-present)
• Qike Li, PhD, *Res Assoc* The University of Arizona (2017-2018)
• Nima Pouladi, MD/PhD, *Res Assoc* The University of Arizona (2014-2016)
• Ikbel Achour PhD, The University of Illinois at Chicago (2012-13),
- Now: *Translational Medicine Director at MedImmune (AstraZeneca), Advisor Precision Health for CB2 UofA, EVP TAYP, Co-Chair WIB*
• Vincent Gardeux PhD, 2012-2015 (trained from Post-Doc to Assistant Professor)
- Now: *Research Collaborator at* École Polytechnique Fédérale de Lausanne
• Xinan Yang PhD, Post-Doctoral Fellow, The University of Chicago (2008-2011).
- Now: *RA Assistant Professor @* Univ. of Chicago
• David Mann, MD, 2008-10, Resident in Dermatology, University of Chicago (research advisory role).
• Younghee Lee, PhD, Post-Doct. 2007-10 Fellow, onco-microRNAs & genetics studies, Univ of Chicago
- Now: *Associate Professor of Biomedical Informatics*, University of Utah
• Michael Cantor, M.D. M.Sc. (Post Doctoral fellowship) – Genomic Medicine, 2001-4, Columbia University
- Now: *Associate Professor* & *Chief Medical Officer* , New York Univ
• Te-Hui Kuo, M.D., M.A. (Post-Doct. Fellow)–Mining Drug-Disease Contraindications, 2001-3, Columbia Univ
• Hedi Hegyi, Ph.D., (Post-Doct.Fellow.), Columbia Univ., 2004-5; Now: *Fellow,* Inst.of Enzymology, Hungary

--Secondary Advisor--

• Maira Soto, PhD Fellow in radiation oncology (primary advisor: Kathleen Rodgers), The University of Arizona, 2018-present (F32 award submission).
• Christopher Morisson, MD,PhD Fellow in radiation oncology (Advisor: Baldassarre Stea), The University of Arizona, 2017-present (oligometastasis progression classifier).
• Huiping Liu, PhD, Post-Doct. (Advisor: G Greene), 2010-2011(microRNA expression analyses).
• Eun-Hee Shim, PhD, post-doct. (Advisor: J Cunningham laboratory), 2010-11 (genomic studies analyses).
• Wei Zhang PhD, Fellow, Hematology/oncology, The University of Chicago (2009-10), Now: *Asst Prof,* UIC
• Tanguy Seiwert, MD (Microarray Analysis), Pulmonary Fellow, The University of Chicago, 2006-7.
• Ankit Desai, cardiology fellow, MD (Microarray Analysis), Pulmonary Fellow, Univ of Chicago, 2006-7.
• Chern-Sing Goh, Ph.D. (Post-Doctoral Fellowship; 2004-2005), Now: software consultant .
• Vincent Delbagno, M.D., M.A. (rotation, 2004), Columbia University; Now: consultant
• Aylit Schultz, MD, (intern; 2002-3), Columbia University
-Now: *Assistant Professor of Medicine* at Tufts Medical Center and

Master Degree, Undergraduate, and High School Research Advisor for

• Aracely Lopez Esquer, Arizona State University Biomedical Science candidate (2019-present), Border Latino and American Indian Summer Exposure to Research (BLAISER) mentorship program.
• Liam Scott Wilson, awardee of the University of Arizona KEYS research mentorship program, Mesa High School Senior (2018) and University of Arizona Computer Science degree candidate (Honors College 2019-present), Flynn Scholarship awardee, 2018-present.
• Wesley Chiu, Basis Tucson North High School Senior (2018) and University of Arizona Engineering degree candidate (Honors College 2019-present).
• Brent Lee Walsh, Basis Tucson North High School Senior (2018) and University of Arizona Neuroscience degree candidate (Honors College 2019-present).
• Minsu Pumajero, University High School Graduate & freshman at University of Arizona Computer Science Major, 2018.
• Benjamin Isabelle, Basis Tucson North High School Senior, 2018.
• Jacob Smith, Catalina Foothills High School Senior, 2015; Rice Graduate and MD candidate at University of Texas at Rio Grand Valle.

• Kyle Goble, win Walsh, B. Ap. Sc (engineering) Student, UA Diversity mentoring program, 2015. MD Candidate at Medical College of Georgia in Augusta.
• Edwin Walsh, B. Sc (engineering) 4th yr Pritzker School of Medicine Student, 2008.
• James Deitzer, Bioengineer, M.A., 2005, Columbia Univ, Genomic Ontologies in SNOMED.
• Tara Borlawsky, M.Sc. – Distributed Knowledge Management for Clinical Alerts, 2004, Columbia University.
-Now: *Dir. Of Research Informatics Services,* Ohio State University Ctr.
• Daniel Rappaport, M.A. candidate, NLP & ontologies of genetic expression 2004-5, Columbia University.
• Huinar Quek, M.A. – Biomed DB Interoperability, 2002-2003, Columbia Univ
-Now: Lecturer, Biomed Engineer., Nanyang Technol. Univ., Med Inform Dir, Ministry of Health (Singapore)

Academic advisor for
• Pallav Sharda, M.A., 2002-3, Columbia Univ. – Now: Business Intelligence Lead, Kaiser Permanente.
• Vincent M. Delbagno, M.D., M.Sc., 2002-4, Columbia University
• Jianbo Lei, M.D.., M.Sc., 2002-2004, Columbia University.
• Kwok-Tim Chan, M.D., M.Sc., 2003-4, Columbia Univ-Now: Senior Med Officer, Dept. of Health, Hong Kong.
• Sameer Malhotra, M.B.B.S., M.A., 2003-4, Columbia University.

