CURRICULUM VITAE
Amy D Willis, Ph.D.

July 21, 2017

1. Biographical information
   - Amy D Willis
   - University of Washington, Department of Biostatistics, F-657 Health Sciences Building, Seattle WA 98195
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2. Education
   - Australian National University, B Actuarial Studies (Honours), 12/2011
   - Cornell University, M.S., Statistics, 01/2015
   - Cornell University, Ph.D., Statistics, 05/2017

3. Licensure
   - None

4. Professional Positions
   - Senior Analyst, Macroeconomics, Canberra, Australia, 08/2009-06/2012
   - Research, Data Management and Audit Officer, ACT NOWaste, Canberra, Australia, 11/2011-06/2012
   - Graduate Student, Department of Statistical Science, Cornell University, 08/2012-05/2017
   - Statistical Consultant, Zadeh Laboratory, College of Human Ecology, Cornell University, 12/2014-05/2015
   - Quantitative Analyst Intern, Google, Mountain View, CA, 05/2015-07/2015
   - Assistant Professor, Department of Biostatistics, University of Washington, Seattle, WA, 06/2017-present

5. Honors, Awards, Scholarships
   - National Undergraduate Scholarship, Australian National University, 2008-2011
   - Australian National University College of Business and Economics Summer Research Scholarship, 2009-2010.
   - John XXIII College Academic Excellence Scholarship, 2008, 2009
   - First Class Honours, Australian National University, 2011
   - College Banner Bearer, Cornell University, 2017

6. Professional Activities
   - Referee: Annals of Applied Statistics; Bioinformatics; Biometrics; Biostatistics; PLoS Computational Biology
   - Guest Editor: PLoS Computational Biology (July 2017)

- Professional Memberships: American Statistical Association; National Geographic Society

7. Bibliography

1) Bunge, J., Willis, A. & Walsh, F., 2014. Estimating the number of species in microbial diversity studies. *Annual Review of Statistics and Its Application*, 1, pp.427–445.

2) Christ, J.P., Willis, A.D., Brooks, E.D., Brink, H.V., Jarrett, B.Y., Pierson, R.A., Chizen, D.R. & Lujan, M.E., 2014. Follicle number, not assessments of the ovarian stroma, represents the best ultrasonographic marker of polycystic ovary syndrome. *Fertility and Sterility*, 101(1), pp.280–287.

3) RoyChoudhury, A., Willis, A. & Bunge, J., 2015. Consistency of a phylogenetic tree maximum likelihood estimator. *Journal of Statistical Planning and Inference*, 161, pp.73–80.

4) Willis, A. & Bunge, J., 2015. Estimating diversity via frequency ratios. *Biometrics*, 71(4), pp.1042–1049.

5) Samorodnitsky, G., Resnick, S., Towsley, D., Davis, R., Willis, A. & Wan P., 2016. Nonstandard regular variation of in-degree and out-degree in the preferential attachment model. *Journal of Applied Probability*, 53(1), pp.146–161.

6) Brink, H.V., Willis, A.D., Jarrett, B.Y., Lin, A.W., Soler, S., Best, S., Bender, E.L., Peppin, A.K., Hoeger, K.M., & Lujan, M.E., 2016. Sonographic markers of ovarian morphology, but not hirsutism indices, predict serum total testosterone in women with regular menstrual cycles. *Fertility and Sterility*, 105(5), pp.1322–1329.

7) Willis, A., 2016. Extrapolating abundance curves has no predictive power for estimating microbial biodiversity. *Proceedings of the National Academy of Sciences*, 113(35), E5096–E5096.

8) Chan, N., Willis, A., Kornhauser, N., Ward, M.M., Lee, S.B., Nackos, E., Seo, B.R., Chuang, E., Cigler, T., Moore, A., Donovan D., Cobham M.V., Fitzpatrick, V., Schnei- der, S., Wiener, A., Guillaume-Abraham, J., Anjom, E., Zelkowitz, R., Warren, J.D., Lane, M.E., Fischback, C., Mittal, V., & Vahdat, L. , 2017. Influencing the Tumor Microenvironment: A Phase II Study of Copper Depletion Using Tetrathiomolybdate in Patients with Breast Cancer at High Risk for Recurrence and in Preclinical Models of Lung Metastases. *Clinical Cancer Research*, 23(3), pp.666–676.

