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Research: Computational Ecology, Data Science, Network Analysis.

Development and application of computational methods to answer question in ecology and population biology of plants and animals (including humans), from data collection to analysis and scientific insight.

Education and Professional Preparation:

2004-2005	**Center for Discrete Mathematics and Theoretical Computer Science (DIMACS)** NSF Postdoctoral Fellow *Computational epidemiology and population biology* Advisors: Simon A. Levin (Princeton) and S. (Muthu) Muthukrishnan (Rutgers)
2002-2004	**University of New Mexico** NSF Postdoctoral Fellow *Computational methods for controlled breeding programs and phylogeny reconstruction* Advisors: Bernard M. E. Moret, David A. Bader
1996-2002	**University of Illinois, Urbana-Champaign** Ph.D. in Computer Science, May 2002 Thesis: *Multichannel Communication and Graph Vertex Labeling* Advisor: Edward M. Reingold
1991-1995	**Hebrew University, Jerusalem, Israel** B.Sc., Computer Science and Mathematics (double major), July 1995

Employment and Positions Held:

2016–	**Professor**, Department of Computer Science, University of Illinois, Chicago **Adjunct Professor**, Department of Bioengineering, University of Illinois, Chicago
2014–	**Founding member, Project lead**, Wildbook.org **Board of Directors Member**, Wild Me (non-profit)
2013, 2014	**Researcher** Microsoft Research
2010-2016	**Associate Professor**, Department of Computer Science, University of Illinois, Chicago **Adjunct Associate Professor**, Department of Bioengineering, University of Illinois, Chicago
2005-2010	**Assistant Professor**, Department of Computer Science, University of Illinois, Chicago **Adjunct Assistant Professor**, Department of Bioengineering, University of Illinois, Chicago
2004-2005	**Postdoctoral Fellow** Center for Discrete Mathematics and Theoretical Computer Science (DIMACS)
2002-2004	**Postdoctoral Fellow** Department of Computer Science and Laboratory for High-Performance Algorithm Engineering and Computational Molecular Biology,University of New Mexico
2001	**Visiting Lecturer** Department of Computer Science, University of Illinois, Urbana-Champaign
Aug 2000	**Research Assistant** Sandia National Laboratory
1996-1998	**Teaching assistant** Department of Computer Science, University of Illinois, Urbana-Champaign
1995-1996	**Research programmer** Geographic Modeling Lab, University of Illinois, Urbana-Champaign
1994-1995	**GIS programmer** Malam Group, Jerusalem, Israel.
1993-1994	**GIS programmer and administrator** Hebrew University Geographic Information Systems Center, Jerusalem, Israel **Research Programmer** Ecology, Systematics and Evolution Dep., Hebrew University, Jerusalem, Israel

Awards and Honors:

2007,'12,'17   UIC CoE Advisor Award
2014   Association for Women in Science Chicago Innovator Award
2012   UIC Graduate Mentoring Award
2010   UIC INSPIRE Award [recognizes long-term, consistent, and outstanding professional service to the UIC community]
2009   UIC WOW Award [for concern and support for others and service above and beyond expectations]
2009   UIC Mentor of the Year Award
2009   UIC CoE Faculty Research Award
2008-2013   NSF Faculty Early CAREER Award
2004-2005   DIMACS NSF Postdoctoral Fellowship

Publications:

Journals

[1] C. Amornbunchornvej, I. Brugere, A. Strandburg-Peshkin, D. R. Farine, M. C. Crofoot, and **T. Y. Berger-Wolf**. "Coordination Event Detection and Initiator Identification in Time Series Data." ACM Trans. Knowl. Discov. Data 12, 5, Article 53 (June 2018), 33 pages. (*invited paper*)

[2] I. Brugere, B. J. Gallagher, **T. Y. Berger-Wolf**, "Network Structure Inference, A Survey: Motivations, Methods, and Applications". *ACM Computing Surveys*. 51(2), Article 24 (April 2018), 39 pages.

[3] D. R. Farine, A. Strandburg-Peshkin, I. D. Couzin, **T. Y. Berger-Wolf**, M. C. Crofoot, "Individual variation in local interaction rules can explain emergent patterns of spatial organisation in wild baboons". *Proceedings of the Royal Society B* 284: 20162243, April 2017.

[4] D. R. Farine, A. Strandburg-Peshkin, **T. Y. Berger-Wolf**, B. Ziebart, I. Brugere, J. Li, M. C. Crofoot, "Both Nearest Neighbors and Long-term Affiliates Predict Individual Locations During Collective Movement in Wild Baboons", *Nature Scientific Reports*, 6 (27704), June 2016.

[5] M. Maggioni, **T. Y. Berger-Wolf**, "Optimization Techniques for Sparse Matrix-Vector Multiplication on GPUs", *Journal of Parallel and Distributed Computing*, Volumes 93–94, July 2016, Pages 66–86.

[6] C. Ma, R. Kenyon, A. Forbes, **T. Y. Berger-Wolf**, D. Llano, "SwordPlots: Exploring Neuron Behavior within Dynamic Communities of Brain Networks", *Journal of Imaging Science and Technology*. 60(1), January 2016, 10405–1-10405-13(13). **Recipient of IS&T's 2017 Charles E. Ives/Journal Award**

[7] D. I. Rubenstein, S. R. Sundaresan, I. R. Fischhoff, C. Tantipathananandh, **T. Y. Berger-Wolf**, "Similar but Different: Dynamic Social Network Analysis Highlights Fundamental Differences between the Fission-Fusion Societies of Two Equid Species, the Onager and Grevy's Zebra". *PLOS ONE* 10(10): e0138645. doi: 10.1371/journal.pone.0138645

[8] C.-A. Chou, Z. Liang, W. Chaovalitwongse, **T. Y. Berger-Wolf**, B. DasGupta, S. Sheikh, M. Ashley, I. Caballero, "Column Generation Framework of Nonlinear Similarity Model for Reconstructing Sibling Groups". *INFORMS Journal on Computing*. 27(1), September 2014, 35–47.

[9] A. S. Maiya and **T. Y. Berger-Wolf**, "Expansion and decentralized search in complex networks." *Knowledge and Information Systems* (2012): 468–490. First published online January 2013, doi: 10.1007/s10115-012-0596-4.

[10] C.-A. Chou, W. A. Chaovalitwongse, **T. Y. Berger-Wolf**, B. DasGupta, M. V. Ashley, "Capacitated Clustering Problem in Computational Biology: Combinatorial and Statistical Approach for Sibling Reconstruction", *Computers and Operations Research*, 39(3), March 2012, 609–619.

[11] F. Saeed, A. Perez-Rathke, J. Gwarnicki, **T. Y. Berger-Wolf**, A. Khokhar, "High Performance Multiple Sequence Alignment System for Pyrosequencing Reads from Multiple Reference Genomes", *Journal of Parallel and Distributed Computing*, 72(1), January 2012, 83–93.

[12] M. C. Crofoot, D. I. Rubenstein, A. S. Maiya, **T. Y. Berger-Wolf**, "Aggression, Grooming and Group-level Cooperation in White-faced Capuchins (Cebus capucinus): Insights from Social Networks", *American Journal of Primatology*, 73(8), 821–833, August 2011.

[13] A. Anand, J. Anderson, **T. Y. Berger-Wolf**, "Predicting Orientation Selectivity in Primary Visual Cortex", *Journal of Vision* August 2, 2010 vol. 10 no. 7 article 936.

[14] S. I. Sheikh, **T. Y. Berger-Wolf**, A. Khokhar, I. C. Caballero, M. V. Ashley, W. Chaovalitwongse, C.-A. Chou, B. DasGupta, " Combinatorial Reconstruction of Half-sibling Groups from Microsatellite Data", *Journal of Bioinformatics and Computational Biology: Selected Papers from CSB2009*, 8(2), Apr 2010, 337–56.

[15] M. V. Ashley, **T. Y. Berger-Wolf**, W. Chaovalitwongse, B. DasGupta, A. Khokhar, S. I. Sheikh, "An Implicit Cover Problem in wild Population Study", *Discrete Mathematics, Algorithms and Applications*, 2(1): 21-32, 2010.

[16] Habiba, **T. Y. Berger-Wolf**, Y. Yu, J. Saia, "Finding Spread Blockers in Dynamic Networks", *Advances in Social Network Mining and Analysis*, Lecture Notes in Computer Science, 5498, 55–76, Springer, 2010.

