

Nicholas W. VanKuren

Ph. D. Candidate  
Committee on Genetics, Genomics, and Systems Biology  
The University of Chicago  
Department of Ecology & Evolution  
303 Zoology  
1101 E. 57th Street  
Chicago, IL 60637  
E-mail: nvankuren@uchicago.edu  
Phone: (773) 834-3567

#### Education

2010- The University of Chicago, Committee on Genetics, Genomics, and Systems Biology Ph.D. program, Chicago, IL, USA  
2006-2010 Cornell University, College of Agriculture and Life Sciences, Ithaca, NY, USA  
B.S. in Biological Sciences, Cum Laude with highest honors in research  
2009 The University of Melbourne, Melbourne, Victoria, Australia, exchange program

#### Research

2011- The University of Chicago, Department of Ecology and Evolution. Advised by Manyuan Long, Ph.D., Edna K. Papazian Distinguished Service Professor  
2007-2011 Cornell University, Department of Plant Pathology. Advised by Teresa E. Pawlowska, Ph.D.  
- Ribosomal RNA gene evolution in arbuscular mycorrhizal fungi  
- Genetic variation in populations of *Claroideoglossum etunicatum*  
2008-2009 Cornell University, Department of Natural Resources. Undergraduate research assistant with Katherine A. Ballantine, Ph.D.  
- Effect of soil amendments on restored wetland recovery.

#### Funding

2013-2016 National Science Foundation Graduate Research Fellowship  
2016 The Allied Genetics Conference (Orlando, FL, USA) Travel Award  
2010-2013 National Institutes of Health Genetics and Regulation Training Grant  
2009 S. Ann and Robert R. Morley Student Research Grant, \$1,500 "The evolution of distinct ribosomal RNA sequence variants in a single lineage of arbuscular mycorrhizal fungi"

#### Presentations

1. VanKuren NW. *Drosophila melanogaster*-specific genes rapidly became essential for fly development. The Allied Genetics Conference. Orlando, FL, USA. 13-17 July 2016. Oral.
2. VanKuren NW. *Drosophila melanogaster*-specific genes rapidly became essential for fly development. The University of Chicago Graduate Student Seminar. Chicago, IL, USA. 12 February 2016. Oral.
3. VanKuren NW & Long M. *Drosophila melanogaster*-specific genes rapidly became

- essential for fly development. Annual University of Chicago Molecular Biosciences Cluster Retreat. Chicago, IL, USA. 5-7 November 2015. Poster.
4. VanKuren NW. Functional and evolutionary analysis of *Drosophila melanogaster*-specific genes. The University of Chicago Genetics of Model Organisms Club. Chicago, IL, USA. 20 February 2014. Oral.
  5. VanKuren NW. The origin and evolution of chimeric genes in *Drosophila melanogaster*. Annual University of Chicago Molecular Biosciences Cluster Retreat. Galena, IL, USA. 1-3 November 2013. Oral.
  6. VanKuren NW & Long M. Prevalence and expression of young chimeric genes in *Drosophila melanogaster*. Annual Meeting of the Society for Molecular Biology and Evolution. Chicago, IL, USA. 7-11 July 2013. Poster.
  7. VanKuren NW. Prevalence and expression of young chimeric genes in *Drosophila melanogaster*. The University of Chicago Genetics of Model Organisms Club. Chicago, IL, USA. 14 February 2013. Oral.
  8. VanKuren NW & Long M. Identifying new genes in *Drosophila melanogaster*. Annual University of Chicago Molecular Biosciences Cluster Retreat. Galena, IL, USA, 1-3 November 2012. Poster.
  9. VanKuren NW, den Bakker HC, Morton JB, & Pawlowska TE. Ribosomal RNA gene evolution in arbuscular mycorrhizal fungi. 26th Fungal Genetics Conference at Asilomar, California, USA. 15-20 March 2011. Poster.
  10. VanKuren NW, den Bakker HC, Morton JB, & Pawlowska TE. Patterns of ribosomal RNA gene evolution in arbuscular mycorrhizal fungi. The 9<sup>th</sup> International Mycological Conference, Edinburgh, UK. 1-6 August 2010. Poster.
  11. VanKuren NW & Pawlowska TE. Patterns of ribosomal RNA gene evolution in arbuscular mycorrhizal fungi. Cornell University Biology Honors Session, Cornell University, Ithaca, NY, USA. 22 May 2010. Poster.
  12. Clune DJ, VanKuren NW, Pawlowska TE. Visualizing inter-individual interactions in *Glomus etunicatum*. Mycological Society of America Annual Meeting. Penn State University. 9-13 August 2008. Inoculum 59(4): 26. Poster.

