November 2016

Joshua S. Weitz, Ph.D.
Professor
School of Biological Sciences
Georgia Institute of Technology

Table of Contents

I. Earned Degrees

B.S.	Physics	1993-1997	Princeton University, Princeton, NJ
Ph.D.	Physics	1997-2003	MIT (advisor: D. Rothman)

II. Employment History

2003-2005	NSF Interdisciplinary Informatics Postdoctoral Fellow, Ecology & Evolutionary Biology, Princeton University (advisor: S. Levin)
2005-2006	Research Staff, Ecology & Evolutionary Biology, Princeton University
2006	Associate Research Scholar, Ecology & Evolutionary Biology, Princeton University
2007-2012	Assistant Professor, School of Biology & Courtesy Appointment in the School of Physics, Georgia Institute of Technology
2012-2016	Associate Professor (with tenure), School of Biology & Courtesy Appointment in the School of Physics, Georgia Institute of Technology
2015-present	Founding Director of the Interdisciplinary Quantitative Biosciences Graduate Program at the Georgia Institute of Technology
2016-present	Professor, School of Biological Sciences (formerly School of Biology) w/Courtesy Appointment in the School of Physics, Georgia Institute of Technology

III. Honors and Awards

2016	2016 Best Postgraduate Textbook Prize Awarded by the Royal Society of Biology for Quantitative Viral Ecology: Dynamics of Viruses and Their Microbial Hosts (Princeton University Press, 2015)
2014-2017	Simons Foundation Investigator in Ocean Ecology Processes
2014-2017	Advisory Board Member, National Institute for Mathematical and Biological Synthesis
2013-2014	Visiting Associate Professor, Department of Ecology and Evolutionary Biology, University of Arizona
2014	Honorable Mention, CDC Annual Statistical Awards, Applied Section (2013)
2012-present	Review Editor, Frontiers in Virology
2012	Opponent, PhD Defense, Niels Bohr Institute, Adviser: Kim Sneppen
2011-present	Faculty Member, Theoretical Ecology, F1000
2010-present	Editorial Board Member, Journal of Theoretical Biology
2008-2013	James S. McDonnell Foundation Award in 21st Century Science Initiative: Studying Complex Systems
2007-2013	Burroughs Wellcome Fund Career Award at the Scientific Interface: *Evolutionary Ecology of Bacterial Viruses*
2006	M.L. Shifman scholarship, Microbial Diversity course, Marine Biological Laboratory
2003-2005	NSF Postdoctoral Fellowship in Interdisciplinary Informatics
2003	Award for Excellence in Teaching, Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology
1999	NATO Advanced Summer Institute International Travel Award
1997-2000	National Defense Science and Engineering Graduate Fellowship
1996 & 1997	Allen Shenstone Goodrich Award for "outstanding work in experimental physics," Dept. of Physics, Princeton University
1993-1997	National Science Scholar, Maryland State Department of Education

IV. Research, Scholarship, and Creative Activities

(* next to item number indicates work done at Georgia Tech)
(# indicates Weitz group grad student/postdoc; @ indicates undergraduate author)
Google Scholar profile at http://bit.ly/jsweitz_gscholar

A. Published Books, Parts of Books, and Edited Volumes

A1. Books

1*. **Weitz, JS.** (2015) Quantitative Viral Ecology: Dynamics of Viruses and Their Microbial Hosts. Princeton University Press, 360 pp.

A2. Refereed Book Chapters

1*. Held, NL, #Childs, LM, Davison, M, **Weitz, JS**, Whitaker, RJ & Bhaya, D. (2013) CRISPR-Cas systems to probe ecological diversity and host-viral interactions. CRISPR-Cas systems, editors: Barrangou and van der Oost, Springer. 221-250.

A3. Other Parts of Books

No data

A4. Edited Volumes

No data

B. Refereed Publications and Submitted Articles

B1. Published and Accepted Journal Articles

Google Scholar, ~3500 citations, h-index 36

1*. **Weitz, J.S**., #Eksin, C., #Paarporn, K., Brown, S.P., and Ratcliff, W.C. (2016) An oscillatory tragedy of the commons in replicator dynamics with game-environment feedback. *Proceedings of the National Academy of Sciences USA*. doi:10.1073/pnas.1604096113

2*. Sullivan, M.B., **Weitz, J.S.,** Wilhelm, S.W. (2016) Viral ecology comes of age. *Environmental Microbiology Reports.* doi: 10.1111/1758-2229.12504

3*. Gregory, A.C., Solonenko, S.A., Ignacio-Espinoza, J.C., LaButti, K., Copeland, A., Sudek, S., Maitland, A., Chittick, L., dos Santos, F., **Weitz, J.S.**, Worden, A.Z., Woyke, T., and Sullivan, M.B. (2016) Genomic differentiation among wild cyanophages despite widespread horizontal gene transfer. *BMC Genomics* 17:930.

4*. #Jover, L.F., Romberg, J. and **Weitz, J.S.** (2016) Inferring phage-bacteria infection networks from time-series data. *Roy. Soc. Open Sci.* 3: 160654.

5*. #Hayriye Gulbudak and **Weitz, J.S.** (2016) A touch of sleep: biophysical model of contact-mediated dormancy of archaea by viruses. doi: 10.1098/rspb.2016.1037

6*. #Taylor, B.P., Dushoff, J. and **Weitz, J.S.** (2016) Stochasticity and the limits to confidence when estimating R0 of Ebola and other emerging infectious diseases. *J. Theor. Biol.* 408: 145-154.

7*. (Joey) Leung and **Weitz, J.S.** (2016) Conflicting attachment and the growth of bipartite networks. *Physical Review E*. 93: 032303.

8*. Charles H Wigington, Derek L Sonderegger, Corina PD Brussaard, Alison Buchan, Jan F Finke, Jed Fuhrman, Jay T Lennon, Mathias Middelboe, Curtis A Suttle, Charles Stock, William H Wilson, K Eric Wommack, Steven W Wilhelm, **Weitz, J.S.** (2016) *Nature Microbiology*

9*. #Flores, C.O, Poisot, T., Valverde, S and **Weitz, J.S.** (2016) BiMat: a MATLAB package to facilitate the analysis of bipartite networks. *Methods in Ecology and Evolution*. 7:127-132.

10*. #Das A, Schneider H, Burridge J, Ascanio AKM, Wojciechowski T, Topp CN, Lynch JP, **Weitz JS**, #Bucksch A. (2015). Digital Imaging of Root Traits (DIRT): a high-throughput computing and collaboration platform for field-based plant phenomics. *Plant Methods.* 11:51.

11*. #Jover, L.F., #Flores, C.O., #Cortez, M.H. and **Weitz, J.S.** (2015) Multiple regimes of robust patterns between network structure and biodiversity. *Scientific Reports.* 5:17856.

12*. **Weitz, J.S.** Stock CA, Wilhelm SW, Bourouiba L, Coleman ML, Buchan A, Follows MJ, Fuhrman JA, #Jover LF, Lennon JT, Middelboe M, Sonderegger DL, Suttle CA, #Taylor BP, Frede Thingstad T, Wilson WH, Eric Wommack K. (2015). Multitrophic model of virus effects on marine surface microbial communities. *ISME J.* 9:1352-1364.

13*. **Weitz, J.S.** & Dushoff, J. (2015) Modeling post-death transmission of Ebola virus disease: challenges for inference and opportunities for control. *Scientific Reports* 5: 8751.

14*. #Bucksch A, Burridge J, York LM, Das A, Noord E, **Weitz JS**, and Lynch JP. (2014). Image-based high-throughput field phenotyping of crop roots. Plant Physiology. 166:470-486.

15*. #Childs LM, England W, **Weitz JS,** Whitaker, RW. (2014) CRISPR-induced distributed immunity in microbial populations. *PLoS One.* 9:e101710

16*. Deng, L, Ignacio-Espinazo, J., Poulous B. **Weitz JS,** Hugenholtz P and Sullivan MB. (2014) Viral tagging reveals discrete populations in Synechococcus viral genome sequence space. *Nature*. 513: 242-245.

17*. #Jover, L, Effler, TC, Buchan A, Wilhelm SW, and **Weitz JS**. (2014) An elemental view of virus particles: implications for marine biogeochemical cycles. *Nat Rev Microbiol.* 12: 519-528.