[17] M. Lahiri, **T. Y. Berger-Wolf**, "Mining Periodic Behavior in Dynamic Social Networks", *Journal of Knowledge and Information Systems* 24(3): 467–498, 2010.

[18] W. Chaovalitwongse, C.-A. Chou, **T. Y. Berger-Wolf**, B. DasGupta, S. I. Sheikh, M. V. Ashley, I. C. Caballero,"New Optimization Model and Algorithm for Sibling Reconstruction from Genetic Markers", *INFORMS Journal of Computing*, 22(2): 179–193, 2010.

[19] M. V. Ashley, **T. Y. Berger-Wolf**, P. Berman, W. Chaovalitwongse, B. DasGupta, M.-Y. Kao, "On Approximating Four Covering and Packing Problems", *Journal of Computer and System Sciences*, 75 (5), 287–302, 2009

[20] M. V. Ashley, I. C. Caballero, W. Chaovalitwongse, B. DasGupta, P. Govindan, S. I. Sheikh, **T. Y. Berger-Wolf**, "KINALYZER, A Computer Program for Reconstructing Sibling Groups", *Molecular Ecology Resources*, 9 (4), July 2009, 1127–1131.

[21] **T. Y. Berger-Wolf**, S. I. Sheikh, B. DasGupta, M. V. Ashley, I. C. Caballero, W. Chaovalitwongse, S. L. Putrevu, "Reconstructing Sibling Relationships in Wild Populations", *Bioinformatics*, 23(13), i49–i56.

[22] **T. Y. Berger-Wolf**, C. Moore, and J. Saia, "A computational approach to animal breeding" *Journal of Theoretical Biology*, 244(3), Feb 2007, 433–439.

[23] W. Chaovalitwongse, **T. Y. Berger-Wolf**, B. DasGupta, and M. V. Ashley. "Set covering approach for reconstruction of sibling relationships", *Optimization Methods and Software (Special Issue on Systems Analysis, Optimization and Data Mining in Biomedicine)*, 22(1), Feb 2007, 11–24

[24] **T. Y. Berger-Wolf**, W. E. Hart, and J. Saia. "Discrete sensor placement problems in distribution networks." *Journal of Mathematical and Computer Modelling*, 42 (13), Dec 2005, 1385–1396

[25] **T. Y. Berger-Wolf** and E. M. Reingold. "Index assignment for multichannel communication under failure." *IEEE Transactions on Information Theory*, 48(10), Oct 2002, 2656–2668

Refereed Conferences and Workshops

[26] C. Amornbunchornvej and **T. Y. Berger-Wolf**, "Mining and Modeling Complex Leadership Dynamics of Movement data." *Proceedings of the 2018 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2018)*, August 2018, Barcelona, Spain.

[27] A. Taheri, K. Gimpel, **T. Y. Berger-Wolf**, "Learning Graph Representations with Recurrent Neural Network Autoencoders", *Inaugural KDD Deep Learning Day*, August 2018, London, UK. (*spotlight presentation*).

[28] C. Amornbunchornvej, M. Crofoot, **T. Y. Berger-Wolf**, "Framework for Inferring Leadership Dynamics of Complex Movement from Time Series", *SIAM International Conference on Data Mining (SDM'18)*, May 2018, San Diego, CA.

[29] J. Parham, C. V. Stewart, J. Crall, D. I. Rubenstein, J. Holmberg, **T. Y. Berger-Wolf**, "An Animal Detection Pipeline for Identification", *IEEE Winter Conference on Applications of Computer Vision (WACV'18)*, pp 1075–1083, March 2018, Lake Tahoe, NV.

[30] **T. Y. Berger-Wolf**, B. Igic, C. Taylor, R. Sloan, R. Poretsky, "A Biology-themed Introductory CS Course at a Large, Diverse Public University", *The 49th Technical Symposium on Computer Science Education (SIGSE'17)*, February 2018, Baltimore, MD.

[31] J. Li, B. Ziebart, **T. Y. Berger-Wolf** "A Game-Theoretic Adversarial Approach to Dynamic Network Prediction." In: *Phung D., Tseng V., Webb G., Ho B., Ganji M., Rashidi L. (eds) Advances in Knowledge Discovery and Data Mining. PAKDD 2018.* Lecture Notes in Computer Science, vol 10939. Springer

[32] I. Brugere, C. Kanich, **T. Y. Berger-Wolf**, "Network Model Selection for Task-Focused Attributed Network Inference", *ICDM Workshop on Data Mining in Networks (DaMNet'17)*, November 2017, New Orleans, USA.

[33] **T. Y. Berger-Wolf**, D. I. Rubenstein, C. V. Stewart, J. Holmberg, J. Parham, S. Menon, J. Crall, J. Van Oast, E. Kiciman, L. Joppa, "Wildbook: Crowdsourcing, computer vision, and data science for conservation", *The Data for Good Exchange*, September 2017, New York , NY.

[34] I. Brugere, C. Kanich, **T. Y. Berger-Wolf**, "Evaluating Social Networks Using Task-Focused Network Inference", *KDD Workshop on Mining and Learning with Graphs (MLG'17)*, August 2017, Halifax, Canada.

[35] C. Amornbunchornvej, I. Brugere, A. Strandburg-Peshkin, D. Farine, M. Crofoot, **T. Y. Berger-Wolf**, "Coordination Event Detection and Initiator Identification in Time Series Data", *KDD Workshop on Mining and Learning from Time Series (MiLeTS'17)*, August 2017, Halifax, Canada. (*selected among best papers for invited journal publication*)

[36] C. Amornbunchornvej, M. Crofoot, **T. Y. Berger-Wolf**, "Identifying Traits of Leaders in Movement Initiation", *The 7th Workshop on Social Network Analysis in Applications (SNAA'17)*, July 2017, Sydney, Australia.

[37] S. Menon, **T. Y. Berger-Wolf**, E. Kiciman, L. Joppa, C. V. Stewart, J. Parham, J. Crall, J. Holmberg, J. Van Oast, "Animal Population Estimation Using Flickr Images", *2nd International Workshop on the Social Web for Environmental and Ecological Monitoring (SWEEM 2017)*, June 2017, Troy, NY.

[38] A. Purgato, E. Reggiani, E. D'Arnese, **T. Y. Berger-Wolf**, M. Grimaldi, M. Santambrogio, "GPU-Based Computation for Brain Spatio-Temporal Networks Definition", *39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'17)*, July 2017, JeJu Island, S. Korea.

[39] J. Parham, J. Crall, C. V. Stewart, **T. Y. Berger-Wolf**, D. I. Rubenstein, "Animal Population Censusing at Scale with Citizen Science and Photographic Identification", *AAAI 2017 Spring Symposium on AI for Social Good (AISOC'17)*, March, 2017, Stanford University, CA.

[40] A. Purgato, M. D. Santambrogio, **T. Y. Berger-Wolf**, A. G. Forbes, "Interactive visualization for brain spatio-temporal networks", *IEEE EMBS International Conference on Biomedical & Health Informatics (BHI'17)*, February 2017, Orlando, FL.

[41] J. Li, K. Asif, H. Wang, B. Ziebart, **T. Y. Berger-Wolf**, "Adversarial Sequence Classification", *International Joint Conference on Artificial Intelligence (IJCAI'16)*, July 2016, New York, NY.

[42] **T. Y. Berger-Wolf**, D. I. Rubenstein, C. V. Stewart, J. Holmberg, J. Parham, J. Crall, "IBEIS: Image-Based Ecological Information System: from Pixels to Science and Conservation", *The Data for Good Exchange*, September 2015, New York , NY.

[43] C. Ma, R. V. Kenyon, A. Forbes, **T. Y. Berger-Wolf**, B. J. Slater, D. A. Llano, "Visualizing Dynamic Brain Networks Using an Animated Dual-Representation", *Eurographics Conference on Visualization (EuroVis)*, May 2015, Cagliari, Italy.

[44] J. Li, I. Brugere, B. Ziebart, **T. Y. Berger-Wolf**, M. Crofoot, D. Farine, "Social Information Improves Location Prediction in the Wild", *AAAI International Workshop on Trajectory-based Behaviour Analytics (TrBA'15)*, January 2015, Austin, TX.

[45] C. Ma, R. V. Kenyon, **T. Y. Berger-Wolf**, D. A. Llano, "Visualizing Communities in Dynamic Mouse Brain Networks", *IEEE Information Visualization Conference (InfoVis)*, November 2014, Paris, France (poster).

