

Curriculum Vitae

Andreas Wagner

Professor, University of Zürich
Institute of Evolutionary Biology
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Academic Positions

2011- **Professor (full), University of Zurich**, Dept. of Evolutionary Biology and Environmental Studies
2016-2020 Chairman, Univ. of Zürich, Dept. of Evolutionary Biology and Environmental Studies
1999 - **External Professor, The Santa Fe Institute**, New Mexico, U.S.A.
2021 Fellow, Stellenbosch Institute for Advanced Study (STIAS), South Africa
2006-2010 Professor (full), Univ. of Zürich, Institute of Biochemistry
2012-2013 Consultant, A*Star Bioinformatics Institute, Singapore
2002-2012 Associate Professor (with tenure), Univ. of New Mexico, Department of Biology
2007- Group Leader, Swiss Institute of Bioinformatics
2004-2005 Visiting Scientist, Institut des Hautes Études Scientifiques, Bures-sur-Yvette, France
1998-2002 Assistant Professor, University of New Mexico, Department of Biology
2000-2006 Associated Faculty Member, Albuquerque High Performance Computing Center
1998-2002 Adjunct Professor, University of New Mexico, Department of Biology
1996 Visiting Scientist, Los Alamos National Laboratory, U.S.A.
1996-1998 Postdoctoral Fellow, The Santa Fe Institute
1995-1996 Fellow, Institute for Advanced Study Berlin, Germany
1995 Postdoctoral Fellow with Leo W. Buss, Yale University

Education

1995 **Ph.D.**, Yale University, Dept. of Biology
1994 **M. Phil.**, Yale University, Dept. of Biology
1990 **M.Sc.**, Univ. of Vienna, Dept. of Molecular Genetics, "with honors"

Honors

2018 Elected Corresponding Member, Austrian Academy of Sciences
2014 Elected Member, European Molecular Biology Organization (EMBO)
2011 Elected Fellow, American Association for the Advancement of Science
2010 Gold medal for *Paradoxical Life*, best Science books of 2009, Independent Publisher Book Awards 2010
2010 Silver medal for *Paradoxical Life*, best Philosophy books of 2009, by Foreword Magazine
2004- Member, Faculty of 1000 Biology
1996-1998 Postdoctoral Fellow, The Santa Fe Institute
1995-1996 Fellow, Institute for Advanced Study Berlin, Germany
1995 J.S. Nicholas Prize for Best Dissertation, Yale University
1994 G. Evelyn Hutchinson Prize, Yale University
1991-1995 University Fellowship, Yale University

1991 Fellowship for Research at the University of Chicago, Austrian Federal Science Ministry.

Professional Service

Editorial Boards Science Advances (2023-), Biology (2019-2023), Philosophy, Theory, and Practice in Biology (2010-), BMC Ecology and Evolution (2004-), Genome Biology and Evolution (2013-2016), Bioessays (2004-2013), Journal of Experimental Zoology/Molecular and Developmental Evolution (1999-2016); The Open Evolution Journal (2007-2013); Santa Fe Institute Publications (2002-2010), Wiley Interdisciplinary Reviews: Systems Biology (2007-2011), Molecular Genetics and Genomics (2007-2011), Advances in Complex Systems (2000-2008)

Steering Committees Research Priority Program in Evolutionary Biology at the University of Zurich (2012-2024), Evolutionary Biology Ph.D. Program, University of Zurich (2009-), Research Priority Program in Systems Biology at the University of Zurich (2007-2012), Center for Advanced Studies, UNM (2002-2004)

Advisory Boards Institute for Integrative Systems Biology (I² SysBio), University of Valencia (2024-), Department of Computational Biology, University of Lausanne (2022-), Science Advisory Board, The Santa Fe Institute (2014-2020)

Juries SIB Young Bioinformatician Award (2008 as Chair, 2010), Motoo Kimura Lifetime Contribution Award (SMBE, 2017)

Admission Committees Computational Biology and Bioinformatics Master Program (2007-2016)

Program Coordinator One of several coordinators for the research program in “Evolutionary Dynamics” funded by the W.M. Keck foundation, The Santa Fe Institute (1998-2001)

Conference

Co-organization “Origins of novelty in biological, social, and technological systems” at the Santa Fe Institute, Santa Fe, NM (October 2014); “Robustness in biological systems” at the Mathematical Biology Institute, