

**Joshua S. Weitz, Ph.D.**

Professor, Department of Biology  
 Clark Leadership Chair in Data Analytics  
 Affiliate Professor of Physics  
 University of Maryland-College Park

Blaise Pascal Chair of Excellence  
 Institut de Biologie  
 École Normale Supérieure  
 Paris, France (2021-2024)

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**I. Earned Degrees**

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

**II. Employment History**

*University of Maryland, College Park, MD*

2023-	Professor (w/tenure), Department of Biology, University of Maryland
2023-	Clark Leadership Chair in Data Analytics, University of Maryland
2023-	Affiliate Professor, Department of Physics, University of Maryland
2023-	Affiliate Professor, Institute for Advanced Computing (UMIACS), University of Maryland

*Institute de Biologie, École Normale Supérieure, Paris, France*

2021-2022	Blaise Pascal Chair of Excellence, Institut de Biologie, ENS, Paris, France (2021-2 in residence, 2021-2024 Chair holder)
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*Georgia Institute of Technology*

2023-	Adjunct Professor, Biological Sciences, Georgia Institute of Technology
2021-2023	Tom and Marie Patton Chair in Biological Sciences, Georgia Institute of Technology

2020-2021 Patton Distinguished Professor, Georgia Institute of Technology  
 2007-2023 Full Professor (2016-), Associate Professor (2012-2016, received tenure), and Assistant Professor (2007-2012), School of Biological Sciences, Georgia Institute of Technology  
 2016-2023 Courtesy Professor, School of Electrical and Computer Engineering, GT  
 2015-2023 Founding Director of the Interdisciplinary Quantitative Biosciences Graduate Program, GT  
 2007-2023 Courtesy Professor, School of Physics, GT

*Princeton University*

2006 Associate Research Scholar, Ecology & Evolutionary Biology, Princeton University  
 2005-2006 Research Staff, Ecology & Evolutionary Biology, Princeton University  
 2003-2005 NSF Interdisciplinary Informatics Postdoctoral Fellow, Ecology & Evolutionary Biology (EEB), Princeton University (advisor: S. Levin)

**III. Honors and Awards**

**III.1 Awards & Recognition**

**Society Awards**

2019 Elected Fellow of the American Academy of Microbiology  
 2017 Elected Fellow of the American Association for the Advancement of Science (AAAS) for contributions in ‘quantitative viral ecology’.

**Named Lectures**

2022 Dr. Erik B. & Mrs. Joyce D.C. Young Lecture, Bioscience Day, University of Maryland, College Park

**External Awards and Recognition**

2023-2027 Simons Foundation Investigator in Theoretical Physics in the Study of Living Systems  
 2021-2024 Awarded Charles Blaise Pascal International Chair of Excellence, Ecole Normale Supérieure, Ile-de-France Region, France  
 2018 Montgomery Blair High School Mathematics and Science Magnet Distinguished Alumni Award, Silver Spring, MD  
 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)  
 2014-2024 Simons Foundation Investigator in Ocean Processes and Ecology  
 2014 Honorable Mention, CDC Annual Statistical Awards, Applied Section (2013)  
 2013-2014 Visiting Associate Professor, Department of Ecology and Evolutionary Biology, University of Arizona  
 2008-2013 James S. McDonnell Foundation Award in 21<sup>st</sup> 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  
 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

### **Georgia Tech Awards and Recognition**

2021	Georgia Tech Outstanding Achievement in Research Program Development (co-awarded with Anton Bryskin, Gregory Gibson, Pinar Keskinocak, Michael Shannon, Loren Williams and JulieAnne Williamson as part of integrative Covid-19 responses at GT)
2021	Georgia Tech ‘One Giant Leap’ Award for Institute Service (w/Covid-19 testing team)
2021	Georgia Tech Sigma Xi Best Faculty Paper of the Year Award (Chande et al., Nature Human Behavior, 2020; joint award w/Prof. Clio Andris)
2020	Patton Distinguished Professorship, Georgia Institute of Technology (term award)
2020	Georgia Tech Class of 1934 Outstanding Interdisciplinary Activities Award
2020	Georgia Tech Faculty of the Year, Graduate Student Government Association
2017	Petit Institute for Bioengineering and Biosciences ‘Above and Beyond’ Interdisciplinary Activities Award, Georgia Tech

### **III.2 Editorial Boards**

2024-present	co-Editor in Chief, Journal of Theoretical Biology
2019-2023	Editorial Board, mBio
2017-2023	Editorial Board, Virus Evolution
2010-2023	Editorial Board, Journal of Theoretical Biology
2018-2020	Senior Editor, ISME Journal
2017-2019	Editorial Board, Scientific Reports
2015-2018	Editorial Board, mSystems
2011-2018	Faculty Member, Theoretical Ecology, F1000
2012-2017	Review Editor, Frontiers in Virology

### **III.3 Advisory Boards & Steering Committees**

2014-2021	School of Biological Sciences Advisory Committee
2014-2019	Parker H. Petit Institute for Bioengineering and Bioscience Steering Committee
2014-2017	Advisory Board Member, National Institute for Mathematical and Biological Synthesis

### **III.4 External Review Committees**

2021	External Review Committee, Department of Computational Medicine, UCLA
2019	External Review Committee, NRT in Ecological Informatics, Northern Arizona University

## **IV. Research, Scholarship, and Creative Activities**

**Google Scholar profile at [http://bit.ly/jsweitz\\_gscholar](http://bit.ly/jsweitz_gscholar).**

**Total publications:** >150 refereed articles, 1 solo-author book

**Total citations:** >12,000, h-index: 62 as of 12/2023

**Projects ongoing:** Multi-part QBioS textbook series in proof stage for publication in early 2024, public-facing book on asymptomatic transmission and pandemics in production for publication in Fall 2024

**Annotations:** # indicates current or former Weitz group member

### **A1. Published Books, Parts of Books, and Edited Volumes**

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

### **A2. Books In Press**

1. **Weitz, JS** (in press) Quantitative Biosciences: Dynamics Across Molecules, Organisms, to Ecosystems. Princeton University Press slated publication March 2024, ~408pp)

2. **Weitz, JS** and #Taylor, B. (in press) Quantitative Biosciences in MATLAB: Dynamics Across Molecules, Organisms, to Ecosystems. Princeton University Press (copy editing and preparation for publication, slated publication March 2024~250pp)
3. **Weitz, JS** and #Dominguez-Mirazo, M. (in press) Quantitative Biosciences in R: Dynamics Across Molecules, Organisms, to Ecosystems. Princeton University Press (copy editing and preparation for publication, slated publication March 2024, ~250pp)
4. **Weitz, JS**, English, N., Lee, A., and Zamani, A. (in press) Quantitative Biosciences in Python: Dynamics Across Molecules, Organisms, to Ecosystems. Princeton University Press (copy editing and preparation for publication, slated publication March 2024, ~250pp)
5. **Weitz, JS** (in production, Johns Hopkins University Press) Asymptomatic: The Silent Spread of COVID-19 and the Future of Pandemics (~250pp)

## B. Refereed Publications and Submitted Articles

### B1. Manuscripts in Review/Revision/Preprint

#### In review

1. #Lucia-Sanz, A., #Peng, S., #Leung, C-Y., Gupta, G. Meyer, J.R. **Weitz, J.S.** Inferring strain-level mutational drivers of phage-bacteria interaction phenotypes. *mBio*
2. #Beckett, S.J., #Demory, D., #Coenen A.R., Casey, J.R., Dugenne, M., Follett, C.L., Connell, P., Carlson, M.C.G., Hu, S.K., Wilson, S.T., Muratore, D., Rodriguez-Gonzalez, R.A., Peng, S., Becker, K.W., Mende, D.R., Armbrust, E.V., Caron, D.A., Lindell, D., Follows, M.J., White, A.E., Ribalet, F., **Weitz, J.S.**, Diel population dynamics and mortality of *Prochlorococcus* in the North Pacific Subtropical Gyre. *Nature Communications*
3. Pineau, R.M., Demory, D., Libby, E., Lac, D.T., Day, T.C., Bravo, P., Yunker, P.Y., **Weitz, J.S.**, Bozdag, G.O., Ratcliff, W.C. Emergence and maintenance of stable coexistence during a long-term multicellular evolution experiment. *Nat. Eco. Evo.*
4. Zborowsky, S., #Seurat, J., Balacheff, Q., Nguyen Ngoc Minh, C., Titécat, M., Evrard, E., Rodriguez-Gonzalez, R.A., Marchi, J. **Weitz, J.S.**, Debarbieux, L. Macrophage-induced reduction of bacteriophage density limits the efficacy of in vivo pulmonary phage therapy *Cell Host Microbe*

### B2. Published

#### 2023

5. Borin, J.M, Lee, J.J. #Lucia-Sanz, A. Gerbino, K.R. **Weitz, J.S.** Meyer, J.R. Rapid bacteria-phage coevolution drives the emergence of multi-scale networks. *Science, in press*
6. Pompei, S., Bella, E., **Weitz, J.S.**, Grilli, J., Cosentino Lagomarsino, M. Metacommunity scenario preserves diversity in presence of gene-specific selective sweeps. *PLoS Comp. Biol.*, in press
7. Sinclair, A.H., Taylor, M.K., Brandel-Tanis, F., #Davidson, A., Chande, A.T., Rishishwar, L., Andris, C., Adcock, R.A., **Weitz, J.S.**, Samanez- Larkin, G.R., #Beckett, S.J. Counteracting COVID-19 Risk Misestimation with an Interactive Website: An Online Informational Intervention. *PLoS One*, in press
8. Schwartz, D.A., Shoemaker, W.R., Magalie, A., **Weitz, J.S.**, Lennon, J.T. (2023), Coevolution with a seed bank. *ISME J, in press*
9. Park, S.W., Dushoff, J. Grenfell, B. **Weitz, J.S.** (2023) Intermediate levels of asymptomatic transmission can lead to the highest levels of epidemic fatalities. *PNAS Nexus*
10. #Beckett, S., Brandel-Tanis, F. #Nguyen, Q., Chande, A. Rishishwar, L., Andris, C.M., **Weitz, J.S.**, (2023) localcovid19now: processing and mapping COVID-19 case data at subnational scales. *J. Open Source Software*