[46] F. Vafaee, G. Turàn, P. Nelson and **T. Y. Berger-Wolf**, "Balancing the Exploration and Exploitation in an Adaptive Diversity Guided Genetic Algorithm", *IEEE Congress on Evolutionary Computation*, July 2014, Beijing, China.

[47] F. Vafaee, G. Turàn, P. Nelson and **T. Y. Berger-Wolf**, "Among-site Rate Variation: Adaptation of Genetic Algorithm Mutation Rates at each Single Site", *Genetic and Evolutionary Computation Conference (GECCO)*, July 2014, Vancouver, Canada.

[48] M. Maggioni and **T. Y. Berger-Wolf**, "CoAdELL: Adaptivity and Compression for Improving Sparse Matrix-Vector Multiplication on GPUs", *International Workshop on Accelerators and Hybrid Exascale Systems*, 2014, Phoenix, May 20.

[49] M. Maggioni and **T. Y. Berger-Wolf**, "Adaptivity and Compression: a Recipe for Sparse Matrix-Vector Multiplication on GPUs", *NVIDIA GPU Technology Conference*, 2014, San Jose, March 24-27.

[50] M. Maggioni and **T. Y. Berger-Wolf**, "AdELL: An Adaptive Warp-Balancing ELL Format for Efficient Sparse Matrix-Vector Multiplication on GPUs", *International Conference on Parallel Processing*, 2013, Lyon, France, October 1-4, pp. 11-20.

[51] M. Maggioni and **T. Y. Berger-Wolf**, "An Architecture-Aware Technique for Optimizing Sparse Matrix-Vector Multiplication on GPUs", *International Conference on Computational Science (ICCS2013)*, Barcelona, Spain, June 5-7, 2013.

[52] **Tanya Berger-Wolf**, Dimitrios I. Diochnos, András London, András Pluhár, Robert H. Sloan and György Turán, "Commonsense knowledge bases and network analysis", *11th Commonsense Symposium*, May 27-29, 2013.

[53] M. Maggioni, **T. Y. Berger-Wolf** and J. Liang, "GPU-based Steady-State Solution of the Chemical Master Equation", *International Workshop on High Performance Computational Biology (HiCOMB2013)*, Boston, May 20, 2013.

[54] M. Maggioni, **T. Y. Berger-Wolf** and J. Liang, "Unveiling Cellular Mechanisms using GPU-based Sparse Linear Algebra", *Nvidia GPU Technology Conference (GTC2013)*, San Jose, March 18-21, 2013.

[55] Jonathan Crall, Charles Stewart, **Tanya Y. Berger-Wolf**, Daniel Rubenstein. "HotSpotter - Species Independent Animal Instance Recognition". *Proceedings of the Workshop on the Applications of Computer Vision (WACV)*, January 2013.

[56] D. Won, C. Chou, W. A. Chaovalitwongse, **T. Y. Berger-Wolf**, B. Dasgupta, A. A. Khokhar, M. V. Ashley, J. Palagi, M. Maggioni, and S. I. Sheikh, "An Integrated Optimization Framework for Inferring two-generation Kinships and Parental Genotypes from Microsatellite Samples", *Proceeding of the ACM International Conference on Bioinformatics, Computational Biology and Biomedicine (BCB)*, 2012, Orlando, Florida, October 7-10, pp 392- 399.

[57] Chayant Tantipathananandh and **Tanya Y. Berger-Wolf**. "Finding Communities in Dynamic Social Networks". *Proceedings of the 11th IEEE International Conference on Data Mining (ICDM), December 2011, Vancouver, Canada*.

[58] Habiba and **Tanya Y. Berger-Wolf**."Working for influence: effect of network density and modularity on diffusion in networks", *Proceedings of the IEEE ICDM2011 Workshop on Data Mining in Networks*, December 2011.

[59] Rajmonda Caceres, **Tanya Y. Berger-Wolf**, and Robert Grossman. "Temporal Scale of Processes in Dynamic Networks", *Proceedings of the IEEE ICDM2011 Workshop on Data Mining in Networks*, December 2011.

[60] Arun Maiya and **Tanya Y. Berger-Wolf**. "Benefits of Bias: Towards Better Characterization of Network Sampling", *Proceedings of the 17th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), August 2011, San Diego, CA*, 2011.

[61] Khairi Reda, Chayant Tantipathananandh, Andrew Johnson, Jason Leigh, **Tanya Berger-Wolf**. "Visualizing the Evolution of Community Structures in Dynamic Social Networks". *Proceedings of the EuroVis 2011–13th annual Visualization Symposium, June 2011, Bergen, Norway*

[62] Mayank Lahiri, Chayant Tantipathananandh, Rosemary Warungu, Daniel I. Rubenstein, **Tanya Y. Berger-Wolf**. "Biometric Animal Databases from Field Photographs: Identification of Individual Zebra in the Wild". *Proc. of the ACM International Conference on Multimedia Retrieval (ICMR 2011), Trento, Italy*, 2011.

[63] Arun Maiya and **Tanya Berger-Wolf**, "Expansion and Search in Networks". *Proceedings of the 19th ACM International Conference on Information and Knowledge Management (CIKM-10), October 2010, Toronto, Canada*.

[64] **Tanya Berger-Wolf**, Ilya R. Fischhoff, Dan I. Rubenstein, Siva R. Sundaresan, Chayant Tantipathananandh. "Dynamic Analysis of Social Networks of Equids". *Applications of Social Network Anslysis (ASNA)*, September 2010.

[65] Caitlin L. Barale, Ipek Kulahci, Habiba, Rajmonda Sulo, **Tanya Berger-Wolf**, and Daniel I. Rubenstein. "A social network approach to sheep movement and leadership". *Applications of Social Network Anslysis (ASNA)*, September 2010.

[66] Dan Brown and **Tanya Berger-Wolf**, "Discovering kinship through small subsets". *Proceedings of the Workshop on Algorithms in Bioinformatics (WABI-10), September 2010, Leads, England*

[67] Rajmonda Sulo, **Tanya Berger-Wolf**, and Robert Grossman. "Meaningful selection of temporal resolution for dynamic networks", *Proceedings of the 8th Workshop on Mining and Learning with Graphs (MLG)*, Aug. 2010

[68] Arun Maiya and **Tanya Berger-Wolf**, "Online Sampling of High Centrality Individuals in Social Networks". *Proceedings of the 14th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD-10), June 2010, Hyderabad, India*.

[69] Arun Maiya and **Tanya Berger-Wolf**, "Sampling Community Structure". *Proceedings of WWW 2010, April 2010, Raleigh, NC*.

[70] Saad Sheikh, Ashfaq Khokhar, and **Tanya Berger-Wolf**, "Efficient and scalable parallel reconstruction of sibling relationships from genetic data in wild populations'". *Proceedings of the 9th IEEE International Workshop on High Performance Computational Biology (HiCOMB-10), April 2010, Atlanta, GA*

[71] Khairi Reda, Chayant Tantipathananandh, **Tanya Y. Berger-Wolf**, Jason Leigh, Andrew E. Johnson, "SocioScape - a Tool for Interactive Exploration of Spatio-Temporal Group Dynamics in Social Networks", *Proceedings of the IEEE Information Visualization Conference (INFOVIS '09), Atlantic City, New Jersey*, 2009.

[72] **Tanya Y. Berger-Wolf**, Mayank Lahiri, Chayant Tantipathananandh, and David Kempe, "Finding Structure in Dynamic Networks", *Proceedings of the Workshop on Information in Networks (WIN-09), September 2009, New York, NY*

[73] Arun S. Maiya and **Tanya Y. Berger-Wolf**, "Inferring the Maximum Likelihood Hierarchy in Social Networks". *Proceedings of the International Symposium on Social Intelligence and Networking (SIN-09), August 2009, Vancouver, Canada*

[74] Saad I. Sheikh, **Tanya Y. Berger-Wolf**, Ashfaq Khokhar, Isabel C. Caballero, Mary V. Ashley, Wanpracha Chaovalitwongse, Bhaskar DasGupta, "Combinatorial Reconstruction of Half-Sibling Groups". *Proceedings of the 8th International Conference on Computational Systems Bioinformatics (CSB), August 2009, Stanford, CA*, Peter Markstein and Ying Xu (editors), Life Science Society, 59–67. (Full version invited to a special issue of Journal of Bioinformatics and Computational Biology)

[75] C. Tantipathananandh, **T. Y. Berger-Wolf**, "Algorithms for Identifying Dynamic Communities", *Proceedings of the 15th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), June 2009, Paris, France*.