18*. #Das A, #Bucksch A, #Price CA and **Weitz JS**. (2014) ClearedLeavesDB: an online database of cleared plant leaf images. *Plant Methods.* 10:8

19*. #Taylor, B.P. #Cortez, MH and **Weitz, JS**. (2014) The virus of my virus is my friend: ecological effects of virophage with alternative modes of coinfection. *Journal of Theoretical Biology.* 354: 124-136.

20*. #Cortez, MH and **Weitz, JS**. (2014) Coevolution can reverse predator-prey cycles, *Proceedings of the National Academy of Sciences USA.* 111: 7486-7491

21*. #Price, CA, and **Weitz, J.S.** (2014) Costs and benefits of reticulate leaf venation. *BMC Plant Biology.* 14: 234

22*. **Weitz JS.** (2014) Let my people go (home) to Spain: a genealogical model of Jewish identities since 1492. *PLoS One.* 9:e85673

23*. #Bucksch A, Turk G and **Weitz, J.S.** (2014) The Fiber Walk: A Model of Tip-Driven Growth with Lateral Expansion. *PLoS One, 9: e85585.*

24.* #Price CA, Munro, P and **Weitz JS,** (2014) Estimates of leaf vein density are scale dependent. *Plant Physiology* . 164:173-180

25.* #Lee, T., Parikh, R., **Weitz, J.S.,** Kim, H. (2014) Quantifying the interaction between adjacent genes within heterologous modules in yeast. *G3.* 4: 109-116.

26.* #Joh, R.I, Barzilay, E., Mintz, E., Weiss, H. and **Weitz, J.S.** (2013) Dynamics of shigellosis epidemics: estimating individual-level transmission and reporting rate from national epidemiological datasets. *Am J. Epidemiol* 178: 1319-1326.

27*. #Taylor, B, #Lee, T. and **Weitz, JS.** (2013) Multi-scale sensitivity analyses of models of complex gene regulatory networks. *Methods.* 62: 109-120.

28*. Topp CN, Iyer-Pascuzzi AS, Anderson JT, Lee C-R, Zurek PR, Symonova O, Zheng Y, Bucksch A, Mileyko Y, Galkovskyi T, Moore BT, Harer J, Edelsbrunner H, Mitchell-Olds T, **Weitz JS,** Benfey PN. (2013) 3D phenotyping and quantitative trait locus mapping identify core regions of the rice genome controlling root architecture. *Proc. Natl. Acad. Sci. USA*. 110: E1695-E1704.

29*. #Jover, L., #Cortez, MH, and **Weitz, JS**. (2013) Mechanisms of multi-strain coexistence in host-phage systems with nested infection networks. *J. Theor. Biol.* 332: 65-77

30*. Haegeman, B, Hamelin, J., Moriary, J., Neal, P., Dushoff, J. and **Weitz, J.S.** (2013) Robust estimation of microbial diversity in theory and in practice. *ISME Journal*. 7: 1092-11101.

31*. #Mitchell, G.J., Nelson, D.C., Wiesenfeld, K. and **Weitz, J.S.** (2013) Critical cell wall hole size for enzymatic lysis in Gram-positive bacteria. *J. Roy. Soc. Interface*. 10: 20120892.

32.* #Flores, CA, Valverde, S and **Weitz, JS** (2013), Multi-scale structure and geographic drivers of cross-infection within marine bacteria and phages. *ISME Journal.* 7: 520-532.

33.* #Cortez, M.H. and **Weitz, J.S.** (2013) Distinguishing between indirect and direct modes of transmission using epidemiological time series. *American Naturalist.* 181: E43-E54.

34.* Held, NL, #Childs, LM, Davison, M, **Weitz, JS**, Whitaker, RJ & Bhaya, D. (2013) CRISPR-Cas systems to probe ecological diversity and host-viral interactions. CRISPR-Cas systems, editors: Barrangou and van der Oost, Springer.

35*. Fang, S., Clark, R.T., Zheng, Y., Iyer-Pascuzzi, A.S., **Weitz, J.S.,** Kochian, L.V., Edelsbrunner, H., Liao, H., and Benfey, P.N.. (2013) Evidence for genotype-dependent recognition by rice roots. *Proc. Natl. Acad. Sci. USA.* 110: 2670-2675.

36*. **Weitz, J.S.,** Poisot, T., Meyer, J.R., #Flores, C.O., Valverde, S., Sullivan, M.B., and Hochberg, M.E. (2013) Phage-bacteria infection networks. *Trends in Microbiology.* 21: 82-91.

37*. Price, C.A, **Weitz, J.S,** Savage, V., Stegen, J., Clarke, A., Coomes, D., Dodds, P.S., Etienne, R., Kerkhoff, A., McCulloh, K., Niklas, K., Olff, H., Swenson, N. (2012) Testing the metabolic theory of ecology. *Ecology Letters.* 15: 1465-1474.

38*. #Price, C.A. and **Weitz, J.S.** (2012) Mini-review: Allometric covariation: a hallmark behavior of plants and leaves. *New Phytologist.* 192: 882-889.

39*. **Weitz, J.S.** and Wilhelm, S.W. (2012) Ocean Viruses and Their Dynamical Effects on Microbial Communities and Biogeochemical Cycles. *F1000 Biology Reports*. 4:17

40*. Jiang, X., Langille, M.G.I., Neches, R.Y., Elliot, M. Levin, S.A., Eisen, J.A., **Weitz, J.S.** and Dushoff, J. (2012). Functional biogeography of ocean microbes: dimension reduction of metagenomic data identifies biological patterns across scales. *PLoS One*. 7: e43866

41*. #Mileyko, Y, Edelsbrunner, H, #Price, C.A., and **Weitz, J.S.** (2012) Hierarchical ordering of reticular networks. *PLoS One*. 7: e36715.

42*. #Galkovskyi, T, #Mileyko, Y., Bucksch, A., Moore, B., #Symonova, O., #Price, C.A., Topp, C.N., Iyer-Pascuzzi, A.S., Zurek, P.R., Fang, S., Harer, J., Benfey, P.N. and **Weitz, J.S.** (2012) GiA Roots: software for the high-throughput analysis of plant root system architecture. *BMC Plant Biology.* 12:116.

43.* Haegeman, B and **Weitz, J.S.** (2012) Neutral theory of genome evolution and the frequency distribution of genes. *BMC Genomics.* 13: 196.

44.* #Childs, LM, Held, NL, Young, MJ, Whitaker, RJ and **Weitz, J.S.** (2012) Multi-scale Model of CRISPR-induced Coevolutionary Dynamics: Diversification at the Interface of Lamarck and Darwin. *Evolution.* 66: 2015-2029.

45.* Meyer, J.R., Dobias, D.T., **Weitz, J.S. ,** Barrick, J.E., Quick, R.T. and Lenski, R.E. (2012) Repeatability and contingency in the evolution of a key innovation in phage lambda. *Science* 335:428-432.

46.* #Price, C.A., Wing, S. and **Weitz, J.S.** (2012) Scaling and structure of dicotyledenous leaf venation networks. *Ecology Letters* 15: 87-95.

47.* Jeng, X., **Weitz, J.S.,** Dushoff, J. (2012). A non-negative matrix factorization framework for identifying modular patterns in metagenomic profile data. *Journal of Mathematical Biology.* 64: 697-711.

48.* #Flores, C., Meyer, J., #@Farr, L., Valverde, S. and **Weitz, J.S. (**2011). The statistical structure of host-phage interactions. *Proceedings of the National Academy of Sciences USA.* 108: *E288-E297.*

49.* #Kislyuk, A, Haegeman, B., Bergman, N. and **Weitz, J.S.** (2011). Genomic fluidity: an integrative view of gene diversity within microbial populations. *BMC Genomics.* 12:32

50.* #Joh, R.I. & **Weitz, J.S.** (2011). To lyse or not to lyse: transient-mediated stochastic fate determination in cells infected by bacteriophages. *PLoS Computational Biology*. 7: e1002006.

51.* Menge, D.M., Ballantyne, F.B., and **Weitz, J.S.** (2011). Dynamics of nutrient uptake strategies: Lessons from the tortoise and the hare. *Theoretical Ecology*. 4: 163-177.

