Tiffani L. Williams

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1 Contact Information

The Grainger College of Engineering
Department of Computer Science
University of Illinois at Urbana-Champaign
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2 Research Interests

Computer science education, multiple pathway education, linguistics and inclusive language, computational biology, phylogenetic tree inference, high-performance computing, and experimental performance studies of algorithms.

3 Professional Appointments

- *Dean's Fellow in Inclusion, Belonging, and Engagement*, Grainger College of Engineering, University of Illinois at Urbana-Champaign, 9/21–present.
- *Teaching Professor and Director of Onramp Programs*, Department of Computer Science, University of Illinois at Urbana-Champaign, 1/20–present.
- *Professor of the Practice and Director of Computer Science Programs*, Khoury College of Computer Sciences, Northeastern University–Charlotte, 6/17–1/20.
- *Associate Professor (Tenured)*, Department of Computer Science and Engineering, Texas A&M University, 9/11–5/17.
- *Applications Researcher*, Institute for Applied Mathematics and Computational Science (IAMCS), Texas A&M University, 6/10–5/17.
- *Affiliate Faculty*, Interdisciplinary Research Program in Ecology and Evolutionary Biology, Texas A&M University, 9/08–5/17.
- *Assistant Professor*, Department of Computer Science and Engineering, Texas A&M University, 8/05–8/11.
- *Edward, Frances, and Shirley Daniels Fellow*, Radcliffe Institute for Advanced Study, Harvard University, 8/04–7/05.
- *Postdoctoral Research Fellow*, Department of Computer Science, The University of New Mexico, 9/01–7/04.
- *Instructor/Visiting Lecturer*, Department of Computer Science, University of Central Florida, 1996–2001.

4 Education

- Postdoctoral Research Fellow, 2001–2004, The University of New Mexico.
  - Advisor: Bernard M.E. Moret (co-Advisor: David A. Bader)
- Ph.D. in Computer Science, 2000, University of Central Florida.
  - Advisor: Rebecca J. Parsons
  - Thesis: *A General-Purpose Model for Heterogeneous Computation*
- B.S. in Computer Science, 1994, Marquette University.

5 Awards and Honors

- Teacher Ranked as Excellent by their Students, University of Illinois at Urbana-Champaign, 2020
- Association of Former Students (AFS) Distinguished Achievement Award in Teaching–College Level, Texas A&M University, 2016
- Undergraduate Faculty Teaching Excellence Award, Department of Computer Science and Engineering, Texas A&M University, 2014
- PopTech Science Fellow, 2012
- Denice Denton Emerging Leader ABIE Award, 2011
- Graduate Faculty Teaching Excellence Award, Department of Computer Science and Engineering, Texas A&M University, 2011
- DARPA Computer Science Study Panel, 2006
- Radcliffe Institute Fellow, 2004–2005
- Alfred P. Sloan Postdoctoral Fellowship in Computational Biology, 2002–2004
- NSF CISE Postdoctoral Research Associate in Experimental Computer Science, 2002 *(award declined)*
- Ford Foundation Postdoctoral Fellowship Program for Minorities, 2002 *(award declined)*
- McKnight Doctoral Fellowship, 1994-1999
- Russell V. Ewald Award for outstanding McKnight Doctoral Fellow, 1996
- North American Philips Scholar, 1990-1994
- Marquette Ignatius Scholar, 1990–1994

6 Grants Awarded

- "Designing an Inclusive Language Framework that Cultivates Inclusive Cultures for Black Students, Faculty, and Staff", *GIANT 2021: IDEA Institute, University of Illinois at Urbana-Champaign*, PI: **Tiffani L. Williams** (University of Illinois at Urbana-Champaign), Co-PIs: Nancy Amato (University of Illinois at Urbana-Champaign) and Karin Jensen (University of Illinois at Urbana-Champaign). 03/16/21–05/15/22, $12,043.
- "AI Institute: Artificial Intelligence for Future Agricultural Resilience, Management, and Sustainability (AIFARMS)" (AFRI grant no. 2020-67021-32799/project accession no. 1024178), *National Institute of Food and Agriculture*, PI: Vikram Adve (University of Illinois at Urbana-Champaign), Co-PIs from 7 institutions, 09/01/20–08/31/25, $19,998,045.

