

James Robert Green, PhD, PEng, SMIEEE

Personal Information

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Employment

Academic Appointments

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| Department of Systems and Computer Engineering Carleton University, Ottawa, Ontario | Associate Professor Jul. 2010 – present |
| Department of Health Sciences (<i>cross-appointment</i>) Carleton University, Ottawa, Ontario | Associate Professor Feb. 2015 – present |
| Institute for Data Science Carleton University, Ottawa, Ontario | Interim Director Jan. 2016 – Jun. 2016 |
| Department of Systems and Computer Engineering Carleton University, Ottawa, Ontario | Assistant Professor Sept. 2005 – Jun. 2010 |
| Department of Electrical and Computer Engineering Queen's University, Kingston, Ontario | Teaching Fellow Sept. 2003 – Apr. 2005 |
| Faculty of Applied Science, Integrated Learning Centre Queen's University, Kingston, Ontario | Tutor/Facilitator Jan. 2004 – Apr. 2004 |
| Department of Electrical and Computer Engineering Queen's University, Kingston, Ontario | Teaching Assistant Sept. 1998 – Apr. 2003 |

Industry Experience

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| Molecular Mining Corporation Kingston, Ontario | Computational Scientist Sept. 2000 – Apr. 2001 |
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Contributions:

The following sections list my publications. Publications prior to 2012 are shown in grey. I have received 413 citations since 2012, according to Google Scholar.

Refereed Journal Publications

- [J30] Nizami S, Bekele A, Hozayen M, Greenwood K, Harrold J, Green JR, "Measuring uncertainty during respiratory rate estimation using pressure-sensitive mats," *IEEE Transactions on Instrumentation and Measurement*, in press.
- [J29] Martínez-López Y, Barigye SJ, Martínez-Santiago O, Marrero-Ponce Y, Green JR, Castillo-Garit JA, 2017, "Prediction of aquatic toxicity of benzene derivatives using molecular descriptor from atomic weighted vectors," *Environmental Toxicology and Pharmacology* 56:314-321 (doi:10.1016/j.etap.2017.10.006).
- [J28] Kazmirchuk T, Dick D, Burnside DJ, Barnes B, Moteshareie H, Hajikarimlou M, Omid K, Ahmed D, Low A, Lettl C, Hooshyar M, Schoenrock A, Pitre S, Babu M, Cassol E, Samanfar B, Wong A, Dehne F, Green JR, Golshani A, 2017, "Designing Anti-Zika Virus Peptides Derived from Predicted Human-Zika Virus Protein-Protein Interactions" *Computational Biology and Chemistry*, in press.
- [J27] Ruiz-Blanco YB, Agüero-Chapin G, García-Hernández E, Álvarez O, Antunes A, Green JR, 2017, "Exploring General-purpose Protein Features for Distinguishing Enzymes and Non-enzymes Within the Twilight Zone," *BMC Bioinformatics*, 18:349, (doi: 10.1186/s12859-017-1758-x).
- [J26] Shahreza ML, Ghadiri N, Mossavi SR, Varshosaz J, Green JR, 2017, "Heter-LP: A heterogeneous label propagation algorithm and its application in drug repositioning," *Journal of Biomedical Informatics*, 68:167-183, (doi:10.1016/j.jbi.2017.03.006).
- [J25] Schoenrock A, Burnside D, Moteshareie H, Pitre S, Hooshyar M, Green JR, Golshani A, Dehne F, Wong A, 2017, "Evolution of Protein-Protein Interaction Networks in Yeast," *PLoS ONE* 12(3): e0171920. (doi:10.1371/journal.pone.0171920)
- [J24] Shahreza ML, Ghadiri N, Mossavi SR, Varshosaz J, Green JR, 2017, "A Review of Network-based Approaches to Drug Repositioning," *Briefings in Bioinformatics*, 68:167-183, (doi:10.1016/j.jbi.2017.03.006).
- [J23] Ruiz-Blanco YB, Marrero-Ponce Y, García-Hernández E, Green JR, 2016, "Novel 'extended sequons' of Human N-glycosylation sites improve the precision of qualitative predictions: An alignment-free study of pattern recognition using ProtDCal protein features", *Amino Acids*, in press, <http://rdcu.be/m2vB>, (doi: 10.1007/s00726-016-2362-5)
- [J22] Peace RJ, Biggar KK, Storey KB, Green JR, 2015, "A Framework for Improving MicroRNA Prediction in Non-Human Genomes", *Nucleic Acids Research*, doi:10.1093/nar/gkv698
- [J21] Ruiz-Blanco YB, Paz W, Green JR, Marrero-Ponce Y, 2015, "ProtDCal: A Program to Compute General-Purpose-Numerical Descriptors for Sequences and 3D-Structures of Proteins", *BMC Bioinformatics*, 16(1):162.
- [J20] Schoenrock A, Samanfar B, Pitre S, Hooshyar M, Jin K, Phillips CA, Wang H, Phanse S, Omid K, Gui Y, Alamgir Md, Wong A, Barrenäs F, Babu M, Benson M, Langston MA, Green JR, Dehne F, Golshani A, 2014, "Efficient Prediction of Human Protein-Protein Interactions at a Global Scale", *BMC Bioinformatics*, 15:283. **This paper was designated as "Highly Accessed".**

- [J19] Ruiz-Blanco YB, Marrero-Ponce Y, García Y, Puris A, Bello R, Green JR, Sotomayor-Torres CM, 2014, "A physics-based scoring function for protein structural decoys: Dynamic testing on targets of CASP-ROLL", *Chemical Physics Letters* 610:135-140.
- [J18] Fraser GD, Chan ADC, Green JR, Maclsaac D, 2014, "Automated Biosignal Quality Analysis for Electromyography using a One-Class Support Vector Machine", *IEEE Transactions in Instrumentation and Measurement*, 63(12):2919-2930 (doi:10.1109/TIM.2014.2317296).
- [J17] Chao S, Green JR*, Smith JC*, 2014, "Evaluation of a GPGPU-based de novo peptide sequencing algorithm", *Journal of Medical and Biological Engineering*, in press (doi:10.5405/jmbe.1713). (*co-corresponding authors)
- [J16] Ghadiri A, Green JR, Marble AE, 2014, "Real-time Non-contact Optical Tongue Tracking", *Journal of Medical and Biological Engineering*, in press (doi:10.5405/jmbe.1712).
- [J15] Gagne R, Green JR, Dong H, Wade MG, Yauk CL, 2013, "Identification of Thyroid Hormone Receptor Binding Sites in Developing Mouse Cerebellum", *BMC Genomics*, 14:341 (doi: 10.1186/1471-2164-14-341).
- [J14] Nizami S, Green JR, McGregor C, 2013, "Implementation of Artifact Detection in Critical Care: A Methodological Review", *IEEE Reviews in Biomedical Engineering*, 6:127-42 (doi:10.1109/RBME.2013.2243724).
- [J13] Yuan MY, Green JR, Goubran R, 2013, "Thermal Imaging for Assisted Living At Home: Improving Kitchen Safety", *Journal of Medical and Biological Engineering*, 33(4):380-387 (doi:10.5405/jmbe.1271).
- [J12] Pitre S, Hooshyar M, Schoenrock A, Samanfar B, Jessulat M, Green JR, Dehne F, Golshani A, 2012, "Short Co-occurring Polypeptide Regions Can Predict Global Protein Interaction Maps", (*Nature*) *Scientific Reports*, 2:239.
- [J11] Jessulat M, Pitre S, Gui Y, Hooshyar M, Omid O, Samanfar B, Tan LH, Alamgir Md, Green JR, Dehne F, Golshani A, 2011, "Recent Advances in Protein-Protein Interaction Prediction: Experimental and Computational Methods", *Expert Opinion on Drug Discovery*, 6(9):921-935 (doi:10.1517/17460441.2011.603722). (Review)
- [J10] Amos-Binks A, Patulea C, Pitre S, Schoenrock A, Gui Y, Green JR, Golshani A, Dehne F, 2011, "Binding Site Prediction for Protein-Protein Interactions and Novel Motif Discovery using Re-occurring Polypeptide Sequences", *BMC Bioinformatics*, 12:225. **This paper was designated as "Highly Accessed"**.
- [J9] Peace R, Mahmoud H, Green JR, 2011, "Exact String Matching For MS/MS Protein Identification Using the Cell Broadband Engine", *Journal of Medical and Biological Engineering*, 31(2).
- [J8] Luo X, McKeague M, Pitre S, Dumontier M, Green JR, Golshani A, DeRosa MC, Dehne F, 2010, "Computational Approaches Towards the Design of Pools for the in vitro Selection of Complex Aptamers", *RNA* 16:11. **This paper was recommended by "Faculty of 1000"**.
- [J7] Green JR, Korenberg MJ, and Aboul-Magd Md, 2009, "MISO Dynamic Nonlinear Protein Secondary Structure Prediction", *BMC Bioinformatics* 10:222.
- [J6] Pitre S, North C, Alamgir Md, Jessulat M, Chan A, Luo X, Green JR, Dumontier M, Dehne F, Golshani A, 2008, "Global Investigation of Protein-Protein Interactions in Yeast

Saccharomyces Cerevisiae Using Re-occurring Short Polypeptide Sequences", *Nucleic Acids Research* 36(13):4286-4294.

