



Tanya Y. Berger-Wolf

Translational Data Analytics Institute
The Ohio State University
1760 Neil Ave, Columbus, OH 43210
tdai.osu.edu
berger-wolf.1@osu.edu

Computational ecologist, creating AI and data-driven computational approaches for biodiversity and conservation, from scientific insight to deployed solutions (**Wild Me**). Living at the unique intersection of computer science, wildlife biology, and social sciences, founding new fields of science (**imageomics**). Working with many teams of brilliant people who do cool, amazing, and impactful things.

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 (last 20 years):

- 2020– **Professor**, Department of Computer Science and Engineering, The Ohio State University
Electrical and Computer Engineering, The Ohio State University
Evolution, Ecology and Organismal Biology, The Ohio State University
Faculty Director, Translational Data Analytics Institute, The Ohio State University
- 2019-2020 **President and Board of Directors Member**, wepo.io
- 2014– **Founding member, Project lead**, Wildbook.org
Board of Directors Member, Wild Me (non-profit)
- 2016-2019 **Professor**, Department of Computer Science, University of Illinois, Chicago
Adjunct Professor, Department of Bioengineering, University of Illinois, Chicago
- 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

Awards and Honors:

- 2023 ACM-W Service Badge
- 2023 – Member of the Life Sciences Board, National Academies of Sciences, Engineering, and Medicine
- 2023 IEEE Senior Member
- 2023 – Member of the Advisory Council, Ocean Vision AI

2022 –	Member of the International Scientific Advisory Board, Artificial Intelligence for Science, Science for Artificial Intelligence (AISSAI) Centre, CNRS
2022 –	Invited specialist, Global Partnership on AI (GPAI), AI on Biodiversity working group
2022	Invited subject matter expert, US Chamber of Commerce panel on AI Ethics
2018 –	Selected partner non-profit, AI for Earth initiative, Microsoft
2017 –	Subject matter editor: Ecosphere (emergent technologies)
2019	University of Illinois Scholar
2018	UIC Distinguished Researcher Award
2014	Association for Women in Science Chicago Innovator Award
2012	UIC Graduate Mentoring Award
2009	UIC Mentor of the Year Award
2009	UIC CoE Faculty Research Award
2008-2013	NSF Faculty Early CAREER Award

Publications:

Journals

- [1] Robert L. Fischman, J. B. Ruhl, Brenna R. Forester, Tanya M. Lama, Marty Kardos, Gretel Aguilar Rojas, Nicholas A. Robinson, Patrick D. Shirey, Gary A. Lamberti, Amy W. Ando, Stephen Palumbi, Michael Wara, Mark W. Schwartz, Matthew A. Williamson, **Tanya Berger-Wolf**, Sara Beery, David Rolnick, Justin Kitzes, David Thau, Devis Tuia, Daniel Rubenstein, Caleb R. Hickman, Julie Thorstenson, Gregory E. Kaebnick, James P. Collins, Athmeya Jayaram, Thomas Deleuil, and Ying Zhao. "A landmark environmental law looks ahead." *Science*, 382, 1348–1355, December 2023. DOI:10.1126/science.adn3245
- [2] A. Asudeh, **T.Y. Berger-Wolf**, B. DasGupta, A. Sidiropoulos. "Maximizing coverage while ensuring fairness: a tale of conflicting objectives". *Algorithmica*, 85, 1287–1331 (2023). <https://doi.org/10.1007/s00453-022-01072-1>
- [3] Naik, A. G., Kenyon, R. V., Taheri, A., **Berger-Wolf, T. Y.**, Ibrahim, B. A., Shinagawa, Y., Llano, D. A. "V-NeuroStack: open-source 3D Time Stack software for Identifying Patterns in Neuronal Data". *Journal of Neuroscience Research*, 00, 1–15, October 2022. <https://doi.org/10.1002/jnr.25139>
- [4] R. Harel., S. Alavi, A. Ashbury, J. Aurisano, **T.Y. Berger-Wolf**, G. Davis, B. T. Hirsch, U. kalbitzer, R. Kays, K. Mclean, C. Nunez, A. Vining, R. W. Havmøller, z. walton, M. C. Crofoot. "Life in 2.5D: Animal movement in the trees". *Frontiers in Ecology and Evolution* (2022), volume 10. <https://doi.org/10.3389/fevo.2022.801850>
- [5] D. Blount, S. Gero, J. Van Oast, J. Parham, C. Kingen, B. Scheiner, T. Stere, M. Fisher, G. Minton, C. Khan, V. Dulau, J. Thompson, O. Moskvyak, **T.Y. Berger-Wolf**, C. V. Stewart, J. Holmberg, J. J. Levenson. "Flukebook: an open-source AI platform for cetacean photo identification". *Mammalian Biology* (2022), <https://doi.org/10.1007/s42991-021-00221-3>
- [6] D. Tuia, B. Kellenberger, S. Beery, B. Costelloe, S. Zuffi, B. Risse, A. Mathis, M. Mathis, F. Van Langevelde, T. Burghardt, R. Kays, H. Klinck, M. Wikelski, I. Couzin, G. van Horn, M. Crofoot, C. Stewart, and **T. Y. Berger-Wolf**, "Perspectives in machine learning for wildlife conservation". *Nature Communications*, 13(1), 1–15, February 2022. <https://doi.org/10.1038/s41467-022-27980-y>.
- [7] T. Ginossar, I.J. Cruickshank, E. Zheleva, J. Sulskis, **T. Y. Berger-Wolf**, "Cross-platform spread: vaccine-related content, sources, and conspiracy theories in YouTube videos shared in early Twitter COVID-19 conversations". *Human Vaccines & Immunotherapeutics*, Januray 2022, 1–13. doi: 10.1080/21645515.2021.2003647.
- [8] I. Crushchank, T. Ginossar, E. Zheleva, J. Sulskis, **T. Y. Berger-Wolf**, "Content and Dynamics of Websites Shared over Vaccine-Related Tweets in COVID-19 Conversations: A Computational Analysis". *Journal of Medical Internet Research*, 23(12), e29127. doi: 10.2196/29127
- [9] C. Amornbunchornvej, E. Zheleva, and **T. Y. Berger-Wolf**. "Variable-lag Granger Causality and Transfer Entropy for Time Series Analysis". *ACM Trans. Knowl. Discov. Data* 15(4), Article 67, May 2021, 30 pages.
- [10] D. A. Llano, C. Ma, U. Di Fabrizio, A. Taheri, K. A. Stebbings, G. Yudintsev, G. Xiao, R. V. Kenyon, **T. Y. Berger-Wolf**, "A novel dynamic network imaging analysis method reveals aging-related fragmentation of cortical networks in mouse" *Network Neuroscience*, 5(2), 569–590, March 2021.