Grants, Scholarship, Fellowship Support and Contracts

Past Scholarships

• 1986	Research Scholarship	Graduate student, Fond de Recherche en Santé du Québec
• 1987	Research Scholarship	Graduate Student, Kidney Foundation of Canada
• 1987	Research Scholarship	Graduate Student, Fond de Recherche en Santé du Québec
• 1998-2001	Post-Doctoral Research Fellowship	Independent Research Fellowship – Medical Research Council of Canada (MRC) http://www.cihr-irsc.gc.ca/f/2798.html

Current Grants

• NIH/NIAID U01AI122275-01 Galgiani/**Lussier** (MPIs) 2016 –2021 $2,270,000
Immuno-Genetic Basis for Human Disseminated Coccidioidomycosis. A small proportion of infections result in progressive, debilitating, even life-threatening illness (disseminated coccidioidomycosis or DCM), especially in African Americans. All evidence suggests that this heightened susceptibility is due to differences in immunologic responses of the patient, clearly understood in overtly immunodeficient persons (i.e., those with AIDS) but is not understood for the large majority with DCM. The genetic underpinning of DCM will be investigated in ~400 subject with European and African ancestry **using novel single-subject transcriptome analyses** (**N-of-1-*pathways***) informing targeted sequencing. Specifically, we will identify the personal transcriptome response of their peripheral blood mononuclear cells (PBMCs) when incubated *ex vivo* with cocci vs vehicle control. IRB 1403252480

• NIH 1UG3OD023171-01 Kron (formally Ojo), Rieman (MPIs) **Lussier** (Informatics Director; Co-I) 07/2016-06/2021 $15,500,000
White House Precision Medicine Initiative Cohort: University of Arizona - Banner Health Precision Medicine Initiative Cohort Enrollment Center.
A of Us - Precision Medicine Initiative grant. PHI serviced using the Clinical Data Warehouse developed by the Lussier team (and former Lussier team members that transferred to Banner for that purpose)

• R21AI152394 **Lussier (PI)** 4/1/2020-3/31/2022
Systems-level genetic patterns underlying disseminated coccidioidomycosis in humans
Disseminated coccidioidomycosis (DCM) is a rare and potentially life-threatening consequence of infection by Coccidioides spp. The reason why certain otherwise healthy people develop this adverse outcome while most others do not is largely unknown. However, it is thought to be genetic, primarily involving variation in the immune system and for the majority of cases does not appear to be a Mendelian disorder. Using a pathway gene set approach allows us to look at differentially impacted systems, rather than expecting all patients to carry the same mutation. We will be the first to conduct genome-wide pathway analyses (exome and GWAS) on the human genetic variants and complex patterns that underlie susceptibility to disseminated coccidioidomycosis, using DNA collected from over 500 people.

- NIH/NIA 1R01AG053589 Brinton-Diaz (PI) 9/1/2017-8/31/2022 $1,2500,000
  Aging and Estrogenic Control of the Bioenergetic System
  The fundamental issues to be investigated are the mechanisms whereby estrogen integrates bioenergetic responses across two genomic compartments while simultaneously monitoring energetic demand and performance in real time.
  Role: Co-I

- NIH/NCI CA023074 Kraft (PI) **Lussier** (Assoc Dir, Precision Med & Bioinform) 2016 –2021 $11,509,520
  Support for the critical infrastructure and shared resources needed by our Cancer Center scientific program investigators to seek new treatment methods to both prevent and cure cancer.

- NIH/NHLBI U01 HL125208 Yuan/Rischard (MPIs) **Lussier** (Genomic Core Director) 2014 – 2019
  Phenomic and Genomic Study to Subphenotype Hispanics with Pulmonary Hypertension (PH). This proposal will redefine the PH classification using genomics & epigenetics to improve diagnosis, prognosis and therapy. Collected 160 "WHO group 1 PAH" PBMC samples +28 controls (Other lung diseases) due for annual report – over 500 subphentyopes (mortality, functional outcome, hemodynamics, imaging, …) (June 2017).

- NSF 1635379 Fan (PI) **Lussier** Co-I 8/1/2016 - 7/31/2019 $199,889
  Collaborative Research: Automated Knowledge Discovery in Reliability and Healthcare from Complex Data with Covariates. Motivated by reliability and healthcare having big social impacts, our objective is to investigate a new methodology for automated knowledge discovery from complex data with covariates using matrix-analytic models, and statistical tools for efficiently collecting such data or selecting the useful subsets from massive data for quick implementations.

- NIH/NHLBI HL132532 Guerra/Martinez/Wright (MPI) **Lussier** (Co-I) 2016 –2019 $27,689,255
  Early Origins of Chronic Airflow Limitation: Outcomes Into the 4th Decade of Life, Tucson Children's Respiratory Study (CRS). We hypothesize that abnormal responses to respiratory viruses may be major contributors to the early origins of asthma and COPD. As the only birth cohort that has followed a large number of non selected subjects into the 4th decade of life, the TCRS offers a unique opportunity to investigate the early life risk factors for and the potential disease mechanisms involved in the origin of asthma and COPD in adult life.3 specific aims: 1.To identify host and environmental factors in early life that predict lung function deficits, persistence of asthma, and development of airflow limitation in mid-adult life; 2. To determine the role of RSV LRI in early life and its interaction with active smoking as determinants of lung function deficits, and to characterize associated alterations in gene expression in induced sputum cells and in PBMCs exposed to RSV. 3. To determine the molecular endotype generated in nasal epithelial cells in response to rhinovirus infection that distinguishes subjects with adult asthma and a history of persistent wheezing in early life from those with adult asthma but without such history. Aims #2-3 comprise an ex vivo assay that expose the human subject's cells to virus and unveils dysregulated molecular patterns **using novel single-subject transcriptome analyses** (**N-of-1-*pathways***).

- NIH/NHLBI P01 HL126609-01 Garcia (PI/PD) **Lussier** (Genomics Core Dir) 2015 –2020 $1,514,666
  Cytoskeletal Regulation of Lung Endothelial Pathobiology. This PPG, in its 16th-20th year of proposed funding, will integrate our deeply mechanistic, highly translational and clinically-relevant studies to drive new knowledge about the complex field of inflammatory lung injury. A major thematic direction is understanding the spatial regulation of the dynamic actomyosin cytoskeleton (central stress fibers, lamellipodia formation, focal adhesion formation) involving MLCK, cortactin, c-Abl, EVL, β-integrins. Furthermore, by utilizing functional genomics to evaluate ALI-associated SNPs (polymorphisms) for these key cytoskeletal-associated genes, our programmatic approaches are woven into experimental strategies that test novel therapies to attenuate inflammatory edema. This multi-faceted systems biology translational application will provide the basis of understanding for **personalized therapies**.