[76] M. V. Ashley, **T. Y. Berger-Wolf**, W. Chaovalitwongse, and B. DasGupta, A. Khokhar, S. I. Sheikh, "On Approximating An Implicit Cover Problem in Biology", *Proceedings of the 5th International Conference on Algorithmic Aspects in Information and Management (AAIM), June 2009, San Francisco, CA*

[77] M. Lahiri, **T. Y. Berger-Wolf**, "Mining Periodic Behavior in Dynamic Social Networks", *Proceedings of the 8th IEEE International Conference on Data Mining (ICDM), December 2008, Pisa, Italy*, 373–382. (Full version invited to a special issue of Journal of Knowledge and Information Systems)

[78] M. Lahiri, A. Maiya, R. Sulo, Habiba and **T. Y. Berger-Wolf**, "The Impact of Structural Changes on Predictions of Diffusion in Networks", *ICDM Workshop on Analysis of Dynamic Networks, December 2008, Pisa, Italy.*

[79] Habiba, **T. Y. Berger-Wolf**, Y. Yu, J. Saia, "Finding Spread Blockers in Dynamic Networks", *Proceedings of the 2nd ACM SIGKDD Workshop on Social Network Mining and Analysis (SNA-KDD), August 2008, Las Vegas, NV*, (full version invited to a special issue of Springer LNCS series publication)

[80] S. Sheikh, **T. Y. Berger-Wolf**, M. V. Ashley, I. C. Caballero, W. Chaovalitwongse, and B. DasGupta, "Error Tolerant Sibship Reconstruction in Wild Populations", *Proceedings of the 7th International Conference on Computational Systems Bioinformatics (CSB), August 2008, Stanford, CA, 273–284.* Peter Markstein and Ying Xu (editors), 273-284, World Scientific Publishers, 2008.

[81] S. I. Sheikh, **T. Y. Berger-Wolf**, A. A. Khokhar, and B. DasGupta, "Consensus Methods for Reconstruction of Sibling Relationships from Genetic Data", *Proceedings of the AAAI Multidisciplinary Workshop on Advances in Preference Handling (MPREF), July 2008, Chicago, IL*

[82] Habiba, **T. Y. Berger-Wolf**, "Graph Theoretic Measures for Identifying Effective Blockers of Spreading Processes in Dynamic Networks", *Proceedings of the MLG-ICML Workshop on Machine Learning on Graphs, July 2008, Helsinki, Finland*.

[83] C. Tantipathananandh, **T. Y. Berger-Wolf**, and D. Kempe, "A Framework For Community Identification in Dynamic Social Networks", *Proceedings of the 13th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), August 2007, San Jose, CA, USA*, 717–726.

[84] **T. Y. Berger-Wolf**, S. I. Sheikh, B. DasGupta, M. V. Ashley, I. C. Caballero, W. Chaovalitwongse, S. L. Putrevu, "Reconstructing Sibling Relationships in Wild Populations", *15th Annual International Conference on Intelligent Systems for Molecular Biology (ISMB), July 2007, Vienna, Austria* [same as Bioinformatics publication in journals].

[85] M. Lahiri and **T. Y. Berger-Wolf**, "Structure Prediction in Temporal Networks using Frequent Subgraphs", *IEEE Symposium on Computational Intelligence and Data Mining (CIDM), April, 2007, Honolulu, Hawaii*

[86] S. Sheikh, **T. Y. Berger-Wolf**, W. Chaovalitwongse, B. DasGupta, and M. Ashley, "Reconstructing Sibling Relationships from Microsatellite Data", *European Conf. on Computational Biology (ECCB), Jan 2007, Eilat, Israel*

[87] M. Laifenfeld, A. Trachtenberg, and **T. Y. Berger-Wolf**, "Identifying Codes and the Set Cover Problem", *44th Annual Allerton Conf. on Communication, Control, and Computing, Sept 2006, Allerton, IL.*

[88] **T. Y. Berger-Wolf** and J. Saia, "A framework for analysis of dynamic social networks", *Proceedings of the 12th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), August 2006, Philadelphia, PA, USA*, 523–528.

[89] **T. Y. Berger-Wolf**, B. DasGupta, W. Chaovalitwongse, and M. V. Ashley. "Combinatorial reconstruction of sibling relationships" *Proceedings, 6th International Symposium on Computational Biology and Genome Informatics (CBGI), Salt Lake City, Utah, July 21 - 26*, 2005, 1252-1255

[90] **T. Y. Berger-Wolf**. "Online Consensus and Agreement of Phylogenetic Trees." In Inge Jonassen, Junhyong Kim (Eds.): *Algorithms in Bioinformatics, 4th International Workshop (WABI), Bergen, Norway, September 17-21, 2004, Proceedings. Lecture Notes in Computer Science, 3240, Springer*, 350–361

[91] **T. Y. Berger-Wolf** and E. M. Reingold. "Optimal multichannel communication under failure." *Proceedings, 10th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 1999, 858–859.

Unrefereed Publications:

[92] I. Brugere, C. Kanich, **T. Y. Berger-Wolf**, Evaluating social networks using task-focused network inference, arXiv preprint, July 2017.

[93] I. Brugere, C. Kanich, **T. Y. Berger-Wolf**, A General Framework For Task-Oriented Network Inference, arXiv preprint, May 2017.

[94] C. Amornbunchornvej, I. Brugere, A. Strandburg-Peshkin, D. Farine, M. C. Crofoot, **T. Y. Berger-Wolf**, FLICA: a framework for leader identification in coordinated activity, arXiv preprint, March 2016.

Book Chapters:

[95] R. Sulo Cacéres and **T. Y. Berger-Wolf**, "Temporal Scale of Dynamic Networks", *Temporal Networks*, Petter Holme and Jari Saramäki (Editors), Spinger, 2013.

[96] **T. Y. Berger-Wolf**, C. Tantipathananandh, and D. Kempe, "Community Identification in Dynamic Social Networks", *Link Mining: Models, Algorithms and Applications*, Philip S. Yu, Christos Faloutsos, and Jiawei Han (Editors), Springer, 2010.

[97] M. V. Ashley, **T. Y. Berger-Wolf**, I. C. Caballero, W. Chaovalitwongse, B. DasGupta, and S. I. Sheikh. "Full Sibling Reconstruction in Wild Populations From Microsatellite Genetic Markers". *Computational Biology: New Research*, pp. 231–258, Nova Publishers.

Professional Reports:

[98] D. I. Rubenstein, J. Parham, C. V. Stewart, **T. Y. Berger-Wolf**, J. Holmberg, J. Crall, B. L. Mackey, S. Funnel, K. Cockerill, Z. Davidson, L. Mate, C. Nzomo, R. Warungu, D. Martins, V. Ontita, J. Omulupi, J. Weston, G. Anyona, G. Chege, D. Kimiti, K. Tombak, A. Gersick, N. Rubenstein, "The State of Kenya's Grevy?s Zebras and Reticulated Giraffes: Results of the Great Grevy's Rally 2018". *Report to the Kenya Wildlife Service*, June 2018

[99] **T. Y. Berger-Wolf**, J. Crall, J. Holmberg, J. Parham, C. V. Stewart, B. Low Mackey, P. Kahumbu, and D. I. Rubenstein. "The Great Grevy's Rally: The Need, Methods, Findings, Implications and Next Steps. *Report to the Kenya Wildlife Service*, September 2016.

[100] D. I. Rubenstein, C. V. Stewart, **T. Y. Berger-Wolf**, J. Parham, J. Crall, C. Machogu, P. Kahumbu, and N. Maingi. "The Great Zebra and Giraffe Count: The Power and Rewards of Citizen Science". *Report to the Kenya Wildlife Service*, July 2015.

[101] American Association for the Advancement of Science in conjunction with the Federal Bureau of Investigation and the United Nations Interregional Crime and Justice Research Institute, "National and Transnational Security Implications of Big Data in the Life Sciences", 2014. [Brief version] (Contributing working group member)

Tutorials:

[102] P. Cui, J. Pei, W. Zhu, **T. Y. Berger-Wolf**, I. Brugere, B. Perozzi, "Modeling Data With Networks + Network Embedding: Problems, Methodologies and Frontiers". *24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, August 2018.

[103] **T. Y. Berger-Wolf**, T. M. Przytycka, and M. Singh. "Dynamics of Biological Networks". *Pacific Symposium on Biocomputing (PSB)*, January 2009 and January 2010.