- [11] J. Leoni, M. Tanelli, S. C. Strada and **T. Y. Berger-Wolf**, "Ethogram-based automatic wild animal monitoring through inertial sensors and GPS data". *Ecological Informatics*, 59, September 2020, 101112.
- [12] J. W. Brown, A. Taheri, R. V. Kenyon, **T. Y. Berger-Wolf**, D. A. Llano. "Signal Propagation via Open-Loop Intrathalamic Architectures: A Computational Model". *eNeuro*, 7(1), ENEURO.0441-19.2020. <https://doi.org/10.1523/ENEURO.0441-19.2020>
- [13] C. Amornbunchornvej and **T. Y. Berger-Wolf**. "Framework for Inferring Following Strategies from Time Series of Movement Data", *ACM Transactions on Knowledge Discovery from Data (TKDD)*. 14(3), May 2020, 1–22.
- [14] C. Amornbunchornvej and **T. Y. Berger-Wolf**. "Mining and Modeling Complex Leadership-Followership Dynamics of Movement data", *Social Network Analysis and Mining*. 9, Article 58, October 2019. doi:10.1007/s13278-019-0600-z
- [15] A. Taheri, K. Gimpel, **T. Y. Berger-Wolf**, "Sequence-to-Sequence Modeling for Graph Representation Learning", *Applied Network Science* 4, Article 68, August 2019. doi:10.1007/s41109-019-0174-8.
- [16] 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*)
- [17] 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.
- [18] 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.
- [19] 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.
- [20] 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.
- [21] 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**
- [22] 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
- [23] C.-A. Chou, Z. Liang, W. Chaovalltwongse, **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.
- [24] 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.
- [25] C.-A. Chou, W. A. Chaovalltwongse, **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.
- [26] 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.
- [27] 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.
- [28] 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.
- [29] S. I. Sheikh, **T. Y. Berger-Wolf**, A. Khokhar, I. C. Caballero, M. V. Ashley, W. Chaovalltwongse, 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.

- [30] 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.
- [31] 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.
- [32] M. Lahiri, **T. Y. Berger-Wolf**, "Mining Periodic Behavior in Dynamic Social Networks", *Journal of Knowledge and Information Systems* 24(3): 467–498, 2010.
- [33] 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.
- [34] 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
- [35] 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.
- [36] **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.
- [37] **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.
- [38] 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
- [39] **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
- [40] **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

- [41] M. Kholiavchenko, J. Kline, M. Ramirez, S. Stevens, A. Sheets, R. Ramesh Babu, N. Banerji, E. Campolongo, M. Thompson, N. Van Tiel, J. Miliko, E. Bessa, I. Duporge, **T. Y. Berger-Wolf**, D. Rubenstein, C. Stewart, "KABR: In-Situ Dataset for Kenyan Animal Behavior Recognition From Drone Videos", *2024 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) Workshops*, Waikoloa, Hawaii, Jan 2024, pp. 31–40.
- [42] J. Kline, C. Stewart, **T. Y. Berger-Wolf**, M. Ramirez, S. Stevens, R. Ramesh Babu, N. Banerji, A. Sheets, S. Balasubramaniam, E. Campolongo, M. Thompson, C. V. Stewart, M. Kholiavchenko, D. I. Rubenstein, N. Van Tiel, J. Miliko , "A Framework for Autonomic Computing for In Situ Imageomics", *2023 IEEE International Conference on Autonomic Computing and Self-Organizing Systems (ACSOS)*, Toronto, ON, Canada, 2023, pp. 11–16, doi: 10.1109/ACSOS58161.2023.00018.
- [43] N. Banerji, S. Chang, A. Perrault, **T. Y. Berger-Wolf**, M. Quam. "Pandemic Data Collection, Management, Analysis and Decision Support: A Large Urban University Retrospective". In *epiDAMIK 6.0: The 6th International workshop on Epidemiology meets Data Mining and Knowledge Discovery at KDD 2023*
- [44] M. Elhamod, M. Khurana, H. Babu Manogaran, J. C. Uyeda, M. A. Balk, W. Dahdul, Y. Bakis, H. L. Bart, P. M. Mabee, H. Lapp, J. P. Balhoff, C. Charpentier, D. Carlyn, W.-L. Chao, C. V. Stewart, D. I. Rubenstein, **T. Y. Berger-Wolf**, and A. Karpatne. 2023. "Discovering Novel Biological Traits From Images Using Phylogeny-Guided Neural Networks". In *Proceedings of the 29th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD '23)*. Association for Computing Machinery, New York, NY, USA, 3966–3978. <https://doi.org/10.1145/3580305.3599808>
- [45] K. Andrews, M. Ohannessian, **T. Y. Berger-Wolf**, "Modeling Access Differences to Reduce Disparity in Resource Allocation", *Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO'22)*, October 2022, Article No.: 17, pp1–11. <https://doi.org/10.1145/3551624.3555302>
- [46] S. Adhikari, E. Zheleva, R. Mermelstein, **T. Y. Berger-Wolf**, "Understanding the Dynamics between Vaping and Cannabis Legalization Using Twitter Opinions", *The 15th International AAAI Conference on Web and Social Media (ICWSM 2021)*, June 2021.

- [47] J. Leoni, M. Tanelli, S. C. Strada and **T. Y. Berger-Wolf**, "Data-Driven Collaborative Intelligent System for Automatic Activities Monitoring of Wild Animals," *IEEE International Conference on Human-Machine Systems (ICHMS 2020)*, 2020, pp. 1-6, doi: 10.1109/ICHMS49158.2020.9209350.
- [48] J. Aurisano, J. Hwang, A. Johnson, L. Long, M. Crofoot and **T. Berger-Wolf**, "Bringing the Field into the Lab: Large-Scale Visualization of Animal Movement Trajectories within a Virtual Island", *2019 IEEE 9th Symposium on Large Data Analysis and Visualization (LDAV)*, Vancouver, BC, Canada, 2019, pp. 83–84, doi: 10.1109/LDAV48142.2019.8944350.
- [49] C. Amornbunchornvej, E. Zheleva, **T. Y. Berger-Wolf**, "Variable-lag Granger Causality for Time Series Analysis", *The 6th IEEE/ACM International Conference on Data Science and Advanced Analytics (DSAA 2019)*, October 2019, Washington DC.
- [50] A. Taheri, K. Gimpel, **T. Y. Berger-Wolf**, "Predictive Temporal Embedding of Dynamic Graphs". *The IEEE/ACM International Conference on Social Networks Analysis and Mining (ASONAM 2019)*, August 2019, Vancouver, BC.
- [51] G. Muscioni, R. Pressiani, M. Foglio, M. Crofoot, and **T. Berger-Wolf**. "A framework for identifying group behavior of wild animals". In *KDD 2019 workshop on Data Mining and AI for Conservation*, August 2019, Anchorage, AL.
- [52] A. Taheri, **T. Y. Berger-Wolf**, "Evolutionary Representation Learning for Dynamic Graphs". *ICML 2019 Workshop on Learning and Reasoning with Graph-Structured Data*, June 2019, Long Beach, CA.
- [53] A. Taheri, K. Gimpel, **T. Y. Berger-Wolf**, "Learning to Represent the Evolution of Dynamic Graphs with Recurrent Models". In *Companion Proceedings of The 2019 World Wide Web Conference (WWW '19)*, Ling Liu and Ryen White (Eds.). ACM, New York, NY, USA, 301-307
- [54] E. D'Arnese, E. Del Sozzo, A. Chiti, **T. Y. Berger-Wolf**, M. D. Santambrogio, "Automating Lung Cancer Identification in PET/CT Imaging" *2018 IEEE 4th International Forum on Research and Technology for Society and Industry*, September 2018, Palermo, Italy
- [55] C. Amornbunchornvej, M. Crofoot, **T. Y. Berger-Wolf**, "Traits of Leaders in Movement Initiation: Classification and Identification" *Proceedings of the 2018 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2018)*, August 2018, Barcelona, Spain.
- [56] 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.
- [57] 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*).
- [58] 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.
- [59] 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.
- [60] **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.
- [61] 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
- [62] 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.
- [63] **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.
- [64] 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.

- [65] 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*)
- [66] C. Amornbunchornvej, M. Crofoot, **T. Y. Berger-Wolf**, "Identifying Traits of Leaders in Movement Initiation", *The 7th Workshop on Social Network Analysis in Applications (SNA'A'17)*, July 2017, Sydney, Australia.
- [67] 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.
- [68] 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.
- [69] 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.
- [70] 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.
- [71] 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.
- [72] **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.
- [73] 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.
- [74] 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.
- [75] 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).
- [76] F. Vafaee, G. Turà, 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.
- [77] F. Vafaee, G. Turà, 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.
- [78] 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.
- [79] 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.
- [80] 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.
- [81] 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.
- [82] **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.
- [83] 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.

- [84] 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.
- [85] 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.
- [86] D. Won, C. Chou, W. A. Chaovallwongse, **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.
- [87] 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.
- [88] 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.
- [89] 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.
- [90] 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.
- [91] 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*
- [92] 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.
- [93] 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.
- [94] **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 Analysis (ASNA)*, September 2010.
- [95] 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 Analysis (ASNA)*, September 2010.
- [96] 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
- [97] 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
- [98] 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.
- [99] Arun Maiya and **Tanya Berger-Wolf**, "Sampling Community Structure". *Proceedings of WWW 2010*, April 2010, Raleigh, NC.
- [100] 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
- [101] 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.
- [102] **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