11. Sinclair, A.H., Taylor, M.K., #Davidson, A., **Weitz, J.S.**, #Beckett, S.J. Samanez- Larkin, G.R., (2023) Scenario-Based Messages on Social Media Motivate COVID-19 Information Seeking. *Journal of Applied Research in Memory and Cognition*,
12. de Meijere, G., Valdano, E., Castellano, C., Debin, M., Kengne-Kuetche, C., Turbelin, C., Noel, H., **Weitz, J.S.**, Paolotti, D., Hermans, L. Hens, N., Colizza, V. (2023) Attitudes towards booster, testing and isolation, and impact on COVID-19 response in winter 2022/2023 in France, Belgium, and Italy. *The Lancet Regional Health - Europe*
13. Sinclair, A.H., Taylor, M.K., **Weitz, J.S.** Beckett, S.J., Samanez-Larkin, G.R. (2023) Attitudes towards bivalent COVID-19 boosters and recommendations for public health interventions, *MMWR*
14. #Marchi, J., Zborowsky, S., Debarbieux, L. and **Weitz, J.S.** (2023) The dynamic interplay of bacteriophage, bacteria and the mammalian host during phage therapy *iScience*,
15. Berestycki, H., Desjardins, B., **Weitz, J.S.**, Oury, J-M (2023) Epidemic modeling with heterogeneity and social diffusion. *J. Math. Biol.*
16. #Magalie, A., Schwartz, D, Lennon, J.T., **Weitz, J.S.** (2023) Re-examining optimal dormancy strategies in fluctuating environments given delays in phenotypic switching. *J. Theor. Biol.*,
17. #Harris, J., Park, S.W., Dushoff, J. and **Weitz, J.S.** (2023) How time-scale differences in asymptomatic and symptomatic transmission shape SARS-CoV-2 outbreak dynamics. *Epidemics*
18. #Muratore, D., Bertagnolli, A.D., Bristow, L.A., Thamdrup, B., **Weitz, J.S.**, Stewart, F.J. (2023) Microbial and viral genome and proteome nitrogen demand varies across multiple spatial scales within a marine oxygen minimum zone. *mSystems*
19. #Lucia-Sanz, #Magalie, A., #Rodriguez-Gonzalez, R, #Leung, C.Y., **Weitz, J.S.** (2023) Modeling shield immunity to reduce COVID-19 transmission in long-term care facilities. *Annals of Epi*, 77 44-52.
20. Park, S.W. Sun, K., Abbott, S., Sender, R. Bar-On, Y. **Weitz, J.S.**, Funk S., Grenfell, B.T., Backer, J.A., Wallinga, J. Viboud, C., and Dushoff, J. Inferring the differences in incubation-period and generation-interval distributions of the Delta and Omicron variants of SARS-CoV-2, *PNAS*

## 2022

21. #Shivam, S., **Weitz, J.S.**, Wardi, Y. (2022) Vaccine stockpile sharing for selfish objectives. *PLoS Global Public Health*, 2: e0001312.
22. Park, S.W., Bolker, B. M., Funk, S., Metcalf, C.J., **Weitz, J.S.**, Grenfell, B.T., Dushoff, J. (2022) The importance of the generation interval in investigating dynamics and control of new SARS-CoV-2 variants. *Journal of the Royal Society Interface*, <https://doi.org/10.1098/rsif.2022.0173>.
23. Maidanik, I., Kirzner, S., Pekarski, I., Arsenieff, L., Tahan, R., Shitrit, D., Baran, N., Goldin, S., **Weitz, J.S.**, Lindell, D.. (2022) Cyanophages from a less virulent clade dominate over their sister clade in global oceans. *ISME J.* 16: 2169-2180.
24. #Shivam, S., #Li, G., #Lucia-Sanz, A., and **Weitz, J.S.** (2022) Time-scales modulate optimal lysis-lysogeny decision switches and near-term phage fitness. *Virus Evolution*, 8: veac037.
25. Kellogg, J.T., Adams, C., Dube, W.C., Collins, M.H., Lopman, B.A., **Weitz, J.S.**, Fridkin, S.K (2022). Quantifying Risk for SARS-CoV-2 Infection among Nursing Home Workers For 2020/2021 Winter Surge of the COVID-19 Pandemic in Georgia, U.S.A *Journal of the American Medical Directors Association.* 23: 942-946.e1
26. Gupta, A, #Peng, S, #Leung, C.Y, Borin, J, Medina, S, **Weitz, J.S.**, Meyer, J.R. (2022) Leapfrog dynamics in phage-bacteria coevolution revealed by joint analysis of cross-infection phenotypes and whole genome sequencing. *Ecology Letters.* 25: 876-888.
27. #Muratore, D., Boysen, A.K., Harke, M.J., Becker, K.W., Casey, J.R., Coesel, S.N., Mende, D.R., Wilson, S.T., Aylward, F.O., Eppley, J.M., Vislova, A., #Peng, S., #Rodriguez-Gonzalez, R.A., #Beckett, S.J., Armbrust, E.V., DeLong, E.F., Karl, D.M., White, A.E., Zehr, J.P., Van Mooy, B.A.S., Dyhrman, S.T., Ingalls, A.E., **Weitz, J.S.**, (2022) Complex marine microbial communities partition metabolism of scarce resources over the diel cycle, *Nature Ecology & Evolution.* 6: 218-229.

28. \*Gibson, G., \***Weitz, J.S.**, \*Shannon, M., et al. (2022) Surveillance-to-Diagnostic Testing Program for Asymptomatic SARS-CoV-2 Infections on a Large, Urban Campus in Fall 2020. *Epidemiology*. 33: 209-216. \*Co-corresponding authors

## 2021.

29. Kraay, A.N.M, Nelson, K.N, Zhao, C., #Demory, D., \***Weitz, J.S.**, \*Lopman, B.A. (2021) Modeling serological testing to inform relaxation of social distancing for COVID-19 control. *Nature Communications* 12: 7063. \*Equal contributions.
30. Amin, A.B., Kellogg, J.T., Adams, C., Dube, W.C., Collins, M.H., Lopman, B.A., Johnson II, T.M., **Weitz, J.S.**, Fridkin, S.K (2021). Risk Factors for SARS-CoV-2 Seropositivity Among Nursing Home Staff: A Cross-Sectional Analysis of Participants Enrolled in the COPING Study. *Antimicrobial Stewardship & Healthcare Epidemiology*. 1, e35, 1–6
31. Lopman, B.A., Shioda, K., Nguyen, Q., Beckett, S.J., Siegler, A.J., Sullivan, P.S., **Weitz, J.S.** A framework for monitoring population immunity to SARS-CoV-2. *Annals of Epidemiology*. 63: 75-78.
32. Rose, C., Medford, A.J., Goldsmith, C.F., Vegge, T., **Weitz, J.S.**, Peterson, A.A. Population susceptibility variation and its effect on contagion dynamics. Heterogeneity in susceptibility dictates the order of epidemic models, *J. Theor. Biol.*, 528:110839.
33. #Li, G., #Shivam, S., Hochberg, M.E., Wardi, Y., **Weitz, J.S.** (2021) Disease-dependent interaction policies to support health and economic outcomes during the COVID-19 epidemic. *iScience*, 24:102710.
34. #Muratore, D. and **Weitz, J.S.** (2021) Infect while the iron is scarce: nutrient-explicit phage-bacteria games. *Theoretical Ecology*. 14: 467-487.
35. #Demory, D., **Weitz, JS**, Baoudoux, A-C, Touzeau, S., Simon, N., Rabouille, S., Sciandra, A., Bernard, O. (2021) A thermal trade-off between viral production and degradation drives virus-phytoplankton population dynamics. *Ecology Letters*, 24: 1133-1144.
36. Shioda, K, Lau, MSY, Kraay, ANM, Nelson, KN, Siegler, AJ, Sullivan, PS, Collins, MH, **Weitz, JS**, Lopman, BA (2021) Estimating the cumulative incidence of SARS-CoV-2 infection and the infection fatality ratio in light of waning antibodies, *Epidemiology*, 32: 518-524.
37. Correa, A.M.S., Buchan A., Sullivan, M.B., and **Weitz, J.S.** (2021). Rules of life for viruses of microorganisms. *Nat. Reviews Microbiology*, 19: 501-513.
38. #Eksin, C., Ndeffo-Mbah, M., and **Weitz, J.S.** (2021) Reacting to outbreaks at neighboring localities, *J. Theor. Biol.*, 520:110632.
39. Burmeister, A.R., Hansen, E., Cunningham, J.E., Regio, E.H., Turner, P.E., **Weitz, J.S.**, Hochberg, M.E. (2021) Fighting microbial pathogens by integrating host ecosystem interactions and evolution. *BioEssays*, 43: 2000272.
40. Becker, K.W., Harke, M.J., Mende, D.R., #Muratore, D. , **Weitz, J.S.**, Delong, E.F., Dyhrman, S.T.van Mooy, B.A.S. (2021) Combined pigment and metatranscriptomic analysis reveals highly synchronized diel patterns of phenotypic light response across domains in the open oligotrophic ocean. *ISME J*. 15: 520-533.
41. Park, S W., Bolker, B. M., Champredon, D. Earn, D.J., Li, M., **Weitz, J.S.**, Grenfell, B.T., and Dushoff, J.D. (2020) Forward-looking serial intervals correctly link epidemic growth to reproduction numbers. *PNAS*. 118: e2011548118.

## 2020

42. **Weitz, J.S.**, Park, S.W., Eksin, C., Dushoff, J. (2020) Awareness-Driven Behavior Change Can Shift the Shape of Epidemics Away from Peaks and Towards Plateaus, Shoulders, and Oscillations. *PNAS*. 117: 32764-32771.
43. Chande, A. Lee, S., Harris, M., Nguyen, Q., Beckett, S.J., Hilley, T., Andris, C. **Weitz, J.S.** (2020) Real-time, interactive website for US-county level Covid-19 event risk assessment. *Nature Human Behavior*. 4: 1313-1319.

44. Yanni, D., Jacobeen, S., Marquez-Zacarias, P., **Weitz, J.S.**, Ratcliff, W.C., Yunker, P.J (2020) Topological constraints in early multicellularity favor reproductive division of labor. *eLife*, eLife.54348
45. Lachance, J.L., Simonti, C.N., **Weitz, J.S.** (2020) Large sample spaces do not imply biological systems are ‘fine-tuned’. *Journal of Theoretical Biology*. V507:110457.
46. Mruwat, N., Carlson, M., Goldin, S., Ribalet, R., Kirzner, S., Hulata, Y., #Beckett, S.J., Shitrit, D., **Weitz, J.S.**, Armbrust, E.V., Lindell, D.I. (2020) A single-cell polony method reveals low levels of infected *Prochlorococcus* in oligotrophic waters despite high cyanophage abundances. *ISME J*, 15: 41–54.
47. Park, S.W., Bolker, B. M., Champredon, D., Earn, D.J., Li, M., **Weitz, J.S.**, Grenfell, B.T., and Dushoff, J.D. (2020) Reconciling early-outbreak preliminary estimates of the basic reproductive number and its uncertainty: framework and applications to the novel coronavirus (2019-nCoV) outbreak. *J. Roy Soc. Interface*, rsif.2020.0144.
48. #Li, G., #Leung, C.Y., Wardi, Y., Debarbieux, L., and **Weitz, J.S.** (2020) Optimizing the Timing and Composition of Therapeutic Phage Cocktails: A Control-theoretic Approach. *Bull. Math. Biol.* 82:75.
49. #Li, G., #Cortez, M.H. and **Weitz, J.S.** (2020) When to be temperate: on the benefits of lysogeny vs. lysis, *Virus Evolution*, 6: veaa042.
50. **Weitz, J.S.**, #Beckett, S.J., #Coenen, A.R., #Demory, D., #Dominguez-Mirazo, M., Dushoff, J., #Leung, C.Y., #Li, G., #Magalie, A., #Park, S.W., #Rodriguez-Gonzalez, R., #Shivam, S. and #Zhao, C. (2020) Modeling Immune Shielding in Reducing COVID-19 Epidemic Spread. *Nature Medicine*. 26: 849-854.
51. Park, S.W., Cornforth, D.M., Dushoff, J. and **Weitz, J.S.** (2020) The time scale of asymptomatic transmission affects estimates of epidemic potential in the COVID-19 outbreak. *Epidemics*, 31: 100392.
52. Azimi, S., Roberts, A.E.L., #Peng, S., **Weitz, J.S.**, McNally, A., Brown, S.P., Diggle, S.P. (2020) Allelic polymorphism shapes collective phenotypes in evolving *Pseudomonas aeruginosa* populations. *ISME J*, 14, 1929-1942.
53. #Coenen, A.R., Hu, S., Luo, E., #Muratore, D., **Weitz, J.S.** (2020) A primer on analyzing microbiome high-resolution time series. *Frontiers in Genetics*, fgene.2020.00310.
54. #Demory, D., Liu, R., Chen, Y., Zhao, F., #Coenen, A., Zeng, Q., and **Weitz, J.S.** (2020) Linking light dependent life history traits with population dynamics for *Prochlorococcus* and cyanophage. *mSystems*, mSystems.00586-19.
55. #Rodriguez-Gonzalez, R.A., #Leung, C-Y., Chan, B., Turner, P.E., **Weitz, J.S.** (2020) Quantitative models of phage-antibiotic combination therapy. *mSystems*. 5: e00756-19.