- "Phylogenomics and the roles of chromosome architecture, recombination and hybridization on phylogenetic accuracy in the cat family (Felidae)" (DEB-1753760), *National Science Foundation*, Lead PI/institution: William J. Murphy (Texas A&M); PIs/collaborative institution: **Tiffani L. Williams** (Northeastern). 07/01/2018–06/30/2021, $939,059.
- "Collaborative Research: Automated and Community-Driven Synthesis of the Tree of Life" (DEB-1208337), *National Science Foundation*, Lead PI/institution: Karen Cranston (NESCent); PIs/collaborative institutions: Gordon Burleigh (U. Florida), Keith Crandall (Brigham Young), Karl Gude (Michigan State), David Hibbett (Clark), Mark Holder (U. Kansas), Laura Katz (Smith College), Richard Ree (Field Museum of Natural History), Stephen Smith (U. Michigan), and **Tiffani L. Williams** (Texas A&M). 06/01/12–05/31/17, $5,760,000.
- "Texas Regional Collaborative for Computer Science", Carolyn Schroeder (PI), Philip Ritchey (Co-PI), **Tiffani L. Williams**(Co-PI), $30,000, 2015–2016.
- "III:Small:Collaborative:Novel Techniques for Understanding Convergence in Large-Scale Markov Chain Monte Carlo Phylogenetic Analyses" (IIS-1018785), *National Science Foundation*, Lead PI/institution: **Tiffani L. Williams** (Texas A&M); PIs/collaborative institution: Marc L. Smith (Vassar College). 09/01/2010–08/31/2013, $500,000.
- "ATOL Collaborative Research: Resolving Mammalian Phylogeny with Genomic and Morphological Approaches" (DEB-0629849), *National Science Foundation*, PI: William Murphy (Texas A&M); Co-PIs: John Bickham (Purdue), Rodney Honeycutt (Pepperdine), **Tiffani L. Williams** (Texas A&M), 10/1/2006–9/30/2012, $600,000.
- "III-CTX: Large-Scale Analysis of Collections of Phylogenetic Trees" (IIS-0713618), *National Science Foundation*, PI: **Tiffani L. Williams** (Texas A&M), 8/15/2007–7/31/2011, $424,508. (Additional REU supplements: $16,000 in 2009.)
- "Computer Science Study Panel (CS2P)" (HR0011-06-1-0020), *The Defense Advanced Research Projects Agency*, PI: **Tiffani L. Williams** (Texas A&M), $81,535, 3/27/06–3/26/07.
- "Building the Tree of Life — A National Resource for Phyloinformatics and Computational Phylogenetics" (EF/BIO 03-31654), *The National Science Foundation (ITR Program)*, PI: B.M.E. Moret (UNM); Co-PIs from 13 institutions, $11.6M, 10/1/03–9/30/08. (Co-PI while at UNM from 2003–2004.)
- "Alfred P. Sloan Postdoctoral Fellowship in Computational Molecular Biology" (DE-FG03-02ER63426), *The Alfred P. Sloan Foundation and The Department of Energy*, PI: **Tiffani L. Williams** (UNM), $120,000, 8/1/02–7/31/04.

7 Teaching

University of Illinois at Urbana-Champaign

I have developed and taught the following courses for our new Illinois Computing Accelerator for Non-specialists (iCAN) program.