- [103] 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
- [104] Saad I. Sheikh, **Tanya Y. Berger-Wolf**, Ashfaq Khokhar, Isabel C. Caballero, Mary V. Ashley, Wanpracha Chaovallitwongse, 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)
- [105] 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.
- [106] M. V. Ashley, **T. Y. Berger-Wolf**, W. Chaovallitwongse, 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
- [107] 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)
- [108] 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.
- [109] 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)
- [110] S. Sheikh, **T. Y. Berger-Wolf**, M. V. Ashley, I. C. Caballero, W. Chaovallitwongse, 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.
- [111] 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
- [112] 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.
- [113] 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.
- [114] **T. Y. Berger-Wolf**, S. I. Sheikh, B. DasGupta, M. V. Ashley, I. C. Caballero, W. Chaovallitwongse, 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] .
- [115] 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
- [116] S. Sheikh, **T. Y. Berger-Wolf**, W. Chaovallitwongse, B. DasGupta, and M. Ashley, "Reconstructing Sibling Relationships from Microsatellite Data", *European Conf. on Computational Biology (ECCB)*, Jan 2007, Eilat, Israel
- [117] 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.
- [118] **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.
- [119] **T. Y. Berger-Wolf**, B. DasGupta, W. Chaovallitwongse, 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

- [120] **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
- [121] **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 (arXiv and bioRxiv):

- [122] Vardaan Pahuja, Weidi Luo, Yu Gu, Cheng-Hao Tu, Hong-You Chen, **Tanya Berger-Wolf**, Charles Stewart, Song Gao, Wei-Lun Chao, Yu Su, "Bringing Back the Context: Camera Trap Species Identification as Link Prediction on Multimodal Knowledge Graphs". arXiv:2401.00608 [cs.CV]
- [123] Samuel Stevens, Jiaman Wu, Matthew J Thompson, Elizabeth G Campolongo, Chan Hee Song, David Edward Carlyn, Li Dong, Wasila M Dahdul, Charles Stewart, **Tanya Berger-Wolf**, Wei-Lun Chao, Yu Su, "BioCLIP: A Vision Foundation Model for the Tree of Life". arXiv:2311.18803
- [124] Dipanjyoti Paul, Arpita Chowdhury, Xinqi Xiong, Feng-Ju Chang, David Carlyn, Samuel Stevens, Kaiya Provost, Anuj Karpatne, Bryan Carstens, Daniel Rubenstein, Charles Stewart, Tanya Berger-Wolf, Yu Su, Wei-Lun Chao. "A Simple Interpretable Transformer for Fine-Grained Image Classification and Analysis". arXiv preprint arXiv:2311.04157
- [125] Cheng-Hao Tu, Hong-You Chen, Zheda Mai, Jike Zhong, Vardaan Pahuja, **Tanya Berger-Wolf**, Song Gao, Charles Stewart, Yu Su, Wei-Lun Chao. "Holistic Transfer: Towards Non-Disruptive Fine-Tuning with Partial Target Data". arXiv preprint arXiv:2311.01420
- [126] Lily Xu, Esther Rolf, Sara Beery, Joseph R. Bennett, **Tanya Berger-Wolf**, Tanya Birch, Elizabeth Bondi-Kelly, Justin Brashares, Melissa Chapman, Anthony Corso, Andrew Davies, Nikhil Garg, Angela Gaylard, Robert Heilmayr, Hannah Kerner, Konstantin Klemmer, Vipin Kumar, Lester Mackey, Claire Monteleoni, Paul Moorcroft, Jonathan Palmer, Andrew Perrault, David Thau, Milind Tambe. "Reflections from the Workshop on AI-Assisted Decision Making for Conservation". arXiv preprint arXiv:2307.08774
- [127] D. Tuia, B. Kellenberger, S. Beery, B. Costelloe, S. Zuffi, B. Risse, A. Mathis, M. Mathis, F. Van Langevelde, T. Burghardt, R. Kays, H. Klinck, M. Wikelski, I. Couzin, G. van Horn, M. Crofoot, C. Stewart, and **T. Y. Berger-Wolf**, "Seeing Biodiversity: perspectives in machine learning for wildlife conservation". arXiv preprint arXiv:2110.12951
- [128] M Keymanesh, **T.Y. Berger-Wolf**, M Elsner, S Parthasarathy. "Fairness-aware summarization for justified decision-making". arXiv preprint arXiv:2107.06243
- [129] CV Stewart, JR Parham, J Holmberg, **T.Y. Berger-Wolf**. "The Animal ID Problem: Continual Curation". arXiv preprint arXiv:2106.10377
- [130] B. A. Ibrahim, C. Murphy, G. Muscioni, A. Taheri, G. Yudintsev, R. V. Kenyon, **T. Y. Berger-Wolf**, M. I. Banks, D. A. Llano, Corticothalamic gating of population auditory thalamocortical transmission in mouse, bioRxiv 625988; doi: <https://doi.org/10.1101/625988>
- [131] J. W. Brown, A. Taheri, R. V. Kenyon, **T. Y. Berger-Wolf**, D. A. Llano A computational model of intrathalamic signaling via open-loop thalamo-reticular-thalamic architectures. bioRxiv 574178; doi: <https://doi.org/10.1101/574178>
- [132] I. Brugere, C. Kanich, **T. Y. Berger-Wolf**, Evaluating social networks using task-focused network inference, arXiv preprint, July 2017.
- [133] I. Brugere, C. Kanich, **T. Y. Berger-Wolf**, A General Framework For Task-Oriented Network Inference, arXiv preprint, May 2017.
- [134] 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:

- [135] R. Sulo Cacéres and **T. Y. Berger-Wolf**, "Temporal Scale of Dynamic Networks", *Temporal Networks*, Petter Holme and Jari Saramäki (Editors), Springer, 2013.
- [136] **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.

- [137] 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 and Briefs:

- [138] GPAI 2022. Biodiversity & Artificial Intelligence, Opportunities and Recommendations, Report, November 2022, Global Partnership on AI.
- [139] L. A. Shanley, L. Fortson, **T. Y. Berger-Wolf**, K. Crowston, and P. Michelucci, "Imagine All the People: Citizen Science, Artificial Intelligence, and Computational Research". Washington: D.C.: Computing Community Consortium (CCC), 2021.
- [140] **T. Y. Berger-Wolf**, B. Carterette, T. Elsayed, M. Keet, F. Sebastiani, H. Suleman, "Report on the 2nd ACM SIGIR/SIGKDD Africa school on machine learning for data mining and search", ACM SIGIR Forum, 54(1), 2020, 1–6.
- [141] 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
- [142] **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.
- [143] 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.
- [144] 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:

- [145] 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.
- [146] **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:

- [147] 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.
- [148] 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:

- 2023- \$5,000,000 NSF + NSERC *Global Climate Center: AI and Biodiversity Change (ABC)*, PI: **T. Y. Berger-Wolf**
2028 CA\$3,750,000 co-PIs: M. Jarzyna, S. Beery, J. Kitzes, International collaborators: Canada (funded by NSERC): D. Rolnick, L. Pollock, K. Gaynor, G. Taylor, UK: T. Burghardt, O. M. Aodha, S. O'Donnell, Switzerland: D. Tuia, Australia: B. Meyer.
- 2021- \$15,968,604 NSF *HDR Institute: Imageomics: A new frontier of biological information powered by knowledge-guided machine learning*, PI: **T. Y. Berger-Wolf**, co-PIs: A. Karpatne, C. Stewart, H. Bart, H. Lapp

2020-2022	\$1,249,960	NSF FAI: Addressing the 3D Challenges for Data-Driven Fairness: Deficiency, Dynamics, and Disagreement, PI: B. Ziebart, co-PIs: I. Kash, M. Ohannessian, X. Zhnag, T.Y. Berger-Wolf
2019	\$1,500,000	NSF HDR TRIPODS: UIC Foundations of Data Science Institute, co-PIs: L. Reyzin, A. Sidiropoulos, N. Devroye, W. Perkins. (Grant left for UIC, PI changed)
2019	\$15,000	Discovery Partners Institute. AI and Environment, PI: T.Y. Berger-Wolf , co-PIs: T. L. Theis, J. D. Brawn, E. M. Schauber
2019		NSF HDR IDEAS Lab
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, Pls: B. Ziebart, T.Y. Berger-Wolf , M. Crofoot.
2014-2019	\$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
2015-2018	\$300,000	NSF EF-1550853 EAGER-NEON: Image-Based Ecological Information System (IBEIS) for Animal Sighting Data for NEON Pls: C.V. Stewart, T.Y.Berger-Wolf , D.I. Rubenstein
2014-2018	\$314,504	NSF CNS-1453555 EAGER: Prototype of an Image-Based Ecological Information System (IBEIS), Pls: 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, <i>Computational Behavioral Ecology on the Cloud</i> , 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, Pls: 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. Chaovalltwongse
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), Pls: 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, Pls: 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. Chaovalltwongse
2006-2007	\$91,000	Microsoft award 14936, Computational Tools for Population Biology

Invited Talks (last 5 years and a few special ones):

Talks on “**Imageomics**”, “*AI for Conservation*”, “*Trustworthy AI for the Planet*”, “*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*”, “*Computational Population Biology*”, “*Women in STEM*”

- Dec 2023 NeurIPS 2023 Workshop: Tackling Climate Change with Machine Learning, **Invited keynote**
Oct 2023 **Distinguished Lecture**, Institute for Experiential AI, Northeastern University
Oct 2023 Bezos Earth Fund AI for Climate and Nature workshop
Sep 2023 Department of Food, Agricultural and Biological Engineering (FABE), College of Food, Agricultural, and Environmental Sciences (CFAES), Ohio State University
Aug 2023 The HDF5 User Group (HUG) meeting 2023, **invited keynote**
Aug 2023 GPAI Project RAISE Workshop
Jul 2023 Monash Prato Dialogue AI Summit 2023
Jun 2023 NASEM Paving the Way for Continental Scale Biology: Tools and Approaches for Connecting Research Across Scales webinar
Jun 2023 Risk Institute, Ohio State University
Jun 2023 CV4Animals workshop at CVPR 2023, **invited keynote**
May 2023 Ohio Science Day of the Ohio Academy of Science, **Invited keynote**
May 2023 Artificial Intelligence and Conservation, WWF Kathryn Fuller Science for Nature Seminar series
Apr 2023 **Distinguished Lecture**, Cheriton School of Computer Science, Waterloo University, Canada
Apr 2023 CEIMIA Global Partnership on AI conference on AI session on AI and Biodiversity, Ottawa, Canada
Apr 2023 Science Sundays lecture, OSU College of Arts and Sciences
Apr 2023 Michigan Institute on Data Science Future Leaders Symposium, University of Michigan, Ann Arbor
Mar 2023 The 4th TOKAI Digital Human Resource Forum, NUCB Business School, Nagoya campus, Japan
Mar 2023 University of Tsukuba, Tsukuba, Japan
Feb 2023 AI and Nature week keynote, University of Bristol, Bristol, UK
Jan 2023 TraitFest
Dec 2022 AI for Social Good global forum
Dec 2022 University of Monash, Melbourne, Australia
Dec 2022 Government-University-Industry Research Roundtable (GUIRR), National Academies of Science, Engineering and Medicine
Nov 2022 Columbus Science Pub, Columbus, Ohio
Nov 2022 Data Science Hub uDASH, University of New South Wales, Sydney, Australia
Nov 2022 h2o.ai World, Sydney, Australia
Nov 2022 Defining user needs for tracking animal movements and lives in a changing world, Yale University
Oct 2022 AI Club, Ohio State University
Oct 2022 AI for Conservation workshop, Harvard University
Sep 2022 Imaginecology workshop
Sep 2022 Complex networks symposium, SIAM Mathematics of Data Science conference
Sep 2022 AI Dialogues, Monash Prato Center
Sep 2022 Lucy Family Institute for Data and Society, Notre Dame University
Aug 2022 The Wilds, Ohio
Aug 2022 Microsoft Research colloquium
Aug 2022 AI for conservation workshop, European biodiversity consortium, Hortobagy National Park, Hungary
Aug 2022 CV4Ecology inaugural summer school
Jul 2022 Data Analytics Summer Camp, Translational Data Analytics Institute, Ohio State University
Jul 2022 Intelligent Systems for Molecular Biology (ISMB), **keynote speaker**
Jun 2022 Movement ecology panel, WILDLABS
Apr 2022 Earthvision workshop, CVPR conference, **keynote speaker**
Apr 2022 Northeastern University
Apr 2022 Retirees Association, Ohio State University
Apr 2022 ExploreCSR workshop, Ohio State University
Apr 2022 Columbus Zoo
Mar 2022 How Good AI Can Be AI for Good in Higher Education panel, SXSW EDU

- Feb 2022 ExploreCSR workshop, University of Illinois at Chicago
Feb 2022 Department of Communication, University of New Mexico
Feb 2022 OSU FABE seminar
Feb 2022 AAAS symposium on crowd-engaged science
Dec 2021 AI and Biodiversity panel, AI for Climate initiative
Nov 2021 Environmental Data Science, Yale University
Nov 2021 AAAI Second Symposium on Science-Guided AI
Oct 2021 Max Planck Institute Grand Challenges Symposium
Oct 2021 24th International Conference on Discovery Science (DS'2021), **keynote speaker**
Sep 2021 City and Regional Planning (CRP), Ohio State University
Aug 2021 IMERSA summit
Aug 2021 Blalock Lecture in the ICPSR Summer Program, University of Michigan
Jul 2021 New Hampshire Academy of Sciences summer program
Jul 2021 AI4Biodiversity workshop, Israel
Jun 2021 10 years of NASA Space Biology AI application and development workshop
Jun 2021 Ethics and Technology panel, Virtual Residency Intermediate/Advanced Workshop 2021
Apr 2021 SIAM International Conference on Data Mining (SDM 2021), **keynote speaker**
Apr 2021 DataYap
Mar 2021 Vanderbilt Data Science Institute colloquium
Mar 2021 TEDxOSU, featured on TED.com
Mar 2021 NUY Center for Data Science
Feb 2021 NJIT Institute for Data Science Seminar
Feb 2021 Max Planck Institute, Collective behavior cluster
Feb 2021 UNEP/UNESCO AI for the Planet Conference
Dec 2020 DIMACS TRIPODS
Nov 2020 Women in Engineering Graduate Council Leadership Speaker series
Nov 2020 AI& HPC Workshop at SC20
Oct 2020 Academic Data Science Association Leadership Summit, **keynote speaker**
Jul 2020 6th International Conference on Computational Social Science, IC²S², **keynote speaker**
Jun 2020 Data Science Capstone course, University of British Columbia
Apr 2020 Wageningen University, Netherlands
Mar 2020 Big Data Analytics Association, The Ohio State University
Mar 2020 Department of Biology, Purdue University
Jan 2020 Department of Computer Science, Cape Town University, Cape Town, South Africa
Dec 2019 AI Days Chicago, Chicago, IL
Nov 2019 Annual Symposium, Michigan Institute for Data Science (MIDAS), Ann Arbor, MI, **keynote speaker**
Nov 2019 Argonne National Laboratory
Oct 2019 Max Planck Institute for Intelligent Systems, Tübingen, Germany
Sep 2019 Department of Computer Science and Engineering, The Ohio State University
Sep 2019 IEEE Women in Engineering Leadership Summit
Sep 2019 Workshop on Higher-Order Interaction Networks, Oxford, UK (keynote speaker)
Jul 2019 Joint meeting Annual Conference of the Animal Behavior Society (ABS) and the International Council of Ethologists Conference (ICE), Chicago, IL (**plenary speaker**)
Jun 2019 GirlCon Chicago, IL
Jun 2019 Salesforce AI for Social Good Research Speaker Series, CA
May 2019 Chicago Science Fest 2019, Illinois Science Council, Chicago, IL
May 2019 Security Education Workshop, Chicago, IL
Apr 2019 Esri (Environmental Systems Research Institute), Redlands, CA
Apr 2019 University of California Riverside, Riverside, CA
Apr 2019 Institute for Software Research Seminar, Carnegie Mellon University, Pittsburgh, PA
Feb 2019 IUPUI Data to Action Speaker Series, Indianapolis, IN
Feb 2019 Symposium on AI for Conservation, University of Southern California, Los Angeles, CA
Feb 2019 University of Southern California Center for Artificial Intelligence and Society, Los Angeles, CA
Feb 2019 H2O World, San Francisco, CA

Jan 2019	Machine Learning Summer School, Stellenbosch, South Africa
Sep 2018	Detect and Prevent: AI Collaboration to End Wildlife Trafficking Online Workshop, WWF and Microsoft, Redmond, WA
Jun 2018	SciFoo ignite talk, Sunnyvale, CA
Jun 2018	GirlCon Chicago, IL
Jun 2018	Capitol Hill Ocean Week, Washington, D.C
Oct 2017	Design_Code_Build, Museum of Science and Industry, Chicago, IL (Rock star speaker)
Jul 2017	Science Foo Camp, Mountainview, CA
Oct 2016	The White House Frontiers Conference , Pittsburgh, PA (ignite speaker)
Feb 2016	36th Annual Symposium on Sea Turtle Biology and Conservation, Peru, Lima (invited speaker)
Jun 2015	Animal Behavior Society Annual Meeting, presidential symposium, Anchorage, AK (invited speaker)
Sep 2014	Association for Promoting Tourism to Africa Annual Meeting

Students Supervised:

Current PhD and MS students:

- Sebrina Zeleke, CSE Ph.D. expected 2026
- Namrata Banerji, CSE Ph.D. expected 2026
- Michelle Ramirez, CSE Ph.D. expected 2027 [COE@OSU graduate scholarship]
- Samuel Malloy, Environmental Sciences Graduate Program Ph.D. expected 2024
- Jenna Kline, CSE Ph.D. expected 2026 (co-advised with Christopher Stewart)
- Anya Ellis, CSE Ph.D. expected 2028

- Sowbaranika Balasubramaniam, M.S. expected 2024
- HarshaVardhan Mutra Rupendra, M.S. expected 2024

Past Postdocs:

- Janet Backs (with Mary Ashley, UIC Bio)
- Damien Farine (with Margaret Crofoot, UC Davis) [Max Planck Institute of Animal Behavior]
- David Pappano (with Daniel Rubenstein, Princeton) [Time, Inc, McKinsey & Company]

Graduated students, PhD:

- Moniba Keymanesh, PhD. 2022 (co-advised with Srinivas Parthasarathy)

- Ivan Brugere, Ph.D. 2020 [Google Lime Scholar 2014, ESP IGERT Associate 2014, Chancellor's Graduate Research Award 2014]
- Shelby Heinecke, Ph. D. 2020 (Lev Rayzin co-adviser, UIC MCS)
- Aynaz Taheri, Ph.D. 2019 [Dean's Graduate Scholarship Award, 2019]. Thesis: *Graph Representation Learning with Deep Recurrent Models*
- Chainarong Amornbunchornvej, Ph.D. 2018 [Thai government scholarship]. Thesis: *Inference of Leadership of Coordinated Activity in Time Series*. [National Electronics and Computer Technology Center (NECTEC)]
- 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 postdoc]
- 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]

Graduated students, MS:

- Reshma Ramesh Babu, MS May 2023, *Imageomics Approach to Understanding Visual Biological Trait Similarities using Butterfly Mimicry as a Model System* [Barklay's Bank]
- Gabriele Aldeghi, MS Fall 2019, *Retinal Segmentation of Intraoperative B-Scan Optical Coherence Tomography Using Deep Learning*
- Mattia DiFata, MS Fall 2019, *Surgical Instrument Tracking for Intraoperative Vitrectomy Guidance Using Deep Learning and Computer Vision*
- Sri Phani Mohana Tejaswi Gorti, MS Dec 2019, *Identifying Genetic Relatedness in Birds Using Visual Patterns*
- Guido Di Donato, MS May 2019, *Leveraging Succinct Data Structures for the Burrows-Wheeler Mapping of Short Sequence Reads on FPGA*
- Jessica Leoni, MS May 2019, Time-Series Processing and Classification for the Automatic Assessment of Wild Animals Activities [PhD Milan]
- Pratik Anil Kshirsagar, MS May 2019, *Investigating Effects of Translating Similarity Ranking into PairwiseSimilarity for Image-Based Identification* [Morningstar]
- Lorenzo Semeria, MS May 2019, *MOSAIC: Modeling Online Sharing of Animal images Collections* [Truss Holdings, Inc]
- Matteo Foglio, MS May 2019, Thesis: *Animal Wildlife Population Estimation Using Social Media Collections* [Wepo Inc]
- Riccardo Pressiani, MS May 2019. Thesis: *A Sensor System to Track Individual and Social Behavior in the Wild* [Wepo Inc]
- Guido Muscioni, MS May 2019. Thesis: *Behavior Identification of Social Individuals from Sensor Data* [Anthem, Inc.]
- 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* [Ullinois 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:

OSU: Craig Fouts, Nathan Chaikowsky, Mia

UIC: 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 Werfel, 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 Orshon-sky, Mahmooda Ali, Ashley Stojak, Jared Manusig, Shirley Li, Sourav Jayaprakash, Michelle Ramirez, Viktor Kirillov, Abdul Khan, Saccha Agriel, Pouyan Pourmirjafari.

Hghschool students:

Emma Sloan, Phillip Martin, Jordan Towe, Kaitlyn Lu, Katherine Chambers, Kyla Guru, Hannah McDougall, Jason Obrycki, Varun Mallampati, Zoe Wachtel, Josephine H., Vi-An Nguen.