52*. #Price, C.A. #Symonova, O., #Mileyko, Y., Hilley, T. and **Weitz, J.S.** (2011). LEAF GUI: segmenting and analyzing the structure of leaf veins and areoles. *Plant Physiology.* 155: 236-244.

53*. Serra, M., Smith, H.A., **Weitz, J.S.** and Snell, T.W. (2011). Analyzing threshold effects in the sexual dynamics of cyclically parthenogenetic rotifer populations. *Hydrobiologia.* 662: 121-130.

54.* #Price, C.A. and **Weitz, J.S.** (2010). Zero-sum allocational strategies determine the allometry of specific leaf area. *American Journal of Botany.* 97:1808-1815.

55*. #Price, C.A., Gillooly, J., Allen, A., **Weitz, J.S** and Niklas, K (2010)**.** The metabolic theory of ecology: prospects and challenges for plant biology. *New Phytologist.* 188: 696-710.

56*. #Mitchell, G.J., Nelson, D.C. and **Weitz, J.S.** (2010). Quantifying lytic enzymes: estimating the combined effects of chemistry, physiology and physics. *Physical Biology.* 7: 046002.

57*. Gudelj, I.[e], **Weitz, J.S.**[e], Meyer, J., Ferenci, T., Horner-Devine, M.C., Marx, C., Ackerman, M., and Forde, S.E.. (2010). An integrative approach to understanding microbial diversity: from intracellular mechanisms to community structure. *Ecology Letters.* 13:1073-1084.

58.* #Mileyko, Y. and **Weitz, J.S.** (2010). Bifurcation analyis of gene regulatory network motifs subject to copy number variation. *SIAM J. on Applied Dynamical Systems.* 9: 799-826.

59*. Iyer-Pascuzzi, A.[e1], #Symonova, O.[e1], #Mileyko, Y., Hao, Y., Belcher, H., Harer, J., **Weitz, J.S.**[e2], Benfey, P.N.[e2] (2010). Imaging and analysis platform for automatic phenotyping and trait ranking of plant root systems. *Plant Physiology.* 152:1148-1157.

60*. Ballantyne, F, Menge D, and **Weitz, J.S.** (2010). A discrepancy between Michaelis-Menten based nutrient uptake model predictions and nitrogen to phosphorus stoichiometry in the surface ocean. *Limnology and Oceanography.* 55: 997-1008.

61*. #Boettiger, C., Dushoff, J. and **Weitz, J.S.** (2010). Fluctuation domains in adaptive evolution. *Theoretical Population Biology.* 77: 6-13.

62*. #Kislyuk, A. #Bhatnagar, S., Dushoff, J. and **Weitz, J.S.** (2009). Unsupervised statistical clustering of environmental shotgun sequences. *BMC Bioinformatics.* 10: 316.

63*. #Wang, H., Jiang, L. and **Weitz, J.S.** (2009). Bacterivorous grazers facilitate organic matter decomposition: a quantitative modeling approach. *FEMS Microbiology Ecology.* 69: 170-179.

64*. #Price, C.A., Ogle, K., White, E.P. and **Weitz, J.S.** (2009). Evaluating scaling theories in biology. *Ecology Letters.* 12: 641-651.

65*. #Joh, R.I., #Wang, H., Weiss, H. and **Weitz, J.S.** (2009). Dynamics of indirectly transmitted infectious diseases with immunological threshold. *Bulletin of Mathematical Biology.* 71: 845-862.

66*. Menge, D. and **Weitz, J.S.** (2009). Dangerous nutrients: Evolution of phytoplankton resource uptake subject to virus attack. *Journal of Theoretical Biology.* 257: 104-115.

67*. #Mileyko, Y., #Joh, R.I. and **Weitz, J.S.** (2008). Small-scale copy number variation and large-scale changes in gene expression. *Proceedings of the National Academy of Sciences USA.* 105: 16659-16664.

68*. Weitz, J.S, #Mileyko, Y., #Joh, R.I., and Voit, E.O. (2008). Collective decision making in bacterial viruses. *Biophysical Journal.* 95: 2673-2680.

69*. **Weitz, J.S.** and Dushoff, J. (2008). Alternative stable states in host-phage dynamics. *Theoretical Ecology*, 1: 13-19.

70*. Muneekeparakul, R., **Weitz, J.S.**, Rinaldo, A., Levin, S.A. and Rodriguez-Iturbe, I (2007). A neutral metapopulation model of riparian biodiversity. *J. Theor. Biol.*, 245: 351-363.

71*. Baskett, M., and **Weitz, J.S.**, and Levin, S.A. (2007*)*. The evolution of dispersal in reserve networks. *Amer. Nat.* 170: 59-78.

72*. **Weitz, J.S.**, Benfey, P.N. and Wingreen, N. (2007). Evolution, interactions, and biological networks. *PLoS Biology* 5:e11.

62. **Weitz, J.S.,** Ogle, K. and Horn, H.S. (2006). Ontogenetically stable hydraulic design in woody plants. *Functional Ecology* 20: 191-199.

63. **Weitz, J.S.** and Levin, S.A. (2006). Size and scaling in predator-prey dynamics. *Ecol. Lett.* 9: 548-557**.**

64. **Weitz, J.S.** and Hartman, H. (2006) Phage in the time of cholera. *Lanc. Infect. Dis*. 6: 257-258.

65. Memmott, J., Alonso, D., Berlow, E., Dobson, A., Dunne, J., Sole, R. and **Weitz, J.S.** (2006). Biodiversity loss and ecological network structure. Food Webs As Complex Adaptive Networks Linking Structure to Dynamics, eds. M. Pascual and J. A. Dunne. Oxford University Press.

66. **Weitz, J.S.,** Hartman, H. and Levin, S.A. (2005). Coevolutionary arms races between bacteria and bacteriophage. *Proceedings of the National Academy of Sciences USA,* 102: 9535-40.

67. M. Pie and **J.S. Weitz** (2005*)* Null model of morphospace occupation. *Am. Nat*. 166: E1.

68. **Weitz, J.S.** and Rothman, D.H. (2004). Dynamics of a contact process with ontogeny. *Physical Review E*, 70:021915.

69. **Weitz, J.S.** and Rothman, D.H. (2003). Scale-dependence of resource-biodiversity relationships. *J. Theor. Bio*. 225: 225-234.

70. Dodds, P.S. and **Weitz, J.S.** (2003). Packing limited growth of irregular objects. *Physical Review E*, 67:016117.

71. Dodds, P.S. and **Weitz, J.S.** (2002). Packing limited growth. *Physical Review E* 65: 056108.

72. Dodds, P.S., Rothman, D.H. and **Weitz, J.S.** (2001*).* Re-examination of the "3/4"-law of metabolism. *J. Theor. Biol*. 209: 9-27.

73. **Weitz, J.S.** and Fraser, H.B. (2001). Explaining mortality rate plateaus. *Proc. Natl. Acad. Sci. USA* 98: 15383-15386.

74. Cohen, R.E. and **Weitz, J.S.** (1998). The melting curve and premelting of MgO. High Pressure Temperature Research: Properties of Earth and Planetary Materials, eds. M.H. Manghnani and Y. Syono. American Geophysical Union: Geophysical Monograph Series.

75. Hinrichsen, H., **Weitz, J.S.** and Domany, E. (1997). An algorithm-independent definition of damage spreading - application to directed percolation. *Journal of Statistical Physics*, 88:617–636.

76. Fu, T. and **Weitz, J.S.** (1994). A high spatial resolution particle displacement velocimetry algorithm. Laser Anemometry: 1994 Advances and Applications, ed. T. Huang. ASME.

B2. Conference Publications (Refereed)

1*. #Paarporn, K., #Eksin, C., **Weitz, J.S.,** and Shamma, J. (in press) The effect of awareness on networked SIS epidemics. 55th IEEE Conference on Decision and Control.

2*. #Paarporn K, #Eksin C, Shamma J, and **Weitz JS**. (2015). Epidemic Spread Over Networks with Agent Awareness and Social Distancing. 53rd Annual Allerton Conference on Communication, Control, and Computing.

B3. Other Refereed Material

No data

C. Other Publications

1. Weitz JS (2003) Generalized Contact Processes in Ecology. Ph.D. dissertation, **MIT**

D. Presentations

*Note: only those presentations delivered by JS Weitz are listed; * denotes plenary speaker/featured lecturer*

Invited presentations at conferences

2017

KITP Eco-evolutionary dynamics of microbial communities, Santa Barbara (7/2017)

2016

*Aquatic Virus Workshop 8, Plymouth, United Kingdon (7/2016)

Quantitative Laws II, Como, Italy (6/13/06 & 6/14/06)

2015

Georgia Institute of Technology Bioinformatics conference, Atlanta, GA, (11/2015)

*Workshop: Living Systems from Interaction Patterns to Critical Behavior, Venice, Italy (9/16/15 & 9/17/15)

Evergreen Phage Meeting, Olympia, WA (8/6/2015)

Marine Biological Laboratory, Microbial Diversity Course (8/4/15) - Two Lectures

NIH, Fogarty International Center, RAPIDD Workshop on Ebola Forecasting Approaches (3/23/2015)

2014

*Isaac Newton Institute for Mathematical Sciences, Program on Modeling Microbial Communities

- PhD Summer course 10/27/2014)
- Workshop (10/31/2014)

Burroughs Wellcome Fund, BWF-CASI Awardees Meeting (10/2014)

School of Biology Retreat, Georgia Institute of Technology (9/7/2014 – keynote speaker)

*Marine Biological Laboratory, Microbial Diversity Course (8/1/2014-8/2/2014)

- Two Lectures in Microbial Diversity Summer Course (8/1/2014)
- Symposium Speaker, Systems Microbiology (8/2/2014)

Gordon Research Conference, Marine Microbes (6/2014)

Burroughs Wellcome Fund Board of Director's Meeting, Santa Barbara, CA (2/2014)

Dynamics Days, Georgia Institute of Technology (1/4/2014)

2013

Aquatic Viral Workshop 7, St. Petersburg, FL (11/4/2013)

*Quantitative Laws of Genome Evolution, Lake Como, Italy (6/28/2013-6/30/2013)

- Introduction to evolutionary ecology for quantitative biologists – Part 1
- Introduction to evolutionary ecology for quantitative biologists – Part 2

- Simple (but different): evolutionary dynamics of gene composition within bacterial genomes

Frontiers in Systems and Synthetic Biology '13, Georgia Tech (3/22/2013)
Biosphere 2, Environmental Virology Workshop, U of Arizona (1/7/2013)

2012
Centers for Models of Life, Niels Bohr Institute, DNA Dynamics and Life Strategies Conference, Denmark (8/17/2012)

2011
Human Health and the Microbiome Symposium, Emory University (12/2011)
U of Florida, Department of Biology (11/15/2011)
U of Texas-Austin, Section of Integrative Biology (10/19/2011)
CRISPR 2011, Berkeley, CA. (7/12/2011).
Centers for Models of Life, Niels Bohr Institute, Copenhagen, Denmark (5/11/2011)
Kavli Institute for Theoretical Physics, UCSB. (3/1/2011)

2010
CRISPR 2010, Berkeley, CA. (7/23/2010).
*Southeastern Ecology and Evolution Conference, Atlanta, GA. (3/26/2010)
DARPA Fundamental Laws of Biology Workshop, Irvine, CA. (1/20/2010).

2009
Microbes to Metazoaons: Regulation, Dynamics, and Evolution of Social Behavior Workshop, Georgia Tech. (12/3/2009).
EPSO Plant Phenotyping Workshop, Julich Germany (11/2/2009)
Ecological Society of America 94th Annual Meeting, Albequerque, NM. (8/6/2009).

2008
Rutgers University, BioMAPS (11/11/2008).
Genetic and Evolutionary Computation Conference, Atlanta, GA (7/14/2008).

2007
DARPA Fundmental Laws of Biology Annual Meeting, San Diego, CA. (12/12/2007).

2006
Ecological Society of America 91st Annual Meeting, Memphis, TN. (8/10/2006).
American Society for Microbiology 106th General Meeting, Orlando, FL (5/22/2006).
DARPA Fundamental Laws of Biology Annual Meeting, Santa Barbara, CA. (5/12/2006).
DARPA Fitness Landscape Workshop, University of California–Berkeley (2/4/2006).

2005
4th International Canopy Conference, Leipzig, Germany (7/14/2005).

Invited presentations at universities & institutes:
2017
Medical College of Georgia (3/2017)
NYU, Department of Biology (3/2017)
UCSD, Department of Ecology and Evolutionary Biology (2/2017)

2016
London School of Hygiene and Tropical Medicine (7/2016)

Georgia Southern University, School of Public Health (3/2016)
U of Vermont, Complex Systems Institute (3/2016)

2015
U of Michigan, Ecology and Evolutionary Biology (10/29/15)
National Center for Biotechnology, Madrid, Span (10/23/15)
U of Nebraska Lincoln, Biotechnology and Life Sciences Seminar, (10/14/2015)
University of Buenos Aires, Instituto de Calculo, Buenos Aires, Argentina (6/24/2015)
Emory University, Population Biology, Ecology and Evolution (9/4/15)
Weizmann Institute of Science, Department of Physics (6/3/2015)
Technion – Israel Institute of Technology, Department of Biology (6/1/2015)
MIT, Earth, Atmospheric and Planetary Sciences & Microbial Systems Joint Seminar (3/18/2015)
MIT, Biophysics (3/17/2015)
Howard University, Department of Mathematics (3/12/2015)

2014
School of Biology, Georgia Institute of Technology (11/25/2014)
Soft Matter and Biophysics, School of Physics, Georgia Institute of Technology (11/4/2014)
J. Craig Venter Institute, San Diego, CA (3/2014)

2013
Department of Ecology & Evolutionary Biology, University of Arizona, Tucson, AZ (12/2/2013)
Arizona State University
- School of Mathematics and Statistics, Tempe, AZ (11/12/2013)
- School of Life Sciences Tempe, AZ (11/13/2013)

Centre for Biodiversity Theory and Modelling, CNRS, Moulis, France (5/2013)
Institute for Evolutionary Biology, Universitat Pompeu Fabra, Barcelona, Spain (5/2013)
University of Maryland, Department of Biology (3/4/2013)
Institute for Bioenginering and Biosciences, Georgia Tech (2/12/2013)

2012
U of Tennessee-Knoxville, Ecology & Evolutionary Biology (11/9/2012)

2011
U of Florida, Department of Biology (11/15/2011)
U of Texas-Austin, Section of Integrative Biology (10/19/2011)
University of Montpellier-II, Montpellier, France. (5/16/2011)
Centers for Models of Life, Niels Bohr Institute, Copenhagen, Denmark (5/11/2011)
McMaster University, Department of Biology, Hamilton ON. (3/24/2011) *Graduate student selected speaker
McMaster University, Department of Biology, Hamilton ON (3/25/2011) *Graduate student selected speaker

2010
INRIA, Seminaire du Projet de Recherche, Montpellier, France. (5/25/2010).
University of Georgia, Dept. of Microbiology (4/8/2010).
Harvard University, Dept of Organismal and Evolutionary Biology (3/25/2010).

2009
Duke University, Institute for Systems Biology (10/1/2009).
UCLA, Dept. of Biomathematics, (5/21/2009).

University of Pennsylvania, Dept. of Biology, (4/30/2009).

2008
University of Alabama-Birmingham, Dept. of Microbiology. (12/9/2008).
Reed College, Dept. of Physics. (11/19/2008).
University of Oregon, Center for Ecology and Evolution (11/17/2008).
Rutgers University, BioMAPS (11/11/2008).
NIH, Lambda Lunch Seminar (5/22/2008).
University of Maryland Biotechnology Institute (4/18/2008).
University of Georgia, Dept. of Ecology (3/18/2008).
University of Illinois Urbana Champagne, Dept. of Physics (3/4/2008).
Emory University, Program in Population, Ecology and Evolutionary Biology (2/15/2008).
Tata Institute for Fundamental Research, School of Theoretical Physics, Mumbai, India (1/3/2008).