- [J5] Pitre S, Alamgir Md, Green JR, Dumontier M, Dehne F, Golshani A, 2008, "Computational Methods for Predicting Protein-Protein Interactions", *Adv Biochem Eng Biotechnol.* 110:247-267. (Review)
- [J4] Green JR and Korenberg MJ, 2006, "On the Advantages of Multi-Input Single-Output Parallel Cascade Classifiers", *Ann. Biomed. Eng.* 34:709-716.
- [J3] Green JR, Korenberg MJ, David R, Hunter I, 2003, "Recognition of Adenosine Triphosphate Binding Sites Using Parallel Cascade System Identification", *Ann. Biomed. Eng.* 31:462-470.
- [J2] Bushel PR, Hamadeh HK, Bennett L, Green JR, Ableson A, Misener S, Afshari CA, Paules RS, 2003, "Computational Selection of Distinct Class- and Subclass-Specific Toxicant Gene Expression Signatures", *J. Biomed. Info.* 35(3):160-170.
- [J1] Korenberg MJ, Lipson E, Green JR, Solomon, JE, 2002, "Parallel Cascade Recognition of Exon and Intron DNA Sequences", *Ann. Biomed. Eng.* 30(1):129-140.

Articles Submitted to Refereed Journals

- [S2] Peace RJ, Sheikh Hassani M, Green JR, "miPIE: NGS-based Prediction of miRNA Using Integrated Evidence," submitted to (*Oxford*) *Bioinformatics*.

Book Chapters

- [B1] Peace RJ and Green JR, "Computational Sequence- and NGS-based MicroRNA Prediction" in *Biomedical Signal Processing in Big Data*, edited by Sejdic E and Falk TH, CRC Press, *in press*.

Refereed Conference Proceedings

All papers below were refereed on full manuscript except where noted

- [C42] Dick K, Dehne F, Golshani A, Green JR, "Positome: A method for improving protein-protein interaction quality and prediction accuracy", *IEEE CIBCB 2017*, Manchester, United Kingdom, Aug 2017, (doi:10.1109/CIBCB.2017.8058545).
- [C41] Nizami S, Bekele A, Hozayen M, Greenwood K, Harrold J, Green JR, "Comparing time and frequency domain estimation of neonatal respiratory rate using pressure-sensitive mats," *IEEE International Symposium on Medical Measurements and Applications (MeMeA)*, Rochester, MN, USA, 7-10 May 2017 (***Awarded the IEEE MeMeA "Women in Engineering Best Paper"***)
- [C40] Nizami S, Cohen-McFarlane M, Green JR, Goubran RA, "Comparing metrological properties of pressure-sensitive mats for continuous patient monitoring," *2017 IEEE Sensors Applications Symposium*, Glassboro, New Jersey, 13-15 March 2017.
- [C39] Cohen-McFarlane M, Green JR, Goubran RA, Knoefel F, "Smart Monitoring of Fluid Intake and Bladder Voiding using Pressure Sensitive Mats", *37th Annual International Conference of the IEEE-EMBS (EMBC)*, Orlando, Florida, 16-20 Aug 2016.
- [C38] Dick K, Green JR, "Comparison of Sequence- and Structure-Based Protein-Protein Interaction Sites", *IEEE EMBS ISC 2016*, Ottawa, Canada, May 2016.
- [C37] Barnes B, Karimloo M, Schoenrock A, Burnside D, Cassol E, Wong A, Dehne F, Golshani A, Green JR, "Predicting Novel Protein-Protein Interactions Between the HIV-1 Virus and

Homo Sapiens", *IEEE EMBS ISC 2016*, Ottawa, Canada, May 2016. **(Awarded 3rd Prize in Student Paper Competition)**

- [C36] Cohen-McFarlane M, Green JR, Goubran RA, Knoefel F, "Monitoring Congestive Heart Failure using Pressure-Sensitive Mats", *IEEE International Symposium on Medical Measurements and Applications*, Benevento, Italy, 15-18 May 2016.
- [C35] Cohen-McFarlane M, Green JR, Goubran R, Knoefel F, "Characterization of Measurements from Pressure Sensitive Mats Using an Anthropomorphic Body Model", *IEEE International Instrumentation and Measurement Technology Conference (I²MTC)*, Taipei, Taiwan, 23-26 May 2016.
- [C34] Schoenrock A, Burnside, D, Moteshareie H, Green JR, Wong A, Golshani A, Dehne F, "Engineering Inhibitory Proteins with InSiPS: The In-Silico Protein Synthesizer", *Supercomputing 2015*, Austin, Texas, Nov 2015.
- [C33] Nizami S, Green JR, McGregor C, 2015, "An Artifact Detection Framework for Clinical Decision Support Systems", *World Congress on Medical Physics & Biomedical Engineering*, Toronto, Canada, June 2015.
- [C32] Peace RJ, Green JR, "Updated Free Energy Parameters Increase MicroRNA Prediction Performance", *World Congress on Medical Physics & Biomedical Engineering*, Toronto, Canada, June 2015.
- [C31] Moradshahi P, Green JR, Lemair ED, Baddour, N, "Differentiating Two Daily Activities Through Analysis of Short Ambulatory Video Clips", *IEEE International Symposium on Medical Measurements and Applications (MeMeA)*, pp 160-163, Gatineau, Canada, May 2013.
- [C30] Fraser GD, Chan ADC, Green JR, Maclsaac D, "Biosignal Quality Analysis of Surface EMG using a Correlation Coefficient Test for Normality", *IEEE International Symposium on Medical Measurements and Applications*, Gatineau, Canada, May 2013.
- [C29] Chao S, Green JR, Smith JC, "De Novo Peptide Sequencing Using General-Purpose Computing On a Graphics Processing Unit", *36th Conference of the Canadian Medical & Biological Engineering Society*, Ottawa, Canada, May 2013. **(Awarded 2nd Prize in Student Paper Competition)**
- [C28] Amos-Binks AR, Green JR, "Calibration Interface for the Electronic Swim Coach", *36th Conference of the Canadian Medical & Biological Engineering Society*, Ottawa, Canada, May 2013.
- [C27] Ghadiri A, Green JR, Marble AE, "Using Local Binary Patterns for Non-Contact Optical Tongue Tracking", *36th Conference of the Canadian Medical & Biological Engineering Society*, Ottawa, Canada, May 2013.
- [C26] Miyata C, Greiss R, Green JR, Ryan J, "RUTalking2Me? An Assistive Device Combining Beamforming and Speech Recognition", *36th Conference of the Canadian Medical & Biological Engineering Society*, Ottawa, Canada, May 2013.
- [C25] Abser N, Maclsaac D, Chan ADC, Fraser GD, Green JR, "CleanEMG: Comparing interpolation strategies for power line interference quantification in surface EMG signals", *35th Conference of the Canadian Medical & Biological Engineering Society*, Halifax, Canada, June 2012.

