JAMES (JAMIE) T. MORTON

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EDUCATION

Graduate	University of California, San Diego
2015 - Present	PhD student in Computer Science
Graduate	University of Colorado, Boulder
2014 - 2015	PhD student in Computer Science
	Integrative Quantitative Biology Program
Undergraduate	Miami University
2010 - 2014	Four B.S. Degrees with majors in
	Computer Science (Cum Laude)
	Engineering (Cum Laude)
	Mathematics and Statistics
	Engineering Physics
	GPA: 3.74/4.0
Study Abroad	Hong Kong University of Science and Technology
Spring 2012	

HONORS

- **NSF Graduate Fellow**, 2015 - 2018 (Started date deferred from Fall 2014 as requested)
- **Integrated Quantitative Biology Fellowship**, University of Colorado Boulder, 2014 - 2015
- **National Barry Goldwater Scholar**, 2013
- **Benjamin Harrison Scholar**, Miami University, 2010-2014
- **First place**, Institute of Navigation (ION) Autonomous Snowplow Competition, 2014
- **NSF REU**, Cold Spring Harbor Laboratories, Summer 2012
- **Provost Academic Achievement Award**, Miami University, 2012
- **Ohio Space Grant Scholar Award**, NASA, 2012 - 2014
- **Dean's List**, Miami University, 2010-13
- **R.L. Edwards Scholarship**, Department of Physics, Miami University, 2011, 2013
- **Mary Jeannette and Clifford Harvey Scholarship**, Department of Mathetmatics, Miami U., 2013
- **Mary Jean and Joseph R. Priest Scholarship**, Department of Physics, Miami University, 2012
- **President List**, Miami University, 2010-11
- **Nestle Scholar**, Computer Sci. and Software Eng. Dept, Miami University, 2011
- **Faculty Prize**, Department of Mathematics, Miami University, 2011
- **Joseph A. Culler** Award, Department of Physics, Miami University, 2010,2011
- **NSF Travel Grant**, Coupling, Energetics, & Dynamics of Atmospheric Regions workshop, 2010
- **Wright Scholar**, Air Force Research Laboratory, Wright Patterson Air Force Base, 2009

EXPERIENCE

Research Experience

Rotation student University of California San Diego, La Jolla, CA, Fall 2015 - Present

– Working in Dr. Rob Knight's lab to study microbial ecology.

Research Rotations University of Colorado, Boulder, CO, Spring 2015

– Worked with Dr. Manuel Lladser to develop coverage statistics and study Aitchison geometry.

– Worked with Dr. Christopher Lowry to study anxiety effects on mouse microbiota.

– Worked with Dr. Noah Fierer and Albert Barberan to study microbes found in household dust.

Research Assistant Miami University, OH, Summer 2014

– Worked with Dr. Iddo Friedberg to develop **BOA** to identify bacteriocin associated gene clusters.

Data Scientist Intern Johns Hopkins University, MD , Summer 2013
– Worked with Dr. Benjamin Langmead to develop **Rail-RNA**
Undergraduate Research Program Cold Spring Harbor Laboratories, NY , Summer 2012
– Worked with Dr. Thomas Gingeras and Dr. Alex Dobin to study allelic specific expression
Research Assistant Miami University, OH , Spring 2011 - Fall 2011
– Worked with Dr. John Karro and Dr. Chun Liang to develop **SCOPE++** to study alternative polyadenylation
Research Assistant Miami University, OH , Summer 2010
– Worked with Dr. Qihou Zhou on processing incoherent scattering radar data
Engineering Aide Wright Patterson Air Force Base, OH, Summer 2010
– Testing out RSS localization algorithms on USRP using GNU radio.
Wright Scholar Wright Patterson Air Force Base, OH, Summer 2009
– Studied cognitive radio, radar, and GPS concepts and techniques

Teaching Experience
Teaching Assistant Miami University, OH, Spring 2011
– Assisted Professor Mostafa Modirrousta in teaching of two sections of Intro to Engineering labs

National Competitions
Autonomous Snowplow Competition St. Paul MN, January, 2014
– One of three team members, First Place Award, Best Report Award, Best Presentation Award
Intelligent Ground Vehicle Competition Rochester, MI , Summer 2013
– One of four team members, 5th place in Design

SKILLS

Foreign Language Skills
- Chinese – Working Proficency in Mandarin and written Chinese

Technical Skills
- Python • C/C++ • Java • Javascript • LaTeX • ROS • Hadoop
- Matlab • R • Unix • SQL • OpenCL • CUDA • git