2007
National Center for Biological Research, Bangalore, India. Institute Lecture (12/21/2007).
National Center for Biological Research, Bangalore, India. Institute Lecture (12/20/2007).
University of Buenos Aires, Dept. of Physics, Buenos Aires, Argentina. (7/5/2007).
University of British Columbia, Vancouver, Canada, Department of Mathematics. (4/26/2007).
Georgia Institute of Technology, School of Mathematics. (4/18/2007).
Georgia Institute of Technology. Center for Biologically Inspired Design. (3/26/2007).
Ecole Normale Superieure, Paris, France. (2/2/2007).

2006
Necker Hospital, Paris, France. (11/15/2006).
Ecological Society of America 91st Annual Meeting, Memphis, TN. (8/10/2006).
American Society for Microbiology 106th General Meeting, Orlando, FL (5/22/2006).
DARPA Fundamental Laws of Biology Annual Meeting, Santa Barbara, CA. (5/12/2006).
Mathematical Biology Institute, Ohio State University. (4/27/2006).
Department of Engineering Sciences and Applied Mathematics, Northwestern University (2/28/2006).
DARPA Fitness Landscape Workshop, University of California–Berkeley (2/4/2006).
Department of Mathematics, San Diego State University (1/31/2006).
School of Biology, Georgia Institute of Technology (1/24/2006).

2005
Dept. of Mathematics, UC-Berkeley (11/21/2005).
Dept. of Computer Science, Duke University (10/17/2005).
4th International Canopy Conference, Leipzig, Germany (7/14/2005).

2004
Center for Studies in Physics and Biology, Rockefeller University (9/28/2004).
Dept. of Civil and Environmental Engineering, MIT (3/11/2004).

2003
Center for Discrete Mathematics and Theoretical Computer Science, Rutgers University (10/1/2003).

2002
Harvard Forest, Harvard University (7/17/2002)

Selected contributed presentations at conferences:
International Society for Microbial Ecology 2012, Copenhagen, Denmark. *(*8/2012)

Society for Mathematical Biology Annual Meeting, Knoxville, TN (7/2012)
Aquatic Viral Workshop AVW6, Texel, Netherlands. *(*11/3/2011*)*
Ecological Society of America Annual Meeting, San Jose, CA. (8/7/2007).
Society for Mathematical Biology Annual Meeting, San Jose, CA. (8/1/2007).
Adaptive Dynamics Workshop, Tvarminne Zoological Station, Finland. (1/11/2006).
Ecological Society of America Annual Meeting, Montreal, Canada. (8/9/2005).
Gordon Research Conference on Microbial Population Biology, Andover, NH. (7/20/2005).
First Young Researchers Workshop in Mathematical Biology, Ohio State University. *(*3/1/2005).
Gordon Research Conference on Metabolic Basis of Ecology, Lewiston, ME. (7/7/2004).
Gordon Conference on Theoretical Biology and Biomathematics, Tilton, NH. (6/12/2002).

E. Grants and Contracts

E1. As Principal Investigator

Research Grants and Contracts:

Currently funded:

8/1/2012-7/31/2016 OCE-1233760 – National Science Foundation, Biological Oceanography: *Understanding the Effects of Complex Phage-Bacteria Infection Networks on Ocean Ecosystems* (**Weitz, PI**, $471,076).

10/1/2014-6/30/2017 Simons Foundation: Simons Collaboration on Ocean Ecology Processes ($488,828; **Weitz, PI**) "*Viruses vs. zooplankton: quantifying the interplay between parasites and predators in the North Pacific Ocean*"

7/15/2014-7/14/2017 Army Research Office ($825,000; **Weitz PI**) "*Coevolutionary complex networks: dynamical foundations, influence, and control."*

11/1/2015-12/31/2016 Mathworks Corporation, *Curriculum Development Award for Modules in Quantitative Biosciences* (**Weitz, PI,** $30,000**)**

Previous funding:

6/1/2015-12/1/2015 iPlant Collaborative, *High-Throughput Compute Platform for Quantifying Root Traits from Image Data.* (**Weitz, PI**, $39,998)

1/1//2007–12/31/2013 Burroughs Wellcome Fund: Career Award at the Scientific Interface: *Evolutionary Ecology of Bacterial Viruses.* (**Weitz, PI,** $500,000, NCE until 6/30/2015).

2012-2014 National Institute for Mathematical and Biological Synthesis: *Ocean Viral Dynamics* (**Weitz, PI** w/S. Wilhelm, Co-PI; Workshop grant for all travel and hosting expenses for 15 participants at meetings in NIMBioS, Knoxville, TN: Spring 2012, Fall 2012, Summer 2013 and Spring 2014)

10/1/2008-9/30/2013 James S. McDonnell Foundation: *Mechanisms and Evolution of Complex Life History Traits in Bacterial Viruses* (**Weitz, PI**, $448,261, NCE until 12/31/2014).

E2. As Co-Principal Investigator

Currently funded:

10/1/2013-9/30/2018 DEB-1342876 – National Science Foundation, Dimensions of Biodiversity, *Dimensions: Cost and benefits of chronic viral infections in natural ecosystems* (**Weitz, Co-PI** $442,272 w/M. Young PI at Montana State University)

9/1/2012-8/31/2017 PHY-1205878 – National Science Foundation Physics of Living Systems: *Physics of Living Systems Student Research Network* **(Weitz, Co-PI**, w/5 others, w/D. Goldman, PI, $1,188,363).

Previous funding:

9/1/2008-8/31/2012 PGRP-0820624 – National Science Foundation: *GEPR-Genome-wide Analysis of Root Traits* (**Weitz, Co-PI**, $302,815 to G.Tech w/ P. Benfey PI at Duke University)

9/11/2009-9/10/2011 Defense Advanced Research Projects Agency: *Predictive Biology: Adaptability, Robustness and the Fundamental Laws of Biology*. (**Weitz, Co-PI, $** 252,724 to G. Tech w/S. Levin PI, Princeton University).

1/1/2007–10/7/2010 Defense Advanced Research Projects Agency: *Microstates to Macrodynamics: A New Mathematics of Biology*. (**Weitz, Co-PI**, $416,724 to G. Tech w/S. Levin PI, Princeton University).

E3. Workshop Grants

4/15/2016-12/31/2016 National Science Foundation: Workshop grant for *Quantitative Laws II*, Lake Como, Italy (**Weitz, PI,** $15,000)

5/1/2016-12/31/2016 Burroughs Wellcome Fund: Workshop grant for *Quantitative Laws II*, Lake Como, Italy (**Weitz, PI,** $3,500)

1/1/2015-12/31/2015 Burroughs Wellcome Fund: Workshop grant for *Dynamic Models of Ebola in W. Africa: Linking Predictions, Control Efforts and Policy* (**Weitz, PI**, $12,000)

1/14/2008-4/30/2010 Burroughs Wellcome Fund: Workshop grant for *Viral Paradigms: Molecules, Populations, Ecosystems and Infectious Disease* (**Weitz, PI**, $14,565).

1/1/2008 -12/31/2009 DEB-0808966 – National Science Foundation: Workshop grant for *Viral Paradigms: Molecules, Populations, Ecosystems and Infectious Disease* (**Weitz, PI,** $12,600).

F. Other Scholarly Accomplishments

The Weitz group has led the development of the following software and database packages:

1. BiMat – Analysis library for the structure of bipartite networks in ecology (Release: 2015)
http://bimat.github.io

2. GiA Roots – Semi-automated phenotyping of root system architecture derived from 2D images taken in transparent gels (Release: 2012)
http://www.giaroots.org

3. LEAF GUI – User-assisted extraction of leaf venation structure given 2D cleared leaf images (Release: 2011)
http://www.leafgui.org

4. DIRT – Digitial Imaging of Root Traits extends GiA Roots by enabling semi-automated phenotyping of crop plant root traits grown in field conditions (Release: 2015 – still in beta development)
http://dirt.iplantcollaborative.org

5. CLID – Cleared Leaf Image Database provides access to thousands of cleared leaf images to the scientific community and general public (Release: 2014)
http://clearedleavesdb.org

G. Societal and Policy Impacts

Weitz served as Chair of the Rapid Response workshop on "*Dynamic Models of Ebola in W. Africa: Linking Predictions, Control Efforts and Policy*" (January 2015, Georgia Tech), including participants from academica and government including BARDA and the White House Office of Science, Technology and Policy. Weitz organized the development of a workshop report to disseminate workshop discussions to the broad scientific and policy community, available here: http://bit.ly/ebm_gt_report