Other:

[104] Aimée Leslie, Christine Hof, Diego Amorocho, **Tanya Berger-Wolf**, Jason Holmberg, Charles Stewart, Stephen G. Dunbar, and Claire Jean. "The Internet of Turtles". *The State of the World's Sea Turtles Report*, vol XI, Jan 2016, 12–13.

[105] Invited book review of "Bioconsensus" (DIMACS Series in Discrete Mathematics and Theoretical Computer Science, Vol. 61) edited by M. F. Janowitz, F.-J. Lapointe, F. R. McMorris, B. Mirkin, and F. S. Roberts, *Journal of Systematic Biology*, 53(3), June 2004, 515–517

External Research Funding:

Year	Amount	Description
2018-2021	$997,363	NSF CNS-1828265 *MRI: Acquisition of a Composable Platform as a Service Instrument for Deep Learning & Visualization (COMPaaS DLV)*, PI: M. Brown, co-PIs: A. E. Johnson, R. V. Kenyon, G.E. Marai, **T.Y. Berger-Wolf**, B. Di Eugenio, C. Kanich, B. Liu, L. Renambot, P. Yu, X. Zhang.
2016-2019	$299,525	NSF IUSE-1612113 *Diversifying CS with a Biology-themed Introductory CS Course at a Large, Diverse Public University*, PI: R. Sloan, co-PIs: **T.Y. Berger-Wolf**, R. Poretsky, C. Taylor, B. Igic
2015-2019	$750,000	NSF IIS-1515587 *CRCNS: Community Dynamic Imaging of Corticothalamic Projections*, PI: D.A. Llano, co-PIs: **T.Y. Berger-Wolf**, R. Kenyon.
2015-2019	$956,285	NSF III-1514126 *Medium: Collaborative Research: Computational tools for extracting individual, dyadic, and network behavior from remotely sensed data*, PIs: B. Ziebart, **T.Y. Berger-Wolf**, M. Crofoot.
2015-2018	$300,000	NSF EF-1550853 *EAGER-NEON: Image-Based Ecological Information System (IBEIS) for Animal Sighting Data for NEON* PIs: C.V. Stewart, **T.Y.Berger-Wolf**, D.I. Rubenstein
2014-2018	$2,999,999	NSF CNS-1456638 *Development of the Sensor Environment Imaging (SENSEI) Instrument*, PI: M. D. Brown, co-PIs: R. V. Kenyon, A. E. Johnson, **T.Y. Berger-Wolf**
2014-2018	$314,504	NSF CNS-1453555 *EAGER: Prototype of an Image-Based Ecological Information System (IBEIS)*, PIs: **T.Y.Berger-Wolf**, C.V. Stewart, D.I. Rubenstein
2014	$20,000	NSF IIS-1439420 *Student Travel Fellowships for KDD 2014*, PI: **T.Y. Berger-Wolf**
2014	$20,000	Microsoft Research award **Ecological information System**, PI: **T.Y. Berger-Wolf**
2014	In kind	Microsoft Azure for Research, *Computational Behavioral Ecology on the Cloud*, PI: **T.Y. Berger-Wolf**
2013-2014	$150,760	NSF IOS-1250895 *EAGER: Developing dynamic network-based movement models to explore collective decision-making*, PI: Meg Crofoot, co-PI: **T.Y. Berger-Wolf**
2012-2016	$ 800,000	NSF CNS-1248080, *INSPIRE: Mingle: Sensing the Social Interactions of Animals*, PI: Robin Kravets, co-PIs: **T.Y. Berger-Wolf**, Yih-Chun Hu, Joel Brown, Daniel Rubenstein
2011-2013	$ 549,467	NSF IIS-1124495, *EXP: Using technologies to engage learners in the scientific practices of investigating rich behavioral and ecological questions*, PI: T. Moher, co-PIs: L. Lyons, **T.Y. Berger-Wolf**, B. Reiser, J. Brown
2011-2013	$ 75,843	NSF OCI-1152895, *EAGER: Field Computational Ecology Course*, PIs: **T.Y. Berger-Wolf**, D.I. Rubenstein
2011-2013	$1,200,139	NSF IIS-106468, *Scalable kinship inference in wild populations across years and generations*, PI: **T.Y. Berger-Wolf**, co-PIs: M. V. Ashley, B. DasGupta, A. Khokhar, W. Chaovalitwongse
2010-2012	$1,987,49	NSF ARI-0963278, *The Incus Facility: An Integrated UIC Cyberinfrastructure for High-Performance Computing and Networking*, PI: R. Grossman, co-PIs: P. Yu, **T. Y.Berger-Wolf**, J. Leigh, A. Kassem
2008-2010	$60,000	NSF BPC-0837480, *BPC-A: Improving Metropolitan Participation to Accelerate Collaborative Computing Throughout and Success (IMPACTS)*, PIs: D. Reed, R. Greenberg, S. Kamin, C. Hood, co-PIs: R. Sloan, **T.Y Berger-Wolf**, L. Lyons
2008-2015	$504,930	NSF IIS-0747369, *CAREER: Computational Tools for Population Biology*, PI: **T.Y. Berger-Wolf**
	$16,000	REU Supplement, PI: **T.Y. Berger-Wolf**
	$ 100,000	Supplement, PI: **T.Y. Berger-Wolf**

2007-2010	$899,017	NSF IIS-0705822, *III-CXT: Collaborative Research: Computational Methods for Understanding Social Interactions in Animal Populations*, PIs: **T.Y. Berger-Wolf**, D.I. Rubenstein, J. Saia
	$16,000	REU Supplement, PI: **T.Y. Berger-Wolf**
2006-2010	$795,822	NSF IIS-0612044, *Collaborative Research: SEI: Computational Methods for Kinship Reconstruction*, PI: **T.Y. Berger-Wolf**, co-PIs: M. V. Ashley, B. DasGupta, W. Chaovalitwongse
2006-2007	$91,000	Microsoft award 14936, *Computational Tools for Population Biology*

Invited Talks (last 5 years):

Talks on *"Wildbook/IBEIS: Image-Based Ecological Information System"*, *"Computational Insights into the Social Life of Zebras (and other animals)"*, *"Computational Analysis of Dynamic Social Networks"*, *"Computational Behavioral Ecology"*, and *"Computational Population Biology"*

Jul 2019	Joint meeting Annual Conference of the Animal Behavior Society (ABS) and the International Council of Ethologists Conference (ICE), Chicago, IL (**plenary speaker**)
Jan 2019	Machine Learning Summer School, Stellenbosch, South Africa
Oct 2018	H2O World, London, UK
Sep 2018	The Data Science Conference, Chicago, IL
Sep 2018	Detect and Prevent: AI Collaboration to End Wildlife Trafficking Online Workshop, WWF and Microsoft, Redmond, WA
Aug 2018	14th International Workshop on Mining and Learning with Graphs at the 24th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), London, UK
Jul 2018	Data Science for Social Good summer program, Chicago, IL
Jun 2018	SciFoo ignite talk, Sunnyvale, CA
Jun 2018	GirlCon Chicago, IL
Jun 2018	Capitol Hill Ocean Week, Washington, D.C
Feb 2018	Program in Ecology, Evolution, and Conservation Biology (PEEC) Seminar, Integrative Biology, University of Illinois at Urbana-Champaign
Dec 2017	H2O World, Mountainview, CA
Oct 2017	Design‗Code‗Build, Museum of Science and Industry, Chicago, IL (**Rock star speaker**)
Oct 2017	Annual Data Science Conference, SF Data Science Institute, San Francisco, CA
Sep 2017	Data for Good Exchange, Bloomberg, New York, NY
Sep 2017	Women Who Code, Chicago, IL
Sep 2017	Applied Mathematics Departmental Colloquium, Illinois Institute of Technology, Chicago, IL
Jul 2017	Science Foo Camp, Mountainview, CA
Jul 2017	Microsoft Research Faculty Summit 2017, AI for Earth session, Redmond, WA
Jun 2017	29th International Conference on Scientific and Statistical Database Management, panel on Theory-guided Data Science, Chicago, IL
Jun 2017	International Workshop on the Social Web for Environmental and Ecological Monitoring (SWEEM 2017), Troy, NY
Jun 2017	6th biennial Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), Toronto, Canada, (**plenary speaker**)
May 2017	Facebook
May 2017	State of Illinois Analytics Center of Excellence (ACE), Chicago, IL
Apr 2017	Microsoft Research Panel "AI for Earth", Washington, DC
Mar 2017	University Politecnico de Milano, Milan, Italy
Mar 2017	Interdisciplinary Center for Network Science and Applications (iCeNSA), University of Notre Dame, Notre Dame, IN
Feb 2017	SIAM SCE, Atlanta, GA
Nov 2016	World Wildlife Fund (WWF) International, Gland, Switzerland
Oct 2016	**The White House Frontiers Conference**, Pittsburgh, PA (ignite speaker)
Jul 2016	SIAM Annual Meeting, Boston, MA, (**plenary speaker**)
Jul 2016	4th International Conference on Computational Sustainability, Cornell, Ithaca, NY
Jun 2016	AAAI/CCC Artificial Intelligence For Social Good Roundtable, Washington, DC
May 2016	Mining Networks and Graphs: A Big Data Analytic Challenge, SIAM Data Mining, Miami, FL