## 2019

56. Barone, B., #Coenen, A., #Beckett, S.J., Dennis J. McGillicuddy, Jr., **Weitz, J.S.**, and Karl, D. (2019) The impact of sea surface height on biogeochemical dynamics at Station ALOHA. *Journal of Marine Research*. 77 S1:215-245
57. #Dominguez-Mirazo, M., #Jin, R., **Weitz, J.S.** (2019) Functional and comparative genomic analysis of integrated prophage-like sequences in *Candidatus Liberibacter asiaticus*. *mSphere*, mSphere.00409-19.
58. **Weitz, J.S.**, #Li, G., #Gulbudak, H., #Cortez, M.H., and Whitaker, R.J. (2019) Viral invasion fitness across a continuum from lysis to latency. *Virus Evolution*. 5: vez006
59. Talmy, D., #Beckett, S.J., Taniguchi, D., Brussaard, C.P.D., **Weitz, J.S.**, and Follows, M.J. (2019) An empirical model of carbon flow through marine viruses and microzooplankton grazers. *Environmental Microbiology*. doi: 10.1111/1462-2920.14626
60. Talmy, D., #Beckett, S.J., #Zhang, A., Taniguchi, D., **Weitz, J.S.**, and Follows, M.J. (2019) Contrasting controls on microzooplankton grazing and viral infection of microbial prey. *Frontiers in Marine Science*. 6: 182.

61. #Lin, Y. and **Weitz, J.S.** (2019) Spatial interactions and oscillatory tragedies of the commons. *Physical Review Letters*. 122: 148102
62. #Eksin, C., #Paarporn, K., and **Weitz, J.S.** (2019) Systematic biases in disease forecasting - the role of behavior change. *Epidemics*. doi: 10.1016/j.epidem.2019.02.004
63. Park, S.W., Champredon, D., **Weitz, J.S.**, and Dushoff, J. (2019) Exploring how generation intervals link strength and speed of epidemics. *Epidemics*. doi: 10.1016/j.epidem.2018.12.002.
64. #Leung, C.Y. and **Weitz, J.S.** (2019) Not by (good) microbes alone: towards immunocommenseal therapies. *Trends in Microbiology*. 27: 294-302.
65. #Al-Rasheed, H., #Jin, R., and **Weitz, J.S.** (2019) Caution in inferring viral strategies from abundance correlations in marine metagenomes. *Nature Communications*. **10**: 501.
66. #Gulbudak, H. & **Weitz, J.S.** (2019) Heterogeneous virus strategies promote coexistence in virus-microbe systems, *J. Theor. Biol.* 462: 65-84.

## 2018

67. #Paarporn, K., #Eksin, C., **Weitz, J.S.**, and Wardi, Y. Optimal control policies for evolutionary dynamics with environmental feedback. *IEEE Conference on Decision and Control*
68. #Taylor, B.P, **Weitz, J.S.**, Brussaard, C.P.D., and Fischer, M.G. (2018) Quantitative infection dynamics of *Cafeteria roenbergensis* virus. *Viruses* 10: 468.
69. #Beckett, S.J. and **Weitz, J.S.** (2018) The effect of strain level diversity on robust inference of virus-induced mortality. *Front. Microbiol.* 9: 1850.
70. #Coenen, A and **Weitz, J.S.** Limitations of correlation-based inference in complex virus-microbe communities. *mSystems* 3: e00084-18.
71. #Paarporn, K., #Eksin, C. **Weitz, J.S.** (2018) Information sharing for a coordination game in fluctuating environment. *J. Theor. Biol.* 454: 376-385.
72. Munson-McGee, J.H, #Peng, S., Dewerff, S, Stepanauskas, R., Whitaker, R.J, **Weitz, J.S.**, Young, M.J. (2018) A virus or more in (nearly) every cell: ubiquitous virus-host interactions in extreme environments. *The ISME Journal*. 12: 1706-1714.

## 2017

73. **Weitz, J.S.**, #Beckett, S.J., Brum, J.R., Cael, B.B., and Dushoff, J. (2017) Lysis, lysogeny, and virus-microbe ratios. *Nature*. 549: E1-E3.
74. Zehr, J., **Weitz, J.S.**, Joint, I. (2017) How microbes survive in the open ocean. *Science*. 357: 646-647.
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152. 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.
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## Pre-2007 (prior to starting a group at the Georgia Institute of Technology)

155. **Weitz, J.S.**, Ogle, K. and Horn, H.S. (2006). Ontogenetically stable hydraulic design in woody plants. *Functional Ecology* 20: 191-199.
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159. **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.
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164. Dodds, P.S. and **Weitz, J.S.** (2002). Packing limited growth. *Physical Review E* 65: 056108.
165. 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.
166. **Weitz, J.S.** and Fraser, H.B. (2001). Explaining mortality rate plateaus. *Proc. Natl. Acad. Sci. USA* 98: 15383-15386.
167. 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.
168. 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.
169. 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.

### **B3. Conference Publications (Refereed)**

170. #Paarporn, K., #Eksin, C., **Weitz, J.S.**, and Shamma, J. (2017) The effect of awareness on networked SIS epidemics. 55th IEEE Conference on Decision and Control.
171. #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.

### **C1. Other Scientific Publications**

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

### **C2. Essays and Opinions**

1. **Weitz, J.S.** (2021) Mandate vaccines for Georgia students and staff on public campuses. *Atlanta Journal Constitution*, 4/12/2021
2. **Weitz, J.S.** and Gibson, G. (2020) Viral testing mitigates COVID’s spread. *Atlanta Journal Constitution*. 10/16/2020
3. **Weitz, J.S.** (2020) Georgia’s Colleges and Universities Are Not Ready to Open for Face-to-Face Instruction. *Atlanta Journal Constitution*.8/3/2020
4. **Weitz, J.S.**, Harris, M., Chande, A., Gussler, W., Rishishwar, L., and Jordan, I.K. (2020) The Mathematics Behind COVID-19 Event Risk Assessment for State-Level ‘Re-Openings’ *Scientific American*. 5/2020
5. Beckett, S.J and **Weitz, J.S.** (2020) Georgia’s Reopening Depended on Missing Data. *Slate* 5/15/2020
6. **Weitz, JS** (2020) Brian Kemp’s plan to reopen economy could raise COVID-19 risks, *Atlanta Journal Constitution Get Schooled Blog*, 4/21/2020

7. **Weitz, JS** , Lenski, R., Meyers, L.A., Dushoff, J. (2020) Scientists do the math to show large events like March Madness could spread coronavirus. COVID-19 risks, *Atlanta Journal Constitution Get Schooled Blog*, 3/13/220
8. **Weitz, J.S.** (2019) Roll back ‘temporary’ student fees. Atlanta Journal Constitution “Get Schooled Blog”, 3/31/2019
9. **Weitz, J.S.** and Goytia, M. (2018) Trump border policy as child abuse, and a path to justice. Atlanta Journal Constitution, 6/22/2018
10. **Weitz, J.S.**, (2018) Institutional Courage in the Wake of Parkland: The Role of Colleges and Universities. Atlanta Journal Constitution, “Get Schooled Blog”, 3/8/2018
11. **Weitz, J.S.**, (2017) An Invitation to Repeal “Campus Carry”. The Technique, Georgia Tech Student Newspaper, 8/25//2017
12. **Weitz, J.S.**, (2017) Should Scientists Compromise? It Depends on the Terms. The Chronicle of Higher Education, 3/10/17
13. **Weitz, J.S.**, (2017) Strangers in a strange land. The Technique, Georgia Tech Student Newspaper, 1/31/2017

#### **D. Presentations**

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

#### **Invited presentations at universities and conferences**

##### **2024**

Princeton University, Lewis-Sigler Institute (1/2024)

International Forum on Advanced Environmental Sciences and Technology (iFAST) (1/2024)

##### **2023**

Hopkins Marine Center, Stanford University (12/2023)

Center for Theoretical Biological Physics, Rice University (11/2023)

Horn Point Laboratory, University of Maryland (11/2023)

ICTP-SAIFR, Sao Paulo, Colloquium (10/2023)

\*ICTP-SAIFR, Sao Paulo, Brazil Course on Modeling Epidemics (10/2023 – multiple lectures)

Okinawa Institute of Science and Technology, Okinawa, Japan (7/2023)

Institute for Chemical Research, Kyoto University Japan (7/2023)

\*Viral Dynamics Workshop, Nagoya, Japan (7/2023)

Brin Mathematics Research Center, University of Maryland, Workshop on Epidemics and Behaviour (4/2023)

ICTP Summer School on Ecology & Evolution, Sao Paulo, Brazil (2/2023 & 3/2023 – multiple lectures)

University of Maryland, Department of Biology (1/2023)

##### **2022**

Dataseum, workshop, Georgia Tech (11/2022)

\*University of Maryland, Bioscience Days (10/2022)

School of Physics, Georgia Institute of Technology (10/2022)

Paris Symposium on Viral Dynamics (9/2022)

Georgia Institute of Technology, Initiative in Health and the Environment (9/2022)

ICTP Winter School in Quantitative Biology and Ecology, Sao Paulo, Brazil (6/2022 & 7/2022)

EHESS, l'École des Hautes Études en Sciences Sociales, Paris, (6/2022)