- CS 498: Fundamentals of Computer Science I, Fall 2020
- CS 498: Fundamentals of Computer Science II, Spring 2021
- CS 591: Excursions in Computing I, Fall 2020
- CS 591: Excursions in Computing II, Spring 2021

Northeastern University

- CS 5001: Intensive Foundations of Programming, Spring 2018
- CS 5002: Discrete and Data Structures, Spring 2018, Fall 2018
- CS 5006: Algorithms, Summer 2018, Spring 2019
- CS 5007: Computer Systems, Summer 2018, Spring 2019
- CS 5800: Algorithms, Fall 2018

Texas A&M University

- CSCE 110: Programming I, Spring 2011, Fall 2011, Spring 2012, Spring 2013, Fall 2013, Spring 2014, Fall 2014, Spring 2015
- CSCE 411: Design and Analysis of Algorithms, Summer 2014, Summer 2015, Summer 2016, Fall 2016, Spring 2017
- CSCE 433: Formal Languages and Automata, Spring 2007, Spring 2008, Spring 2009, Spring 2010, Spring 2013, Spring 2015, Spring 2016. (previously named CPSC 433 from Spring 2007–Spring 2009)
- CSCE 481: Seminar, Fall 2009
- CSCE 627: Theory of Computability, Spring 2010, Spring 2013, Spring 2015, Spring 2016, Spring 2017
- CSCE 628/BICH 628: Computational Biology, Fall 2005, Fall 2007, Fall 2008, Fall 2009, Fall 2010, Fall 2011, Fall 2013, Spring 2016
  (previously named CPSC 628/BICH 628 from Fall 2005–Fall 2008)
- CPSC 689: Algorithms for Evolutionary Bioinformatics, Spring 2008
- CPSC 689: Computational Phylogenetics, Spring 2006

8 Graduated Ph.D. students

- Ralph Crosby, Ph.D. degree, August 2015.
  Ph.D. thesis: *Phylogenetic Divergence Time, Algorithms for Improved Accuracy and Performance*
  Currently employed: Naval Information Warfare Center Atlantic
- Grant Brammer, Ph.D. degree, May 2014.
  Ph.D. thesis: *Algorithms for Searching and Analyzing Sets of Evolutionary Trees*
  Currently employed: Apple
- Suzanne J. Matthews, Ph.D. degree, May 2012.
  Ph.D. thesis: *Efficient Algorithms for Comparing, Storing, and Sharing Large Collections of Evolutionary Trees.*
  Currently employed: United States Military Academy at West Point
- Seung-Jin Sul, Ph.D. degree, December 2009.
  Ph.D. thesis: *Fast Hash-Based Algorithms for Analyzing Large Collections of Evolutionary Trees.*
  Currently employed: Lawrence Berkeley National Lab

9 Undergraduate Research Students

- Gregory Krupit (Texas A&M University): Fall 2016.
- Cristina Corales (Texas A&M University): Fall 2014–Fall 2015.
- Arthur Philpott (Texas A&M University): Fall 2009–Spring 2012. Supported by NSF's Research Experience for Undergraduates (REU) program.
- Kymberleigh Pagel (Indiana University): Summer 2011. Supported by CRA-W's Distributed Research Experience for Undergraduates Program (DREU).
- Beenish Jamil (George Mason University): Summer 2010. Supported by CRA-W's Distributed Research Experiences for Undergraduates Program (DREU).
- William Dawson (Grove City College): Summer 2009. Supported by NSF's Research Experience for Undergraduates (REU) program.
- Clarice Richardson (Medgar Evers College): Summer 2009. Supported by CRA-W's Distributed Research Experiences for Undergraduates Program (DREU).
- Katie Timmerman (Wright State University): Summer 2009. Supported by CRA-W's Distributed Research Experiences for Undergraduates Program (DREU).
- Cadran Cowansage (Colby College): Summer 2007. Supported by CRA-W's Distributed Mentor Project (DMP).
- Suzanne J. Matthews (Rensselaer Polytechnic Institute): Summer 2006. Supported by CRA-W's Distributed Mentor Project (DMP).

