

# Claudia R. Solís-Lemus

## Curriculum Vitae

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🌐 crsl4

## Education

- 2010–2015 **Ph.D., Statistics**, *University of Wisconsin-Madison*, Madison.  
2014 **M.A., Mathematics**, *University of Wisconsin-Madison*, Madison.  
2003–2008 **B.S., Applied Mathematics**, *Instituto Tecnológico Autónomo de México (ITAM)*, Mexico City, Summa cum laude.  
2003–2008 **B.S., Actuarial Sciences**, *Instituto Tecnológico Autónomo de México (ITAM)*, Mexico City, Summa cum laude.

## Publications

- 2016 **Inferring phylogenetic networks with maximum pseudolikelihood under incomplete lineage sorting**, *Solís-Lemus, Claudia and Ané, Cécile*, PLoS Genetics 12(3): e1005896, doi:10.1371/journal.pgen.1005896.  
2016 **Inconsistency of species-tree methods under gene flow**, *Solís-Lemus, Claudia and Yang, Mengyao and Ané, Cécile*, Systematic Biology, doi: 10.1093/sysbio/syw030.  
2016 **Statistical evidence for common ancestry: application to primates**, *Baum, D., Ané, C., Larget, B., Solís-Lemus, C., Ho, L.S.T., Boone, P., Drummond, C., Bontrager, M., Hunter, S., Saucier, B.*, Evolution, doi: 10.1111/evo.12934.  
2015 **Bayesian species delimitation combining multiple genes and traits in a unified framework**, *Solís-Lemus, Claudia, Knowles, L. Lacey and Ané, Cécile*, Evolution, 2. 69, 492–507

### Conference papers

- 2016 **Crime detection via crowdsourcing**, *Pimentel-Alarcón, D. and C. Solís-Lemus*, 8th Mexican Conference on Pattern Recognition, Springer International.

### Submitted

- 2016 **PhyloNetworks: Julia package for inference and manipulation of phylogenetic networks**, *Solís-Lemus, Claudia and Ané, Cécile*.  
2016 **A new robust measure of relative dispersion**, *Guerrero, Victor and Solís-Lemus, Claudia*.

### In preparation

- 2016 **Bayesian importance sampling for phylogenetic inference**, *with Bret Larget*, UW-Madison.

- 2016 **Modelling and inference of endogenous retrovirus dynamics**, with *Fabricia Nascimiento*, U. of Oxford.
- 2016 **Identificación de los factores del éxito del programa educativo para indígenas**, INEA, Mexico.

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## Software development

- 2015 **PhyloNetworks**, <https://github.com/crsl4/PhyloNetworks>, Julia package for phylogenetic networks including estimation method SNaQ.
- 2014 **iBPP**, <https://github.com/cecileane/iBPP>, Bayesian species delimitation integrating genes and traits.

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## Research Experience

- 2016 **Postdoctoral research**, *NSF-supported project*, Improved Bayesian phylogenetic inference based on approximate conditional independence, PI: Bret Larget.
- 2014–2015 **Research assistant**, *NSF-supported project*, ATOL: Assembling a taxonomically balanced genome-scale reconstruction of the evolutionary history of the Enterobacteriaceae, PI: Nicole Perna, Bret Larget, Cécile Ané, Colin Dewey.
- 2013–2014 **Research assistant**, *NSF-supported project*, Reconciling gene trees: Deciphering the source and extent of genealogical discordance, PI: David Spooner, David Baum, Bret Larget, Cécile Ané, Gregory Thain.

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## Teaching Experience

- 2016 **Guest lecturer**, *Botany 563: Phylogenetic networks*, UW-Madison.
- 2014 **Statistics tutorial**, *PhD qualifying examination summer camp*, UW-Madison.
- 2012–2013 **Teaching assistant**, *Regression methods for population health*, UW-Madison, Professor Ron Gangnon.
- 2011–2012 **Teaching assistant**, *Introduction to Biostatistics for population health*, UW-Madison, Professor Ron Gangnon.
- 2011 **Teaching assistant**, *Introduction to Statistical methods*, UW-Madison, Professor Kevin Packard (Spring), Kam Wah Tsui (Summer).
- 2010 **Teaching assistant**, *Introduction to theory and methods of mathematical statistics I*, UW-Madison, Professor Zhengjun Zhang.
- 2010 **Instructor in Mathematics**, *Advanced Algebra II*, ITAM.
- 2010 **Instructor in Mathematics**, *Calculus II*, ITAM.
- 2009 **Instructor in Mathematics**, *Calculus III*, ITAM.
- 2009–2010 **Instructor in Actuarial Sciences**, *Actuarial Mathematics I*, ITAM.
- 2009–2010 **Instructor in Actuarial Sciences**, *Actuarial Mathematics III*, ITAM.

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## Mentoring Experience

- 2016 **Undergraduate Research Scholar**, *Computing tools for bayesian phylogenetic inference*, Jordan Vonderwell – University of Wisconsin-Madison.

- 2016 **Statistics Senior Honors Thesis**, *Computing tools for PhyloNetworks*, Nan Ji – University of Wisconsin-Madison.
- 2015 **Statistics Senior Honors Thesis**, *Inconsistency of species-tree methods under gene flow*, Mengyao Yang – University of Wisconsin-Madison.
- 2015 **Integrated Biological Sciences Summer Research Program**, *Visualizing inferred phylogenetic networks in Julia*, John Spaw – University of Wisconsin-Madison.
- 2014 **Integrated Biological Sciences Summer Research Program**, *Using quartets to estimate phylogenetic networks*, John Malloy – University of Wisconsin-Madison.