- N5P01HL126609-02 **Lussier** (Assoc. Director, Precision Medicine & Bioinformatics) 2017–2021 $255,205
  Proteome and Genome *Core* will provide essential, cutting edge, proteomic/transcriptomic/genetic expertise to facilitate the translational impact of this highly integrated PPG. This PPG Core will be responsible for providing the research investigators with a well characterized ARDS biobank.

- P01HL134610 Black (PI) **Lussier** (Co-I, Core director) 9/1/2017-8/31/2022
  Genetics, epigenetics, and post-translational modifications in ventilator- induced lung injury (VILI)
  Core B: Molecular Biology and Genetics
  This PPG is focused on studying the critical role of mechanical ventilation, a life-saving intervention in critically ill patients with respiratory failure, in creating excessive mechanical stress that directly augments lung injury, a syndrome known as ventilator-induced lung injury (VILI).
  Role: Co-Investigator, Core B director

- P30CA023074 (PI: Thomson) 7/14/2016-6/30/2021 0.12 Person Months
  Responsive Engagement and Cessation in Cancer Health (REACCH)
  The overall goal of this project is to implement a formally integrated, comprehensive tobacco cessation program with measured outcomes.
  Role: Co-Investigator

Training Grants

- NIH/NHLBI HL126140 Garcia/Moreno (MPI) **Lussier** Co-I 2019/01-2023/01
  The *Arizona PRIDE-25 Advanced Health Disparities Training Program in Heart, Lung, Blood, and Sleep.*
  This training program will enhance diversity and capacity for health disparities research in early career clinical and nascent translational health science academics who come from under-represented minority backgrounds.
  Role: Lussier mentoring Dr. Alvaro Moreira, Assistant Professor at University of Texas HSC

- K01 NHLBI, Jason Karnes PI, Lussier mentor
  Genomic and transcriptomic influences on heparin-induced thrombocytopenia
  Lussier will mentor Dr. Karnes in applying 'N of One' single-subject analytics to dynamic RNA changes observed in PBMC exposed to heparin *ex vivo*. Lussier has previously shown that gene expression classifiers can thereafter been conducted on the union of pathway-level features prioritized in each subject. This leads to cohort sizes orders of magnitude smaller than previously required for transcriptome-anchored classifier development, and enables discovery of candidate multi-characteristic biomarkers in rare disorders such as heparin-induced thrombocytopenia.

- NIGMS T32 GM084905, T. Secomb PI, Garcia/Lussier mentors
  Computational and Mathematical Modeling of Biological Systems

- DOD/DHHS Sally Reel PI, Lussier mentor
  Primary Care Training and Enhancement

- NIH/R25 Uwe Hilgert PI, Lussier mentor
  Course for Skills Development for Biomedical Big Data Science

Pending Grants

- NHLBI Rischard/Garcia/**Lussier** (MPIs) 9/1/2020-8/31/2025. GRANT12959310
  Utilization of an 'N of One' Strategy for PAH Trials in Latinos
  We have identified that, although Hispanic patients with pulmonary arterial hypertension (PAH) are a largely unstudied at-risk population, our studies identified unique Hispanic clinical and genetic susceptibilities for poor PAH outcomes. As PAH is a debilitating often fatal disease without a cure, we have created a specialized University of Arizona-led LATN PAT consortium (LATinx 'N-of-1' in PAh Trials) to examine the utility of "omics-intensive" genomic strategies in predicting/validating responses to combination PAH therapy and propose a novel biologic monoclonal antibody therapy. We speculate these studies will enhance the capacity to conduct clinical trials in at risk populations and lead to development of therapies that reduce the morbidity and mortality of vexing disorders with unmet therapeutic needs such as PAH. Supported by compelling preliminary data, published work and unique 'N-of-1' expertise, SA #2 will optimize use of the 'N-of-1'-pathway approach (ex vivo paired transcriptomes from a single patient) in treatment-naïve LATN PAT subjects. 'N-of-1' analyses will predict and verify pharmacological target sensitivity and clinical changes in RV response to up-front combination PAH therapy.

- NSF Zhang/ Watkins/ Kobourov (MPIs) 7/1/2020-6/30/2025
  TRIPODS: Advancing Data science Endeavors
  Transdisciplinary Research in Principles of Data Science (TRIPODS) Phase II application with the goal of promoting long-term, interdisciplinary research and training activities that engage theoretical computer scientists, statisticians, and mathematicians in developing the theoretical foundations of data science applied to medicine, environmental science, and engineering. A secondary role of this application is to help; establish and promote a diverse population to pursue careers in data science.
  Role: Co-Investigator

- NIH R-01 Ghishan 7/1/2020-6/30/2025
  Matrix Vesicles in osteoblast biology during health and intestinal inflammation
  Our proposal focuses on osteoblast function and fills the gaps in our understanding of the fundamental aspects of mineralization, and how they are affected by mediators associated with chronic inflammation.
  Role: Co-Investigator

- A Breath of Hope Lung Foundation Belinda (PI). 1/2020-4/30/2022
  Targeting lung adenocarcinoma microenvironment through eNAMPT pathway
  Research fellowship grant to utilize the N-of-1 pathway analysis to identify classifiers for the pharmacological response to eNAMPT monoclonal antibody in lung cancer patients.
  Role: Co-mentor

Planned Submissions for the June 2020 deadline

- NLM **Lussier** (PI)
  Improving precision medicine of rare diseases through single-subject analytics of gene product dynamics

- NHLBI Garcia/**Lussier** (MPIs)
  Utilization of an 'N of One' Strategy for ARDS Trials in Latinos

Completed Grants (organized in 3 categories; reverse chronological order)