10 National and International Service

- Member, Committee on Systematic Change in ACM, 2020–present
- Emerging Leader ABIE Award in honor of Denice Denton.
  - Chair: 2020
  - Co-Chair: 2017–2019
- Associate Editor, *Systematic Biology*, 2010–2017.
- Steering committee member, Denice Denton Emerging Leaders Workshop, 2016.
- General Co-Chair, Grace Hopper Celebration for Women in Computing, 2014.
- Co-Director, Distributed Research Experiences for Undergraduates (DREU) program, 2011–2013.
- Member, Coalition to Diversify Computing (CDC), 2011–2013.
- Program co-chair and Medical Technology Track Co-Chair, Grace Hopper Celebration for Women in Computing, 2013.
- Technical Program Co-Chair, Richard Tapia Celebration of Diversity in Computing Conference, 2007.
- Program committee member, BICoB 2016; BIBM 2015; HiCOMB 2005, 2011, 2012; BIOCOMP 2013; GECCO 2007, 2010, 2011; EvoBIO 2008, 2009, 2010, 2011; CCGrid 2010; HiPCoMB 2005, 2006, 2010; RECOMB-CG 2007, 2009, 2010; HiPC 2008; PDCS 2007; AINA

2007, WABI 2006; ICPP 2006; PBC 2005, 2006; Chinese-American Beckman Frontiers of Science Symposium, sponsored by the U.S. National Academy of Sciences and Chinese Academy of Sciences, 2004, 2005.

- Invited panelist/participant: Women in Tech conference (NC TECH) 2017; CRA-W Graduate Cohort Workshop 2006–2013, 2015; National Science Foundation's Assembling, Visualizing, and Analyzing the Tree of Life (NSF AVAToL) Ideas Lab 2011; Workshop on Biographs, Stazione Zoologica Anton Dohrn, 2007; W. M. Keck Foundation Roundtable on the Future of Science, 2006; Chinese-American Beckman Frontiers of Science Symposium, sponsored by U.S. National Academy of Sciences and Chinese Academy of Sciences, Shanghai, China, 2003; Program for Women in Mathematics at the Institute for Advanced Study (IAS) at Princeton University 2003.

11 University Service

University Service at UIUC

- Member, Illini Success Survey Task Force, 2020–present
- Member, Faculty Senate, 2020–present

Grainger College of Engineering at UIUC

- Member, Diversity Committee, 2020–present
- Member, Anti-Racism Task Force, 2020

Department of Computer Science at UIUC

- Member, CS CARES, Department of Computer Science, 2021–present
- Member, Broadening Participation Committee, Department of Computer Science, 2020–present

12 Workshops, Short Courses, and Tutorials

- *Break into Tech: A Gentle Introduction to Computer Science,* a two-day workshop at Northeastern University–Charlotte.
  - 2017: Offered 3 times (October, November, and December).
  - 2018: Offered 7 times (February, March, April, June, July, October, and November).
  - 2019: Offered 2 times (February and April).

  Short video summarizing the first day of the workshop (7/14/18).
  https://bit.ly/3w8txfh
- WeTeach CS TAMU: Professional Development for CS Teachers, 3/19/2016 – 4/29/16.
- *To Write What is Worth Publishing*, TAMUS LSAMP, Texas A&M University, College Station, TX, November 30, 2011.
- *How to Give A Great Scientific Talk*, University of British Columbia, Vancouver, Canada, February 25, 2011.

- *Goal Setting in Graduate School*, TAMUS LSAMP, Texas A&M University, College Station, TX, October 7, 2010.
- *Are They Really Listening? How to Give Scientific Presentations*, Women in Theory Workshop, Princeton University, Princeton, NJ, June 17, 2008.
- *Are They Really Listening? How to Give Scientific Presentations*, Richard Tapia Celebration of Diversity in Computing Conference, Orlando, FL, October 15, 2007.