9) Bataille, C.P., Willis, A., Yang, X. & Liu, X.M., 2017. Continental igneous rock composition: A major control of past global chemical weathering. *Science Advances*, 3(3), E1602183.

10) Willis, A., Bunge, J. & Whitman, T., (to appear 2017). Improved detection of changes in species richness in high diversity microbial communities. *Journal of the Royal Statistical Society: Series C (Applied Statistics)*.

11) Willis, A, & Bell, R.C. (Accepted). Uncertainty in phylogenetic tree estimates. *Journal of Computational and Graphical Statistics.*

8. Patents and Other Intellectual Property
   - Publicly available software

   1) breakaway, an R library for estimating and modelling microbial diversity, available at https://cran.r-project.org/web/packages/breakaway/index.html

9. Funding History
   - None

10. Public Health Practice Activities
    - None

11. Conferences and Symposia (*=invited)
    1) March 2014: Ordered Data Analysis, Models, and Health Research Methods: HNN60; *A ratio-based method for estimating an unknown number of classes*
    2) August 2014: Joint Statistical Meetings; *id.*
    3) October 2014: Université de Montréal, Microbial Evolutionary Genomics Group*; *Statistical inference for estimating and modeling diversity*
    4) June 2015: Google HQ, Decision Support Research Group*; *Species Richness Estimation*
    5) August 2015: Joint Statistical Meetings, Microbiome in Epidemiology Section*; *Righting some wrongs in the statistical analysis of microbial community data*
    6) December 2015: Queensland University of Technology, ARC Centre of Excellence for Mathematical & Statistical Frontiers*; *Taxonomic richness estimation and comparison*
    7) September 2016: Pontificia Universidad Javeriana, Departamento de Matemáticas*; *Teoremas del límite central y conjuntos de confianza para árboles filogenéticos*
    8) September 2016: Universidad de los Andes, Departamento de Matemáticas*; *id.*
    9) October 2016: University of Glasgow, School of Mathematics and Statistics*; *Biodiversity Statistics*

10) October 2016: Newcastle University, School of Mathematics and Statistics*; *Confidence Sets for Phylogenetic Trees*
11) December 2016: Université de Montreal, Département de mathématiques et de statistique*; *id.*
12) January 2017: Pennsylvania State University, Department of Statistics*; *id.*
13) January 2017: University of Texas at Austin, Department of Statistics and Data Sciences*; *id.*
14) January 2017: University of Michigan, Department of Statistics*; *id.*
15) January 2017: Carnegie Mellon University, Department of Statistics*; *id.*
16) February 2017: University of Wisconsin-Madison, Department of Biostatistics and Medical Informatics*; *id.*
17) February 2017: University of Pennsylvania, The Wharton School, Statistics Department*; *id.*
18) February 2017: Columbia University, Department of Statistics*; *id.*
19) February 2017: University of Washington, Department of Biostatistics*; *id.*
20) February 2017: Broad Institute of MIT, Second Workshop on Statistical and Algorithmic Challenges in Microbiome Data Analysis*; *Visualizing uncertainty in phylogenetic trees.*

12. University Service
    - None

13. Professionally-Related Community Service
    - None

14. Other Information
    - None

15. Teaching History
    a) Formal courses
        - Summer Institute in Statistical Genetics/Summer Institute in Statistics and Modelling in Infectious Diseases
            1. Module 1: Probability and Statistical Inference; July 2017

    b) Other Teaching
        - Teaching Assistantships at Cornell University
            1. STSCI2100: Introductory Statistics; Fall 2012
            2. STSCI4100: Multivariate Analysis; Spring 2013
            3. BTRY6010: Statistical Methods 1; Fall 2013
            4. STSCI4140: Applied Design; Spring 2015, Spring 2017
            5. STSCI3100: Statistical Sampling; Fall 2014, Fall 2015
        - Teaching Assistantships at Australian National University
            1. STAT1008: Quantitative Research Methods; Semester 2 2009, Semester 1 2010 , Semester 2 2010, Semester 2 2011

2. STAT1003: Statistical Techniques; Semester 1 2011

- Lecturing at Marine Biological Laboratory
  1. Strategies and Techniques for Analyzing Microbial Population Structures: August 2013, August 2014, August 2015, August 2016

c) Independent Study

- None

16. Advising and Formal Mentoring

- None