A) Translational clinical genomics & precision medicine

- NIH/NCI 1R01CA190696-01 Schatz (PI) Lussier (Core Director; Co-I) 2014 – 2019
  A New Treatment Paradigm for ALK-Driven Cancers Exploiting Oncogene Overdose. Using techniques that shed new light on important growth mechanisms of tumors, we are studying resistance against drugs that inhibit ALK, a protein involved in driving the growth of several different cancers. This project investigates **single-cell line transcriptome analyses** (**N-of-1-*pathways***) in lymphoma, using xenograft, transgenic mouse models, including a clinical component interfacing with a Novartis Oncology phase II trial currently underway.
- NIH/NCI R01CA16449201 Kron (PI) ; Lussier/Weichselbaum (Co-I) 2011-2014
  Radiation response within the tumor microenvironment
- NIH/NHLBI 5R01HL103553 Lussier Co-I 2010 - 2014
  Deranged Coagulation and Fibrinolytic Cascades in Idiopathic Pulmonary Fibrosis
- NIH/NHLBI 1U01HL105371 Lussier PI of the Subcontract (10%); (PIs: A Choi, JGN Garcia) 2010-3
  Phase II study of inhaled Carbon Monoxide for treatment of IPF
- NIH/NCI 1R01CA142996-01 Cox/Olopade (MPI) ; Lussier (Co-I) 2010-2014
  Genome-*Wide Association Study of Breast Cancer in the African Diaspora?*
- NIH/NCI/CTEP 3UL1RR024999-03S3,Vokes/Lussier/Seiwert (Lead Inv) Solway(CTSA PI) 2009-11 $282,714
  Multicenter randomized phase II study of Temsirolimus versus Cetuximab +Temsirolimus in patients with recurrent/metastatic head and neck cancer. Clinical hypothesis: the combination of mTOR inhibition (using temsirolimus) and EGFR inhibition (using cetuximab) prolongs progression free survival (PFS) in patients, who have failed EGFR based therapy, whereas mTOR inhibition alone does not provide a similar benefit. Underlying **bioinformatically-initiated drug rescue hypothesis**: the combination of mTOR inhibition with temsirolimus and EGFR inhibition with cetuximab is synergistic in abolishing aberrant cross-talk between oncogenic pathways driving progression of head and neck squamous cell carcinomas and overcomes primary and/or secondary resistance to cetuximab.

- NIH/NIAID 5U54 AI057158 Lipkin (PI) Lussier (Lead Inv & Bioinform Core Director; $5M) 2003-5 $60M
  Northeast Research Center of Excellence for Biodefense and Emerging Infections
- NIH/NHLBI 1RC2HL101740-01 Martinez (PI) Lussier (Subcontract PI) 2009 - 2011
  Molecular Markers of Idiopathic Pulmonary Fibrosis Progression
- NIH/NCI 2 P01 CA040046-21 Le Beau (PI) Lussier (Co-I) 2008 - 2011
  Etiology of Alkylator-Induced Myeloid Leukemia
- NIH/NCI 5P50CA125183 Olopade (PI) Lussier (Co-I) 2006 - 2011
  SPORE in Breast Cancer
- Cancer Research Foundation, Le Beau (PI) Lussier (Lead I) ; 2008-11 $4.5M ($375k bionform.)
  T-AML:Harness Complex Science to Fight Cancer
- NIH/NCI/NIGMS PAAR-U19GM061393-11 Ratain/Cox/Dolan (MPI) Lussier (Co-I) 2010-2011 $12,500,000
  Pharmacogenetics of Anticancer Agents research group
- NIH/NLM 1R01LM009725 Sarkar (PI) Lussier (Co-I) 2008-2012
  Enhancing organism based disease knowledge via taxonomic intelligence
- 5U54CA121852MAGNet Califano (PI) Lussier (Lead I) 2005 - 2010
  National Center for the Multiscale Analysis of Genomic & Cellular Networks
- NYSTAR Center for Advanced Technology Grant # C020054 Lussier (PI) 2003-4
  Clinical-Genomics Knowledge-Bases for High Throughput Drug Discovery
- NIH/NLM 5G08LM007198-03 Lussier (Subcontract PI) 2004-5
  ICTVdb: The Universal Virus Information System
- NIH/NLM R01LM007659 Friedman (PI) Lussier (co-PI) 2003 - 2007
  Capturing and Linking genomic and clinical information. Use natural language processing (NLP) to facilitate cancer research by automatically extracting and organizing clinical and genetic information from the Electronic Medical Record (EMR) and from journal articles.
- NYSTAR Center for Advanced Technology Grant # 21240026 Lussier (PI) 2002 - 2003
  Knowledge Base of Clinical Traits for Human Disease Genes
- NIH/NLM K22 LM008308 Lussier (PI) 2004 - 2008
  Semantic Approaches to Phenotypic Databases Analyses. Build innovative informatics tools capable of automatically querying and organizing phenotypic data associated to genomic and genetic knowledge.

B) Clinical research informatics (CRI) and Big Data Science

- NIH/ UL1RR029879 Tobacman/Mermelstein (MPI) 2009-2014
  Ctr for Clinical & Transl. Science (University of Illinois at Chicago CTSA)
- NIH/ 5UL1RR024999 Solway (PI) Lussier/Silverstein co-Lead Biomedical Informatics Core 2007 - 2011
  Clinical and Translational Science Awards (CTSA): University of Chicago
- NIH/ RFA-CA-11-005 *Community Profile CTSA Supplement;* Hynes (PI) Lussier (Co-I); 2011-2
- NIH/ CTSA/ *Clinical Efficacy Research Supplement* (PI: D. Meltzer, J. Krishnan;Lussier co-inv) 2011-2
- NIH/ 1S10RR029030-01 Foster (PI) Lussier (Lead Inv) 2010
  BEAGLE: A Supercomputer for Biomedical Simulation and Data Analysis . "Beagle" Cray XE6 Supercomputer of the Computation Institute: 150 Teraflop (17,856 cores; 1,488 processors; 23,3 terabyte of memory, 464 terabytes of disks drive). Lussier: modeling non-coding polymorphisms of health.
- NIH/NCI 5P30CA014599-35 Le Beau (PI) Lussier (Associate Director for Informatics) 2008 - 2011
  University of Chicago Comprehensive Cancer Center Support Grant

C) Information science of knowledge representation (e.g. ontologies) and natural language processing

- NIH/ 3UL1RR024999-03S5 Lussier (Lead Inv) Solway (CTSA PI, Adm. Suppl.) 2009 - 2011 $1,924,346
  Service Oriented Discovery Architecture: Semantic Expansion Project. The key overall objective is to enable data

integration from enterprise systems for translational researchers using SNOMED and UMLS – anchored clinical narratives (via natural language processing, as well as GRID-accessible ontology-server and NLP-server services). IRB Protocol 10-325-B.

