

# Gregory Moyerbrailean

373 Gravilla St.

La Jolla, CA 92037

(517) 614-5498

[gmoyerbr@wayne.edu](mailto:gmoyerbr@wayne.edu)

<http://gmoyerbrailean.github.io>

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## Education

- Aug 2016 **PhD, Molecular Biology and Genetics**, *Center for Molecular Medicine and Genomics, Wayne State University, Detroit MI*
- Dissertation: Modeling the mechanism underlying environmental and genetic determinants of gene expression and complex traits
  - Advisors: Dr. Roger Pique-Regi and Dr. Francesca Luca
- May 2010 **BS, Microbiology (Cell and Molecular Biology)**, *Michigan State University, East Lansing, MI*

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## Research Experience

- Aug 2012 **Center for Molecular Medicine and Genomics, Wayne State University**
- Aug 2016 ◦ Computational analysis of non-coding genetic variation, differential gene expression, allele-specific gene expression, and phenotypic variation using high-throughput sequencing data
- Nov 2011 **Department of Physiology, Wayne State University**
- Aug 2012 ◦ Microbial community analysis from 16S deep-sequencing
- Jul 2010 **Department of Microbiology and Molecular Genetics, Michigan State University**
- Sep 2011 ◦ Molecular analysis of the beneficial effects of probiotics on bone health
- Software development to assist targeted mutagenesis via high-efficiency recombineering
- Nov 2008 **Department of Plant Biology, Michigan State University**
- Jul 2010 ◦ Data analysis of student performance for a broad NSF-funded project to reform introductory biology
- Collection, organization, and storage of sensitive data relating to the NSF-funded Faculty Institutes for Reforming Scientific Teaching (FIRST) IV project
- Sep 2007 **Department of Microbiology and Molecular Genetics, Michigan State University**
- Aug 2008 ◦ Molecular characterization of a putative thymidine-7-hydroxylase found in *Trypanosoma brucei*

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## Teaching Experience

- Winter 2010 **Teaching Assistant**, Computer Concepts and Competencies (CSE101) at Michigan State University
- Fall 2009 **Teaching Assistant**, Biology of Plants (PLB203) at Michigan State University
- Teaching Assistant**, Computer Concepts and Competencies (CSE101) at Michigan State University

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## Professional Experience

- Jul 2008 **Laboratory Technician**, MSU Diagnostic Center for Population and Animal Health, East Lansing, MI.
- Aug 2009 Tasks included tissue handling and preparations, cleanup and disposal of hazardous materials, working with a CERNER client database, and following Standard Operating Procedures
- 2007 **Intern**, BrainCells, Inc, La Jolla, CA. Regular tasks included dishwashing, updating inventory, making solutions, and weighing out compounds. Extra tasks included coating cell culture plates, cutting tissue sections with a microtome, and antibody staining of tissue samples

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## Publications

- 2016 Kato I, Vasquez AA, **Moyerbrailean GA**, Land S, Sun J, Lin HS, Ram JL. Oral microbiome and history of smoking and colorectal cancer. *J Epidemiol Res.* 2016;2(2):92-101
- 2016 **Moyerbrailean GA**, Harvey CT, Kalita CA, Wen X, Luca F, Pique-Regi R. Which Genetics Variants in DNase-Seq Footprints Are More Likely to Alter Binding? *PLoS Genet.* 2016;12(2):e1005875

- 2015 **Moyerbrailean GA**, Davis GO, Harvey CT, Watza D, Wen X, Pique-Regi R, Luca F. A high-throughput RNA-seq approach to profile transcriptional responses. *Sci Rep*. 2015;5:14976
- 2014 Harvey CT, **Moyerbrailean GA**, Davis GO, Wen X, Luca F, Pique-Regi R. QuASAR: Quantitative Allele Specific Analysis of Reads. *Bioinform*. 2014;31(8):1235-1242
- 2014 Fujimoto M, **Moyerbrailean GA**, Noman S, Gizicki JP, Ram ML, Henqinet J, Green PA, Ram JL. Application of Ion Torrent sequencing to the assessment of the effect of alkali ballast water treatment on microbial community diversity. *PLoS ONE*. 2014;9(9):e107534
- 2010 Bray Speth E, Momsen JL, **Moyerbrailean GA**, Ebert-May D, Long TM, Wyse SA, Linton D. 1, 2, 3, 4: Infusing quantitative literacy into introductory biology. *CBE Life Sci Educ*. 2010;9(3):323-32

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## Select Presentations

- Nov 2015 **Moyerbrailean GA\***, AL Richards, D Kurtz, CA Kalita, GO Davis, CT Harvey, A Alazizi, D Watza, Y Sorokin, N Hauff, X Zhou, X Wen, R Pique-Regi, F Luca. High-throughput allele-specific expression across 250 environmental conditions. Oral presentation at RECOMB/ISCB, Philadelphia, PA
- Nov 2014 **Moyerbrailean GA\***, CT Harvey, CA Kalita, X Wen, Luca F and R Pique-Regi. Which genetic variants in DNase I hypersensitive regions are functional? Oral presentation at RECOMB/ISCB, San Diego, CA
- Jul 2014 **Moyerbrailean GA\***, CT Harvey, CA Kalita, X Wen, Luca F and R Pique-Regi. Empirical and computational survey of non-coding variants that affect transcription factor binding. Poster presentation at ISMB RegGenSIG, Boston, MA
- Jun 2014 Luca F, **GA Moyerbrailean\***, CT Harvey, CA Kalita, X Wen and R Pique-Regi. Molecular and Evolutionary Features of Regulatory Variants. Poster presentation at SMBE, San Juan, Puerto Rico
- Nov 2013 Luca F, **GA Moyerbrailean**, CT Harvey and Pique-Regi R\*. Analysis of non-coding genetic variants impact on gene regulation and complex traits. Oral presentation at RECOMB/ISCB, Toronto, ON, Canada
- May 2013 **Moyerbrailean GA\***, F Luca and R Pique-Regi. Analysis of genetic variants and their effects on complex traits. Poster presentation at BOG, Cold Spring Harbor, NY

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## Computational Skills

- Programming** Python, R, Java, C++, make, git, HTML, CSS, Javascript (incl. jQuery)  
Familiar with Perl, Ruby, SQL (MySQL and PostgreSQL), C/C#, PHP
- OS** Unix/Linux (incl. HPC), Mac OSX, Microsoft Windows
- Type Setting** LaTeX, Microsoft Office, Google Docs
- IDE** Vim, emacs, Eclipse, Microsoft Visual Studio