Eco-Evolutionary Mathematics Symposium, IBENS, Paris (6/2022)

University of Valencia (6/2022)

Institut Pasteur, Workshop on Epidemic Modeling and Behaviour, Paris (5/2022)

INSERM, Modeling in Public Health Series, Paris (5/2022)

International Society for Viruses of Microorganisms, Webinar Series (4/2022)  
Biozentrum, Computational Biology Series, Basel (4/2022)  
QLife Winter School, Quantitative Viral Dynamics Across Scales, Paris (3/2022)  
IAME Research Center, INSERM, Paris (3/2022)  
\*International Center for Theoretical Physics, Winter College on the Physics of Complex Systems  
(2/2022-3/2022), 9 lectures on ‘Quantitative Viral Dynamics’

## 2021

Ecology and Evolution, Freie Universitaet, Berlin, Germany (11/2021)  
Multidisciplinary Institute for Environmental Studies, University of Alicante, Alicante, Spain (11/2021)  
Statistical and Mathematical Modeling in Biological Applications (SaMMBA), Pasteur Institute, Paris,  
France (11/2021)  
Robert Holt Group Seminar, Department of Biology, U of Florida (11/2021)  
Institute of Ecology and Environmental Sciences, CNRS Paris, France (10/2021)  
Institut d’Biologie, ENS, Paris, France (10/2021)  
Center for Interdisciplinary Research (CRI), Paris, France (10/2021)  
\*French Phage Network, Roscoff, France (10/2021)  
Kavli Institute for Theoretical Physics (8/2021) (series of lectures and tutorials, course instructor in  
Quantitative Biology Summer Research Course ‘Microbial Interactions’)  
\*Institute of Physics, Physics and Biology 2021, Oxford, UK (7/2021)  
\*IEEE Engineering in Medicine and Biology Society (EMBS) Annual Conference (7/2021)  
\*Aquatic Virus Workshop 10, Kyoto, Japan (6/2021)  
Georgia Tech, College of Science Townhall on Coronavirus Mitigation (5/2021)  
Ohio State University, Biophysics (4/2021)  
Northwestern University, Chemical and Biological Engineering (4/2021)  
\*Tara Oceans Quantitative Life Conference (3/2021)  
Montana State University, Microbiology (3/2021)  
Rice University, Center for Theoretical Biophysics (3/2021)  
Emory University, Theory and Modeling of Living Systems Virtual Workshop on Covid-19 (1/2021)

## 2020

Georgia Tech, College of Science Townhalls on Coronavirus (regular series, 8/20; 9/20x2; 11/20)  
ICTP, Trieste, Italy, Winter School on Quantitative Systems Biology: Quantitative Approaches in  
Ecosystem Ecology (11/2020 – 12/2020; 3 lectures)  
Scripps Institute of Oceanography, Ecology (10/2020)  
Montana State University, Disease Ecology (10/2020)  
UNAM (Mexico), Institute of Physics (10/2020)  
University of Montpellier, Ecology and Evolution (10/2020)  
Princeton University, Ecology and Evolutionary Biology Seminar (10/2020)  
ACM-Bioinformatics and Computational Biology Conference, Covid-19 Symposium (9/2020)  
Emory School of Public Health, Bioinformatics and Biostatistics (9/2020)  
UGA, Department of Microbiology (9/2020)  
Stockholm Institute of Economics, Coronavirus Form (9/2020)  
Kavli Institute of Theoretical Physics, Bacteriophage Forum (8/2020)  
Covid-19 Dynamics and Evolution, Virtual Conference (7/2020)  
University of Texas-Austin, Covid-19 Visiting Speaker, Meyers Laboratory (6/2020)  
MPI for Evolutionary Biology (6/2020)  
Vermont Complex Systems Center, University of Vermont (6/2020)  
School of Biological Sciences Advisory Board, Georgia Institute of Technology (4/2020)  
Nonlinear Sciences Seminar on COVID-19, Georgia Institute of Technology (4/2020)

Center for Microbial Dynamics and Infection - Coronavirus Forum, Georgia Institute of Technology (2/2020)

## 2019

Simons Collaboration on Ocean Processes and Ecology, Simons Foundation (12/2019)  
\*Combating Therapeutic Resistance Symposium, Peabody Museum, Yale University, (11/2019)  
NASA Astrobiology Institute, Astrovirology Workshop Without Walls (virtual workshop) (9/2019)  
Gordon Research Conference on Marine Molecular Ecology, Hong Kong Institute for Science and Technology, Hong Kong (7/2019)  
International Physics of Living Systems Conference, Max Planck Institute for Biochemistry, Munich, Germany (7/2019)  
Ecole Normale Supérieure, Theoretical Physics, Paris, France (7/2019)  
Institute for Infectious Disease Research, Ohio State University (4/2019)  
AAAS Annual Meeting, Washington DC (2/2019)  
\*ICTP Summer School on Mathematical Models of Evolution, Sao Paulo, Brazil (1/2019) Multiple lectures (a series of 4 in total)

## 2018

Simons Collaboration on Ocean Processes and Ecology, Simons Foundation (12/2018)  
Santa Fe Institute, Santa Fe, NM (11/2018)  
International Society of Microbial Ecology 17, Leipzig, Germany (8/2018)  
ASLO Summer Meeting 2018, Vancouver, BC (6/2018)  
Jockey Club Institute for Advanced Study, Hong Kong University of Science and Technology (4/2018)  
Institute for Data, Engineering, and Science, Georgia Institute of Technology (3/2018)  
School of Informatics, Computing, and Cyber Systems, Northern Arizona University (3/2018)  
One Health Symposium, U of Florida, Emerging Pathogens Institute (1/2018)

## 2017

Simons Collaboration on Ocean Processes and Ecology, Simons Foundation (12/2017)  
University of Tennessee-Knoxville, Department of Microbiology (10/2017)  
Georgia Institute of Technology, Antimicrobial Resistance Symposium, School of Biological Sciences (8/2017)  
\*KITP Eco-evolutionary dynamics of microbial communities, Santa Barbara (7/2017). Multiple lectures  
Federation of European Microbiological Societies 2017 (7/2017)  
University of Buenos Aires, Department of Biology (6/2017)  
American Society of Virology Annual Meeting, Madison, WI (6/2017)  
Centennial Bacteriophage Conference, Human Phage Therapy Day, Institut Pasteur, Paris, France (4/2017)  
JGI Meeting on Microbial Diversity (4/2017)  
NIH, Lambda Lunch (4/2017)  
NYU, Department of Biology (3/2017)  
Emory University, Center for Cystic Fibrosis and Airways Disease Research (CF-AIR) (3/2017)  
UCSD, Department of Ecology and Evolutionary Biology (2/2017)

## 2016

Simons Collaboration on Ocean Processes and Ecology, Simons Foundation (12/2016)  
\*Aquatic Virus Workshop 8, Plymouth, United Kingdom (7/2016)  
London School of Hygiene and Tropical Medicine (7/2016)  
Quantitative Laws II, Como, Italy (6/13/06 & 6/14/06)  
Georgia Southern University, School of Public Health (3/2016)  
U of Vermont, Complex Systems Institute (3/2016)



## 2015

Georgia Institute of Technology Bioinformatics conference, Atlanta, GA, (11/2015)  
U of Michigan, Ecology and Evolutionary Biology (10/29/15)  
National Center for Biotechnology, Madrid, Spain (10/23/15)  
U of Nebraska Lincoln, Biotechnology and Life Sciences Seminar, (10/14/2015)  
\*Workshop: Living Systems from Interaction Patterns to Critical Behavior, Venice, Italy (9/16/15 & 9/17/15)  
Emory University, Population Biology, Ecology and Evolution (9/4/15)  
Evergreen Phage Meeting, Olympia, WA (8/6/2015)  
Marine Biological Laboratory, Microbial Diversity Course (8/4/15) - Two Lectures  
University of Buenos Aires, Instituto de Calculo, Buenos Aires, Argentina (6/24/2015)  
Weizmann Institute of Science, Department of Physics (6/3/2015)  
Technion – Israel Institute of Technology, Department of Biology (6/1/2015)  
NIH, Fogarty International Center, RAPIDD Workshop on Ebola Forecasting Approaches (3/23/2015)  
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)  
\*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)  
J. Craig Venter Institute, San Diego, CA (3/2014)  
Burroughs Wellcome Fund Board of Director's Meeting, Santa Barbara, CA (2/2014)  
Dynamics Days, Georgia Institute of Technology (1/4/2014)

## 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)

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

Centre for Biodiversity Theory and Modelling, CNRS, Moulis, France (5/2013)  
Institute for Evolutionary Biology, Universitat Pompeu Fabra, Barcelona, Spain (5/2013)  
Frontiers in Systems and Synthetic Biology '13, Georgia Tech (3/22/2013)  
University of Maryland, Department of Biology (3/4/2013)  
Institute for Bioengineering and Biosciences, Georgia Tech (2/12/2013)

Biosphere 2, Environmental Virology Workshop, U of Arizona (1/7/2013)

## **2012**

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

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)

University of Montpellier-II, Montpellier, France. (5/16/2011)

Centers for Models of Life, Niels Bohr Institute, Copenhagen, Denmark (5/11/2011)

Kavli Institute for Theoretical Physics, UCSB. (3/1/2011)

McMaster University, Department of Biology, Hamilton ON (3/25/2011) \*Graduate student selected speaker

## **2010**

CRISPR 2010, Berkeley, CA. (7/23/2010)

INRIA, Seminaire du Projet de Recherche, Montpellier, France. (5/25/2010)

University of Georgia, Dept. of Microbiology (4/8/2010).

\*Southeastern Ecology and Evolution Conference, Atlanta, GA. (3/26/2010)

Harvard University, Dept of Organismal and Evolutionary Biology (3/25/2010)

DARPA Fundamental Laws of Biology Workshop, Irvine, CA. (1/20/2010)

## **2009**

Microbes to Metazoans: Regulation, Dynamics, and Evolution of Social Behavior Workshop, Georgia Tech. (12/3/2009).