- John Wiley and Sons Publishers & NYSTAR/CAT UPN: 04240001 5-67725 Lussier (PI) 2005 - 2006
  Ontology-based Retrieval of Individualized Evidence-Base Excerpts
- NIH/NLM 1R01LM008635-01 Friedman (PI) Lussier (Co-I)
  Adapting natural processing system for use with SNOMED encoding
- NYSTAR Center for Advanced Technology Grant Lussier (PI) 2003 - 2004
  Intelligent Cooperative Communications for Cross-Organization and Real-Time Responsiveness. Award winning collaboration with Rose Williams (IBM Watson Research Lab) to deploy secure and HIPAA compliant event-monitored communications over Smart Phones (Vigi*LENS*). http://www.cat.columbia.edu/grant_recipients03.htm
- NASA VCU-528753/PO P417322, HRSA / Office of Advanced Telemedicine OAT, 2001-2002:$1,266,000, 2002 - 2003:$850,000,) Shortliffe/Lussier (MPI)
  Vigi*LENS Patient Health Monitoring*. An ontology-anchored and server accessible clinical event monitor for dramatically reduce the cost (TCO).
- NIH/NLM R01LM06274 Friedman (PI) Lussier (Co-I) 1997-2000
  Unlocking data from medical records with text processing
- Medical Research Council of Canada (MRC) B Haynes/ Moehr (MPI) Lussier (Lead Inv) 1995-8 $2,400,000
  Health Evidence and Application Linkages Network -HEALNet-RELAIS. SNOMED in EMRs.

Publications and Communications (542 total; 182 journal publication)

Journal Publications

1. Lussier A, Arseneault A, Varady A, De Médicis R, Lussier Y, Lebel E. "The use of a ^{51}Cr Technique to Detect Gastrointestinal Microbleeding Associated with Nonsteroidal Anti-inflammatory Drugs". **Semin Arthritis Rheum**. 1988:17(3);40-45.
2. Lussier A, Davis A, Lussier Y. "Comparative Gastrointestinal Blood Loss Associated with Placebo, Aspirin and Nabumetone as Assessed by Radiochromium (^{51}Cr)". **J Clin Pharmacol** 1989:29(3);225-228.
3. Lussier YA*: "Le Dossier Patient Informatisé sur ardoise électronique: le défi de Développement Purkinje". **Canadian Medic Inform**, 1994:1(1), 46-47.
4. Lussier YA*."Scientific Medicine in Need of a Standard Coded Nomenclature". **Canadian Medic Inform** 1994:1(4)
5 Lussier YA*, Côté RA: "Are We Closer to Standard Medical Coding?". **Canadian Medic Inform** 1995:2(5).
6 Lussier YA*, Rothwell DJ, Côté RA: "The SNOMED Model: A Knowledge Source for the Controlled Terminology of the Computerized Patient Record". **Methods Inf Med** 1998:37;160-164. PMID: 9656658
7 Liu H, Lussier YA, Friedman C*. "Disambiguating Ambiguous Biomedical Terms in Biomedical Narrative Text: An Unsupervised Method". J Biom Inform 2001:34,249-261. ↳journal
8 Sarkar IN, Cantor MN, Gelman R, Hartel F, Lussier YA*. Linking biomedical language information and knowledge resources: GO and UMLS. **Pac Symp Biocomput** 2003;439-50.PMC1480054 ↳journal
9 Cantor MN, Sarkar IN, Gelman R, Hartel F, Bodenreider O, Lussier YA*. An evaluation of hybrid methods for matching biomedical terminologies: mapping the gene ontology to the UMLS. **Stud Health Technol Inform** 2003;95:62-7. ↳journal
10 Lussier YA*, Li J. Terminological Mapping For High Throughput Comparative Biology of Phenotypes. **Pac Symp Biocomp** 2004;:202-13. ↳journal
11 Friedman C*, Shagina L, Lussier YA, Hripcsak G*. Automated Encoding of Clinical Documents Based on Natural Language Processing. **J Am Med Inform Assoc** 2004-11(5):392-402. PMC516246 ↳journal
12 Wang A, Quek HN, Cantor MN, Kra P, Schultz A, Lussier YA*. "Automating Terminological Networks to Link Heterogeneous Databases". **Stud Health Technol Inform** 2004;11(Pt 1):555-9. PMC2917348 ↳journal
13 Cantor MN, Lussier YA*. Mining OMIM for insight into complex diseases. **Stud Health Technol Inform** 2004;107(Pt 2):753-7. PMC2883183

14 Tao Y, Friedman C, Lussier YA*. The Use of Information Visualization Techniques in Bioinformatics during the Postgenomic Era. **Discov Today Biosilico** 2004; 2: 6. PMC2957900 ↳journal

15 Williams R*, Jalan S, Stern E, Lussier YA*. Cascading Policies Provide Fault Tolerance for Pervasive Clinical Communications. **Proc of 3rd IEEE Internat Conf on Pervasive Computing and Communications Workshops**, (PerComW), IEEE Computer Society 2005:209 – 212. ↳journal

16 Tao Y, Friedman C*, Lussier YA*. "Visualizing information across multidimensional post-genomic structured and textual databases" and textual databases" **Bioinformatics** 2005 15;21(8):1659-67↳journal

17 Cantor MN, Sarkar IN, Bodenreider O, Lussier YA*. Genestrace: Phenomic Knowledge Discovery Via Structured Terminology. **Pac Symp Biocomput** 2005;103-14. PMC2894422 ↳journal

18 Lussier YA*, Williams R, Jalan S, Borlawsky T, Li J, Stern E*. Partitioning Knowledge Bases Between Advanced Notification and Clinical Decision Support Systems. **Decision Support Syst** 43(2007)1274-86↳journal