H. Other Professional Activities
No data

V. Teaching

A. Courses Taught (last 6 years)
(reverse chronological order, * denotes new curriculum, / denotes cross-listed, & denotes co-taught)

	Year	Class #	Name of class	Students	Rating (/5.0)
*	Fall 2016	BIOL 8804	Foundations in Quantitative Biosciences	14	
&	Spring 2016	BIOL 2400	Math Models in Biology	32	4.2
	Spring 2015	BIOL 4755/	Mathematical Biology	1	5.0
	ibid	BIOL 8803	Intro to Systems Biology	8	4.8
*	Spring 2013	BIOL 8803	Seminar on Viral Ecology	5	5.0
	Spring 2012	BIOL 6422/	Theoretical Ecology	7	4.7
	ibid	BIOL 4422	Theoretical Ecology	6	4.9
&	Spring 2012	BIOL 2400	Math Models in Biology	47	4.5
*	Spring 2011	BIOL 4755/	Mathematical Biology	3	4.3
*	*ibid*	BIOL 8803	Intro to Systems Biology	11	5.0
	Spring 2010	BIOL 4422/	Theoretical Ecology	3	5.0
	ibid	BIOL 6422	Theoretical Ecology	16	4.1
*	Spring 2009	BIOL 4755/	Mathematical Biology	14	4.3
*	*ibid*	MATH 4755	Mathematical Biology	6	4.5
&	Spring 2009	BIOL 2400	Math Models in Biology	38	4.3

B. Individual Student Guidance

B1. PhD Students

11. Ashley Coenen 2016-present Physics
10.Yu-Hui Lin 2016-present Physics
9. Shengyun Peng 2015-present Bioinformatics
8. Charles Wigington 2013-present Bioinformatics
7. Bradford Taylor 2011-2016 Physics
    - Nerem International Travel Award to visit Max Plank Institute in Heidelberg, $3000 (2015)
    - Advanced to candidacy, Summer 2013
    - Thesis defense expected in Summer 2016
    - Postdoctoral scientist, Memorial Sloan Kettering Cancer Center (2017-)
6. Luis Jover 2011-2016 Physics
    - Advanced to candidacy, Spring 2013
    - NIMBioS Visiting Graduate Student Fellowship (Spring 2014)
    - Thesis defense expected in Spring 2016
    - AT&T Data Sciences Intern (Summer 2015)
5. Abhiram Das 2011-2015 Bioinformatics
    - Article in Plant Methods selected as Editor's Pick and Most Viewed (July 2014)
    - Lead developer of "Powered by iPlant" project "Digital Imaging of Root Traits"
    - DNAnexus, Bioinformatics Engineer (2015-)
4. Cesar Flores 2010-2014 Physics
    - Thesis: "Phage-bacteria infection networks"
    - CONACyT Mexican National Fellowship (2012-2014)
    - Microsoft Research Cambridge intern (Spring 2014)
    - Decision Sciences Analyst, Conversant Inc (Fall 2014-)

3. Gabriel Mitchell 2008-2013 Biology
   - Thesis: "Quantifying enzymatic lysis in Gram-positive bacteria"
   - Postdoctoral fellow, IST Austria (2013-)
2. Richard In-Ho Joh 2007-2011 Physics
   - Thesis: "Quantitative analysis of biological switches"
   - Postdoctoral fellow, MIT, Department of Chemical Engineering (2011-2013)
   - Postdcotoral fellow, Harvard Medical School (2013-)
1. Andrey Kislyuk 2008-2010 Bioinformatics
   - Thesis: "Algorithm development for next-generation sequencing"
   - Winner, SAIC Student Paper Contest, 2011
   - Bioinformatics Scientist, Pacific Biosciences of California (2010-2011)
   - Bioinformatics Engineer, DNAnexus (2011-)

B2. M.S. students (along with first job upon graduation and current position if known)

11. J. Walker Gussler M.S. non-thesis (Georgia Tech Bioinformatics, to graduate 2016)
10. Devika Singh M.S. non-thesis (Georgia Tech Bioinformatics, to graduate 2016)
9. Adrian Lawsin M.S. non-thesis (Georgia Tech Bioinformatics, graduated 2015)
   - Initial/current: ORISE Fellowship, Centers for Disease Control and Prevention
8. Shimantika Sharma M.S. non-thesis (Georgia Tech Bioinformatics, graduated 2013)
   - Initial: Bioinformatics Engineer, Cincinnati Medical Center
   - Current: Software Engineer, Yahoo
7. Kristen Knipe M.S. non-thesis (Georgia Tech Bioinformatics, graduated 2011)
   - Initial: ORISE Fellowship, Center for Disease Control and Prevention
   - Current: Bioinformatics Scientist, CDC
6. Abhiram Das M.S. non-thesis (Georgia Tech Bioinformatics, graduated 2011)
   - Initial/current: PhD Student, Biology, Georgia Tech, 2011-present
5. Anju Varadarajan M.S. non-thesis (Georgia Tech Bioinformatics, graduated 2010)
   - Iniitial/current: Bioinformatics engineer, BioEdge
4. Hoe-Ming Wong Visiting M.S student (Delft Technical University, Netherlands (11/2011-12/2011)
   - Iniitial/current: PhD student, Delft Technical University
3. Taras Galkovyski Visiting M.S. student (Kiev University, at GT Summer 2009)
   - Initial/current: Software engineer, Google
2. Srijak Bhatnagar M.S. non-thesis (Georgia Tech Bioinformatics, graduated 2007)
   - Initial: Bioinformatics Engineer, UC Davis
   - Current: PhD Candidate, Biology, UC Davis
1. Amol Shetty M.S. non-thesis (Georgia Tech Bioinformatics, graduated 2007)
   - Initial: Applications Developer/Analyst, Emory University
   - Current: Senior Bioinformatics Software Engineer, Institute for Genome Sciences, Johns Hopkins University

B3. Undergraduate Students

16. Adam Zhang Fall 2016
15. Yido Jang Spring-Fall 2013
14. Victoria Chou Summer 2013
   - NSF REU Fellowship
13. Robert Taylor Spring & Summer 2012, Summer 2013
12. Priya Kurani Spring 2012
11. Nicholas Wood Spring 2011/Summer 2011

10. Ryan Carlin Spring 2011/Summer 2011
9. Lauren Farr Summer 2010
    - Cherry Emerson Research Award in SoB (Spring 2011)
    - Co-author on manuscript (Flores et al., PNAS, 2011)
8. Zack Sparks Fall 2009-Spring 2010
7. Brandon Pye Summer 2009
6. Farhad Amani Spring 2009/Fall 2009/Summer 2010
5. Sophia Fisher Fall 2007, Summer 2008-Spring 2010
    - Williams-Wall Award in SoB (Spring 2009)
4. AJ Friend Summer 2008-Fall 2008
    - Phi Kappa Phi award for best Georgia Tech undergraduate (Spring 2009)
3. Ranni Tewfik Fall 2007
2. Christina Wilson Summer 2007-Spring 2008
1. Corwin May Summer 2007
    - NSF REU Fellowship

B4. Service on Thesis Committees

1. Andrey Kislyuk Ph.D. student (Georgia Tech Bioinformatics, 2007-2008, switched to Weitz group)
2. Lee Katz Ph.D. student (Georgia Tech Bioinformatics, 2008-2011)
3. Nick Parnell Ph.D. student (Georgia Tech Biology, 2007-2011)
4. Prabuddha Bansal Ph.D. student (Georgia Tech Chemical & Biomolecular Engineering, 2010-2011)
5. Yun Lee Ph.D. student (Georgia Tech Biomedical Engineering, 2011-2012)
6. Zhichao Pu Ph.D. student (Georgia Tech Biology, 2007-2015)
7. Rachel Penczykowski Ph.D. student (Georgia Tech Biology, (2009-2013)
8. Hyewon Lee Ph.D. student (Georgia Tech Chemical & Biomolecular Engineering, 2011-2013)
9. David Gibbs M.S. student (Georgia Tech Biology, 2013-2014)
10. Minmin Pan M.S. student (Georgia Tech Biology, 2009-2011)
11. Nicole Mazchuko M.S. student (Georgia Tech Biology, 2009-2011)
12. Laura Levy M.S. student (Georgia Tech Biology, 2008-2009)
13. Kristen Gulino Ph.D. candidate (NYU, Biology, 2016-)