EPSO Plant Phenotyping Workshop, Julich Germany (11/2/2009)

Duke University, Institute for Systems Biology (10/1/2009)

Ecological Society of America 94<sup>th</sup> Annual Meeting, Albuquerque, NM. (8/6/2009)

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)

Genetic and Evolutionary Computation Conference, Atlanta, GA (7/14/2008)

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)

DARPA Fundamental Laws of Biology Annual Meeting, San Diego, CA. (12/12/2007)  
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 Supérieure, Paris, France. (2/2/2007)

### **Pre-2007**

Necker Hospital, Paris, France. (11/15/2006)  
Ecological Society of America 91st Annual Meeting, Memphis, TN. (8/10/2006)  
American Society for Microbiology 106<sup>th</sup> 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)  
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)  
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)  
Center for Studies in Physics and Biology, Rockefeller University (9/28/2004).  
Dept. of Civil and Environmental Engineering, MIT (3/11/2004).  
Center for Discrete Mathematics and Theoretical Computer Science, Rutgers University (10/1/2003).  
Harvard Forest, Harvard University (7/17/2002)

## **E. Grants and Contracts**

### **E1. Currently Funded & Awarded**

#### Investigator Funds

1/1/2023-12/31/2027 Simons Foundation Investigator in Theoretical Physics of Living Systems  
(Weitz, PI, \$960,000)  
9/1/2021-9/29/2024 Charles Blaise Pascal International Chair of Excellence, Ile-de-Paris Region,  
École Normale Supérieure, (Weitz, PI, 170,000 euros)

#### Current Grants

7/1/2020-6/30/2024 Simons Foundation: Simons Collaboration on Ocean Ecology Processes. *Viruses vs. zooplankton: quantifying the interplay between parasites and predators in the North Pacific Ocean.* (Weitz, Investigator \$1,280,773)  
4/1/2020-8/31/2024 Simons Foundation: Eco-evolutionary Theories of Viral Fitness on a Continuum from Lysis to Latency (Weitz, PI, \$1,187,968)  
8/22/2019-7/31/2024 NIH- 1R01AI146592-01 – National Institutes of Health, NIAID: *Synergistic control of acute respiratory pathogens by bacteriophage and the innate immune response* (Weitz, PI, \$2,578,632, w/L. Debarbieux, PI (Institut Pasteur))

### **E2. Previously Funded**

2/1/2020-1/31/2023 EP-1934554 – National Science Foundation, Collaborative Research: BEE: A dormancy refuge in host-parasite eco-evolutionary dynamics (Weitz, Co-PI, w/Jay Lennon PI Indiana U, \$268,577 GT portion)  
9/15/2018-9/14/2021 PHY-1806606 – National Science Foundation, Physics of Living Systems: *Collective Dynamics and Collaborative Killing: Synergistic Elimination of Bacteria by Immune Cells and Viruses* (Weitz, PI, \$537,617, w/J. Curtis, NCE).

- 10/1/2018-9/30/2021 OCE-1829636 – National Science Foundation, Biological Oceanography: *Collaborative Research: Inferring Cellular Lysis and Regeneration of Organic Matter by Marine Viruses* (**Weitz, PI**, \$336,989, w/S. Wilhelm (UT-K) and M. Sullivan (OSU), ~\$1.9M total funding, NCE).
- 3/1/2019-2/29/2020 Simons Foundation: *Virus-picoplankton dynamics in the Southern Pacific Ocean* (**Weitz, PI**, \$64,030, w/D. Demory (GT), NCE)
- 7/19/2019-7/18/2023 Army Research Office W911NF1910384 *Dynamics and Control of Complex Networked Communities: Scaling from Microbes to Metazoans* (**Weitz PI**, \$750,000; w/Sam Brown)
- 9/21/2022-9/20/2023 Centers for Disease Control and Prevention: *Mathematic Modeling – COVID-19 Mathematic Modeling of Healthcare Impact and Capacity* (**Weitz, PI**, \$300,000)
- 8/1/2022-1/31/2024 NSF 2200269 - PIPP Phase I: BEHIVE - BEHavioral Interaction and Viral Evolution for Pandemic Prevention and Prediction (B. Aditya Prakash, PI w/**Weitz Co-PI** + others, \$1,000,000; \$120,633 JSW portion).
- 7/1/2021-6/30/2026 NIH- 1 T32 GM142616-01 – Integrative and Quantitative Biosciences Accelerated Training Environment (**Weitz, PI (contact PI)** & Qiu PI, \$1,272,957.00)
- 4/26/2021-4/25/2022 Centers for Disease Control and Prevention: *Mathematical Modeling on Covid-19 Interventions* (**Weitz, PI**, \$300,000)
- 10/1/2021-3/15/2022 Rockefeller Foundation Covid-19 Event Risk Assessment Deployment (**Weitz, PI**, \$50,371)
- 10/1/2018-9/30/2020 DMS-1839339 – National Science Foundation, Mathematical Sciences: TRIPODS+X:EDU: Collaborative Education: Data-driven Discovery and Alliance (**Weitz, Co-PI**, Tetali PI, \$99,976, w/Spelman College, Moorehouse College, and Agnes Scott College).
- 6/1/2020-5/31/2021 NSF- 2032082 – National Science Foundation: *Collaborative Research: RAPID: Integrative Modeling of Intervention Serology and the Role of Shield Immunity in Reducing COVID-19 Epidemic Spread* (**Weitz, PI**, \$99,430, w/B. Lopman (Co-PI, Emory)
- 10/1/2014-6/30/2020 Simons Foundation: Simons Collaboration on Ocean Ecology Processes. *Viruses vs. zooplankton: quantifying the interplay between parasites and predators in the North Pacific Ocean.* (**Weitz, Investigator** \$1,433,318 to GT; D. Karl and E. Delong (U of Hawaii), PI-s)
- 7/15/2014-3/30/2019 Army Research Office (\$915,000; **Weitz PI**) “*Coevolutionary complex networks: dynamical foundations, influence, and control.*”
- 11/1/2015-12/31/2016 (NCE until 12/31/17) Mathworks Corporation, *Curriculum Development Award for Modules in Quantitative Biosciences* (**Weitz, PI**, \$30,000)
- 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, NC).
- 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).

- 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 (current NCE) 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).
- 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

#### Awarded

- 7/1/2022-6/30/2023 Burroughs Wellcome Fund Translational fellowship program for establishing a community for ‘Integrative Health and Environment’ (Dr. Gabi Steinbach, PI, **Weitz-CoPI**, \$48,887).
- 3/1/2021-8/30/2021 Burroughs Wellcome Fund QBioS Hands-On Modeling Workshop 2021 – Epidemics and Outbreaks: Supporting Peer-to-Peer Instruction and Public Engagement (**Weitz, PI**, \$45,410)
- 3/1/2020-6/30/2021 Burroughs Wellcome Fund: Workshop grant for *QBioS Hands On Modeling Workshop* (**Weitz, PI**, \$4,000)
- 4/1/2019-3/30/2020 Burroughs Wellcome Fund: Workshop grant for *QBioS Hands On Modeling Workshop* (**Weitz, PI**, \$2,000)
- 1/1/2017-12/31/2018 Burroughs Wellcome Fund: Workshop grant for *QBioS Hands On Modeling Workshop* (**Weitz, PI**, \$2,000)
- 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).

### E.4 Georgia Tech Funded Grants

- 2021-2022 Georgia Tech Faculty Development Grant, College of Sciences, Georgia Institute of Technology (**Weitz, PI**, 50% supported leave 9 months)
- 2020-2021 Vice-Provost Innovation in Graduate Education Fund, Georgia Institute of Technology (**Weitz, PI**, \$20,000)
- 2020-2021 Georgia Institute of Technology, Vice Provost ‘Small Bets’ Program *Mapping the Shape and Space of Human Rights* (C. Andris, PI, \$71,334, & **Weitz, Co-PI**).
- 2019-2020 Vice-Provost Innovation in Graduate Education Fund, Georgia Institute of Technology (**Weitz, PI**, \$20,000)
- 2018-2019 Georgia Institute of Technology Research Development Grant, College of Sciences,

- Analyzing virus effects on the marine carbon cycle and food web at the Chatham Rise*  
(Weitz, PI, w/Dr. David Demory, \$10,000)
- 2017-2019 Georgia Institute of Technology Strategic President's Advisory Group, *Interdisciplinary Graduate Program in Quantitative Biosciences* (Weitz, PI w/H. Lu, P. McGrath, H. Park, P. Qiu and S. Yi, \$86,000)
- 2017-2018 Georgia Institute of Technology GT-FIRE grant, *Translating QBioS Lectures and Laboratories into Short-course Workshops to Broaden Inclusion and Integration of Quantitative Modeling in the Life Sciences*, (Weitz, PI w/S. Yi, P. Qiu & L. Destefano, \$39,000)
- 2016-2017 Vice-Provost Innovation in Graduate Education Fund, Georgia Institute of Technology (Weitz, PI, \$55,000)
- 2014 College of Sciences Seed Grant, Georgia Institute of Technology, Workshop on *Dynamic Models of Ebola in W. Africa: Linking Predictions, Control Efforts and Policy* (Weitz, PI, \$5,000)
- 2013 College of Sciences Research Development Grant, Georgia Institute of Technology, *Towards 3D Estimation of in situ Phenotypic Traits for Maize and Bean Root Systems* (Weitz, PI, \$10,000)

#### **F. Other Scholarly Accomplishments**

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

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 – Digital 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>
6. Covid-19 Event Risk Assessment Planner – <https://covid19risk.biosci.gatech.edu> (Release 2020, >16M visitors, 99.9% Altmetric score on Nature Human Behaviour, jointly developed w/Prof. Clio Andris, including subnational risk in the US and globally)
7. Population immunity estimator – <https://popimmunity.biosci.gatech.edu> (Release 2021)
8. LocalCovid19Now - <https://github.com/openjournals/joss-reviews/issues/4791> (Release 2022)

Ongoing software releases are distributed via [weitzgroup.github.io](http://weitzgroup.github.io) and announced at [weitzgroup.biosci.gatech.edu](http://weitzgroup.biosci.gatech.edu)

#### **G. Societal and Policy Initiatives**

COVID-19 Modeling Response, 2020-present

Multifaceted effort including risk assessment, transmission characteristics, forecasting and serological initiative, including reports, interface with state level agencies, public engagement, advising, and private-public partnerships for social good. Radio, blogs, essays, analytics, and the development of a dashboard that has seen ~16M visitors and tens of millions of risk estimates since July 7, 2020. JSW served as one of two co-lead faculty advisers of GT's asymptomatic surveillance testing program that was officially launched in August 2020, has provided >500,000 tests to the GT community, and that helped enable safer campus operations, including a multi-month record of <1% positive testing as a result of early identification, isolation, and analytic support.