19 Zhou L, Tao Y, Cimino JJ, Chen ES, Lussier YA, Hripcsak G, Friedman C*. Terminology Model Discovery Using Natural Language Processing and Visualization Techniques. **J Biomed Inform** 2006;39(6):626-36↳journal

20 Lussier YA*, Borlawsky T, Rappaport D, Friedman C*. PhenoGO: Assigning Phenotypic Context to Gene Ontology Annotations. **Pac Symp Biocomput** 2006;:64-75. PMC2906243 ↳journal

21 Choi J, Bakken S*, Lussier YA*, Mendonca EA*. Improving the Human Readability of Arden Syntax Medical Logic Modules Using a Concept-oriented Terminology and Object-oriented Programming Expressions. **Comput Inform Nurs.** 2006 Jul-Aug; 24(4):220-5. ↳journal

22 Goh CS, Gianoulis TA, Liu Y, Li J, Paccanaro A, Lussier YA*, Gerstein M*. Integration of Curated Databases to Identify Genotype-Phenotype Associations. **BMC Genomics** 2006, 7:257. PMC1630430 ↳journal

- ↳**Top-Paper** "Bioinformatics Tool-Related Papers of Note", October 2006, BioInform

23 Friedman C*, Borlawsky T, Xing HR, Lussier YA*. Bio-Ontology and Text: Bridging the Modeling Gap. **Bioinformatics** 2006 Oct 1;22(19):2421-9. PMC2879055 ↳journal

24 Liu Y, Li J, Sam L, Goh CS, Gerstein M*, Lussier YA*. An integrative genomic approach to uncover molecular mechanisms of prokaryotic traits. **PLoS Computational Biology** 2006 2(11): 1419-1435. PMC1636675 ↳journal

Editor's Pick of the month

- ↳**ISMB_2007-highlight,** Selected as a highlight of 2007 for presentation in the Internat Symp on Mol Biol.

25 Tulipano KP, Tao Y, (…), Lussier YA*, Friedman C*. Natural Language Processing and Visualization in the Molecular Imaging Domain. **J Biomed Inform** 40 2007; 270-281. PMID:17084109 ↳journal

26 Palacios G, (…), Lussier Y, Formenty P, Feldmann H, Briese T, Lipkin WI*. Panmicrobial oligonucleotide array for diagnosis of infectious diseases. **Emerg Infect Dis** 2007 13(1):73-81. PMC2725825 ↳journal

27 Lussier YA*, Liu Y. Computational Approaches to Phenotyping: High-Throughput Phenomics. **Proc Am Thorac Soc** Vol 4. pp 18-25, 2007. PMC2647609↳journal

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391 *Highlights of 2011 (ISMB).* Network Modeling Identifies Molecular Functions Targeted by miR-204 to Suppress Head and Neck Tumor Metastasis. (10% acceptation rate). 19th Ann Internat Conf on Intellig Syst Mol Biol. ↳hyperlink

392 *AMIA STB Late Breaking News 2011*- "Therapy Targeted at Unique Personal Disease Polymorphism Using Mechanistic Concordance between Mendelian and Complex Inheritance Anchored on Protein Domain Interactions". AMIA 2011 Summit on Translational Bioinformatics, San Francisco, March 2011.

393 *ISMB Late Breaking News 2012. Single Sample Expression-Anchored Mechanisms Predict Survival in Head and Neck Cancer* 20th Ann Internat Conf on Intelligent Systems for Mol Biol, Long Beach 7/15/12.

-Invited Conference Speaker

394 "Combination therapy for rescuing targeted Erlotinib therapy in oral cancers: from *in silico* models to clinical trial". *4th meeting on Drug Repositioning*, March 14, 2012 in Philadelphia.

395 "The Emergence of Genomic Pathways and Interaction Network Tests in Personal Therapy". *Individualizing Medicine Conference 2012*. Theme 2. Individualizing Clinical Care. 10/1-3/12, Mayo Civic Ctr, ↳hyperlink

396 PERSONALOME: identifying clinically actionable 'Omics. 10/10/13 *Realizing the Potential of Precision Medicine.* Opening Keynote. New York
"Disruptive precision therapeutics: where are we and where do we want to be?" *Precision Medicine Leaders Summit* 2017, San Diego, Aug 21st-24th. http://www.precisionmedicineleaderssummit.com/speakers/

397 Precision Medicine, "Complex immunotherapeutic response and computational models in single-subject studies" Munich, October 14, 2019 http://www.pmbc2019.com/

- Guest Speaker at International Institutions

398 *International Guest Speaker.* First Technical Theme-Biomedical Informatics, Agency for Science, Technology and Research (A*Star),Singapore, Feb 10 2003.

399 *3rd International Symposium of the National Institute of Informatics of Japan*, "e-Biology Initiative: Towards New Frontiers of Biology", Computational approaches to high throughput analyses of non-molecular phenotypes, Tokyo, 3/10/2005. ↳hyperlink

400 *Genome Quebec* - "Bridging the Phenotype Gap: Ontology-Anchored Computational Methods for Biomedicine". Knowledge-Based Bioinformatics Workshop Hosted by the Genome Québec funded project: Ontologies, the semantic web and intelligent systems for genomics. September 21st - 23rd 2005; Montréal, Québec, Canada.

401 *DAGSTUHL Seminar Speaker* 07132–"Ontology Interoperability: All you need is statistics" / 'Toward Interoperability of Biomedical Ontologies', 27.03.2007-30.03.2007. ↳hyperlink

402 *Key State Laboratory of Bioelectronics*. Computing with ontologies in the practice of medicine and in disease gene discovery , (Chien-Shiung Wu Laboratory), Southeast University, Nanjing, 8/20/08

403 *University of Science and Technology of China, Hefei*. Computing with ontologies in Systems Biology and in disease gene discovery. School of Life Sciences, China (http://www.ustc.edu.cn/en/), 8/24/08.