#### Publications

1. VanKuren NW & Long M. *Submitted to PLoS Genetics*. *Drosophila melanogaster*-specific genes rapidly became essential for fly development.
2. Toomer KH, Chen X, Naito M, Mondo SJ, den Bakker HC, VanKuren NW, Lekberg Y, Morton JB, Pawlowska TE. 2015. Molecular evolution patterns reveal life history features of mycoplasma-related endobacteria associated with arbuscular mycorrhizal fungi. *Molecular Ecology* 24(13):3485-500.
3. Gao G, Vibranovski MD, Zhang L, Zheng L, Liu M, Zhang YE, Li X, Zhang W, Fan Q, VanKuren NW, Long M, Wei L. 2014. A long term demasculinization of X-linked intergenic noncoding RNAs in *Drosophila melanogaster*. *Genome Research* 24(4):629-38.
4. VanKuren NW & Vibranovski MD. 2013. A novel dataset for sex-biased gene identification in *Drosophila*. *Journal of Genomics* 2: 64-7.
5. Long M, VanKuren NW, Chen S, & Vibranovski MD. 2013. New gene evolution: Little did we know. *Annual Review of Genetics* 47:325-51.
6. VanKuren NW, den Bakker HC, Morton JB, & Pawlowska TE. 2013. Ribosomal RNA gene

- diversity, effective population size, and evolutionary longevity in asexual Glomeromycota. *Evolution* 67(1):207-24.
7. Vibranovski MD, Zhang YE, Kemkemer C, VanKuren NW, Lopes HF, Karr TL, Long M. 2012. Segmental dataset and whole body expression data do not support the hypothesis that non-random movement is an intrinsic property of *Drosophila* retrogenes. *BMC Evolutionary Biology* 12, 169.
  8. den Bakker HC\*, VanKuren NW\*, Morton JB, & Pawlowska TE. 2010. Clonality and recombination in the life history of an asexual arbuscular mycorrhizal fungus. *Molecular Biology and Evolution* 27(11):2474-2486. \*Contributed equally.

#### Activities

- |            |   |
|------------|---|
| 2016       | The Allied Genetics Conference, Outreach Booth Volunteer. 15 July.  |
| 2015       | The University of Chicago Model Organisms Outreach Day volunteer. High-school level community outreach event. 1 July.   |
| 2014-2016  | University of Chicago Institute for Genomics and Systems Biology DNA Day volunteer. High school-level community outreach event. One day events.   |
| 2013-2016  | The University of Chicago Biological Sciences Division (BSD) Travel Grant coordinator   |
| 2013-2014  | <u>Culture</u> group member: Perform physics experiments with 1st grade students at Donoghue Elementary School (University of Chicago Charter School).  |
| 2013       | Teaching Assistant: Genome evolution: the role of new genes. Fall quarter.  |
| 2013       | Teaching Assistant: Evolution of Biological Molecules. Winter quarter.  |
| 2012-2016  | Committee on Genetics, Genomics, and Systems Biology BSD Dean's Council representative.   |
| 2012-2016  | The University of Chicago Institute for Genomics and Systems Biology, Brain Awareness Day Volunteer; high school-level community outreach event. One day events.  |
| 2012       | Chicago Museum of Science and Industry Spring Into Science Career Fair representative; elementary school-level outreach event. 2 June.  |
| 2011-      | Committee on Genetics, Genomics, and Systems Biology Tutor  |
| 2011       | Teaching Assistant: Genetic Analysis of Model Organisms. Fall quarter.  |
| 2011- 2013 | Committee on Genetics, Genomics, and Systems Biology Student Representative<br>- Coordinate and host graduate student-invited faculty speakers<br>- Organize annual University of Chicago Molecular Biosciences cluster retreat |
| 2011-2014  | Chicago Museum of Science and Industry, Science Connections (Genetics) Guest-Facing Volunteer   |
| 2011       | Molecular Biosciences cluster preliminary examination prep session organizer<br>- Organized weekly sessions for first year graduate students to practice presenting answers to fall exam questions                              |
| 2009-2010  | Cornell University Freshman Biology Student Advisor   |
| 2009-2010  | Cornell University Biology Student Tutor  |
| 2008       | Teaching Assistant, Introductory Field Biology, Cornell University, Fall semester.  |

2007-2008 Into the Streets, cleanup of Ithaca's gorges