- COVID-19 Event Risk Assessment Planning Tool – <https://covid19risk.biosci.gatech.edu>
- GT Asymptomatic Testing Program - <https://research.gatech.edu/surveillance-testing-shown-reduce-community-covid-19-spread>

#### Tahirih Justice Center, 2018-2019

Ongoing collaboration with the Senior Counsel for Policy and Strategy at Tahirih (Jeanne Smoot, J.D.) to analyze historical Georgia marriage data in support of grassroots efforts to end child marriage in the state of Georgia and raise the legal age of marriage to 18 from the current age of 16. This effort includes work by a undergraduate neuroscience major (Ellen Cottingham), and a PhD student in Physics (Ashley Coenen), both mentored by Weitz. The project included time-sensitive delivery of analysis and visualizations of the change in trends in child marriages, county-by-county breakdown, and analysis of age disparities for inclusion in briefing documents. The marriage bill was signed into law on May 6, 2019. Our role in this effort is highlighted below:

- <https://www.tahirih.org/news/victory-in-georgia-new-law-protects-against-child-marriage/>

#### Science of Doing Good, 2018-2019

Co-organized (w/Prof. Paul Wolpe (Emory) and Dr. Jonathan Crane (Emory)) a ‘Scientists in Synagogues’ program on the theme of ‘The Science of Doing Good’, co-sponsored by AAAS’ Dialogue on Science, Ethics, and Religion and the ‘Sinai and Synapses’ program. The program at Congregation Shearith Israel included five community events, featuring local scientists from Georgia State and Emory as well as social good program executives in dialogue on the intersection of science, religion, and society:

- <https://orbitermag.com/biologys-golden-rule/>

#### Center for Access to Justice, 2016-2017

Weitz initiated a collaboration with the Georgia State University Center for Access to Justice (Director: Lauren Lucas, Associate Director: Darcy Meals) to develop an interactive visualization map of Georgia’s “legal deserts” to highlight disparities in county-level accessibility to legal representation and services. This map has been featured at the GSU Center website, Salon, amongst many outlets (2016-2017):

- <http://law.gsu.edu/center-access-justice/research/>
- <https://www.salon.com/2017/09/30/every-year-millions-try-to-navigate-us-courts-without-a-lawyer-partner/?ref=hvper.com>
- [https://weitzgroup.github.io/Access\\_To\\_Justice/](https://weitzgroup.github.io/Access_To_Justice/)

#### Ebola Virus Disease, 2014-2015

Weitz served as Chair and Lead Organizer 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 academia 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](http://bit.ly/ebm_gt_report).

#### Press

Coverage since 2018 includes NY Times, Atlantic, Quanta, Washington Post, LA Times, Atlanta Magazine, National Geographic, Slate, Scientific American, BBC, Bloomberg, Wired, etc.

Selected listing of press coverage: <https://weitzgroup.biosci.gatech.edu/whats-new/media-features/>.

Partial listing of media coverage (>300 items): [https://bit.ly/jsweitz\\_media](https://bit.ly/jsweitz_media)

## **V. Teaching**

### **A. Courses Taught**

(reverse chronological order, \* denotes new curriculum, / denotes cross-listed, & denotes co-taught). For GT classes, all ratings are out 5 and respond to the question of overall effectiveness of the instructor.

Institut de Biologie, École Normale Supérieure

Year	Class #	Name of class	Students	Rating (/5.0)
Fall 2022	IBENS-Paris	Quantitative Viral Dynamics	15	NA
Fall 2021	IBENS-Paris	Quantitative Viral Dynamics	11	NA

Georgia Institute of Technology

Year	Class #	Name of class	Students	Rating (/5.0)
Fall 2022	BIOL 6750/ PHYS 6750	Foundations in Quantitative Biosciences	11	4.5
Fall 2020	BIOL 6750/ PHYS 6750	Foundations in Quantitative Biosciences	10	4.8
Fall 2019	BIOL 8814	Foundations in Quantitative Biosciences	8	5.0
Fall 2018	BIOL 8804	Foundations in Quantitative Biosciences	13	4.8
Fall 2017	BIOL 8804	Foundations in Quantitative Biosciences	6	5.0
* Fall 2016	BIOL 8804	Foundations in Quantitative Biosciences	11	5.0
& Spring 2016	BIOL 2400	Math Models in Biology	32	4.2
Spring 2015	BIOL 4755/ <i>ibid</i>	Mathematical Biology Intro to Systems Biology	1 8	5.0 4.8
* Spring 2013	BIOL 8803	Seminar on Viral Ecology	5	5.0
Spring 2012	BIOL 6422/ <i>ibid</i>	Theoretical Ecology Theoretical Ecology	7 6	4.7 4.9
& Spring 2012	BIOL 2400	Math Models in Biology	47	4.5
* Spring 2011	BIOL 4755/ <i>ibid</i>	Mathematical Biology Intro to Systems Biology	3 11	4.3 5.0
* Spring 2010	BIOL 4422/ <i>ibid</i>	Theoretical Ecology Theoretical Ecology	3 16	5.0 4.1
* Spring 2009	BIOL 4755/ <i>ibid</i>	Mathematical Biology Mathematical Biology	14 6	4.3 4.5
& Spring 2009	BIOL 2400	Math Models in Biology	38	4.3
Fall 2008	BIOL 2400	Math Models in Biology	39	3.9
* Spring 2008	BIOL 6422	Theoretical Ecology	16	4.6
* Spring 2008	BIOL 4422	Theoretical Ecology	8	4.1
&* Fall 2007	BIOL 2400	Math Models in Biology	39	4.1



## B. Individual Student Guidance

### B1. PhD Students

#### *University of Maryland*

21. Kejia Zhang 2023- Applied Mathematics & Scientific Computation  
20. Akash Arani 2022- BEES (U of Maryland) via Quantitative Biosciences (GT)  
19. Raunak Dey 2022- Physics (U of Maryland) via Physics (GT)

#### *Georgia Institute of Technology*

18. Marian Dominguez-Mirazo 2019- Quantitative Biosciences  
• CONaCYT Fellow, Mexico (2021-2024)  
• Chateaubriand Fellow, Institut Pasteur, 2023-2024
17. Rogelio Rodriguez 2018- Quantitative Biosciences  
• CONaCYT Fellow, Mexico (2021-2024)
16. Shashwat Shivam 2019-2023 Electrical and Computer Engineering  
• Job placement: Software Engineering, Medtronic
15. Andreea Magalie 2018-2023 Quantitative Biosciences  
• Data Scientist Intern, Biogen, Summer-Fall 2022  
• Postdoctoral Scientist, Merck (2023-)
14. Daniel Muratore 2017-2022 Quantitative Biosciences  
• Now: SFI Omidyar Postdoctoral Fellow
13. Ashley Coenen 2016-2021 Physics  
• GT Presidential Fellow (2016-2019)  
• Recognized by Tahirih Justice Center for *pro bono* work on data-driven analytics to support changes in Georgia law protecting against child marriage (2019)  
• Now: Data scientist, NRG Energy
12. Guanlin Li 2017-2021 Quantitative Biosciences  
• Now: Quantitative Researcher, Chicago Trading Company
11. Yu-Hui Lin 2016-2019 Physics  
• Now: Data Scientist, Verdigris
10. Shengyun Peng 2015-2018 Bioinformatics  
• Now: Data Scientist, Adobe Inc.
9. Keith Paarporn 2015-2018 Electrical and Computer Engineering  
• First author papers in J. Theor. Biology, Conference on Decisions and Controls (2x)  
• Now: Assistant professor, Department of Computer Science, University of Colorado, Colorado Springs
8. Charles Wigington 2013-2017 Bioinformatics  
• Now: Data scientist at Press Ganey (2017)
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, Summer 2016  
• Now: Postdoctoral scientist, Harvard School of Public Health
6. Luis Jover 2011-2016 Physics  
• Advanced to candidacy, Spring 2013  
• NIMBioS Visiting Graduate Student Fellowship (Spring 2014)  
• Thesis defense, Spring 2016  
• AT&T Data Sciences Intern (Summer 2015)  
• Now: Square Space Data Scientist (2016)
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”
  - Now: 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)
  - Now: 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)
  - Now: Clinical Data Scientist at the Seattle Cancer Care Alliance
2. Richard In-Ho Joh    2007-2011     Physics
- Thesis: “Quantitative analysis of biological switches”
  - Postdoctoral fellow, MIT, Department of Chemical Engineering (2011-2013)
  - Postdoctoral fellow, Harvard Medical School (2013)
  - Now: Assistant Professor in Physics, Virginia Commonwealth University
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)
  - Now: Principal Engineer, Chan Zuckerberg Initiative

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

18. Eugenie Dulout     M.S., Telecom Paris, Internship (2023)
17. Isabelle du Plessis   M.S. Bioinformatics (2023-)
16. Hannah Snyder       M.S. Bioinformatics (2023-)
15. Abir George         M.S. thesis (ENS-Physics, 2022)
- PhD Placement: Biophysics, Princeton
  - Initial: Post-bac internship at IST Vienna
14. Rachel Calder        M.S. non-thesis (Georgia Tech Bioinformatics, current)
- Initial: OMNY Health (intern in Summer 2022; job started in Jan 2023)
13. Hend Al-Rasheed    M.S. studies (concurrent w/PhD in Computer Science)
- Initial/current: Assistant Professor, Saudi Arabia, King Saud University
12. Rong Jin             M.S. non-thesis (Georgia Tech Bioinformatics, graduated 2018)
- Initial/current: M.S. Data Analytics
11. J. Walker Gussler    M.S. non-thesis (Georgia Tech Bioinformatics, graduated 2016)
- Initial/current: ORISE Fellowship, Centers for Disease Control and Prevention
10. Devika Singh         M.S. non-thesis (Georgia Tech Bioinformatics, graduated 2016)
- Initial/current: Ph.D. student, Bioinformatics, GT
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)
  - Initial/current: Bioinformatics engineer, BioEdge
4. Hoe-Ming Wong       Visiting M.S student (Delft Technical University, Netherlands (11/2011-12/2011))
  - Initial/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 (Highlights and information when available)**

#### *University of Maryland*

26. Emma Wachter       Fall 2023

#### *Georgia Institute of Technology*

25. Esther Gallmeier    Fall 2021-Spring 2022
  - Initiated PhD in Applied Mathematics, Cornell
24. Isimeme Udu        Summer 2021, Simons Foundation Summer REU student (Spelman College)
  - Initiated MS in Medical Informatics at Dartmouth College
23. Sophia Ellis        Summer 2021, Simons Foundation Summer REU student (Spelman College)
  - Boston University STaRS Research Scholar
22. Caitlin Cheung      Summer 2021-present
21. Mira Patel           Spring 2021
20. Quan Nguyen        Fall 2020-present
  - Co-author on Nature Human Behaviour & Annals of Epidemiology paper
  - Co-developer on covid19risk.biosci.gatech.edu and popimmunity.biosci.gatech.edu websites
19. Robert Morgan      Spring 2019-Fall 2019
18. Ellen Cottingham   Spring 2019-Fall 2019
17. Brighton Ancelin   Spring 2017
16. Adam Zhang        Fall 2016-Spring 2017, Fall 2017-Spring 2018
  - Planned co-author on manuscript to be submitted in Spring 2019
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 2007/17
2. Christina Wilson        Summer 2007-Spring 2008
1. Corwin May              Summer 2007
  - NSF REU Fellowship