404 *Ewha Womens University*, Hypothesis-Driven Translational Bioinformatics and microRNA-204 regulatory network in Head and Neck Cancers". Seoul, 1/11/2011,

405 Inaugural Workshop Speaker Office of Clinical Pharmacology is leading a new safety initiative intended to compliment and synergize with the other established safety programs that currently exist in Center for Drug Evaluation and Research (CDER). Inaugural workshop: "Pharmacological Mechanism-Based Drug Safety Prediction", FDA White Oak campus, Silver Spring, Maryland, January 27-28, 2011.

406 *KAIST- Korea Advanced Inst of Science & Technol,* 1/14/2011, "Hypothesis-Driven Translational Bioinformatics and Regulatory Networks of Head and Neck Cancers", Daedeok Science Town, Daejeon, South Korea.

407 *Ajou University College of Medicine,* Hypothesis-Driven Translational Bioinformatics & High Throughput Phenomics, Suwon, South Korea, 1/14/11.

408 *2011 AAPS Annual meeting and Exposition (Am. Assoc. of Pharmaceutical Scientists)*. Kinase Inhibitor Toxicities Imputer from Kinome and Clinical Trial Data. Session Title: Ascpt/aaps Joint Symposium: Systems Pharmacology for the Assessment and Prediction of Adverse Drug Effects (#199). Washington Convention Center DC. Oct 26th 2011.

- Scientific Grand Rounds and Seminar Speaker in Universities and Nonprofit Organizations (Last 10)

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449 Grand Rounds of Stanford Biomedical Informatics Research Center. "Integrative genomics analyses unveil specific downstream biological effectors of disease polymorphisms unveiled from specific non-coding Loci". Palo Alto, 3/16/2017.

450 Université de Sherbrooke, Gala des Ambassadeurs: "Avancement de la médecine de précision grâce à une reconception de l'analyze fondée sur les bases de connaissances et axée sur les données personelles: interpretation de l'ADN non-codant et des interactions Genome ×Environnement (G×E)". 1/6/2017

451 The University of Texas Southwestern Medical Center, Department of Clinical Sciences, Special Guest Lecture, "Advancing precision medicine through knowledge-anchored and data-driven science: from noncoding DNA mechanisms to redesigning single-subject analytics".

452 Opening Keynote, Annual Nutrigenomics Meeting and European Commission funded FP7 Nutritech, Opening Keynote, Medical University of Varna, 8/28, http://press.mu-varna.bg/conferences/nugo/nugo-2017 http://nutrigenomics.topshare.com/nutritech/ "Precision nutrigenomics via mechanism-anchored big data science: analytics for single-subject epistasis and personal genome X environment interactions".

453 Regenstrief Institute, Indiana University School of Medicine. "Advancing precision medicine through knowledge-anchored and data-driven science: (i) drug repositioning mitigating intergenic risks and (ii) meaningful single-subjects studies using Genome×Environment (G×E) assays". May 14th, 2018.

454 Webinar, Canadian Institute for Health Research AllerGen Network of Excellence. "The future of data science and bioinformatics-anchored advances in human health". June 11th 2018.

455 Institute for Informatics (I^2), Washington University School of Medicine. "Advancing precision medicine through knowledge-anchored data science: (i) drug repositioning mitigating intergenic risks and (ii) meaningful single-subjects studies using Genome×Environment (G×E) assays". June 19th, 2018.

456 Phoenix Children Hospital, "Enabling small clinical trials required for precision medicine via pathway biomarkers designed with network science". Dec. 18 2018.

457 "Smaller sample size for better precision medicine with machine learning pathway biomarkers across multiple single-subject studies" Mayo Clinic Conference on Artificial Intelligences and Medicine, Keynote Speaker, Philip Hall, May 23rd 2019.

458 "Advancing precision medicine through ontology-driven data science: (i) drug repositioning for trans-acting mechanisms of non-coding variants and (ii) leveraging Genome×Environment (G×E) assays in single-subjects trials". Grand Rounds of the Institute for Biomedical Informatics, University of Pennsylvania School of Medicine, June 13th, 2019.

- Seminar Speaker at For Profit Corporations

459 *IBM Watson Research Laboratory Computational Biology Seminar* "Knowledge Technologies for Clinical and Post-Genomics IT Interoperability". Yorktown, NY, 6/19/2002.

460 *First Genetic Trust,* Database Schema for Clinical Genomics. Sept. 2003, New Jersey.

461 *IBM Watson Laboratories, "*Phenomic Program" . Hawthorne. 11/3/2004.

462 *IBM Watson Research Center,* "Research Technical Discussions on Ontologies in Biomedicine", Industry Solution Laboratory, Hawthorne, NY, 7/8/2005.

463 *Philips Research* **"**Decision Making & Individual. Healthcare: Managing Inform R&D to achieve ROI", 10/8/08

464 *IPSEN Pharmaceutical* June 2014. Clinically actionable "Omics": the personalome for Precision Therapy.

465 *MedImmune (Astra Zeneca*), "Improving the success rate of cohort-level clinical trials using novel single-subject 'omics analytics" April 2017.

466 *Lilly. "*Using genome-by environment interactions to design surrogate biomarkers of therapeutic response for small clinical trials*"* April 15 2019.

- Clinical Grand Rounds and Invited Clinical Lectures

467 One-Day Postgraduate Course on Computers in Medicine from the *Royal College of Physicians and Surgeons of Canada*, Halifax, Sept. 26, 1996. Internet workshops, "Computer basics for beginners".

468 "Introduction à l'Internet pour la médecine interne et spécialisée". *Seminar, Department of Medicine, Faculté de Médecine*, Université Laval, Quebec City, PQ, February, 1997.

469 "Introduction à l'Internet pour le médecin omnipraticien". *Medical Education, Fédération des Médecins Omnipracticiens du Québec,* Sherbrooke, May 1, 1997.

470 "Introduction to the Internet and Related Software: Medical Terminologies : from ICD to SNOMED and its Use in Computerized-Patient Records for Research and Office Use". Postgraduate course on Computers in Medicine from the *Royal College of Physicians and Surgeons of Canada*, Vancouver, Sept. 25, 1997.

471 "Methods and preliminary results of the MI-HEART Clinical Trial." Grand Rounds, *St. Vincent's Hospital, Bridgeport*, CT, Nov. 27, 2001.