## Presentations

### Invited talks

- 2016 **Instituto de Biología UNAM – Mexico City, Mexico**, *Quartet-based inference of phylogenetic networks*.
- 2016 **Simposio de Inferencia y modelación estadística – Guanajuato, Mexico**, *Bayesian phylogenetic inference for big data*.
- 2016 **SSB symposium: Advances in the analysis of reticulate population networks – Evolution meeting**, *Quartet-based inference of phylogenetic networks*.
- 2016 **SSB spotlight: Next generation phylogenetic inference – Evolution meeting**, *Bayesian Phylogenetics with Importance Sampling*, (speaker Bret Larget).
- 2016 **Phylogenomics symposium and software school – Evolution meeting**, *Quartet-based estimation of reticulate evolution*.
- 2015 **System Information Learning Optimization Seminar – UW Madison**, *Statistical inference of phylogenetic networks*.
- 2015 **Evolution Seminar Series – UW Madison**, *Fast reconstruction of hybridization networks from multilocus data*.
- 2015 **Networks seminar – UW Madison**, *Statistical inference on phylogenetic networks*.
- 2015 **Statistics student seminar – UW Madison**, *Statistical inference on phylogenetic networks*.
- 2014 **Seminario Aleatorio – ITAM**, *The role of Statistics in the inference of the Tree of Life*.

### Contributed talks

- 2016 **8th Mexican Conference on Pattern Recognition – Guanajuato, Mexico**, *Crime detection via crowdsourcing*.
- 2015 **Evolutionary System Biology and Modeling Workshop – UW Madison**, *Statistical inference of phylogenetic networks*.
- 2015 **Bayesian Models and Inference – Contributed speed talk JSM**, *Bayesian species delimitation combining multiple genes and traits in a unified framework*.
- 2015 **Mathematical and Computational Evolutionary Biology Conference**, *Inferring phylogenetic networks from quartets with maximum pseudolikelihood estimation*.

2012 **Data, skewness and testing – Contributed papers JSM**, *A parametric measure of dispersion derived from the generalized mean.*  
(presenter: Victor Guerrero)

2009 **XXIV Foro Nacional de Estadística**, *A parametric measure of dispersion derived from the generalized mean.*

#### Tutorials

2016 **Instituto de Biología – UNAM**, *PhyloNetworks: julia package for phylogenetic networks.*

2016 **Phylogenomics symposium and software school – Evolution meeting**, *PhyloNetworks: julia package for phylogenetic networks.*

2016 **Botany 563 – UW Madison**, *Small tutorial on PhyloNetworks and SNaQ.*

2015 **The hacker within series – UW Madison**, *Short introduction to Julia.*

2015 **Statistics student seminar – UW Madison**, *Short introduction to HTCondor.*

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#### Service

2016 **Systematic Biology**, *Editorial Board Member.*

#### Symposium organization

2016 **Evolution meeting SSB symposium**, *Advances in the analysis of reticulate population networks*, Co-organizer: David Baum.

#### Volunteer work

2005-2008 **Sistema de preparatoria abierta para adultos**, *Math high-school teacher for adults*, ITAM, Mexico.

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#### Fellowships and Awards

2015	Student travel support	<i>Society for Systematic Biologists</i>
2015	Vilas conference presentation funds	<i>UW-Madison</i>
2014	Advanced Computing Infrastructure Fellowship	<i>UW-Madison</i>
2012	College of Letters and Science Teaching Fellowship	<i>UW-Madison</i>
2009	Ex-ITAM Research Award in Actuarial Sciences	<i>ITAM</i>
2008	Social Responsibility Award	<i>ITAM</i>
2003	Academic Excellence Scholarship	<i>ITAM</i>

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#### Languages

Spanish Native language

English Proficient level: TOEFL iBT (2009), IELTS (2009)

French Advanced level: DALF C1 (2007)

Portuguese Advanced level: CELPE-BRAS (2008)

German Beginner level: A1 Start Deutsch 1 (2008)

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## Computer skills

Programming C++, Java, Julia, Perl, Python  
Statistics R, SAS, SPSS  
Mathematics Matlab, Mathematica, Macaulay2

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## Certifications

Exam C	Society of Actuaries (SOA)	<i>Construction of Actuarial Models Certificate</i>
Exam FM	Society of Actuaries (SOA)	<i>Financial Mathematics Certificate</i>
Exam P	Society of Actuaries (SOA)	<i>Probability Certificate</i>

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## Statistical consulting

2016 Analysis of education programs for adults in indigenous populations *INEA, Mexico*

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## References

- **Cécile Ané**, Professor of Statistics and Botany, UW-Madison [cecile.ane@wisc.edu](mailto:cecile.ane@wisc.edu)
- **Bret Larget**, Professor of Statistics and Botany, UW-Madison [bret.larget@wisc.edu](mailto:bret.larget@wisc.edu)
- **Douglas Bates**, Emeritus Professor of Statistics, UW-Madison [bates@wisc.edu](mailto:bates@wisc.edu)
- **David Baum**, Chair of Botany, UW-Madison [dbaum@wisc.edu](mailto:dbaum@wisc.edu)
- **Kevin Packard**, Statistical consultant, Cornell U. (to address teaching), [kcp48@cornell.edu](mailto:kcp48@cornell.edu)
- **Ron Gangnon**, Professor of Biostatistics and Population Health (to address teaching) [ronald@biostat.wisc.edu](mailto:ronald@biostat.wisc.edu)