#### **B4. Service on Thesis Committees**

##### *Georgia Institute of Technology*

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. Laura Levy             M.S. student (Georgia Tech Biology, 2008-2009)
4. Nick Parnell            Ph.D. student (Georgia Tech Biology, 2007-2011)
5. Minmin Pan            M.S. student (Georgia Tech Biology, 2009-2011)
6. Nicole Mazchuko     M.S. student (Georgia Tech Biology, 2009-2011)
7. Prabuddha Bansal    Ph.D. student (Georgia Tech Chemical & Biomolecular Engineering, 2010-2011)
8. Yun Lee                Ph.D. student (Georgia Tech Biomedical Engineering, 2011-2012)
9. Zhichao Pu            Ph.D. student (Georgia Tech Biology, 2007-2015)
10. Rachel Penczykowski Ph.D. student (Georgia Tech Biology, (2009-2013)
11. Hyewon Lee          Ph.D. student (Georgia Tech Chemical & Biomolecular Engineering, 2011-2013)
12. David Gibbs         M.S. student (Georgia Tech Biology, 2013-2014)
13. Kristen Gulino        Ph.D. candidate (NYU, Biology, 2016-2018)
14. Carlos Alexander Ruiz Perez    Ph.D. student (Georgia Tech, Bioinformatics, 2018-2021)
15. Zachary Jackson    Ph.D. student (Georgia Tech, Physics, 2020)
16. Benjamin Metcalf    Ph.D. student (Georgia Tech, Bioinformatics, 2021)
17. Conan Zhao          Ph.D. student (Georgia Tech, QBioS, 2020-2022)
18. Stephen Thomas     Ph.D. student (Georgia Tech, QBioS 2019-2022)

##### *University of Maryland*

19. Paulina Huanca        Ph.D. Student (UMD, Environmental Sciences, 2023)

#### **B5. Mentorship of Postdoctoral Fellows and Visiting Scholars**

##### Postdoctoral Fellows

20. Paul Fremont         2023-present
19. Tapan Goel            2022-present
18. Jeremy Seurat        2021-present
17. Jacopo Marchi        2020-present
16. Adriana Sanz         2020-present
15. Jeremy Harris        2020-2023
  - Appointed Visiting Assistant Professor of Mathematics, Rose Hulman College (2023-)
14. Stephen Beckett      2015-present
  - Georgia Tech Climate Change Fellow (2017-8)
  - Promoted to Research Scientist II (2022)
  - Promoted to Associate Research Scientist (U of Maryland, 2023)
13. David Demory         2017-2022

- Research development award (\$10,000, 2018-2019, support for materials for research cruise with NIWA)
  - Co-investigator of a research grant from the Simons Foundation (\$64,030, 2019-2020)
  - CNRS Charge du Recherche (beginning Fall 2022)
12. Joey Leung 2014-2020
    - Senior Investigator, Glaxo Smith Kline (UK)
    - Featured in This Week in Microbiology podcast (episode 159, official podcast of the American Society for Microbiology, 2018)
  11. Ceyhun Eksin 2015-2017
    - Assistant Professor, Industrial Systems Engineering, Texas A&M (effective Summer 2018)
    - Georgia Tech Serve, Learn, Sustain Fellow (2017)
    - Co-advised with Jeff Shamma (GT – Electrical and Computer Engineering & KAUST), 2015-6
  10. Bradford Taylor 2016
    - Postdoc, Harvard School of Public Health (2021-present)
    - Postdoc, Memorial Sloan Kettering Cancer Center (2017-2021)
  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
    - Assistant Professor, Mathematics, U-Louisiana-Lafayette (2017-present)
  8. Alexander Bucksch 2011-2016
    - Associate Professor (2021-) & Assistant Professor (2016-2021), Plant Biology, UGA
    - Cover article, Plant Physiology, October 2014 for analysis of crop roots in field conditions
    - Co-PI, Center for Data Analytics Seed Grant (2014)
    - NSF Career Award
  7. Michael Cortez 2010-2014
    - National Science Foundation Postdoctoral Fellow in Mathematical Sciences (2012-2014)
    - ESA Early Career Fellow (2016-2020)
    - Assistant Professor, Mathematics, Utah State University (2014-2019)
    - Assistant Professor, Biology, Florida State University (2019-)
  6. Tae Lee 2010-2012
    - Now: Senior Scientist, Johnson and Johnson
  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
    - Associate Professor (2013-present), Mathematics, U of Hawaii
    - Visiting Assistant Professor, Duke University & UIUC (2009-2013)
  2. Hao Wang 2007-2009
    - Professor, Mathematics, U of Alberta (2009-present)
    - 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 (departed due to personal family health reasons, post-tenure)
    - 2008 Murray F. Buell Award from the Ecological Society of America

### Visiting Scholars

9. Tasos Marantons      October 2022-Feb 2023, 4 month visit
  - PhD student, Neils Bohr Institute, Copenhagen, Denmark
8. Yu-Hue Chen          Feb – March 2019, 2 week visit
  - PhD student, Hong Kong University of Science and Technology
7. David Talmy          March 2017, 3 day visit
  - Postdoctoral Fellow, MIT
6. Stefania Ottaviano    August 2016, 4 week visit
  - Postdoctoral Fellow, U of Trento, Trento, Italy
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 additional 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:***

*Brin Mathematics Research Center Workshop on Behaviour and Epidemics (Nov 2024, Chairs: J.S. Weitz, Mallory Harris, and Henri Berestycki)*

*ICTP-SAIIR Minicourse on Modeling for Pandemic Prevention, ICTP-SAIIR, Sao Paulo, October 2023 (Chair: J.S. Weitz, ~50 attendees)*

*Simons Foundation Workshop on Virus Ocean Modeling, MIT, April 2023 (Chairs: Stephanie Dutkiewicz, Chris Follett, and J.S. Weitz, ~12 attendees)*

*IBENS and QLife Symposium on Modeling Epidemics and Behaviour*, IBENS, May 2022 (Chair: **J.S. Weitz**, 4 speakers, ~40 attendees)

*QLife Winter School on Quantitative Viral Dynamics*, PSL, Paris, March 2022 (Chair: **J.S. Weitz** of international committee, including 8 scientists and 12+ speakers, ~30 student attendees)

*Aquatic Virus Workshop 10*, Kyoto, Japan, Feb 2021. International Steering Committee Member (Chair: Keizo Nagasaki)

*Covid-19 Rapid Response Forum, Atlanta, GA*, March 9, 2020 (Organizer: **J.S. Weitz**; speakers Weitz, P. Santangelo (GT), and Trevor Bedford (Fred Hutch))

*AAAS Annual Meeting*, Washington DC, Feb 14-17, 2019, Symposium session “The Entangled Fates of Viruses and Microbes” (Chair: **J.S. Weitz**)

*Simons Foundation Collaboration on Ocean Processes and Ecology Modeling Workshop*, Seattle, WA October 29-31, 2018 (Chair: **J.S. Weitz**)

*Simons Foundation Collaboration on Ocean Processes and Ecology Modeling Workshop*, Atlanta, GA, June 13-15, 2018 (Chair: **J.S. Weitz**)

*ASM Microbe*, Atlanta, GA, June 7-11, 2018, Symposium session “Tiny drivers of evolution: phage and their hosts” (Session co-chairs: Alison Buchan and **J.S. Weitz**)

*QBioS Hands-On Modeling Workshop*, Atlanta, GA May 22-23, 2017 (Chair: **J.S. Weitz**)

*Simons Foundation Collaboration on Ocean Processes and Ecology Modeling Workshop*, Atlanta, GA, May 16-18, 2017 (Chair: **J.S. Weitz** with Mick Follows)

*CIFAR-GBMF Workshop in Marine Microbial Ecology and Evolution*. Steering 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 Lagomarsino)

*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:**

Network Society Erdős-Rényi Prize Committee (2022)

Member of the External Advisory Board for the National Research Traineeship in Environmental & Ecological Informatics at Northern Arizona University (2019-2020).

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:***

Guest Editor, PNAS (2020 x 1; 2021 x 1; 2023 x 1)

Editorial Board Member, Virus Evolution (2017-)

Editorial Board Member, Journal of Theoretical Biology (2010-)

Editorial Board Member, mBio (2019-)

Senior Editor, ISME J (2018-2020)

Editorial Board Member, Scientific Reports (2017-2019)

Editorial Board Member, mSystems (2015-2018)

Review Editor, Frontiers in Virology (2012-2017)

Guest Editor, PLoS Pathogens (2017 x 2) & Guest Editor, PLoS Comp. Biology (2014, 2015, 2017)

***Peer Reviewing:***

Manuscripts reviewed for:

*American Journal of Botany, American Naturalist, Annals of Internal Medicine, Applied and Environmental Microbiology, Aquatic Microbial Ecology, Biochemical Engineering Journal, Bioessays, 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, mBio, Microbiology and Molecular Biology Reviews, Molecular Biosystems, mSystems, Nature, Nature Microbiology, Nature Medicine, Physical Review E, Physical Review Letters, Phys Rev X, 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, Science Advances, Scientific Reports, TREE, Tree Physiology, Trends in Microbiology, and Viruses.*

Review panelist:

- NSF, Biological Oceanography (2024)
- NIH IDMX50 Study Section, Phage Biology and Bacteriophage Therapy (2020)
- NSF, Division of Environmental Biology (2008, 2010, 2013)
- Burroughs Wellcome Fund: Biology Immersion for Physical Scientists, Mathematicians and Engineers (Fall 2011)
- Bellman Prize Committee, Best Paper published in Mathematical Biosciences 2010-2012 (Fall 2013)

Ad-hoc proposals reviewed for:

- Tel Aviv University Center for Combatting Pandemics (2021)
- The Royal Society (2021)
- Red Team Review, Ohio State University, Department of Microbiology (2020)
- European Research Commission (2019)
- NSF (2007, 2008, 2009, 2011, 2013, 2014, 2015 x 2, 2016 x 2, 2017, x10 2019, x2 2020)
- 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, Public Reviewer of Habilitation

- Silvia de Monte, Habilitation for ‘Director du Reserche’, Institut de Biologie, ENS, June 2022

#### External MS and PhD thesis reader

- Natalie Blot, M.S in École Supérieure de Physique et Chimie Industrielle, Université de Paris, ‘Frankenstein’s Colloids: Towards Self-Assembly and Self-Replication in Colloidal Systems’ (2022)
- Philippe Cherabier, Ph.D. student in Eco-Evolutionary Mathematics at Institut de Biologie, ENS, Paris ‘Predicting the response of the oceanic carbon cycle to climate change: eco-evolutionary modeling of the microbial loop and the role of viruses’ (2022)
- Hilje Doekes, Ph.D. student in Theoretical Biology at Utrecht University ‘Microbial evolution at multiple scales’ (2020)
- Elad Shtilerman, PhD candidate in the Porter School of Environmental Studies, Tel Aviv University, Israel, “Population and Community Dynamics on Spatial Networks” (2015)
- Silja Heilmann, PhD candidate in Physics at the Niels Bohr Institute, University of Copenhagen, Denmark, “Coexistence, cooperation and communication” (2012 – Official ‘opponent’)

#### ***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***

Talk: “Pandemic Mitigation”, Midtown High School, Atlanta, GA Nov 10, 2022

Panelist, 2021, iFAST Symposium to Honor Simon Levin’s 80<sup>th</sup> birthday, Epidemics, July 26, 2021

Panelist, 2021 Ivan Allen Jr. Prize for Social Courage for Dr. Anthony Fauci, Georgia Institute of Technology, March 15, 2021

Pandemic Forum on Socioeconomic Impacts of Covid-19, International Centre for Theoretical Physics, Trieste, Italy, December 16, 2020