13 Invited Talks

- *New Pathways to Address the Tech Talent Gap and Broaden Participation in Computing*, Indiana University, Luddy School of Informatics, Computing, and Engineering, March 5, 2021. Recording: https://bit.ly/2P9nHtx
- *Language Matters: Abolishing the Harmful and Racist Label 'Underrepresented Minority'*, University of Illinois at Urbana-Champaign, Department of Computer Science, September 16, 2020. Recording: https://bit.ly/3rzP24U
- *Celebrate the Present, Past, and Future of Black Women in Computing+Technology*, blackcomputeHER conference, Washington DC, April 5, 2019. *Keynote speaker*
- *Beyond the Gridiron: Winning with Diverse Women in Tech*, invited track for ABIE Award Winners, Grace Hopper Celebration, Houston, TX, September 28, 2018.
- *Discovering Relationships in the Tree of Life*, UNC Charlotte, Bioinformatics and Software and Information Systems Seminar, Charlotte, NC, April 22, 2016.
- *Searching for Meaning in the Tree of Life*, Capital Celebration of Women in Computing (CAPWIC), Richmond, VA, March 15, 2014. *Keynote speaker*
- *The Tree of Life: A Computer Scientist's Perspective*, PopTech, Camden, ME, October 19, 2012.
- *The Magical Powers of Computing*, speaker, Aleif Middle School, Houston, TX, May 25, 2012.
- *The Magical Powers of Computing*, Expanding Your Horizons (EYH) in Science & Mathematics, Northbrook Middle School, Houston, TX, March 3, 2012. Keynote speaker
- *Discovering Relationships in the Tree of Life*, Denice Denton Emerging Leader Award talk, Grace Hopper Celebration of Women in Computing, Portland, OR, November 11, 2011.
- Women of Color Luncheon, keynote speaker, Grace Hopper Celebration of Women in Computing, Portland, OR, November 10, 2011.
- *How Can Your Work Be More Impactful?*, University of British Columbia, Department of Computer Science, July 12, 2011.
- *Paper Mâché: A Novel System for Executing Scientific Papers*, AMP Workshop: Reproducible Research: Tools and Strategies for Scientific Computing", Vancouver, Canada, July 12, 2011.
- *TreeZip: A New Algorithm for Compressing Large-Scale Phylogenetic Tree Collections*, University of British Columbia, Department of Computer Science, Vancouver, Canada, June 25, 2010.
- *Fast Hash-Based Algorithms for Analyzing Tens of Thousands of Evolutionary Trees*, invited mini symposium on Computational Biology at the 2010 SIAM Conference on Discrete Math (DM'10), Austin, TX, June 17, 2010.

- *Computational Approaches for Constructing Majority Consensus Trees*, RECOMB Satellite Conference on Bioinformatics Education (RECOMB-BE'10), San Diego, CA, May 23, 2010.
- *Bringing Life to Computing*, keynote speaker, NCWIT Award for Aspirations in Computing, Rice University, Houston, TX, February 27, 2010.
- *High-Performance Algorithms for Analyzing Large Collections of Evolutionary Trees*, Broader Engagement lecture, Supercomputing (SC'09), Portland, OR, November 16, 2009.
- *Using the MapReduce Framework to Analyze Large Collections of Evolutionary Trees on Multi-Core Platforms*, The Winifred Asprey Lecture Series in Computer Science, Vassar College, Poughkeepsie, NY, October 13, 2009.
- *MapReduce Algorithms for Summarizing Evolutionary Trees on Multi-Core Platforms*, University of British Columbia, Department of Computer Science, Vancouver, Canada, June 30, 2009.
- *New Techniques for Analyzing Large Collections of Evolutionary Trees*, University of British Columbia, Department of Computer Science, Vancouver, Canada, July 29, 2008.
- *A Cooperative Search Heuristic to Infer Evolutionary Trees*, INFORMS International Conference, Puerto Rico, July 2007.
- *Efficiently Comparing Large Collections of Evolutionary Trees*, Simon Fraser University, Department of Computer Science, Vancouver, Canada, June 14, 2007.
- *Efficiently Comparing Large Collections of Evolutionary Trees*, University of British Columbia, Department of Computer Science, Vancouver, Canada, June 12, 2007.
- *The Landscape of Life*, Workshop on Biographs, Stazione Zoologica Anton Dohrn, Naples, Italy, May 19, 2007.
- *Efficiently Comparing Large Collections of Evolutionary Trees*, Santa Fe Institute, Santa Fe, NM, April 16, 2007.
- *Using Cooperation to Infer Large-Scale Evolutionary Trees*, University of British Columbia, Department of Computer Science, Vancouver, Canada, July 7, 2006.
- *New Techniques for Building Large-Scale Evolutionary Trees*, Yale University, Department of Computer Science, New Haven, CT, May 13, 2005.
- *New Techniques for Building Large-Scale Evolutionary Trees*, Colby College, Department of Computer Science, Waterville, ME, April 15, 2005.
- *An Integrated Approach to Building Evolutionary Trees*, Radcliffe Institute of Advanced Study, Harvard University, Cambridge, MA, February 9, 2005.