- [C24] Fraser GD, Chan ADC, Green JR, Maclsaac D, "Detection of ADC clipping, quantization noise, and amplifier saturation in surface electromyography", *IEEE International Symposium on Medical Measurements and Applications*, pp. 162-166, Budapest, Hungary, Aug 2012.
- [C23] Fraser GD, Chan ADC, Green JR, Maclsaac D, "Removal of electrocardiogram artifacts in surface electromyography using a moving average method", *IEEE International Symposium on Medical Measurements and Applications*, Budapest, Hungary, pp. 128-131, Aug 2012.
- [C22] Iyuke F, Green JR, Willmore W, "Active Learning for the Prediction of Asparagine/Aspartate Hydroxylation Sites on Proteins", *IASTED International Conference on Computational Intelligence and Bioinformatics (CIB2011)*, Pittsburgh, 7-9 Nov 2011.
- [C21] Nizami, S, Green, JR, McGregor, C, "Service oriented architecture to support real-time implementation of artifact detection in critical care monitoring.", 32nd Annual International Conference of the IEEE-EMBS (EMBC), Boston MA, USA, 2011.
- [C20] Fraser GD, Chan ADC, Green JR, Abser N, Maclsaac D, "CleanEMG - Power line interference estimation in sEMG using an adaptive least squares algorithm", 32nd Annual International Conference of the IEEE-EMBS (EMBC), Boston MA, USA, 2011.
- [C19] Abser N, Maclsaac D, Fraser G, Chan ADC, Green JR, "CleanEMG: Quantifying power line interference in surface EMG signals", 34th Conference of the Canadian Medical & Biological Engineering Society and Festival of International Conferences on Caregiving, Disability, Aging and Technology, Toronto, Canada, 69825, pp. 1-4, 2011.
- [C18] Schoenrock A, Dehne F, Green JR, Golshani A, Pitre S, "MP-PIPE: A Massively Parallel Protein-Protein Interaction Prediction Engine", ICS'11, Tuscon AZ, USA, May 31-June 4, 2011.
- [C17] Patulea C, Peace R, Green JR, "CUDA-accelerated Genetic Feedforward-ANN Training for Data Mining", *High Performance Computing Symposium (HPCS2010)*, Toronto, 5-9 June 2010, doi:10.1088/1742-6596/256/1/012014. (refereed on extended abstract)
- [C16] Peace R, Mahmoud H, Green JR, "Exact String Matching For MS/MS Protein Identification Using the Cell Broadband Engine", *CMBEC33*, Vancouver, 15-18 June 2010.
- [C15] Walia M, Lukmanji T, Farrell R, Green JR, "Towards Development of a Robotic Guide Dog", *CMBEC33*, Vancouver, 15-18 June 2010.
- [C14] Salehi-Abari O, Alaca F, Green JR, Goubran R, "Application of Sensor Networks In A Smart Apartment", *CMBEC33*, Vancouver, 15-18 June 2010.
- [C13] Peace R, Stewart T, Green JR, Smith J, "Analysis of Redundant Peaks in LC-MS/MS Datasets", *IEEE International Workshop on Medical Measurements and Applications (MeMeA)*, p.23-27, Ottawa, 30 April-1 May 2010. (refereed on extended abstract)
- [C12] Nizami S, Green JR, Eklund JM, McGregor C, "Heart Disease Classification through HRV Analysis Using Parallel Cascade Identification and Fast Orthogonal Search", *IEEE International Workshop on Medical Measurements and Applications (MeMeA)*, p.134-139, Ottawa, 30 April-1 May 2010. (refereed on extended abstract)
- [C11] Wetherow O, Green JR, Chan ADC, Golshani A, "Plate Analyzer - A Yeast Colony Size Measurement System", *IEEE International Workshop on Medical Measurements and Applications (MeMeA)*, p.140-144, Ottawa, 30 April-1 May 2010. (refereed on extended abstract)

- [C10] Green JR, Mahmoud H, Dumontier M, "Modeling Tryptic Digestion on the Cell BE Processor", *IEEE Canadian Conference on Electrical and Computer Engineering (CCECE09)*, St. John's NFLD, 3-6 May 2009.
- [C9] Yuan MY, Green JR, Goubran R, "Stove Top Thermal Monitoring For Assisted Living At Home", *CMBEC31*, Montreal, 10-13 June 2008.
- [C8] Chan ADC and Green JR, "Smart Rollator Prototype", *IEEE International Workshop on Medical Measurements and Applications (MeMeA)*, p.97-100, Ottawa, 8-9 May 2008. (refereed on extended abstract)
- [C7] Aboul-Magd Md and Green JR, "PCI-SS: Web-Based Human and Machine Interfaces to Protein Secondary Structure Prediction", *IEEE Canadian Conference on Electrical and Computer Engineering (CCECE08)*, Niagara Falls, Ontario, 4-7 May, 2008.
- [C6] Sadeghian A, Yim CH, Chan ADC, Green JR, "Eye-Interact: A Low-Cost Eye Movement Controlled Communication System", *CMBEC30*, Toronto, 16-19 June 2007.
- [C5] Mulligan, K, LaRocque, J, Green, JR, "A Low Cost Non-Contact Approach to Tongue Tracking for Special Needs Children", *CMBEC30*, Toronto, 16-19 June 2007.
- [C4] Green JR and Korenberg MJ, "Nonlinear system Identification Provides Insight into Protein Folding", *IEEE Canadian Conference on Electrical and Computer Engineering (CCECE06)*, Ottawa, Ontario, 7-10 May, 2006. (refereed on abstract only)
- [C3] Green JR, Dmochowski GM, Golshani A, "Prediction of Protein Sumoylation Sites Via Parallel Cascade Identification", *CMBEC06*, Vancouver, 1-3 June 2006.
- [C2] Bushel P R, Bennett L, Hamadeh H, Green JR, Ableson A, Misener S, Paules R, Afshari C, "Gene expression pattern recognition algorithm inferences to classify samples exposed to chemical agents", *Proc. SPIE Int. Soc. Opt. Eng.* 4623:85-93, 2002.
- [C1] Green JR, "Human Factors in Motor Vehicle Collision Investigations", *Proc. CMRSC* 10:498-508, Toronto, Ontario, 9-11 June 1997. (**Best Student Paper Award**)

Patents Pending

- [PP1] Kotlyar M, Ableson A, Green J, Somogyi R, Steeg E, inventors; Molecular Mining Corp., assignee. "Determination of Co-occurrences of Attributes," International Patent Application No. PCT/CA02/00731 (International Patent Publication No. WO 02/095650). Filed May 17, 2002.

Non-refereed technical papers

- [T4] Dick K, Russell L, Souley Dosso Y, Green JR, 2017, "Deep Learning for Identifying Threats to Critical Infrastructure", prepared for Natural Resources Canada, Energy Infrastructure Security Division, 68 pages.
- [T3] Greiss R, Green JR, Goubran RA, 2016, "Acoustic Noise Management in Open Plan Offices for Critical Infrastructure Security", prepared for Natural Resources Canada, Energy Infrastructure Security Division, 52 pages.
- [T2] Peace R, Green JR, 2012, "Final Report on Semantic Techniques for Patent Landscape Analyses," prepared for Global Intellectual Strategies, Ottawa, 16 pages.
- [T1] Dumontier M, Green JR, Golshani A, Smith ML, Mir-Rashed N, Alamgir Md, Eroukovam V, Dehne F, Cheetham JJ, 2008, "Identifying Significant Features Shared Among Yeast Proteins for Functional Genomics", *Nature Precedings*, hdl:10101/npre.2008.2311.1, 16 pages.

Workshops and Invited Technical Presentations

- [W18] Green JR, "Deep Learning for Identifying Threats to Critical Infrastructure," Meeting of the Energy and Utilities Sector Network (EUSN), Ottawa, Canada, 60 minutes, 15 Nov 2017.
- [W17] Green, JR, "Fast and Equitable Grading of Labs and Assignments in Engineering", Teaching Assistant Mentor Workshop Series, Carleton University, 90 minutes, annually 2012-2017.
- [W16] Green JR, "Predicting Rare Events," Data Day 4.0, Carleton University, 29 March 2017.
- [W15] Green JR, "Machine Learning with Class (*Imbalance*)," CASCON 2016 Evidence-based Analytics Workshop, Markham, Ontario, 1 November 2016.
- [W14] Green JR, "Developing machine learning systems in the presence of class imbalance", Invited Talk, Ottawa Machine Learning Meetup Group, Ottawa, Canada, 30 November 2015.
- [W13] Green JR, "Machine Learning for Bioinformatics in the Face of Class Imbalance", Track Keynote at the *World Congress on Medical Physics & Biomedical Engineering*, Toronto, Canada, 11 June 2015.
- [W12] Green JR, "Pattern Classification in the Presence of Class Imbalance", Invited Talk, Universidad Central "Marta Abreu" de Las Villas, Santa Clara, Cuba, 5 May 2015.
- [W11] Green JR, "The Future of Assistive Technologies", International Summit on Accessibility, 20 minutes, Ottawa Ontario, 15 July 2014.
- [W10] Green JR, "Creating Assistive Devices Using Machine Vision", FEDTalks Speaker Series, 60 minutes, Ottawa Ontario, 5 March 2014.
- [W9] Green JR, "Exact String Matching on Cell B/E and GPGPU Multi-core Architectures for Computational Mass Spectrometry", CASCON Workshop on Parallel Algorithms for Multi-Core and Many-Core Processors, 30 minutes, 2 November 2010.
- [W8] Green, JR, "Acceleration of Exact String Matching for Computational Mass Spectrometry", IEEE Computer Society Ottawa Chapter, 90 minutes, 21 September 2010.
- [W7] Gelowsky T, Marjaba R, Patulea C, Green JR, Marble AE, "An Assistive Device for Visually Impaired Swimmers", *CMBEC32*, Calgary, 20-22 May 2009.
- [W6] Green JR, Mahmoud H, Dumontier M, "Modeling Tryptic Digestion on the Cell BE Processor", CASCON 2008, Toronto, 27-28 October 2008.
- [W5] Green JR and Aitken S, "Fast and Equitable Grading of Labs and Assignments in Science and Engineering", Educational Development Center, Carleton University, 90 minutes, 2008-2009.
- [W4] Green JR, Knisely W, Aghaei A, "An Extensible Genetic Algorithms Library for the Cell BE Processor", CASCON 2007, Toronto, 22-25 October 2007.
- [W3] Green JR, "Fast and Equitable Grading of Labs and Assignments in Science and Engineering", Educational Development Center, Carleton University, 90 minutes, 2007-2009, 2010.
- [W2] Green JR, "Discovering protein structure and function via nonlinear system identification", IEEE EMBS Ottawa Chapter, Ottawa, 23 November 2005.