Podcast: “Did you wash your hands?” w/Sam Whitehead (WABE 90.1, NPR Atlanta), December 15, 2020, <https://www.wabe.org/episode/calculating-your-risk-of-coronavirus-exposure-as-the-pandemic-surges/>

Talk: “Covid-19 Near and Long-Term Dynamics”, policy meeting with the Georgia Municipal Association; an alliance of Georgia’s Mayors, w/Clio Andris (~100 Mayors attending) 10/20/20

Podcast: “Lost in the Stacks”, long-form interview on Covid-19 re-opening, July 31, w/Wendy Hagenmeier; [wrek.org](http://wrek.org)

Radio programs: Georgia Public Radio ‘Political Rewind’ on COVID-19 (1 hr long programs; featured guest; host: Bill Nigut, March 26, April 23, June 18, July 26; November 25 in 2020 & April 9, 2021)

- <https://www.gpb.org/news/2021/04/09/political-rewind-vaccinations-ramp-health-leaders-tackle-outreach-persistent>
- <https://www.gpb.org/news/2020/11/25/political-rewind-covid-19-cases-rise-ahead-of-holidays-what-do-manage-risk>
- <https://www.gpb.org/news/2020/07/27/political-rewind-anxiety-exhaustion-and-uncertainty-school-year-approaches>
- <https://www.gpbnews.org/post/political-rewind-closer-look-georgias-outbreak-numbers>
- <https://www.gpbnews.org/post/political-rewind-confusion-over-next-steps-crisis>
- <https://www.gpbnews.org/post/political-rewind-coronavirus-remains-daunting-shifting-issue>

Podcast: “Shield Immunity vs. Herd Immunity”. w/Steven Cherry of TTI/Vanguard (5/2020)  
<https://www.ttvanguard.com/content/Getting-Back-Work%E2%80%94Shield-Immunity-vs-Herd-Immunity-Conversation-Joshua-Weitz>

Blog: The Billion-Year Old Golden Rule of Symbiosis, *Sinai and Synapses (and Orbiter)*. w/Nicole Gerardo and Jonathan Crane (4/2019)

Session chair: Social microbes and Symbiosis, Congregation Shearith Israel, Invited Speaker: Nicole Gerardo (Emory U), part of the AAAS Scientists in Synagogues series. (3/24/2019)

Public talk: “Microbes Get Sick, Too: On Science at the Interface”, Montgomery Blair High School, Math and Science Magnet, Research Convention, Silver Spring, MD (1/11/2018)

Public talk: “Microbes Get Sick Too”, Shearith Israel Synagogue, Atlanta, GA (10/25/2017)

Panel: Association of Health Care Journalists Panel on Antibiotic Resistance (10/19/2017)  
<https://healthjournalism.org/blog/2017/10/ahcj-atlanta-panel-discusses-antibiotic-resistance/>

Public talk: “Microbes Get Sick Too”, Science, Technology, Engineering, Arts and Mathematics (STEAM) Coleman Middle School, Lawrenceville, GA (9/20/2017)

Public talk: March for Science, Plenary Speaker, “Conscience of a Scientist”, Candler Park, Atlanta, GA (4/22/2017)

Podcast: “MindPop – Should Scientists March?” Prof. David Sehat, Georgia State (4/9/2017)

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: “Vaccines: safe, effective, and a critical public good”, Amplifier Blog, Georgia Tech (1/18/2017)  
<http://admin.amplifier.gatech.edu/articles/2017/01/vaccines-safe-effective-and-critical-public-good>

Blog: “Would you like extra viruses with your yogurt”, 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 participant at workshops***

Simons Foundation Mathematical and Physical Sciences Annual Meeting (October 2023)

Harvard Radcliffe Institute Workshop on Marine Viral Ecology (March 2023)

Simons Foundation Mathematical and Physical Sciences Annual Meeting (October 2022)

iFAST Symposium, Simon Levin 80<sup>th</sup> birthday, Panel on Infectious Disease (July 2021)

Mechanisms of Resistance Symposium, Yale University (November 2019)

Working Group: Integrating Critical Phenomenon & Multi-Scale in Virus Evolution. Santa Fe Institute, Santa Fe, New Mexico. (November 2018)

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)

American Association for Microbiology colloquium, The uncharted world of viruses, San Francisco, CA (7/10/13-7/12/13)

Marine Microbiology Initiative modeling workshop, 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).

NAS and Keck Futures Initiative Synthetic Biology, Irvine, CA (11/20/2009-11/22/2009).

NAS 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. Mischakow. 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**

### **Major Leadership Roles**

#### **COVID-19 Response (2020-2023)**

In response to Covid-19 I led and collaborated on modeling-driven responses spanning foundational to applied; including providing time-sensitive response work at local, national, and international levels. Key accomplishments include:

- Led the development of a Covid-19 event risk assessment website visited by ~16M unique visitors ([covid19risk.biosci.gatech.edu](https://covid19risk.biosci.gatech.edu)) that delivered more than 60M risk assessment since launch in July 2020. Coverage at hundreds of news outlets including NY Times, Washington Post, LA Times, Scientific American, National Geographic, Nature, BBC, and local media outlets.
- Co-led the asymptomatic testing program at Georgia Tech, including direct reporting to the EVPR and President's office from August 2020-July 2021 (JSW led the modeling and analytics, joint with Prof. Greg Gibson and Michael Shannon of GTRI). Testing enabled rapid identification of case clusters and control of test positivity to <1% for the majority of Fall 2020-Spring 2021 academic year, including >500,000 tests ([mytest.gatech.edu](https://mytest.gatech.edu)). [GT Summary](#) & [Peer-reviewed article](#).
- Initiated public-facing efforts to communicate risk assessment, transmission characteristics, forecasting and serological initiative, including reports, interface with state level agencies, public engagement, advising, holding town-halls at GT, and initiating private-public partnerships for social good. Featured on local, national, and international media, including multiple essays and public-facing articles on the pandemic in the Atlanta Journal Constitution, Scientific American, and Slate.
- Chaired multiple Covid-19 academic-focused workshops and schools, including a rapid response forum at Georgia Tech (February 2020), hands-on modeling workshop on epidemic dynamics (May 2020 & May 2021, online, >60 participants in both workshops), international winter school on 'Quantitative Viral Dynamics Across Scales' (March 2022, ~30 participants) at ENS-Paris, and international forum on epidemics and behaviour at ENS-Paris (May 2022, ~30 participants).

#### **Founding Director of the QBioS PhD (2015-2023)**

I served as the Founding Director of the QBioS PhD program at Georgia Tech, an interdisciplinary graduate program that continues to establish itself as a national and international leader, through recruitment, education, training, and outreach initiatives. At present, the QBioS program includes 36 current students distributed across four cohorts and supported by 56 program faculty. Multiple students have won awards for their work, including multiple NSF GRFPs, CONaCyT, ARC and PEO scholars, and multiple Institute-level awards. The QBioS program leadership includes a 9 member graduate committee with the support of a 40% program coordinator. Programmatic innovations include:

- A Foundations in Quantitative Biosciences course I developed is now the basis for a book series to be published by Princeton University Press, anticipated publication Fall 2023;
- An annual hands-on workshop for modeling in the biosciences attended by >30 students and faculty from GT, Spelman College, and UGA (courses take place in May of each year, 2017-present).

- Development of a QBioS rotations program in the 1<sup>st</sup> year, inculcating a sense of community and enhancing the interaction amongst students and faculty in the program.
- Establishment of a QBioS Graduate Student Association in Fall 2019.
- Initiation of a QBioS Professional Development course (which I led in the first three years and now significantly enhanced and expanded by Sam Brown, QBioS faculty member).
- Started a new QBioS development fund (multiple inaugural year donors in 2020)

More at [qbios.gatech.edu](http://qbios.gatech.edu) & on twitter [@QBioS\\_GT](https://twitter.com/QBioS_GT).

### **Initiated an Institute-wide Effort to Reduce Graduate Student Fees at Georgia Tech (2019-2022)**

In March 2019, Initiated and led a long-term campaign to systematically reduce the fees paid by graduate students while serving as graduate research assistants and/or as graduate teaching assistants at GT. I organized a resolution and led its passage at Georgia Tech's Faculty Executive Board (in August 2019). Faculty dissemination of the resolution across campus led to a public resolution including >340 faculty signatories which was then discussed and authorized in October 2019 by a vote by the GT Academic Faculty Senate. This resolution spurred the creation of an Executive Leadership Team (ELT) ad hoc working group (on which I served), which communicated our recommendations: including the request to reallocate ~\$2M in administrative funds in FY 2020 to reduce graduate fees by over \$1000/yr for all GRA/GTA students. . The central working group recommendations were approved by the ELT and fee recommendations are under review by the Board of Regents of the University System of Georgia for state-wide assessment as part of a newly formed 'fee working group'. Critically: in 2022 the USG eliminated the special institutional fee, saving GT graduate students more than \$1000 per year.

### **School and Institute Committee Service**

#### **University of Maryland**

2023-2024

Clark Leadership Chair Hiring committee, School of Public Health  
BEES Concentration Area – PhD Admissions Committee  
Hiring committee, Grants director, Department of Biology

#### **Georgia Tech**

2022-2023

Ecology Hiring committee, School of Biological Sciences – hired James Stroud (WUSTL)  
Co-Director, Interdisciplinary PhD in Quantitative Biosciences  
Inaugural Academic Program Review Committee Lead, QBioS PhD  
Chair, Sigma Xi Best Research Paper Award Committee

2021-2022 (on leave in France)

Co-Director, Interdisciplinary PhD in Quantitative Biosciences

2020-2021

Founding Director, Interdisciplinary PhD in Quantitative Biosciences  
School of Biological Sciences Advisory Committee  
School of Biological Sciences Strategic Planning and Hiring Committee  
Asymptomatic Georgia Tech Covid-19 Testing Initiative (reported directly to EVPR + President's office)

2019-2020

Founding Director, Interdisciplinary PhD in Quantitative Biosciences  
School of Biological Sciences Advisory Committee  
Parker H. Petit Institute for Bioengineering and Bioscience Steering Committee (through Fall 2019)

Provost's ad-hoc working group on graduate student support

2018-2019

Founding Director, Interdisciplinary PhD in Quantitative Biosciences  
School of Biological Sciences Advisory Committee  
Parker H. Petit Institute for Bioengineering and Bioscience Steering Committee

2017-2018

Founding Director, Interdisciplinary PhD in Quantitative Biosciences  
School of Biological Sciences Advisory Committee  
Parker H. Petit Institute for Bioengineering and Bioscience Steering Committee  
Ad-hoc reviewer, Georgia Tech EVPR Committee for Reviewing Keck Foundation pre-proposals

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  
Faculty Panelist, College of Sciences and College of Engineering Joint Mentoring Initiative, Conflict Management (12/13/2016)  
Georgia Tech Packard Fellowship internal review 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, 1<sup>st</sup> 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 Interface of Mathematical and Biological Sciences (CIMBS)