14 Publications

Note: Williams's advisees denoted by $*$.

Essays

1. **Tiffani L. Williams**, 'Underrepresented Minority' Considered Harmful, Racist Language. Blog@CACM, 19 June 2020. https://bit.ly/3u4NkdM

Refereed Journal publications

1. Ralph W. Crosby and **Tiffani L. Williams**, "Fast algorithms for computing phylogenetic divergence time", *BMC Bioinformatics*, 18 (Suppl 15):514, 2017.
2. Cody E. Hinchliff, Stephen A. Smith, James F. Allman, J. Gordon Burleigh, Ruchi Chaudhary, Lyndon M. Coghill, Keith A. Crandall, Jiabin Deng, Bryan T. Drew, Romina Gazis, Karl Gude, David S. Hibbett, Laura A. Katz, H. Dail Laughinghouse IV, Emily Jane McTavish, Peter E. Midford, Christopher L. Owen, Richard H. Ree, Jonathan A. Rees, Douglas E. Soltis, **Tiffani L. Williams**, and Karen A. Cranston, "Synthesis of phylogeny and taxonomy into a comprehensive tree of life," *Proceedings of the National Academy of Science (PNAS)*, 112 (41), 12764–12769, 2015.
3. Ralph W. Crosby*, Stephanie Valentine*, and **Tiffani L. Williams**, "Leveraging Programming Difficulty to Improve Understanding and Perception of Non-majors," *Journal of Computing Sciences in Colleges*, 29 (4), 27–35, 2014.
4. Robert W. Meredith, Jan E. Janecka, John Gatesy, Oliver A. Ryder, Colleen A. Fisher, Emma C. Teeling, Alisha Goodbla, Eduardo Eizirik, Tanja Stadler, Dan L. Rabosky, Rodney L. Honeycutt, John J. Flynn, Cynthia Steiner, **Tiffani L. Williams**, Terence Robinson, Angela Burk, Nadia A. Ayoub, Mark S. Springer, William J. Murphy, "Impacts of the Cretaceous Terrestrial Revolution and KPg Extinction on Extant Mammal Diversification," *Science*, 334 (6055), 521–524, 2011.
5. Suzanne J. Matthews* and **Tiffani L. Williams**, "An Efficient and Extensible Approach for Compressing Phylogenetic Trees," *BMC Bioinformatics*, 12 (Suppl 10):S16, 2011.
6. Grant Brammer* and **Tiffani L. Williams**, "A New Support Measure to Quantify the Impact of Local Optima in Phylogenetic Analyses," *Evolutionary Bioinformatics*, 7, 159–170, 2011.
7. G. Brammer*, R. Crosby*, S.J. Matthews*, and **Tiffani L. Williams**, "Paper Mâché: Creating Dynamic Reproducible Science," Procedia Computer Science, 4(0), 658–667, 2011.
8. Seung-Jin Sul* and **Tiffani L. Williams**, "Big Cat Phylogenies, Consensus Trees, and Computational Thinking," *Journal of Computational Biology*, 18(7), 895–906, 2011.
9. Suzanne J. Matthews* and **Tiffani L. Williams**, "MrsRF: An Efficient MapReduce Algorithm for Analyzing Large Collections of Evolutionary Trees," *BMC Bioinformatics*, 11 (Suppl 1):S15, 2010. *(presented at Asia-Pacific Bioinformatics Conference (ABPC'10))*.
10. Seung-Jin Sul*, Suzanne J. Matthews*, and **Tiffani L. Williams**, "Using Tree Diversity to Compare Phylogenetic Heuristics," *BMC Bioinformatics*, 10 (Suppl 4):S3, 2009. *(special issue on best papers from IEEE International Conference on Bioinformatics and Biomedicine (BIBM'08))*.
11. **Tiffani L. Williams** and Rebecca Parsons, "Practical Experience Using a Computational Model for the Design of Heterogeneous Distributed Software", *Journal of Research and Practice in Information Technology*, 33(3), pages 146–157, 2001.