Member of Dissertation Committee:

Current:

- Shivam Abrol, MS, University of Cincinnati (Jillian Aurisano advisor)
- Reza Averly, MS, OSU CSE (Wei-Lun Chao advisor)
- Xinzhu Zhang, Ph.D., OSU EEOB (Andy Roberts advisor)
- Debao Huang, Ph.D., OSU ECE (Rongjun Qing advisor)

Graduated:

- Benjamin Kellenberger, Ph. D. 2020, Wageningen University & Research (Devis Tuia advisor)
- Iain Cruickshank, Ph.D. 2020, CMU CS ISR, (Kathleen Carley advisor)
- Allan Perez-Rathke, Ph.D. May 2019, UIC BioE (Jie Liang advisor)
- Abdel Halloway, Ph. D. March 2019, UIC Biology (Joel Brown advisor)
- 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 Vafaei, 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* (Milos Zefran 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. Patterson, 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:

Fall 22-Spr 23	<i>Experiential Introduction to Imageomics</i> (OSU, VT, Tulane, RPI, Princeton, EPFL, collaborative interdisciplinary multi-institutional course with a field project component in Kenya)
Fall 20, 21, 22	<i>Computer Science and Engineering Research Capstone</i> (OSU, project based graduate and senior undergrad)
Fall 16, 18	<i>Program Design I with Biology</i> (UIC, intro CS with bio content)
Fall 05, 06, 07, 11, 15, 17	<i>Computer Algorithms I</i> (UIC, graduate and senior undergrad)
Spr 08, 15	
Spr 06, 09, 11, 16, 17	<i>Algorithms in Computational Biology</i> (UIC, graduate)
Fall 17, 18	
Spr 10, 12, 15	<i>Field Computational Population Biology</i> (UIC and Princeton graduate, taught in Kenya and UIC)
Fall 12, 14	<i>Mathematical Foundations of Computing</i> (UIC undergraduate)
Fall 09, 10, 11, 12	<i>Discrete Structures II</i> (UIC undergraduate)
Fall 2008	<i>Advanced Algorithm Analysis</i> (UIC, graduate)
Spr 2007	<i>Computational Analysis of Networks</i> (UIC, graduate)
Fall 2003	<i>Inexact Algorithms</i> (UNM, advanced graduate)
Fall 2001	<i>Numerical Linear Algebra</i> (UIUC, graduate and senior undergraduate)
Sum 2001	<i>Introduction to Theory of Computation</i> (UIUC, introductory undergraduate)
Sum 1999	<i>Computer Science Unplugged</i> (UIUC, discover course for non-technical majors)
Fall 1997	<i>Numerical Analysis</i> (UIUC, graduate and senior undergraduate, TA)
Sum 1997	<i>Combinatorial Algorithms</i> (UIUC, graduate and senior undergraduate, TA)
Spr 1997	<i>Discrete Mathematical Structures</i> (UIUC, introductory undergraduate, TA)
Fall 1996	<i>Introduction to Computer Science</i> (UIUC, introductory for engineering majors, TA)

Service and Volunteer Activities (last 5 years, woefully incomplete list):

2023-	Treasurer, founded officer, Central Ohio ACM-W chapter.
2023	Expert judge panel member , Forbes 2023 AI 50 list
2023	Chair , NSF Committee of Visitors, IIS subcommittee, CISE directorate
2018	Member , WWF working group on AI Collaboration to End Wildlife Trafficking
5+ years	<p>Organizing Committee Member (extremely selected):</p> <p>NASEM 1st US-Africa Frontiers of Science, Engineering, and Medicine Symposium, 2022, Nairobi, Kenya</p> <p>AFIRM-19: ACM Africa Summer School on Machine Learning for Data Mining and Search, Cape Town, SA</p> <p>SDM-18,19: SIAM International Conference on Data Mining general co-chair</p> <p>AAAS 15, 19, 21: session organizer</p> <p>GHC-14: Grace Hopper Celebration of Women in Computing Data Science Technical track co-chair.</p> <p>AAAI-14-23, KDD 08-18, SDM 14-17, ...</p> <p>Senior Program Committee member and reviewer for numerous conferences, journals, and granting agencies.</p>
2023	OSU Director of Software Engineering Center Search committee
2020-2023	OSU COVID-19 Comprehensive Monitoring Team, data analytics and modeling lead

- 2020 – OSU Eminence Scholar mentor
2022 OSU CTO Search Committee
2020 OSU College of Engineering Dean Search Committee
- 2018-2019 UIC College of Engineering Executive Committee
2017-2018 UIC CS Faculty search committee chair
2017-2019 UIC PAP STEM undergraduate research internship mentor
2016-2017 UIC Women in Science and Engineering System Transformation (WISEST) Facilitator
2014-2020 UIC Honors College fellow
2018-'19 UIC CS Departmental Advisory Committee

Outreach and Community Service (a woefully incomplete list of the last 5 years):

- 2023 Speaker, inaugural meeting of the Central Ohio ACM-W chapter
2022, '23 Workshop organizer and leader, Data Analytics Summer Camp, TDAI@OSU
2021, '22 Speaker, ExploreCSR@UIC
2020, '22 Speaker, workshop organizer, ExploreCSR@OSU
2016,'18,'20 Co-organizer, The Great Grevy's (And Reticulated Giraffe) Rally, Kenya
2019 Mentor, Rising Stars program
2018, '19 Research mentor, SPARK program, Stevenson High School, IL
2018, '19 Panel speaker, Women in STEM, OPRF High School, IL
2018, '19 Speaker and workshop leader (Tech for Wildlife), GirlCon Chicago
2017 Speaker, Design_Code_Build, workshop for middle and high school students
2017 Speaker, Chicago Women Who Code
2016, '17 Speaker, Girls Who Code - Summer Immersion Program