- [W1] Green JR, "Dynamic nonlinear protein structure prediction", Carleton University, Ottawa Ontario, 10 December 2004.

Posters

- [P20] Nizami S, Bekele A, Souley Dosso Y, Hozayen Y, Basharat A, Aubertin C, Greenwood K, Harrold J, Giffen R, Green JR, "Patient Monitoring in the NICU using Pressure Sensitive Mats and Video Analysis," CASCON 2017, Markham, Ontario, 6-8 Nov 2017. **(Tied for Best Poster Award, among 75 exhibits)**
- [P19] Cohen-MacFarlane, Green JR, Knoefel F, Goubran RA, "Smart Monitoring of Fluid Intake And Bladder Voiding Using Pressure Sensitive Mats," Life Sciences Research Day, Carleton University, 5 May 2017.
- [P18] Dick K, Green JR, "A Framework for Improving Protein-Protein Interaction Predictions," Life Sciences Research Day, Carleton University, 5 May 2017.
- [P17] Souley-Dosso Y, Dick K, Green JR, "Tongue Tracking using Convolutional Neural Networks and Transfer Learning," Life Sciences Research Day, Carleton University, 5 May 2017.
- [P16] Dick K, Souley-Dosso Y, Russell L, Green JR, "Deep Learning for Identifying Threats to Critical Infrastructure," Data Day 4.0, Carleton University, 29 March 2017.
- [P15] Castillo-Garit JA, Martínez-López Y, Barigye SJ, Martínez-Santiago O, Marrero-Ponce Y, Green JR, 2017, "Molecular descriptor from atomic weighted vectors to predict aquatic toxicity," MOL2NET 2016 - 2nd International Conference on Multidisciplinary Sciences, 25 Jan 2017.
- [P14] Nizami S, Nofal S, Statchuk C, Aubertin C, Greenwood K, Harrold J, Green JR, "Pressure Sensitive Mats for Patient Monitoring in the NICU," CASCON 2016, Markham, Ontario, 31 October 2016.
- [P13] Nizami S, Green JR, McGregor C, "Detecting Artifacts in Big Physiologic Data to Enhance Clinical Decision Support", Second Annual Data Day, Carleton University, 1 April 2015. **Honorable Mention in Poster Competition.**
- [P12] Peace R, Green JR, "Species-specific microRNA prediction for elucidation of freeze-tolerance", 2014 Ottawa Hospital Research Institute (OHRI) Research Day, Ottawa ON, 13 Nov 2014.
- [P11] Peace R, Green JR, "MicroRNA prediction for elucidation of freeze-tolerant properties of *C. Picta Bellii*", First Annual Data Day, Carleton University, 24 April 2014.
- [P10] Ruiz-Blanco YB, Martinez E, Marrero-Ponce Y, Green JR, "A Hybrid-meta-heuristic Approach to Search Protein Conformational Space", First Annual Data Day, Carleton University, 24 April 2014.
- [P9] Amos-Binks A, Dehne F, Green JR, "Towards Personalized Interactomes", First Annual Data Day, Carleton University, 24 April 2014
- [P8] Schoenrock A, Samanfar B, Hooshyar M, Phillips CA, Wang H, Pitre S, Omid K, Gui Y, Alamgir Md, Barrenas F, Benson M, Langston M, Green JR, Dehne F, Golshani A, "On finding overlapping graph complexes, with applications to PPI network analysis", UT-ORNL-KBRIN Bioinformatics Summit, Louisville, KY, March 2012

- [P7] Peace R, Mahmoud H, Green JR, “Exact String Matching for Proteomics on the Cell BE”, Second SHARCNET Symposium on GPU and Cell Computing, University of Waterloo, 20 May 2009.
- [P6] Peace R, Mahmoud H, Green JR, “Peptide Sequence Tag Identification Using the Cell BE”, 2nd Annual Carleton Cell BE Programming Workshop, Carleton University, 13-15 May 2009. **Received Best Poster Award.**
- [P5] Rohra R, Kanagasundaram R, Green JR, “Accelerating Nonlinear System Identification Using the Cell BE Processor”, 2nd Annual Carleton Cell BE Programming Workshop, Carleton University, 13-15 May 2009.
- [P4] Gagne R, Williams A, Dong H, Wade M, Green J, Yauk C, "Guidelines for Chip-chip pre-processing and analysis", Health Canada Science Forum, 8-9 Oct 2008. **Received Best Poster Award.**
- [P3] Green JR, Knisely W, Aghaei A, "An Extensible Genetic Algorithms Library for the Cell BE Processor", Cell BE Programming Workshop 2008, Carleton University, 15-16 May 2008.
- [P2] Hamdy M, Belkema P, Green JR, “Dynamic Nonlinear System Identification on the Cell BE”, Cell BE Programming Workshop 2008, Carleton University, 15-16 May 2008.
- [P1] Mahmoud H, Dumontier M, Green JR, “Towards Real Time Protein Identification using the Cell BE”, Cell BE Programming Workshop 2008, Carleton University, 15-16 May 2008.

Funding History

| Year | Grant Agency and Grant | Co-applicants | Amount |
|-----------|---|---|--|
| 2018 | Research Achievement Award (Carleton University) <i>“Real-time patient monitoring during neonatal transport”</i> | | \$15,000 |
| 2017 | OCE VIP-I/NSERC Engage (Clearwater Clinical) <i>“Automating classification of ShoeBOX audiograms”</i> | | \$50,000 |
| 2017 | NSERC Engage (SavvyDox) <i>“Facilitating document collaboration and processing for review committees”</i> | | \$25,000 |
| 2017 | Natural Resources Canada - Critical Infrastructure Protection Program Contract <i>“Deep Learning for Identifying Threats to Critical Infrastructure”</i> | | \$22,500 |
| 2016-2019 | NSERC CRD / IBM CAS Grant (IBM/CHEO) <i>“Pressure sensitive mats for patient monitoring in the NICU”</i> | | \$102,000/yr for 3 years (\$306,000 total) |
| 2016 | MITACS Mitacs Globalink Research Award <i>“Investigation of the protein-protein interaction network of an anti-oxidant protein TPxGl in the human malaria parasite P. falciparum”</i> | Dr. Swati Patankar, ITT Bombay, India Supported travel of Kevin Dick, MASc | \$5,000 |
| 2016-2021 | NSERC Discovery Grant <i>“Effective prediction of microRNAs in the face of class imbalance”</i> | | \$22,000/yr for 5 years (\$110,000 total) |

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|-----------|---|---|---|
| 2016-2022 | NSERC Research and Training Experience Program <i>"Biomedical Engineering Smartphone Training (BEST) Program"</i> | Natalie Baddour (PI) and 7 others. | \$1.65M over 6 years |
| 2016 | Natural Resources Canada - Critical Infrastructure Protection Program Contract <i>"Acoustic noise management in open plan offices"</i> | Rafik A. Goubran | \$25,000 |
| 2014-2016 | Carleton University Development Grant <i>"Computing personalized protein interactomes"</i> | | \$10,000 |
| 2014 | NSERC Engage (SoLink Corp) <i>"Enabling persons with intellectual disabilities to optimize automated video analysis systems – a feasibility study"</i> | | \$25,000 |
| 2013 | NSERC Research Tools & Instruments - I <i>"Personalized human protein interactomes"</i> | Frank Dehne (PI) | \$13,015 |
| 2012 | NSERC Engage (Global Intellectual Strategies) <i>"Evaluation of semantic search technologies for patent landscape analyses"</i> | | \$24,910 |
| 2011-2012 | Carleton University Innovation Forum <i>"Clinical Engineering: "Engineering Health in Hospitals"</i> | Adrian Chan (PI and 5 others) | \$19,000 |
| 2009-2014 | NSERC Discovery Grant <i>"Real-time proteomics on heterogeneous multi-core processors"</i> | | \$19,000/yr for 5 years (\$95,000 total) |
| 2009 | MITACS Network and Training Initiative <i>"Second annual Cell BE programming workshop – the Cell BE in biomedical informatics"</i> | Frank Dehne Michel Dumontier Gabriel Wainer | \$10,000 + \$4,500 in-kind |
| 2009-2011 | Health Canada Genomics R&D Program <i>"Development and validation of toxicogenomic tools, and integrated systems biology approaches in regulatory toxicology"</i> | Carole L. Yauk (PI and 17 others) | \$418,000 (2%) 2009 \$496,000 (2%) 2010 |
| 2008 | Ontario Research Fund Research Infrastructure Program <i>"Laboratory for hardware accelerated protein identification for mass spectrometry"</i> | Michel Dumontier (PI) | 114,628 (50%) |
| 2007 | Canadian Foundation for Innovation Leaders Opportunity Fund <i>"Laboratory for hardware accelerated protein identification for mass spectrometry"</i> | Michel Dumontier (PI) | 114,628 (50%) |
| 2006-2009 | NSERC Discovery Grant <i>"Discovering protein structure and function through nonlinear system identification"</i> 3-year term is policy for new applicants to GSC 331. | | \$15,000/yr for 3 years (\$45,000 total) |
| 2005 | Carleton University Start-up Grant | | \$25,000 |