Refereed Conference publications

1. Carla Brodley, Megan Barry, Aidan Connell, Catherine Gill, Ian Gorton, Benjamin Hescott, Brian Lackaye, Cynthia LuBien, Leena Razzaq, Amit Shesh, Tiffani Williams, and Andrea Danyluk, "An MS in CS for non-CS Majors: Moving to Increase Diversity of Thought and Demographics in CS," *SIGCSE'20: Proceedings of the 51st ACM Technical Symposium on Computer Science Education*, February 2020. http://doi.org/10.1145/3328778.3366802

2. Ralph W. Crosby* and **Tiffani L. Williams**, "A Fast Algorithm for Computing the All-To-All Quartet Distance Across Large Collections of Phylogenetic Trees", *International Symposium on Bioinformatics Research and Applications (ISBRA'12)*, ser. Lecture Notes in Computer Science, vol. 7292, pages 60–71, 2012.

3. Suzanne J. Matthews*, Seung-Jin Sul*, and **Tiffani L. Williams**, "A Novel Approach for Compressing Phylogenetic Trees", *International Symposium on Bioinformatics Research and Applications (ISBRA'10)*, ser. Lecture Notes in Computer Science, vol. 6053, pages 113–124, 2010.

4. Grant Brammer* and **Tiffani L. Williams**, "Decision Tree Learning to Analyze Collections of Evolutionary Trees", *Computational Intelligence in Bioinformatics and Computational Biology (CIBCB'10)*, pages 227–234, 2010.

5. Seung-Jin Sul* and **Tiffani L. Williams**, "An Experimental Analysis of Consensus Tree Algorithms for Large-Scale Tree Collections", *International Symposium on Bioinformatics Research and Applications (ISBRA'09)*, ser. Lecture Notes in Computer Science, vol. 5542, pages 100–111, 2009.

6. Hyun-Jung Park* and **Tiffani L. Williams**, "A Fitness Distance Correlation Measure for Evolutionary Trees," *1st Intl. Conference on Bioinformatics and Computational Biology (BiCoB'09)*, ser. Lecture Notes in Computer Science, vol. 5462, pages 331–342, 2009.

7. Seung-Jin Sul*, Suzanne J. Matthews*, and **Tiffani L. Williams**, "New Approaches to Compare Phylogenetic Search Heuristics," In *IEEE International Conference on Bioinformatics and Biomedicine (BIBM'08)*, pages 239–245, 2008.

8. Seung-Jin Sul*, Grant Brammer*, and **Tiffani L. Williams**, "Efficiently Computing Arbitrarily-Sized Robinson-Foulds Distance Matrices," In *Workshop on Algorithms in Bioinformatics (WABI'08)*, volume 5251 of *Lecture Notes in Computer Science*, pages 123–134, 2008.

9. Seung-Jin Sul* and **Tiffani L. Williams**, "An Experimental Analysis of Robinson-Foulds Distance Matrix Algorithms," In *European Symposium on Algorithms (ESA'08)*, volume 5193 of *Lecture Notes in Computer Science*, pages 793–804, 2008.