Mar 2016	Workshop on Generalized Network Structures and Dynamics, Mathematical Biosciences Institute, Columbus, OH
Feb 2016	36th Annual Symposium on Sea Turtle Biology and Conservation, Peru, Lima (**invited speaker**)
Dec 2015	Toyota Technical Institute, Chicago, IL
Nov 2015	Northwestern Institute on Complex Systems seminar, Chicago, IL
Oct 2015	Wildlife Conservation Expo, San Francisco, CA (invited presenter)
Sep 2015	Data for Good Exchange, Bloomberg, New York, NY
Sep 2015	PHOTO-ID Workshop on Animal Biometrics, Helsinki, Finland, (**keynote speaker**)
Aug 2015	Panel on Data-driven Science, KDD 2015, Sydney, Australia (**invited panelist**)
Jul 2015	Workshop on Tracing Learning, New York Hall of Science, New York, NY
Jul 2015	Workshop on Dynamical Networks and Applications, the University of Bath, UK
Jun 2015	Conference on Computation, Conservation, and Criminology, Washington, DC
Jun 2015	Animal Behavior Society Annual Meeting, presidential symposium, Anchorage, AK (**invited speaker)**
Apr 2015	Lincoln Park Zoo, Chicago IL
Sep 2014	Association for Promoting Tourism to Africa Annual Meeting
Aug 2014	Broadening Participation in Data Mining Workshop at KDD, New York, NY, (**keynote speaker**)
May 2014	ISCB Great Lakes Bioinformatics Conference, Cincinnati, OH, (**keynote speaker**)
May 2014	Microsoft Research Latin American Faculty Summit, Viña del Mar, Chile
Apr 2014	Microsoft eScience on the Cloud conference, Microsoft Research, Redmond, WA
Mar 2014	NIMBioS Workshop on Animal Social Network Analysis, Knoxville, TN
Jan 2014	Data Science Seminar, Jack Baskin School of Engineering, University of California Santa Cruz (**Inaugural speaker**)
Jan 2014	Department of Computer Science, DePaul University
Nov 2013	Technical University of Denmark, Copenhagen, Denmark
Nov 2013	Workshop on Big Data in Mathematical Sciences, University of Warwick, UK
Nov 2013	Security and Privacy Colloquium, Cambridge University, UK
Oct 2013	Southampton University, UK
Sep 2013	Microsoft Research, Cambridge, UK
Sep 2013	Edward Grey Institute, Department of Zoology, Oxford University
May 2013	9th International Symposium on Bioinformatics Research and Applications (ISBRA), **(keynote speaker)**
May 2013	Structure, Statistical Inference and Dynamics in Networks: From Graphs to Rich Data, Santa Fe Institute workshop
Apr 2013	Department of Mathematics & Statistics, Boston University
Apr 2013	Graph Exploitation Symposium (GraphEx), MIT Lincoln Laboratory

Students Supervised:

.**Current PhD and MS students:**

- · Ivan Brugere, Ph.D expected 2018 [Google Lime Scholar 2014, ESP IGERT Associate 2014, Chancellor's Graduate Research Award 2014]
- · Aynaz Taheri, Ph.D. expected 2019.
- · Shelby Heinecke, Ph. D. (Lev Rayzin co-adviser, UIC MCS)

- · Lorenzo Semeria, MS expected Fall 2018
- · Matteo Foglio, MS expected Fall 2018
- · Riccardo Pressiani, MS expected Fall 2018
- · Guido Muscioni, MS expected Fall 2018
- · Andrea Milanta, MS expected Fall 2018
- · Sri Phani Mohana Tejaswi Gorti, MS expected Spring 2019

Past Postdocs:
- · Janet Backs (with Mary Ashley, UIC Bio)

- Damien Farrine (with Margaret Crofoot, UCDavis) [Max Planck institute Radolfzell]
- David Pappano (with Daniel Rubenstein, Princeton) [Time, Inc]

Graduated students:
- Chainarong Amornbunchornvej, Ph.D. 2018 [Thai government scholarship]. Thesis: *Inference of Leadership of Coordinated Activity in Time Series*.
- Jia (Vena) Li, Ph.D. 2018 (Brian Ziebart co-adviser) [Chancellor's Graduate Research Award 2016]. Thesis: *Modeling Temporal and Structural Information in Time Series Data*, [Salesforce]
- Marco Maggioni, Ph.D. 2015. [Chancellor's Graduate Research Award 2011, FMC Scholar 2014, Dean's Graduate Scholar 2014]. Thesis: *Convex Optimization on GPUs* [Citadel]
- Habiba, Ph.D. 2013. [Fulbright Scholar, Chancellor Student Leadership Award 2009, 2010, 50 for the Future 2011]. Thesis: *Finding critical individuals in dynamic networks* [University of Konstanz postodc]
- Chayant Tantipathananandh, Ph.D. 2013. [Outstanding CS TA 2011]. Thesis: *Detecting and Tracking Communities in Social Networks* [Google]
- Rajmonda Sulo Cacéres (Robert Grossman, UofC, co-advisor), Ph.D. 2012. Thesis: *Temporal Scale of Dynamic Networks* [MIT Lincoln Lab]
- Anushka Anand (Leland Wilkinson co-advisor), Ph. D. 2012 [Anita Borg Institute Board 2011, Chancellor Student Leadership Award 2008, 2010, 50 for the Future 2011]. Thesis: *Visual Pattern Detection in High-dimensional Spaces*. [Tableau]
- Arun Maiya, Ph.D. 2011 [Computational Transportation Science IGERT Fellow 2007–2008]. Thesis: *Sampling and Inference in Complex Networks* [Institute for Defense Analyses]
- Mayank Lahiri, Ph.D. 2011 [Provost's Award for Graduate Research 2010, Dean's Scholar 2009–2010]. Thesis: *Measuring and mining dynamic networks* [Facebook, Google, Amazon]
- Saad Sheikh (Ashfaq Khokhar co-advisor), Ph.D. 2009 [Fulbright Scholar]. Thesis: *Combinatorial Methods for Sibling Reconstruction* [University of Florida Postdoc, Microsoft, Bloomberg Analytics, Facebook]

- Eleonora D'Arnese, MS May 2018 (UIC BioE). Thesis: *Automating Lung Cancer Identification in PET/CT Imaging*
- Mathew Yang, M.S. May 2018 (UIC BioE). Project: *Generalized Social Anxiety Disorder Classification with Dynamic Communities*
- Sreejith Menon, M.S. May 2017 [Illinois' 50 For the Future]. Thesis: *Animal Wildlife Population Estimation Using Social Media Images* [Bloomberg Analytics]
- Krutarth Joshi, M.S. May 2017. Project: *Synthetic Input Generation for Sibling Reconstruction Problem* [Microsoft]
- Aayush Kataria, M.S. May 2017. Project: *Half Sibling Reconstruction using Forbidden Subgraphs*
- Umberto Di Fabrizio, M.S. Dec 2016. Thesis: *Formalizing Methods and Analysis of Brain Dynamic Communities from Fluorescence Brain Imaging* [ThousandEyes]
- Jairaj Shaktawat, M.S. Dec 2016. Project: *Friendship and Attribute Similarity Networks Inference from Last.fm Data*
- Ashwin Bansod, M.S. Dec 2016. Project: *Minimizing the Number of Parents for Sibling Reconstruction* [Morningstar, Google]
- Ettore Randazzo, M.S. May 2016. Thesis: *Inferring Interaction Network from Sensor Data* [Google]
- Benedetto Vitale, M.S. May 2016. Thesis: *Inferring High Resolution Terrain, Vegetation, and Lines of Sight Models from Point Cloud Data* [Data Reply IT]
- Alessandro Oddone, M.S. Dec 2015. Thesis: *A Mobile Application for the Image Based Ecological Information System* [BMW Technology Corporation]
- Jen Anderson, M.S. May 2013. Thesis: *An Architecturally Relevant Model for Creating Orientation Maps of Primary Visual Cortex* [ECRA Group]
- Islam Ismailov, M.S. December 2012 [Fulbright Scholar]. Thesis: *Visual object detection for animal behavior research* [Facebook]
- Alan Perez-Rathke, M.S. May 2011 [Illinois' 50 For the Future, UIC CoE Commencement Speaker]. Thesis: *Parallel, Error-Tolerant Sibling Reconstruction for Wild Populations Using Microsatellite Markers* [UIllinois MD/PhD]
- Jaroslaw Gwarnicki, M.S. May 2011. Project. [NetherRealm Studios]