Major Honours and Awards

- Research Achievement Award, Carleton University 2018
- Teaching Achievement Award, Carleton University 2018
- Co-author S. Nizami wins IEEE MeMeA "2017 Best Women in Engineering Paper Award" 2017
- Nominated for Faculty Graduate Mentoring Award 2016
- IEEE Ottawa Section Outstanding Service Award 2015
- Nominated for a Capital Educator's Award 2015
- Senior Member of the Institute of Electrical and Electronic Engineering (IEEE) 2010
- Employee Recognition Award for Health and Safety, Carleton University 2008
- Teaching Achievement Award, Carleton University 2008
- Ontario Graduate Scholarship in Science and Technology 2003 – 2005
- Favourite Professor Award, 3rd Year Computer Engineering, Queen's University 2003 – 2004
- Burroughs Wellcome Fund Bursary to attend Canadian Bioinformatics Workshop 2002
- NSERC PGS-B scholarship 2001 – 2003
- Queen's University Graduate Award 1998 – 2005
- NSERC PGS-A scholarship 1998 – 2000
- Canadian Posture and Seating Centre Scholarship 1998
- CARSP National Student Paper Award 1997

Knowledge and technology translation activities

- 2016-19: Working with IBM and the Children's Hospital of Eastern Ontario to explore the use of pressure-sensitive mats for patient monitoring within the NICU.
- 2017-18: Working with Clearwater Clinical Corporation to use machine learning to automate the analysis of audiograms.
- 2014-15: Worked with the environmental toxicogenomics group at Health Canada to develop a software analysis pipeline for next-generation sequencing mutation spectrum analysis experiments.

Teaching

Note: Average teaching evaluation scores (out of 5) are provided in brackets where available.

Carleton University

- SYSC 2001 Computer Systems Foundations (4.63) 2017-2018
- SYSC 5405/BIOM 5405 Pattern Classification and Experiment Design
- SYSC 3601 Microprocessor Systems
- BIOM 5800 Biomedical Engineering Seminar (with Prof. Andy Adler)
- SYSC 5906 Directed Studies – 'Deep Learning for Critical Infrastructure Protection' (1 student)
- SYSC 5906 Directed Studies – 'Deep Neural Networks' (2 students, with Profs E. Ukwatta and S. Rajan)
- BIOL 5501 Directed Studies – 'Soy allergies and human-soy protein interactions' (1 student)

- SYSC 2001 Computer Systems Foundations (4.48) 2016-2017

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|--|-----------|
| SYSC 5405/BIOM 5405 Pattern Classification and Experiment Design (4.47) | |
| BIOM 5010 Introduction to Biomedical Engineering (with Prof. Andy Adler, 4.44) | |
| BIOM 5800 Biomedical Engineering Seminar (with Prof. Andy Adler) | |
| SYSC 2001 Computer Systems Foundations (4.54) | 2015-2016 |
| SYSC 5405/BIOM 5405 Pattern Classification and Experiment Design (4.31) | |
| BIOM 5010 Introduction to Biomedical Engineering (with Prof. Andy Adler, 4.59) | |
| BIOM 5800 Biomedical Engineering Seminar (with Prof. Andy Adler) | |
| SYSC 2001 Computer Systems Foundations (4.72) | 2014-2015 |
| SYSC 5405/BIOM 5405 Pattern Classification and Experiment Design (4.66) | |
| BIOM 5800 Biomedical Engineering Seminar | |
| SYSC 2001 Computer Systems Foundations (4.60) | 2013-2014 |
| SYSC 5405/BIOM 5405 Pattern Classification and Experiment Design (4.59) | |
| BIOM 5800 Biomedical Engineering Seminar | |
| SYSC 5906 Directed Studies – ‘Biometrics’ (2 students, with Prof. Andy Adler) | |
| SYSC 2001 Computer Systems Foundations (4.67) | 2012-2013 |
| SYSC 5405/BIOM 5405 Pattern Classification and Experiment Design (4.59) | |
| BIOM 5800 Biomedical Engineering Seminar (4.76) | |
| SYSC 5906 Directed Studies – ‘Real-time Patient Monitoring in the NICU’ (1 student) | 2011-2012 |
| SYSC 4507 Computer Systems Architecture (4.60) | 2010-2011 |
| SYSC 5108 Pattern Classification and Experiment Design (4.62) | |
| SYSC 5906 Directed Studies – ‘Distributed Sparse Matrices’ (1 student, with Prof. Andy Adler) | |
| SYSC 4507 Computer Systems Architecture (4.81) | 2009-2010 |
| SYSC 5108 Pattern Classification and Experiment Design (4.45) | |
| SYSC 5906 Directed Studies – ‘Inverse Models and Problems’ (3 students, with Prof. Andy Adler) | |
| SYSC 5906 Directed Studies – ‘Pattern Classification and Experiment Design’ (1 student) | |
| SYSC 3601 Microprocessor Systems (4.82) | 2008-2009 |
| SYSC 4507 Computer Systems Architecture (4.71) | |
| SYSC 5108 Pattern Classification and Experiment Design (4.20) | |
| SYSC 5906 Directed Studies – ‘Inverse Models and Problems’ (2 students, with Prof. Andy Adler) | |
| SYSC 3601 Microprocessor Systems (4.89) | 2007-2008 |
| SYSC 4507 Computer Systems Architecture (4.71) | |
| SYSC 5108 Pattern Classification and Experiment Design (4.56) | |

SYSC 3601 Microprocessor Systems (winter: 4.96) 2006-2007
 SYSC 3601 Microprocessor Systems (spring: 4.82)
 SYSC 4507 Computer Systems Architecture (4.63)
 SYSC 5906 Directed Studies – ‘The Cell BE in Practice’ (4 students, with Prof. Trevor Pearce)

SYSC 3601 Microprocessor Systems (winter: 4.83) 2005-2006
 SYSC 3601 Microprocessor Systems (spring: 4.80)

Queen’s University*

ELEC274 Computer Architecture (4.7) 2005
 ELEC371 Microprocessor Systems (4.4) 2003

* ELEC274 (W05) and ELEC371 (F03) were both taught as a Teaching Fellow at Queen’s University, Department of Electrical and Computer Engineering. I have reported the score for the statement: “Overall, this instructor is an effective teacher” (out of 5).

Graduate Supervision

Summary

| Master Students | | (Post-) Doctoral Students | |
|-----------------|-----------|---------------------------|-----------|
| In Progress | Completed | In Progress | Completed |
| 7 | 16 | 2 | 5 |

Post-doctoral and Visiting Scholar Research in Progress

- Shermeen Nizami, Investigation of the Use of Pressure-Sensitive Mats for Patient Monitoring in the NICU, Postdoctoral Fellow, 2016-present.

Doctoral Thesis Research in Progress

- Kevin Dick, Reciprocal Perspective for Protein Interaction Prediction, PhD., 2015-present.

Master’s Thesis Research in Progress

- Amente Bekele, Algorithms for Patient Monitoring via Pressure-sensitive Mats, M.A.Sc., 2016-present
- Francois Charih, Automated Classification of Audiograms, M.A.Sc., 2017-present
- Calvin Jary, Machine Learning in Bioinformatics (TBD), M.A.Sc., 2017-present
- Mohsen Sheikh-Hassani, Prediction of microRNA using Multi-Domain Features, M.A.Sc., 2016-present
- Yasmina Souley Dosso, Machine Vision for Patient Monitoring in the NICU, M.A.Sc., 2016-present
- Roger Selzler, Pressure-sensitive Mat Technology using Optical Sensors, M.A.Sc., 2016-present

Post-doctoral and Visiting Scholar Research Completed

- Waldo Paz Rodriguez, Integrating Feature Generation and Selection for Describing Protein Sequences and Structures, ELAP Visiting Scholar, Universidad Central “Marta Abreu” de Las Villas, Santa Clara, Cuba, 2016-2017
- Gerardo Maikel Casañola Martin, Prediction of Protein Post-translational Modifications, ELAP Visiting Scholar, Universidad de Las Américas (UDLA), Ecuador, 2016-2017
- Yasser Ruiz-Blanco, Prediction of Protein Methylation, Visiting Professor, Universidad Central “Marta Abreu” de Las Villas, Santa Clara, Cuba, Sept - Oct 2016.

- Juan Alberto Castillo Garit, Prediction of Post-Translational Modification, ELAP Visiting Scholar, Universidad Central “Marta Abreu” de Las Villas, Santa Clara, Cuba, 2015-2016
- Yasser Ruiz-Blanco, Protein Structural Descriptors for Decoy Discrimination and Data Mining Applications, ELAP Visiting Scholar, Universidad Central “Marta Abreu” de Las Villas, Santa Clara, Cuba, Jan - May 2014.