472 *School of Medicine, Univ of Sherbrooke.* "Architecture génomique et applications cliniques de la thérapie de precision". 2014

Intramural Lectures

-Annual Consortium & Seminar Speaker (last 10)

(…)

488 "Personalome: clinically actionable 'Omics ", Lung Cancer Seminars, *University of Illinois at Chicago*, Sept 27th 2013.

489 Clinically actionable "Omics": the Personalome for Integrative Medicine. Telemedicine U of Arizona Cancer Center. 2014

490 Utility of essays targeting the dynamic transcriptome in complex disease progression: virograms, *U of Arizona Genetic and Genomic Grand Rounds,* April 23 2015.

491 Precision Medicine: Translating genomics to clinical applications using networks and ontologies, *U of Arizona Cancer Biol Res Conf*, May 5th 2015.

492 "The personalome of immune mediated disease: precision medicine anchored on dynamic transcriptomes in single subjects studies". *U of Arizona Dept of Immunology*, Dec 3rd 2015.

493 "Precision medicine: The future of personalized healthcare". *U of Arizona Annual Conference on Successful Aging*. March 1st 2015

494 "Deriving one's Personal Dysregulome from Genomics Data Science". *U of Arizona Dept Mgmt Information Systems* May 6th 2016.

*495 "*Designing smaller and faster clinical trials via provoked 'omics responses predictive of disease pathobiology or therapeutic outcomes". *U of Arizona,* Feb 2018

496 "Identifying systems biology-level biomarkers using network science and machine learning", and "Analysis of Large Scale Multi-Omics Data: Trends & Data Collection". *College of Medicine Phoenix, University of Arizona*, Dec 6, 2018.

497 "Using genome-by environment interactions to design surrogate biomarkers of therapeutic response for smaller clinical trials", Statistics Colloquium, Graduate Interdisciplinary Program in Statistics. April 29th 2019.

- Clinical Grand Rounds (last 10)

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510 Desai, Ankit A.; Moreno, Liliana; M. Gomberg-Maitland, Mardi; Maitland, Michael ; Collins, K.; Sammani, Saad; Ma, Shwu-fan; Husain, Aliya N.; Liu, Yang; Sam, Lee; Lang, Roberto M.; Ratain, Mark J.; **Lussier YA**. ; Garcia JGN. Attenuation of a Rodent Model of Pulmonary Hypertension: A Novel Role for Sorafenib, a Multi-Kinase Inhibitor. Department of Medicine Research day 2007.

511 Lee Y, * Huang Y, Fan H, Wu Y, Li J, Zhang Q, Hasina R, Arakaki A, Skolnickj J, Lingen M, Weichselbaum R, Xing HR*, **Lussier YA***. Novel network modeling identifies molecular functions targeted by miR-204 to suppress head and neck tumor metastasis. Department of Medicine Research Day, March 10, 2010.

512 "From targeted sequencing to clinically actionable transcriptomes". *University of Arizona Dept Hemato-Oncology Grand Rounds*, March 27th 2014

513 Dynamic 'omics: beyond genetic approaches to precision therapy, *University of Arizona Cancer Center Grand Rounds*, May 2nd 2014.

514 Precision Medicine: Translating genomics to clinical applications using networks and ontologies, *University of Arizona Cancer, Cancer Biology Program*, May 5nd 2015.

515 *University of Arizona Bio5 Institute,* Nov 17th 2015. Knowledge of systems biology for analysis of clinical and experimental data.

516 *University of Arizona Immunology Dept microlunch (Samuel Campos),* Dec 2nd 2015

517 *University of Arizona Business School, Dept. Management Information Science, (Samuel Campos),* 5/3/2016

518 *University of Arizona* Research Symposium Biomarkers: From Specimen to Clinical Impact: Identifying Systems Biology-Level Biomarkers Using Network Science and Machine Learning, Phoenix, 12/06/2018

Tutorials and Workshop Presentations (Last 10)

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529 *PSB Pac Symp Biocomput* Semantic Web for Life Sciences. 2006

530 *National Ctr for Ontology Research* (NCOR)& AMIA KR-MED Formal Bio-Medical Know Rep 4/12/06

531 *PSB Pac Symp Biocomput*, Kann, Ofran, *Punta*, Radijovac , Lussier. Protein Interactions in Diseases. 1/4/07

532 *DOD TATRC/ IEBI* Advanced Technology Research Ctr Workshop on Information Extraction for Biomed Inform (IEBI), Department of Defence Telemedicine and TATRC. 9/23/07 ↳hyperlink

533 *AACR Speaker*, Educational Workshop Sessions on Systems Biology of the Conference on The Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved and is co-sponsored by the NCI Center to Reduce Cancer Health Disparities. 9/27-30/07

534 *NIH/NCI & DH&HS* "The Role of Biomedical Informatics in Overcoming Current Barriers in Cancer Research, The Blackwell Inn at *The Ohio State University in Columbus*, Ohio, April 2-3, 2008.

535 *NIH- GEI "GWAS and Other –Omics*: The Need for Data Integration", Trans-NIH Workshop – Gene Environment and Health Initiative (GEI), "Genome-wide Association: Analyze This! The Genes, Environment, and Health Initiative". 8/4–5/08, ↳hyperlink

536 *Consortium for Neuropsychiatric Phenomics* "June 9, 2009" UCLA.

537 *Consortium for Neuropsychiatric Phenomics*, June 2010, UCLA.

538 *AMIA Summit on Translational Bioinformatics* 2013. Introduction to Translational Bioinformatics. ↳hyperlink

539 *Translational Bioinformatics Conference 2013.* Disease & drugs models with ENCODE (Encyclopedia of DNA Elements), Oct 2, 2013.

540 *PSB Pac Symp Biocomput 2018* Reading Between the Genes: Computational Models to Discover Function from Noncoding DNA

541 *PSB Pac Symp Biocomput 2019* Reading between the genes: interpreting non-coding DNA in high-throughput

542 *PSB Pac Symp Biocomput 2019* Translational informatics of population health: how large biomolecular and clinical datasets unite