PUBLICATIONS

- Jack A Gilbert, Robert A Quinn, Justine Debelius, Zhenjiang Z Xu, James Morton, Neha Garg, Janet K Jansson, Pieter C Dorrestein, Rob Knight
  Microbiome-wide association studies link dynamic microbial consortia to disease
  Nature 535 (7610), 94-103
- Stefan O. Reber, Nina C. Donner, Philip H. Siebler, James T. Morton
  Immunization with a heat-killed preparation of the environmental bacterium Mycobacterium vaccae promotes stress resilience in mice, *Proceedings of the Natural Academy of Sciences* (2016)
- Morton, J., Freed, S. Lee, S. Friedberg, I
  A large scale prediction of bacteriocin gene blocks suggests a wide functional spectrum for bacteriocins, *BMC Bioinformatics* 16.381 (2015)
- Barberan, A., Dunn, R. Reich B., Pacifici K., Laber E., Menninger H., Morton, J. Henley J., Leff J., Miller S., Fierer N. The ecology of microscopic life in household dust, Proceedings of the Royal Society B, 282.1814 (2015)
- Morton, J., Abrudan, P., Figuegoa, N., Liang, C., Karro, J.
  SCOPE++: Sequence Classification Of homoPolymer Emissions, *Genomics*. 104.3 (2014) 157–162
- Nellore A., Morton, J., Langmead B.
  Rail-RNA: A scalable spliced read aligner, Submitted to *Bioinformatics*

PRESENTATIONS

- Stefan O. Reber, Nina C. Donner, Philip H. Siebler, James T. Morton
  An immunization strategy for prevention of post-traumatic stress disorder (PTSD)
  promotes stress resilience in mice. University California San Diego Pediatrics Symposium (2016)
- Stefan O. Reber, Nina C. Donner, Philip H. Siebler, James T. Morton
  Immunization with a heat-killed preparation of the environmental bacterium Mycobacterium vaccae
  promotes stress resilience in mice. DNA Day (2015)
- Morton, J., Lladser M., Knight R., Uncovering the Unknown: A New Approach in
  Analyzing Microbiome Data NSF Data Science Workshop, 2015
- Morton, J., Freed, S. Lee, S. Friedberg, I. Prediction of Bacteriocin Associated Operons
  Rocky Mountain Bioinformatics Conference, 2014
- Morton, J., Freed, S. Lee, S. Friedberg, I. A pipeline for Identifying Bacteriocin-Associated
  Gene Clusters. ISMB Boston, 2014
- Morton, J., Freed, S. Lee, S. Friedberg, I. Discovering the Next Antibiotic
  Ohio Space Grant Consortium, Cleveland OH, 2014
- Morton, J., P., Abrudan, J. Karro, C. Liang , Sequence classification of homopolymer emissions
  (SCOPE), Great Lakes Bioinformatics Conference, Pittsburgh, PA, 2013
- Morton, J., P., Abrudan, J. Karro, C. Liang , Sequence classification of homopolymer emissions
  (SCOPE), Ohio Space Grant Consortium, Cleveland OH, 2013
- Morton, J., P., Abrudan, J. Karro, C. Liang , Sequence classification of homopolymer emissions
  (SCOPE), IEEE 2nd International Conference on Computational Advances in Bio and
  Medical Sciences, ICCABS 2012, Las Vegas, NV, February 2012
- Morton, J., J. Karro, C. Liang, A novel approach for identifying poly(A) tails in
  raw cDNA sequence data using General Hidden Markov Models, Genome Informatics
  Cold Spring Harbor, NY, November 2011.

OPEN SOURCE CONTRIBUTIONS

- Gneiss (Core Maintainer)
- Micronota (Core Developer)
- Sci-kit Bio (Developer)
- Emperor (Developer)
- BOA: Bacteriocin Operon Associator (Lead Developer)
- SCOPE++: Sequence Classification Of homoPolymer Emissions (Main Developer)
- Rail-RNA (Contributor)
- Scipy (Contributor)
- Biopython (Contributor)

ACTIVITIES

- Poster Reviewer for ISMB 2015 2014-2016
- International Society of Computational Biology Student member, Summer 2014-Present
- Sigma Pi Sigma,Tau Beta Pi,Eta Kappa Nu Spring 2014-2014
- National Society of Collegiate Scholars, Fall 2012 - Spring 2013
- Association for Computing Machinery Student member, Fall 2011-2014
- Institute of Electrical and Electronics Engineers Student member, Fall 2011-2016
- IEEE Miami Student Chapter Treasurer, Fall 2011- Spring 2012