B5. Mentorship of Postdoctoral Fellows and Visiting Scholars

Postdoctoral Fellows

13. Bradford Taylor 2016-present
12. Stephen Beckett 2015-present
11. Ceyhun Eksin 2015-present
    - Georgia Tech Serve, Learn, Sustain Fellow (2017)
    - Co-advised with Jeff Shamma (GT – Electrical and Computer Engineering & KAUST), 2015-6
10. Joey Leung 2014-present
9. Hayriye Gulbudak 2014-2016
    - Co-Chair, Special Session on Ecology and Evolution in Microbial Systems, Society for Mathematical Biology Annual Meeting, June 2015
    - Postdoctoral Associate, School of Mathematical and Statistical Sciences, Arizona State
8. Alexander Bucksch 2011-2016
    - Assistant Professor, Plant Biology, UGA, (2016-)
    - Cover article, Plant Physiology, October 2014 for analysis of crop roots in field conditions
    - Co-PI, Center for Data Analytics Seed Grant (2014)
    - Co-PI, iPlant Collaborative Grant submission (pending)
7. Michael Cortez 2010-2014

- National Science Foundation Postdoctoral Fellow in Mathematical Sciences (2012-2014)
- Assistant Professor, Mathematics, Utah State University

6. Tae Lee 2010-2012
   - Postdoctoral Felow, Harvard Medical School (2012-present)
5. Lauren Childs 2010-2012
   - Assistant Professor, Mathematics, Virginia Tech (2016-)
   - Postdoctoral Fellow, Harvard School of Public Health (2012-present)
4. Olga Symonova 2009-2010
   - Research scientist, IST Austria (2010-present)
3. Yuriy Mileyko 2007-2009
   - Assistant Professor (2013-present), Mathematics, U of Hawaii
   - Visiting Assistant Professor, Duke University & UIUC (2009-2013)
2. Hao Wang 2007-2009
   - Assistant Professor & Associate Professor (w/tenure), Mathematics, U of Alberta
   - Co-advised with Howie Weiss (GT – Mathematics)
1. Charles Price 2007-2010
   - NIMBioS Sabbatical Visitor, U of Tennessee-Knoxville (2015-2016)
   - Assistant. Prof. & Associate Professor (since 2014), Plant Biology, U of Western Australia
   - 2008 Murray F. Buell Award from the Ecological Society of America

Visiting Scholars

5. Maria Barbarossa May 2015, 1 week visit
   - Postdoctoral Fellow, University of Szeged, Hungary
4. Catherine Penington February 2015, 2 week visit
   - Postdoctoral Scientist, U of New South Wales, Australia
3. Sergi Valverde Multiple visits, 2 weeks: July 2010 & December 2011
   - Visiting Professor, University of Pompeu-Fabra Barcelona, Spain
   - Co-authored 3 publications (PNAS, ISME J & Trends in Microbiology) with one additoinal manuscript under review (Methods in Ecology & Evolution)
2. Bart Haegeman Multiple visits, 2 months (9/2009-10/2009) & 2 weeks (2/2011)
   - Scientist, CNRS, Station d'Ecologie Experimentale du CNRS a Moulis, France
   - Co-authored 3 publications (BMC Bioinformatics x 2, ISME J)
1. Takeshi Miki February 2008, one week visit
   - Assistant Professor, National Taiwan University

C. Other Teaching Activities

iGEM Advising (2010-2012)

I was one of three faculty co-founders of Georgia Tech's first synthetic biology team (w/E. Gaucher – Biology – and Mark Styczynski – Chemical and Biological Engineering) and the primary modeling expert & initial fundraiser for the team. The aim of iGEM is to have students design, build and analyze a synthetic microbe to perform a specific task. In 2010, 15 students participated in the team from April – November, culminating in a Silver Medal in the 2010 iGEM jamboree with a project to develop an improved cold-shock response in bacteria. In 2011, we selected new team members, raised >10K in funds with a project focus on CRISPRs (an adaptive immune defense in bacteria). The team won a Bronze medal for their contributions. Both years the team met on a weekly basis for a 4 month period with additional preparation for the multi-team competition. iGEM is an ongoing fixture at Georgia Tech.

2010 Team Page
http://2010.igem.org/Team:GeorgiaTech

2011 Team Page
http://2011.igem.org/Team:GeorgiaTech/CRISPR

VI. Service

A. Professional Contributions

Conference Organizing:

CIFAR-GBMF Workshop in Marine Microbial Ecology and Evolution. Organizing Committee Member. Sintra, Portugal, May 8-12, 2017 (Chair: Willie Wilson, Andrew Hardy Foundation)

Workshop on Statistical Physics/Biology – Quantitative Laws from Microbial Physiology to Ecology, Steering Committee Member. Lake Como, Italy, June 13-24, 2016, (Chair: Marco Cosentino Lagomarsino, Institute Marie Curie)

Ecology and Evolution of Infectious Disease, Organizing Committee, UGA, Athens, GA, May 27-29, 2015 (Chairs: Andrew Park and Sonia Altizer)

Dynamic Models of Ebola in W. Africa: Linking Predictions, Control Efforts and Policy, Organizers: **J.S. Weitz** (chair) and colleagues at GT, Emory, UGA, CDC, McMaster and UT-Austin. Atlanta, GA Jan 22-23, 2015

Quantitative Laws of Genome Evolution. Steering Committee Member*,* Lake Como, Italy, June 27-July 5, 2013 (Chair: Marco Cosentino Lagomarsion)

Frontiers in Systems Biology. Organizing Committee Member, Georgia Tech, March 24-26, 2013 (Chair: Eberhard O. Voit, Georgia Tech)

Environmental Virology. Steering Committee Member, U of Arizona & Biosphere 2, January 6-12, 2013 (Chair: Matthew Sullivan, U of Arizona)

Ocean Viral Dynamics. Organizers: **J.S. Weitz** and S.W. Wilhelm. National Institute for Mathematical and Biological Synthesis. Planned meetings: Apr 20-22, 2012; Oct 22-24 2012; Jun 3-5 2013 & Jan 7-9 2014. (16 scientists participating in total, including 3 international).

Microbes to Metazoans: Regulation, Dynamics, and Evolution of Social Behavior Organizers: B. Hammer, **J. S. Weitz**, and M. Goodisman. Georgia Tech, Atlanta, GA (12/2/2009–12/4/2009).

Viral Paradigms: Molecules, Cells, Ecosystems and Infectious Disease. Organizers: **J. S. Weitz**, H. Weiss, and R. Antia. Georgia Tech, Atlanta, GA (1/14/2008–1/16/2008).

DARPA Workshop on Ocean Biocomplexity: Metagenomics and Ecology. Organizers: **J. S. Weitz** and J. Eisen. Seminars, discussions, and working groups. UC–Berkeley, Berkeley, CA (3/20/2006–3/23/2006).

Advances and Applications in the Environmental and Biological Sciences: Connecting Scientists and Policymakers. Organizer: **J. S. Weitz**. Meeting w/ Dr. John H. Marburger III, Science Adviser to the President. Princeton University, Princeton, NJ (3/1/2005).

Advisory Committees:

Member of the Scientific Advisory Board for the National Institute for Mathematical and Biological Synthesis, U of Tennessee-Knoxville, Tennessee, (2014-2017).