Doctoral Thesis Research Completed

- Shermeen Nizami, Integration of Artifact Detection in Clinical Decision Support Systems, Ph.D., 2008-2016. (co-supervisor: Prof. Carolyn McGregor, Canada Research Chair in Health Informatics, University of Ontario Institute of Technology)
- Robert Peace, MicroRNA Prediction for Unannotated Genome-Wide and Transcriptomic Experiments, Ph.D., 2011-2016.

Master’s Thesis Research Completed

- Allen Amos-Binks, Protein-protein Interaction Prediction in the Presence of Genetic Variation, M.A.Sc., 2012-2014. (co-supervisor: Prof. Frank Dehne, SCS, Carleton University)
- Bradley Barnes, Computational Prediction of miRNA, M.A.Sc., 2015-present.
- Mariana Barssoum, Species-specific Prediction of Protein Secondary Structure, M.A.Sc., 2006-2009.
- Madison Cohen-McFarlane, Tracking Fluid Distributions within the Body Using Pressure-Sensitive Mats, M.A.Sc., 2015-2017. (co-supervisor: Prof. Rafik Goubran, SCE, Carleton University)
- Graham Fraser, Automated Assessment of EMG Signal Quality, M.A.Sc., 2010-2012. (co-supervisor: Prof. Adrian Chan, SCE, Carleton University)
- Ahmad Ghadiri, Mutation Spectrum Analysis via Next Generation Sequencing, M.A.Sc., 2012-2015 (co-supervisor: Prof. Andrew Marble, SCE, Carleton University)
- Rémi Gagné, Computational Identification of Thyroid Response Elements in Genomic DNA, M.Sc., 2006-2010. (part-time; co-supervisor: Dr. Carol Yauk, Health Canada)
- Festus Iyuke, Active Learning For The Prediction of Asparagine and Aspartate Hydroxylation Sites on Human Proteins, M.A.Sc., 2009-2011. (co-supervisor: Prof. Bill Willmore, Biology, Carleton University)
- Jason Koppert, Development and Optimization of Functional Oligomer Coatings for Usage in PCR, M.A.Sc., 2014-2016. (co-supervisor: Prof. Bill Willmore, Biology, Carleton University)
- Qi Li, Medical Informatics via Biostatistics and Pattern Classification, M.A.Sc., 2007-2010. (co-supervisor: Prof. Monique Frize, SCE, Carleton University)
- Alex McKenzie, Digital Signal Processing of Time-varying Gene Expression Data, M.A.Sc., 2006-2010. (co-supervisor: Prof. Richard Dansereau, SCE, Carleton University)
- Catalin Patulea, Targeted Optimization of Computational and Classification Performance of a Protein-Protein Interaction Predictor, M.A.Sc., 2010-2011.
- Robert Peace, String Matching and Online Retention Time Prediction for Real-Time Information-Driven Mass Spectrometry, M.A.Sc., 2009-2011.
- Vismand Rahpeymayrad, Prediction of N-Linked Glycosylation Sites in Plant Proteins, M.A.Sc., 2012-2015
- Ming Ye Yuan, Thermal Imaging Stove Top Monitor for Independent Living, M.A.Sc., 2006-2008. (co-supervisor: Prof. Rafik Goubran, SCE, Carleton University)
- Zhen Liu, Computational Identification of Hydroxylation Sites from Sequence, M.Sc., 2007-2009. (co-supervisor: Prof. Bill Willmore, Biology, Carleton University)

Thesis Examination Committees

I have served on over 100 graduate examination committees for Carleton University (PhD-EE, PhD-CS, PhD-Bio, M.A.Sc.-EE, M.A.Sc.-Biomed, M.Sc.-CS, M.Sc.-Physics, M.A.Sc.-MAE, M.A.-Psych), for the University of British Columbia (PhD), Queen's University (PhD), the University of Toronto (PhD), the University of Western Sydney (M.Sc.-IT), and for the University of Ottawa (PhD-EE, M.A.Sc.-EE, M.Sc.).

Undergraduate and Research Associate Supervision

| 4th Year Project Students | | USRA/Co-op/Intern/Contract Students | |
|---|---|--|---|
| In Progress | Completed | In Progress | Completed |
| 9 | 96 | 2 | 40 |
| Year | Students | Program and Project | Co-supervisor |
| 2017-2018 | Joshua Armel Haris Ghauri | (SYSC4907) Creating an IoT Aquaponics System | |
| | Sajeda Almalki Sarah Garlough Alex Fernandes Gabrielle Genereux | (SYSC4907) iTAD - Carleton University Intelligent Telepresence and Assistive Devices | Prof. Adrian Chan (Carleton, SCE) |
| | Noah Segal Bronwyn Skelley Daniel Hogan | (SYSC4907) Who's Got the Kids? | Prof. Rebecca Bromwich (Carleton, Legal Studies) |
| 2016-2017 | Jaser El-Habrouk | (Contract) Tracking the Tongue using the MS Kinect | |
| | Akhila Ananth Robert Fernandes | (SYSC4907) Colour Identifier and Matcher | |
| | Tyler Ayers Matt LeBlanc | (SYSC4907) Image Logging Bird Feeder | |
| | Connor Neumann Iefan Morgan-Waggitt | (SYC4907) A Webserver for the Prediction of Protein Methylation Sites | |
| | Maryam Kaka | (iCureus Contract) Computational Prediction of Protein-Protein Interaction Interfaces | |
| | Mohamed Hozayen | (USRA/iCureus Contract) Web-based patient event annotation for clinical trials | |
| | Monica Ruttle Bhargav Patel Kevin Sullivan Symon Stowe Daniel Sauve | (SYSC4907) iTAD - Carleton University Intelligent Telepresence and Assistive Devices | Prof. Adrian Chan (Carleton, SCE) |
| 2015-2016 | Roger Selzler | (Volunteer Researcher) Pressure-sensitive mats using opto-electric sensors | |
| | Zeyad Abdelaziz | (Contract) Benchmarking protein methylation predictors & 3D protein structure prediction | |
| | Nick Wicklund | (Intern) Augmenting the Robotic Guide Dog using Arduino-based sensors | |
| | Jacky Chiu | (Intern) Predicting protein methylation in yeast | |
| | Sami Nofal | (USRA) Developing a patient annotation app | |
| | Monty Dhanani | (Research Volunteer) Using the MS Kinect for Non-Contact Tongue Tracking | |

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|-----------|---|--|--|
| | Jonathan Oommen David Bews | (SYSC4907) Wearable obstacle detection for blind swimmers | Prof. Yuu Ono (Carleton, SCE) |
| | Nikola Neskovic Ian Wong Kevin Rosengren | (SYSC4907) Google Glass for chemical inventory tracking | Prof. Sreeraman Rajan (Carleton, SCE) |
| | Lina Serry | (iCureus contract) Evaluation of transcriptomic-based miRNA prediction methods | |
| | Mohammed Ahmed-Muhsin Devin Church Jonathan From Quoc-Nam Le-The | (SYSC4907) Robotic Ringette Coach | |
| | Vivian Liu Monisha Gunalan Amente Bekele David Bui David Yao | (SYSC4907) Wearable Assistive Device for the Deaf | Prof. Victor Aitken (Carleton, SCE) |
| | Mitchell Cail Mamoon Abdulhameed | (SYSC4907) Fitness and Nutrition App | |
| 2014-2015 | Irusha Vidanamadura | (NSERC USRA) Development of a next-generation sequencing mutation spectrum analysis pipeline | |
| | Maryam Kaka | (NSERC USRA) Pressure sensitive mats for detecting patient movement-induced artifacts | Prof. Rafik Goubran (Carleton, SCE) |
| | Chris Yuyitang | (Intern) Robotic Guide Dog | |
| | Alexander Fernandes | (Intern) Improving the Accuracy of the Tongue Tracker | |
| | Jaser El-Habrouk | (Contract) Tracking the Tongue using the MS Kinect | |
| | Christopher Sparrow Angus Burns | (SYSC4907) Wearable obstacle detection for blind swimmers | |
| | Ali Avci Naufil Qureshi | (SYSC4907) Development of a Multi-Camera Multi-Transmitter Electronic Swimming Coach for Blind Athletes | |
| 2013-2014 | Jonathan Oommen | (NSERC USRA) Assistive devices for promoting accessibility to employment and computer control | |
| | Rahul Minhas | (Intern) Developing a tongue-tracking mouse driver | |
| | Abedelbaset Al Tamimi | (Research Associate) Developing a Tongue-Tracking iOS Children's Game | |
| | Colin Jones | (NSERC Engage Research Associate) Enabling persons with intellectual disabilities to optimize automated video analysis systems | |
| | Darren Stahl Robert Nelson | (Contract) iCureus Undergraduate Research: Monitoring Mobility Using a Smartphone | Prof. Ed Lemaire (UofO, Rehab Centre) |
| | Kelly Barker Madeline Harlow | (SYSC4917) Robotic Guide Dog | |