10. Seung-Jin Sul* and **Tiffani L. Williams**, "A Randomized Algorithm for Comparing Sets of Phylogenetic Trees," In *Asia-Pacific Bioinformatics Conference (APBC'07)*, pages 121–130, 2007.

11. **Tiffani L. Williams** and Marc L. Smith, "The Role of Diverse Populations in Phylogenetic Analysis", In *The Genetic and Evolutionary Computation Conference (GECCO '06)*, pages 287–294, 2006.

12. Marc L. Smith and **Tiffani L. Williams**, "Phylospaces: Evolutionary Trees and Tuple Space", *IEEE Workshop on High-Performance Computational Biology (HiCOMB'06)*, 2006.

13. **Tiffani L. Williams** and Marc L. Smith, "Cooperative Rec-I-DCM3: A Population-Based Approach for Reconstructing Phylogenies", In *IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB'05)*, pages 127–134, 2005.

14. Usman Roshan, Bernard M.E. Moret, **Tiffani L. Williams**, and Tandy Warnow, "Rec-I-DCM3: A Fast Algorithmic Technique for Reconstructing Large Phylogenetic Trees", *Proc. 3rd IEEE Computational Systems Bioinformatics Conference (CSB'04)*, pages 98–109, 2004.

15. **Tiffani L. Williams** and Bernard M.E. Moret, "An Investigation of Phylogenetic Likelihood Methods," In *Proc. 3rd IEEE Symp. on Bioinformatics and Bioengineering (BIBE'03)*, pages 79–86, 2003.

16. **Tiffani L. Williams** and Rebecca Parsons, "Exploiting Hierarchy in Heterogeneous Environments", *Workshop on Advances in Parallel and Distributed Computational Models (APDCM'01)*, in conjunction with the *15th International Parallel and Distributed Processing Symposium (IPDPS'01)*, 2001.

17. **Tiffani L. Williams** and Rebecca Parsons, "The Heterogeneous Bulk Synchronous Parallel Model", *Workshop on Advances in Parallel and Distributed Computational Models (APDCM'00)*, in *Lecture Notes in Computer Science*, pages 102–108, 2000.

18. **Tiffani L. Williams** and Mark Goudreau, "An Experimental Evaluation of BSP Sorting Algorithms", *10th IASTED International Conference on Parallel and Distributed Computing Systems (PDCS'98)*, pages 115–118, 1998.

19. Rebecca Parsons and **Tiffani L. Williams**, "Alternative Fitness Functions and their Effect on the Evolution of Hierarchically-Related Individuals", *Massively Parallel Computing Systems*, 1998.

Book Chapters

1. Seung-Jin Sul* and **Tiffani L. Williams**, "Big Cats, Consensus Trees, and Computational Thinking", in *Bioinformatics for Biologists*, P. Pevzner and Ron Shamir, ed., Cambridge University Press, pages 248–266, 2011.
2. Hyun-Jung Park*, Seung-Jin Sul*, and **Tiffani L. Williams**, "Large-Scale Analysis of Phylogenetic Search Behavior," in *Advances in Computational Biology*, H.R. Arabnia, ed., Springer, vol. 680, pages 35–42, 2010.
3. **Tiffani L. Williams**, Mi Yan, David A. Bader, and Bernard M.E. Moret, "High-performance phylogeny reconstruction under maximum parsimony", in *Parallel Computing for Bioinformatics and Computational Biology*, A.Y. Zomaya, ed., John Wiley & Sons, pages 369–394, 2006.
4. Usman Roshan, Bernard M.E. Moret, **Tiffani L. Williams**, and Tandy Warnow, "Performance of supertree methods on various dataset decompositions,", in *Phylogenetic Supertrees*, O.R.P. Bininda-Emonds, ed., Kluwer Publ., pages 301–328, 2004.