- Ramji Krishnan, M.S. Dec 2010. Project *KINALYZER: A Web-based Service for Sibship Reconstruction* [RemedyEHR,...,Workday]
- Priya Govindan, M.S. May 2009. Thesis: *Inferring Network Structure Using Maximum Likelihood Approach* [Rutgers U PhD]
- Chayant Tantipathananandh, M.S. May 2007. Thesis: *Community Identification in Dynamic Social Networks Using Generalized Coloring* [UIC PhD]
- Andrea Franchescini, M.S. May 2007. Thesis: *A software architecture for the analysis of genomic protein family and domain controlled annotations* [Swiss Institute of Bioinformatics]
- Vinodh Periyasamy, M.S. May 2008. Project: *Dynamic Graph Generator: Generic graph simulator for dynamic network* [Goldman Sachs]
- Satya Lahari Putrevu, M.S. December 2007. Project: *Sibling Reconstruction Method Validation* [Microsoft]
- Srikant Vemuri, M.S. December 2007. Project: *Dynamic Network Visualization Tool* [Terra Matrix Media,...,Womply]

Undergraduate students:

Hillary Branske [United States Patent and Trademark Office], Anthony Troy, Nick Shaskevich [Google], Heba Basiony [Google], Joshua Herman, Brian Herman, Andrew Ring [Google, Waymo], Sruti Bhagavatula [UIC PhD], Ashley Riley, Kathleen Mancillas, Sterling Werfal, Anthony Leon [50 for the Future], Jose Hernandez, Idrees Kamal, Serena Schultz, Krishna Vamsi Chandu, James Alex Searing, Shelby Ruettiger, Nathan Seitz, Luis Love, Grae Abbott (UMich), Affan Farid, Abdul Rehman, Gina Gerace, Ellen Kidane, Haley Orshonsky.

Highschool students:

Emma Sloan, Phillip Martin, Jordan Towe, Kaitlyn Lu, Katherine Chambers.

Member of Dissertation Committee:

Current:
- Jason Davlantes, Ph.D. expected graduation 2020, UIC Biology (Hank Howe advisor)
- Kaiser Newaj Asif, Ph. D. expected graduation 2017, UIC CS (Brian Ziebart advisor)
- Abdel Halloway, Ph. D. expected graduation 2018, UIC Biology (Joel Brown advisor)
- Xiangli Chen, Ph. D. expected graduation 2017, UIC CS (Brian Ziebart advisor)

Graduated:
- Ming Ye, Ph.D. 2017, EPFL CS (Bernard Moret advisor)
- Mathew Monfort, Ph. D. October 2016, UIC CS (Brian Ziebart advisor)
- Alessandro Panella, Ph.D. 2016, UIC CS (Piotr Gmytrasiewicz advisor)
- Hilary Osborne, Ph.D. October 2016, UIC Biology (Joel Brown advisor)
- Andrea Purgato, M.S. May 2016, UIC CS (Angus Forbes advisor)
- Benedetto Vitale, M.S. May 2016, UIC CS (Andrew Johnson advisor)
- Daniel Ayala, Ph. D. December 2015, UIC CS (Ouri Wolfson advisor)
- Zhiyuan Chen, Ph. D. October 2015, UIC CS (Bing Liu advisor)
- Mansoureh Takaffoli, Ph. D. September 2015, U Alberta (Osmar Zaiane advisor)
- Sonny Bleicher, Ph. D. August 2014, UIC Biology (Joel Brown advisor)
- Damien Roquero, Ph. D. August 2013, UIC BioE (Yang Dai advisor)
- Jacob Joseph, Ph. D. August 2012, Joint Carnegie Mellon University - University of Pittsburgh Ph.D. Program in Computational Biology. (Dannie Durand advisor)
- Jonathan Waxman, Ph.D May 2012, UIC ECE. (Daniel Graupe and David Carley advisors)
- Hammad Naveed, Ph. D. May 2012, UIC Bioengineering. (Jie Liang advisor)
- Isabel Caballero, Ph. D. December 2011, UIC Biology (Mary Ashley advisor)
- Chun-An Chou, Ph. D. August 2011, Rutgers University, Department of Industrial and Systems Engineering. (Wanpracha Chaovalitwongse advisor)
- Fatemeh Vafaee, Ph.D. May 2011, UIC CS. Thesis: *Controlling Genetic Operator Rates in Evolutionary Algorithms* (Peter Nelson advisor)
- Songqing Zhao, Ph.D. 2010, UIC ECE. Thesis: *Multiple Description Coding over Multiple Channels* (Rashid Ansari advisor)

- Ilaria Bordino, Ph. D. May 2010, Sapienza University of Rome and Pompeu Fabra University of Barcelona. Thesis: *Graph Mining and its applications to Web Search*, (Stefano Leonardi and Ricardo Baeza-Yates advisors)
- Xu Chen, Ph.D. May 2010, UIC ECE. (Dan Schonfeld and Ashfaq Khokhar advisors)
- Junlan Yang, Ph.D. May 2010, UIC ECE. Thesis: *Virtual Video Enhancement for Mobile Cameras: Stabilization, Auto-Focus and Super-resolution* (Dan Schonfeld advisor)
- Fahad Saeed, Ph.D. May 2010, UIC ECE. Thesis: *High Performance Algorithms for Computational Biology*, (Ashfaq Khokhar advisor)
- Arthur Nsamedjeu, M.S. May 2010, Politecnico di Milano and UIC. Thesis: *Self-Adaptive Synchronization Mechanisms for Runtime Applications Performance Improvement* , (Marco Santambrogio advisor)
- Xiaowen Ding, Ph.D. May 2010, UIC. Thesis: *Opinion and Product Name Mining on Web Content*, (Bing Liu advisor)
- Amitabh Trehan, Ph.D. May 2010, University of New Mexico. Thesis: *Self-Healing Dynamic Networks* (Jared Saia advisor)
- Chad A. Williams, Ph.D. May 2010, UIC. Thesis: *A Data Mining Approach to Rapidly Learning Traveler Activity Patterns for Mobile Applications*, (Peter Nelson advisor)
- Marina Langlois, Ph.D. December 2009, UIC. Thesis: *Horn Formulas: Problems and Applications*, (Robert Sloan advisor)
- Khairi Reda, M.S. July 2009, UIC CS. Thesis: *SocioScape - Visual Analysis of Spatio-Temporal Group Dynamics in Social Networks* (Jason Leigh advisor)
- Pan Pan, Ph.D. May 2009, UIC ECE. Thesis: *Optimal Resource Allocation and High-Order Particle Filtering for Video Tracking*, (Dan Schonfeld advisor)
- Carlos Caicedo, Ph.D. January 2009, UIC ECE. Thesis: *Motion control and coordination algorithms for robotic networks* (Miloš Žefran advisor)
- Guanrao Chen, Ph.D. 2009, UIC CS. Thesis: *Exploring Topologies of Genetic Regulatory Networks for Better Reconstruction*, (Yang Dai advisor)
- Harish Naik, M.S. October 2008, UIC. Thesis: *Parallel Implementation of Community Identification in Dynamic Social Networks Using MPI*, (Mitchell Theys advisor)
- Fabio Cancaré, M.S. May 2008, Politecnico di Milano and UIC ECE. Thesis: *Specifications and Modeling for Dynamic Reconfigurable Systems* (Marco Santambrogio and Shantanu Dutt advisors)
- Peng Fan, Ph.D. December 2007, UIC. Thesis: *Design and Analysis of Clustering Frameworks in Vehicular Ad-hoc Networks*, (Peter Nelson advisor)
- Waseem Ahmad, Ph.D. October 2007, UIC. Thesis: *TRIUMF: A context-aware trusted Middleware for Secure and Reliable Collaborative Computing*, (Ashfaq Khokhar advisor)
- Zhengdeng Lei, Ph.D. September 2007, UIC. Thesis: *Genome-wide Computational Prediction of Protein Localization*, (Yang Dai advisor)
- Nicholas D. Pattengale, M.S. April 2005, University of New Mexico. Thesis: *Tools for Phylogenetic Post Processing*, (Bernard M. E. Moret advisor)
- Sunghee Lee, M.S. June 2005, University of New Mexico. Thesis: *Approximate Bottom Line DEE (Dead End Elimination): Hybrid Bottom Line DEE and Split DEE*, (Bernard M. E. Moret advisor)