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|-----------|---|--|---|
| | Tyler Smith Kevin Lemay | (SYSC4917) RUTalking2Me? | Dr. James Ryan, SCE, (Carleton University) |
| | Sravya Atluri Amanda Hamameh | (SYSC4917) Development of a Protein Sumoylation Prediction Server | |
| 2012-2013 | Joshua Delrio Max Joyce | (SYSC4907) Designing an Embedded Self-Replicating 3-Dimensional Printer | Prof. Samuel Ajila (SCE, Carleton University) |
| | Jiakun Fang | (MITACS Globalink Intern) Virtualization for Robust Delivery of Bioinformatics Services | |
| | Colin Miyata Raymond Greiss | (Volunteers) RUTalkin2Me? | Dr. James Ryan, (SCE, Carleton University) |
| | Guanchen Cen Jue Hou Muhammad Fuad Mohd Derrick Nhan | (SYSC4917) Robotic Guide Dog | |
| 2011-2012 | Davide Agnello | (Contract) Development of a Prototype Electronic Swimming Coach for Blind Athletes | |
| | Amente Bekele | (Intern) Development of a Multi-Species Protein- Protein Interaction Database for PIPE | |
| | Derrick Nhan | (Contract) Down Syndrome Patient Database for CHEO | Dr. Mary Pothos, CHEO |
| 2010-2011 | Manmeet Singh Nikhilesh Pradhan | (1 st Year Intern) Identification of Artifacts in Streaming Physiological Data | |
| | Hugo Vihvelin, Myna Moharib, Abhilash Narra | (SYSC4917) Electronic Swimming Coach for Blind Athletes | Prof. Andrew Marble, SCE, Carleton University |
| | Chinedu Nwiyi, Nancy Dioka | (SYSC4917) iCurl: iPhone App for Curling Sports Analytics | |
| | Geoff Clarke | (SYSC4917) Instrumentation of an Olympic Racing Kayak | |
| 2009-2010 | Graham Fraser | (NSERC USRA) Biomedical Imaging – Colony Size Measurement for Functional Genomics | |
| | Derrick Nhan | (1 st Year Intern) Down Syndrome Patient Database for CHEO | Dr. Mary Pothos, CHEO |
| | Jaclyn Baldwin, David Galarneau, Adam Jones, Alexa Loiskandl | (SYSC4917) Electronic Swimming Coach for Blind Athletes | Prof. Andrew Marble, SCE, Carleton University |
| | Furkan Alaca, Omid Salehi-Aba | (SYSC4907) Application of Sensor Networks in a Smart Apartment | Prof. Rafik Goubran, SCE, Carleton University |
| | Ronnie Farrell, Manish Walia, Taha Lukmanji | (SYSC4907) Robotic Guide Dog | |

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|-----------|---|---|--|
| | Faizan Sultan, Suchita Kannangara, Kasun Wijenayake | (SYSC4907) Mass Spectra Processing and Identification on the Cell BE Processor | |
| 2008-2009 | Robert Peace | (NSERC USRA) Exact String Matching for Proteomics on the Cell BE Processor | |
| | Owen Wetherow | (NSERC USRA) Yeast Spot Analyzer | Prof. Adrian Chan, SCE, Carleton University |
| | Jonathan Wong | (1 st Year Intern) Down Syndrome Patient Database for CHEO | Dr. Mary Pothos, CHEO |
| | Ravishankar Kanagasundaram, Rahul Rohra | (SYSC4907) Using the Cell BE Processor for Nonlinear System Identification | |
| | Hanan Mahmoud, Robert Peace | (SYSC4907) Using the Cell BE Processor for Mass Spectrometry SCE Best Project Award | |
| | Ramzi Marjaba, Catalin Patulea, Trevor Gelowski | (SYSC4907) Electronic Swimming Coach for Blind Athletes Featured in Ingenious Magazine, CBC Radio | Prof. Andrew Marble, SCE, Carleton University |
| | Rizwan Haider, Christopher Arksey, Andy Jung | (SYSC4907) Smart Rollator | Prof. Adrian Chan, SCE, Carleton University |
| 2007-2008 | Hanan Mahmoud | (NSERC USRA) Using the Cell BE Processor to Simulate Tryptic Digestion of Proteins | |
| | Davide Agnello | (NSERC USRA) Creation of a Smart Rollator Prototype for Field Testing | Prof. Adrian Chan, SCE, Carleton University |
| | David Xu | (1 st Year Intern) Creation of a Down Syndrome Patient Database for CHEO | Dr. Mary Pothos, CHEO |
| | Mohammed Aboul-Magd, Faysal Hasan, Alex Sintu | (SYSC4907) Smart Walker - Obstacle Avoidance and Guidance | Prof. Adrian Chan, SCE, Carleton University |
| | Ryan Steeves, Mike Colussi | (SYSC4907) Eye-Interact | Prof. Adrian Chan, SCE, Carleton University |
| | Peter Wiebe, Paola Osorio | (SYSC4907) Red-Light/Green-Light Playing Robot | |
| | Faezeh Rafsanjani-Sadeghi, Weizhong Li | (SYSC4907) Behaviour Modification Through Machine Vision | Prof. Andy Adler, SCE, Carleton University |
| | Brian Earl, Davide Agnello | (SYSC4907) Smart Walker - Usage Monitoring and Telemetry SCE Best Project Award | Prof. Adrian Chan, SCE, Carleton University |

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| | Kevin Charland, Ka Chun Eric Au | (SYSC4907) Vehicle Anti-Dozing Eye-Monitoring System | |
| | Moheyeldin Mohsen Hamdy, Payam Belkameh | (SYSC4907) Using the Cell BE Processor for Nonlinear System Identification | |
| | Kagiso Mguni | (SYSC4907) Intelligent Systems for Bioinformatics: Protein Analysis Tool | |
| 2006-2007 | Mohammed Aboul-Magd | (NSERC USRA) PCI Protein Secondary Structure Prediction Webservice | |
| | Arman Aghaei, William (Che) Knisely | (Contract) Open Source Genetic Algorithms Library for the IBM Cell BE | |
| | Lisa Boyachok, Yasmin Khezri, Jed Vito | (SYSC4907) Smart Walker - Robust Heart Rate Detection | Prof. Adrian Chan, SCE, Carleton University |
| | Greg Dmochowski | (Contract) Open Source Protein Structure-Function Navigator | |
| | Jonathan LaRocque, Kyle Mulligan | (SYSC4907) Assistive Device for Children with Down Syndrome | |
| | James Makienko, George Shenouda | (SYSC4907) Smart Walker - Force and Gait Analysis | Prof. Adrian Chan, SCE, Carleton University |
| | Amir Sadeghian, Ryan (Chol-ho) Yim | (SYSC4907) Eye Interact SCE Best Project Award | Prof. Adrian Chan, SCE, Carleton University |
| 2005-2006 | Divya Mantha | (Co-op) Bioinformatics Systems Developer: Migration of bioinformatics resources to Linux | |
| | Sankua Chao | (SYSC4907) Towards Protein Structure: Predicting Protein Domain Boundaries | |
| | Greg Dmochowski | (Co-op) Bioinformatics Systems Developer - Creating a web interface for PCI-SUMO | |
| | Arlinda Hyseni | (BIOL4907) Developing an O-Glycosylation Prediction Tool for <i>s. Cerevisiae</i> | Prof. Ashkan Golshani, Biology, Carleton University |

Services and Professional Memberships

- Editorial positions:
 - Associate Editor, Journal of Medical and Biomedical Engineering, 2014-present
 - Guest Issue Co-Editor, Journal of Medical and Biological Engineering, 2013
- Workshop Organization Committees:
 - Advisory committee member, 2016 IEEE Engineering in Medicine and Biology International Student Conference, Ottawa, 29-31 May 2016.