Editorial Board Memberships:

Editorial Board Member, Journal of Theoretical Biology (2010-)
Editorial Board Member, mSystems (2015-)
Guest Editor, PLoS Computational Biology (2014, 2015)
Review Editor, Frontiers in Virology (2012-)

Peer Reviewing:

Manuscripts reviewed (currently ~20 per year total) for:
American Journal of Botany, American Naturalist, Applied and Environmental Microbiology, Aquatic Microbial Ecology, Biochemical Engineering Journal, Bioinformatics, British Journal of Cancer, Bulletin

of Mathematical Biology, Coral Reef, Ecological Complexity, Ecology, Ecology Letters, eLife, Environmental Microbiology and Environmental Microbiology Reports, FEMS Microbial Ecology, Functional Ecology, ISME Journal, Journal of Theoretical Biology, Journal of Virology, Mathematical Biosciences, Microbiology and Molecular Biology Reviews, Molecular Biosystems, Nature, Physical Review E, Physical Review Letters, Plant, Cell and Environment, PLoS Biology, PLoS Pathogens, PLoS Computational Biology, PLoS One, Proceedings of the National Academy of Sciences USA, Reviews of Modern Physics, Science, TREE, Tree Physiology, and *Trends in Microbiology.*

Review panelist:

- NSF, Division of Environmental Biology (2008, 2010, 2013)
- Burroughs Wellcome Fund: Biology Immersion for Physical Scientists, Mathematicians and Engineers (Fall 2011)
- Bellman Prize Committee for Best Paper published in Mathematical Biosciences 2010-2012 (Fall 2013)

Ad-hoc proposals reviewed for:

- NSF (2007, 2008, 2009, 2011, 2013, 2014, 2015 x 2, 2016 x 2)
- Swiss National Science Foundation (2015)
- Templeton Research Foundation (2013)
- ETH-Zurich Research Commission (2013)
- Cambridge University Press (2012)
- US-Israel Binational Science Foundation (2011)
- Israel Science Foundation (2011)
- Springer (2010)
- Center for Complexity Science, Israel (2007)

External thesis reader

- Silja Heilmann, PhD candidate in Physics at the Niels Bohr Institute, University of Copenhagen, Denmark, "Coexistence, cooperation and communication" (2012)
- Elad Shtilerman, PhD candidate in the Porter School of Environmental Studies, Tel Aviv University, Israel, "Population and Community Dynamics on Spatial Networks" (2015)

Professional Memberships

American Association for the Advancement of Science, American Physical Society, Ecological Society of America, International Society for Microbial Ecology, Society for Mathematical Biology

B. Public and Community Service

Blogging, Talks for the General Public, Media

Public talk: "Microbes Get Sick Too", Atlanta Science Tavern, Manuel's Tavern, Atlanta, GA (9/24/2016) https://www.meetup.com/AtlantaScienceTavern/events/233612949/

Blog: "Would you like extra viruses with your yogry", Amplifier Blog, Georgia Tech (11/17/2016) http://amplifier.gatech.edu/articles/2016/11/would-you-extra-viruses-your-yogurt

Radio: "Can we curb selfish behavior?", On Second Thought w/Celeste Headlee, Georgia Public Broadcasting (11/21/2016) http://gpbnews.org/post/can-we-curb-selfish-behavior-one-georgia-tech-study-has-answer

Radio: "Wir nehmen, bis nichts mehr daist", DRadio Wissen, German NPR, (11/22/2016) http://dradiowissen.de/beitrag/ressourcen-knappheit-wir-nehmen-bis-nichts-mehr-da-ist

Invited member of national workshops

BARDA, Public Health Issues for Ebola: Modeling for Policy, Washington DC (December 15, 2014)

National Academies of Science and Keck Futures Initiative, Collective Behaviors, Irvine, CA (11/2014) *This workshop arose from a proposal I submitted in Spring 2010, in collaboration with Brian Hammer, Michael Goodisman, and participants of a GT workshop on social behaviors.
American Association for Microbiology colloquium, The uncharted world of viruses, San Francisco, CA (7/10/13-7/12/13)
Marine Microbiology Initiative modeling workshop, Gordon and Betty Moore Foundation, Miami, FL (3/6/2013-3/7/2013)
Microbial and Viral Evolution: Kavil Institute of Theoretical Physics, Santa Barbara, CA (2/28/11-3/5/2011).
National Academies of Science and Keck Futures Initiative Synthetic Biology, Irvine, CA (11/20/2009-11/22/2009).
National Academies of Science and Keck Futures Initiative Complex Systems, Irvine, CA (11/13/2008-11/15/2008).
Mathematical Models, Microbes and Evolutionary Diversification. Organizers: S. Forde and I. Gudelj. National Evolutionary Synthesis Center, Durham, NC (4/8/2008-4/10/2008).
Scaling in Biology: NSF Workshop. Organizer: Alan Hastings. UC-Davis, Davis, CA (5/30/2007-6/1/2007).
Cooperation Among Microorganisms: DARPA Workshop. Organizers: N. Wingreen and B. Bassler. Park City, Utah (8/23/2006-8/28/2006).
State-Dependent Delays in Regulatory Networks. Organizers: T. Buchman, J. Lorsch, and K. Mischaikow. DIMACS Center, Rutgers University (3/2/2006–3/3/2006).
DARPA Workshop on Fitness Landscapes. Organizer: R. Lenski. UC–Berkeley (2/3/2006–2/5/2006).
First Young Researchers Workshop in Mathematical Biology. Organizers: A. Friedman and MBI Postdocs. Mathematical Biology Institute, Ohio State University (3/29/2005–4/1/2005).
From Structure to Dynamics in Complex Ecological Networks. Organizers: J. Dunne and M. Pascual. Santa Fe Institute (2/19/2004–2/21/2004).

C. Institute Contributions

2016-2017
"Blue Sky" Retreat Co-Lead, Environmental Microbiome Research at Georgia Tech
Founding Director, Interdisciplinary PhD in Quantitative BioSciences
School of Biology Advisory Committee
Parker H. Petit Institute for Bioengineering and Bioscience Steering Committee

2015-2016
Founding Director, Interdisciplinary PhD in Quantitative BioSciences
Search Committee for Chair of Biology, School of Biology
Search Committee for TT position in Chemical Ecology, School of Biology
School of Biology Advisory Committee
Abel Professor Fellowship Selection Committee, School of Biology
Parker H. Petit Institute for Bioengineering and Bioscience Steering Committee
High-performance Computing Working Group, College of Sciences

2014-2015
Parker H. Petit Institute for Bioengineering and Bioscience Steering Committee
Chair, Planning Committee for the initiation of a new PhD in Quantitative BioSciences
School of Biology Advisory Committee
Founder and organizer of "Cherry Emerson Coffee House" – a weekly gathering of School of Biology faculty, students and staff.

2013-2014 (note: on sabbatical at the U of Arizona)

Chair, Planning Committee for the initiation of a new PhD in Quantitative BioSciences
School of Biology Advisory Committee

2012-2013
Chair, Computational and Quantitative Biology Planning Committee
Graduate Committee, School of Biology
Founder and organizer of "Cherry Emerson Coffee House" – a weekly gathering of School of Biology faculty, students and staff.
Judge, Undergraduate Research Symposium (4/2013)
Judge, Georgia Tech Research and Innovation Conference (3/2013)

2011-2012
Biophysics Faculty Search Committee, School of Physics – two successful hires
Graduate Committee, School of Biology
Computational and Quantitative Biology Planning Committee
Founder and organizer of "Cherry Emerson Coffee House" – a weekly gathering of School of Biology faculty, students and staff.
Judge, Georgia Tech Research and Innovation Conference (2/7/2012)

2010-2011
Ad-hoc School of Biology planning committee, School of Biology
Graduate Committee, School of Biology
Computational and Quantitative Biology Planning Committee
Founder and organizer of "Cherry Emerson Coffee House" – a weekly gathering of School of Biology faculty, students and staff.

2009-2010
iGEM Team Leader & Co-Instructor, 1st Georgia Tech iGEM team
Seminar Coordinator, School of Biology
Computational and Quantitative Biology Planning Committee
IBSI Graduate Program Planning Committee
Judge, Georgia Tech Research and Innovation Conference (2/8/2010)
Founder and organizer of "Cherry Emerson Coffee House" – a weekly gathering of School of Biology faculty, students and staff.

2008-2009
Seminar Coordinator, School of Biology
- Initiated sponsorship agreement with VWR to support seminar activities including creation of a postdoctoral excellence award in experimental biology & a distinguished lecture

Computational and Quantitative Biology Planning Committee
IBSI Graduate Program Planning Committee
Founder and organizer of "Cherry Emerson Coffee House" – a weekly gathering of School of Biology faculty, students and staff.

2007-2008
Chair, School of Biology Seminar Committee
Computational and Quantitative Biology Planning Committee
Computational Biology Faculty Search Committee – one successful hire
Planning Committee, Center for Research at the Interface of Mathematical and Biological Sciences (CIMBS)