Teaching Experience (at UIC):

Fall 16, 18	*Program Design I with Biology* (UIC, intro CS with bio content)
Fall 05, 06, 07, 11, 15, 17 Spr 08, 15	*Computer Algorithms I* (UIC, graduate and senior undergrad)
Spr 06, 09, 11, 16, 17 Fall 17, 18	*Algorithms in Computational Biology* (UIC, graduate)
Spr 10, 12, 15	*Field Computational Population Biology* (UIC and Princeton graduate, taught in Kenya and UIC)
Fall 12, 14	*Mathematical Foundations of Computing* (UIC undergraduate)
Fall 09, 10, 11, 12	*Discrete Structures II* (UIC undergraduate)

Fall 2008   *Advanced Algorithm Analysis* (UIC, graduate)
Spr 2007   *Computational Analysis of Networks* (UIC, graduate)

Service and Volunteer Activities (last 5 years):

Member of the Editorial Board: .
PLoS ONE
International Journal of Knowledge Discovery in Bioinformatics
Ecosphere (emergent technologies subject matter editor)

Edited Volumes: .
Annals of Mathematics and Artificial Intelligence: special section on local pattern mining in graph-structured data, Tanya Berger-Wolf and Tamás Horváth. Annals of Mathematics and Artificial Intelligence (2014) 69:313-314, DOI 10.1007/s10472-014-9401-2
Pacific Symposium on Biocomputing (PSB) 2010, Dynamics of Biological Networks

Member, WWF working group on AI Collaboration to End Wildlife Trafficking 2018 - present

Partner non-profit, AI for Earth initiative, Microsoft 2018 - present

Member, Research Data Alliance working group 2013 - Present

Guest editor, PLoS Computational Biology 2014

Member, AAAS-FBI Big Data in the Life Sciences and National Security Working Group 2013

Member, strategic planning task force on Animal Behavior 2013

Organizing Committee Member: .
SDM-18,19: SIAM International Conference on Data Mining general co-chair
GLBIO-17: Great Lakes Bioinformatics Conference program co-chair
SDM-16: SIAM International Conference on Data Mining workshop chair
GHC-14: Grace Hopper Celebration of Women in Computing Data Science Technical track co-chair.
KDD-14: ACM SIGKDD International Conference on Knowledge Discovery and Data Mining Student Awards Chair
NetSci-13

Chair, ACM SIGKDD Doctoral Dissertation Award Committee 2017

Member, ACM SIGKDD Doctoral Dissertation Award Committee 2009-2014

Meetings and Sessions Organized and Chaired (last 5 years): .
NetInf-2017: SIAM SDM Workshop on Inferring Networks From Non-Network Data co-chair
SIAM AN-16 Mini-Symposium on Network Inference
AAAI-15: American Association for Advancement of Science symposium on Insights from Social Networks: Visualizing Big Data from Cells to Cell Phones to Societies, February 2015
NIMBioS Workshop on Animal Social Network Analysis, March 2014
SIAM-NetSci13: SIAM Workshop on Network Science, July 2013

Program Committee Member (last 5 years): .
AAAI-18 32nd AAAI Conference on Artificial Intelligence
KDD-18 24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**Senior Program Committee**)

AAAI-17 31st AAAI Conference on Artificial Intelligence
AAAI-17 Computational Sustainability track
KDD-17 23th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**Senior Program Committee**)
SDM-17 SIAM International Conference on Data Mining (**Senior Program Committee**)

AAAI-16 30th AAAI Conference on Artificial Intelligence
ICDM-16 IEEE International Conference on Data Mining (PhD forum)
KDD-16 22th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**Senior Program Committee**)
SDM-16 SIAM International Conference on Data Mining (**Senior Program Committee**)

AAAI-15 Twenty-Ninth AAAI Conference on Artificial Intelligence
KDD-15 21th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**Senior Program Committee**)

SDM-15 SIAM International Conference on Data Mining (**Senior Program Committee**)

KDD-14 20th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining
ICDM-14 IEEE International Conference on Data Mining (**area chair**)
AAAI-14 Twenty-Eighth AAAI Conference on Artificial Intelligence
SDM-Networks-14 SDM workshop on Mining Networks and Graphs: A Big Data Analytics Challenge

Reviewer for: Animal Behavior, Public Library of Science (PLoS), Proceedings of the National Academy of Sciences (PNAS), Proceedings of the Royal Society, Intelligent Data Analysis (IOS Press) - Special Issue on Dynamic Networks and Knowledge Discovery, Transactions on Knowledge Discovery from Data, Data Mining and Knowledge Discovery (DAMI), Advances in Bioinformatics (ABI), IEEE Internet Computing, Knowledge and Information Systems (KAIS), Israel Science Foundation (ISF), IEEE/ACM Transactions on Knowledge Discovery and Datamining (TKDD), IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB), Social Networks, Workshop on Social Networks (WOSN), Journal on Combinatorial Optimization (JOCO), ACM-SIAM Symposium on Discrete Algorithms (SODA), International Journal of Modern Physics, US-Israel Binational Science Foundation, Workshop on Experimental Algorithms (WEA), IEEE Transactions on Information Theory, Journal of Parallel and Distributed Computing, Hawaii International Conference on System Sciences (HICSS), INFORMS Journal of Computing, Journal of Discrete Algorithms, NSF panels, DIMACS series, Journal of Optimization Methods and Software (OMS), Theory of Computing Systems (TOCS), IEEE International Conference on Networking, Sensing, and Control (ICNSC), IEEE Transactions on Parallel and Distributed Systems, Journal of Agricultural, Biological and Environmental Statistics, Journal of Theoretical Biology, International Conference on Distributed Computing Systems (ICDCS), Algorithmica, Tools and Algorithms for the Construction and Analysis of Systems (TACAS),x" European Joint Conferences on Theory and Practice of Software (ETAPS)

University Committee Service (recent): .
College of Engineering Executive Committee, UIC, 2018-present
Chair, Faculty search committee, UIC, 2017-2018
PAP STEM mentor, UIC, 2017-present
WISEST Facilitator, UIC, 2016-2017
Faculty search committee, UIC, 2015-2017
Fellow, Honors College, UIC, 2014-present
Chair, Colloquium and PR Committee, UIC, 2014-2015, 2018-present
Departmental Advisory Committee, UIC, 2014-2015, 2018-present
Departmental Committee for Outreach and Undergraduate Recruiting, 2011-2013
Faculty Advisor to Women in CS, UIC, 2007-2013
Departmental Graduate Committee, UIC, 2009-2010
Undergraduate Committee, UIC, 2005-2007, 2010-2011
University Search Committee for Vice Chancellor for Academic Affairs, UIC, 2010-2011

Outreach and Community Service (a woefully incomplete list of last 5 years): .
Co-organizer, The Great Grevy's (And Reticulated Giraffe) Rally, Kenya, January 2018
Speaker, GirlCon Chicago, July 2018
Speaker, Design_Code_Build, workshop for middle and high school students, October 2017.
Speaker, Chicago Women Who Code, September 2017
Speaker, UIC Girls Who Code - Summer Immersion Program, July 2016, July 2017
Co-organizer, The Great Grevy's Rally, Kenya, January 2016
Expert participant, Hackathon for Wildlife Chicago, November 2015
Co-organizer, Great Zebra and Giraffe Count, Nairobi National Park, March 2015
Founding member, principal, Wildbook.org (non-profit), 2014-present
Board of Directors Member, WildMe (non-profit), 2014-present
Panel member, Girl Engineers, Mathematicians and Scientists workshop, Naperville Centrail Highschool
Women in Computing: International Women's Day celebration speaker at Google, 2013