- Track Co-Chair (Bioinformatics), 2015 World Congress on Medical Physics and Biomedical Engineering, Toronto, 7-12 June 2015
- Academic Co-Chair, 2013 Joint Conference of the Canadian Medical and Biological Engineering Society (CMBEC36) and L'Association des Physiciens et Ingénieurs Biomédicaux du Québec (APIBQ42), Ottawa, 21-24 May 2013
- Chair, Second Annual Carleton Cell BE Programming Workshop, Carleton University, 13-15 May 2009
- Co-Chair, CASCON Workshop on the Cell BE and Multi-core Programming Architectures, Toronto, 27 Oct. 2008
- Co-Chair, CASCON Workshop on the Cell BE Programming Experience!, Toronto, 28 Oct. 2008
- Co-Chair, Cell BE Programming Workshop, Carleton University, 15-16 May 2008
- Technical Program Committees:
 - IEEE BIBE 2018 – 18th International Conference on Bioinformatics and BioEngineering, Oct 2018
 - IEEE BIBE 2016 – 16th International Conference on Bioinformatics and BioEngineering, Oct 2016
 - IEEE EMBS International Student Conference (ISC), May 2016
 - IEEE MeMeA 2015 – Medical Measurements and Applications, May 2015
 - IEEE CCECE 2014 – Biomedical and Health Informatics Stream, May 2014
 - IEEE MeMeA 2013 – Medical Measurements and Applications, May 2013
 - Associate editor for the CCECE 2012 Biomedical Engineering and Health Informatics track, May 2012
 - 13th IASTED International Conference on Intelligent Systems and Control (ISC 2011), July 2011
 - 2011 International Conference on Autonomous and Intelligent Systems (AIS 2011), June 2011
 - The Third IEEE International Workshop of Real-Time Service-Oriented Architecture and Applications (RTSOAA 2010), July 2010
 - IEEE MeMeA 2010 – Medical Measurements and Applications, April 30-May1 2010
 - IEEE Cluster 2010, "Algorithms and Applications" track, September 2010
 - 2010 International Conference on Autonomous and Intelligent Systems (AIS 2010), June 2010
 - The Second IEEE International Workshop of Real-Time Service-Oriented Architecture and Applications (RTSOAA 2009)
 - 2009 (IEEE) International Conference on Signals, Circuits and Systems (SCS 2009)
 - CCECE 2009, Signal and Multimedia Processing Symposium
- Vice-Chair, IEEE EMBS Ottawa Chapter, 2015-present
- Secretary, IEEE EMBS Ottawa Chapter, 2007-2015
- Advisory Board member for the Carleton University READ (Research, Education, Accessibility, and Design) Innovation Centre, 2015-present
- Reviewer for:
 - Annals of Biomedical Engineering, 2009, 2007, 2005, 2002.
 - BBAGEN, 2015
 - Bioinformatics (Oxford) 2015
 - BMC Genomics, BMC Systems Biology, 2017
 - BMC Bioinformatics, 2016
 - Computer Methods and Programs in Biomedicine, 2011
 - FEBS Letters 2015
 - Journal of Medical Systems, 2009
 - Journal of Medical and Biological Engineering 2013, 2016.
 - Journal of Molecular Biology, 2015

- Journal of Theoretical and Applied Electronic Commerce Research, 2009
- Nucleic Acids Research, 2014, 2012, 2006
- PLoS One, 2015
- SIAM Journal on Discrete Mathematics, 2008
- Simulation: Transactions of the Society for Modeling and Simulation International, 2011
- Ad hoc grant reviews for NSERC Discovery Grant, CFI Leader's Opportunity Fund, MITACS Accelerate, NSERC Collaborative Health Research Projects (CHRP), and NSERC Strategic Project Grant.
- Session chair for CMBEC33 (2010), CMBEC32 (2009), CCECE08 (2008), CMBEC30 (2007), and CMBEC29 (2006).
- Memberships:
 - Senior Member of the Institute of Electrical and Electronic Engineering (IEEE), 2010
 - IEEE Engineering in Medicine and Biology (EMBS)
 - Canadian Medical and Biological Engineering Society (CMBES)
 - Canadian Systems Biology Society
 - Canadian Proteome Society
- Judge for Ottawa Regional Science Fair (2008, 2010, 2011, 2013-2018)
- Virtual Ventures mentor (2016, 2017)

Committee Membership

Carleton University

Associate Director of the Ottawa-Carleton Collaborative Program in Bioinformatics 2016-2017

Chair, SCE Faculty Hiring Committee for Real-time Data Analytics and Software Engineering

Secretary of Engineering Faculty Board

Carleton University Joint Health and Safety Committee (CUASA rep)

Faculty of Engineering and Design Health and Safety Committee (SCE rep)

Carleton University Development Grant Review Committee

University Tenure and Promotion Appeal Committee

Fire Warden, 6th floor Canal Building

Virtual Ventures Faculty Mentor

Director of the Ottawa-Carleton Collaborative Program in Bioinformatics 2015-2016

Interim Director of the Carleton University Institute for Data Science

Chair, Systems and Computer Engineering Faculty Hiring Committee for Real-time Data Analytics/Software

Carleton University Joint Health and Safety Committee (CUASA rep)

Member of the Advisory Board for READ Innovation Centre

University Tenure and Promotion Appeal Committee

Faculty Mentor, Virtual Ventures

Institute for Data Science Selection Committee

Virtual Ventures Faculty Mentor

Member of the Systems and Computer Engineering Tenure & Promotion Committee

Fire Warden, 6th floor Canal Building

Co-op Coordinator, Department of Systems and Computer Engineering 2014-2015
Director of the Ottawa-Carleton Collaborative Program in Bioinformatics
Systems and Computer Engineering Faculty Hiring Committee, Biomedical Engineering
School of Computer Science Hiring Committee, Canada Research Chair in Big Data
Carleton University Joint Health and Safety Committee (CUASA rep)
Fire Warden, 6th floor Canal Building
NSERC PGS-D & PGS-M Departmental Scholarship Ranking Committee
Member of the Advisory Board for READ Innovation Centre

Co-op Coordinator, Department of Systems and Computer Engineering 2013-2014
Associate Director of the Ottawa-Carleton Collaborative Program in Bioinformatics
University Tenure and Promotion Appeal Committee
Institute for Data Science Steering Committee
Systems and Computer Engineering Faculty Hiring Committee
Carleton University Joint Health and Safety Committee (CUASA rep)
Fire Warden, 6th floor Canal Building

Co-op Coordinator, Department of Systems and Computer Engineering 2012-2013
Associate Director of the Ottawa-Carleton Collaborative Program in Bioinformatics
Systems and Computer Engineering Faculty Hiring Committee
Systems and Computer Engineering TA Orientation Panel Member

Associate Chair, Undergraduate Studies, Department of Systems and Computer Engineering 2010-2011
Fully Certified Member of Carleton University Joint Health and Safety Committee (CUASA rep)
Faculty of Engineering and Design Committee on Admissions and Studies (CAS)
Faculty mentor for Student Experience Office's Emerging Leaders Program
Chief Fire Warden, Mackenzie Building Block 4

Associate Chair, Undergraduate Studies, Department of Systems and Computer Engineering 2009-2010
Fully Certified Member of Carleton University Joint Health and Safety Committee (CUASA rep)
Faculty of Engineering and Design Committee on Admissions and Studies (CAS)
Faculty of Engineering and Design Health and Safety Committee
Educational Development Centre New Faculty Orientation Panel Member
Systems and Computer Engineering TA Orientation Panel Member
Faculty mentor for Student Experience Office's Emerging Leaders Program
Chief Fire Warden, Mackenzie Building Block 4

Fully Certified Member of Carleton University Joint Health and Safety Committee (CUASA rep) 2008-2009
Employee Appreciation Day Steering Committee
Employee Recognition Awards Selection Committee
Faculty Recruitment and Support Advisory Committee
Faculty of Engineering and Design Committee on Admissions and Studies (CAS)
Program Coordinator for Biomedical and Electrical Engineering
Faculty Liaison for Undergraduate Biomedical Engineering Society
Carleton Faculty of Engineering and Design Health and Safety Committee
Carleton University Teaching Achievement Award Selection Committee
Educational Development Centre New Faculty Orientation Panel Member
Systems and Computer Engineering TA Orientation Panel Member
Chief Fire Warden, Mackenzie Building Block 4

Carleton University Joint Health and Safety Committee (CUASA rep) 2007-2008
Carleton Faculty Recruitment and Support Advisory Committee
Faculty of Engineering and Design Committee on Admissions and Studies (CAS)
Program Coordinator for Biomedical and Electrical Engineering
Carleton Faculty of Engineering and Design Health and Safety Committee
Systems and Computer Engineering Tenure & Promotion Committee
Carleton University Patrick O'Brien High School Teaching Award Selection Committee
Educational Development Centre "Moving Forward by Looking Back" Faculty Panel Member
Chief Fire Warden, Mackenzie Building Block 4
Systems and Computer Engineering Hiring Committee

Carleton University Joint Health and Safety Committee (CUASA rep) 2006-2007
Carleton Faculty Recruitment and Support Advisory Committee
Faculty of Engineering and Design Committee on Admissions and Studies (CAS)
Program Coordinator for Biomedical and Electrical Engineering
Faculty Founder of Undergraduate Biomedical Engineering Society
Carleton Faculty of Engineering and Design Health and Safety Committee
Systems and Computer Engineering Tenure & Promotion Committee
Carleton University Patrick O'Brien High School Teaching Award Selection Committee
Fire Warden, Mackenzie Building Block 4, 4th floor.

Faculty of Engineering and Design Committee on Admissions and Studies (CAS) 2005-2006
Faculty of Engineering and Design Health and Safety Committee

Other

FIRST Robotics Faculty Mentor for St. Francis Xavier High School, Ottawa 2013-2014
Member of the Board of Directors, Down Syndrome Association – National Capital Region 2006-2010

Fully certified member of the Queen's Applied Science Joint Health and Safety Committee 1999-2005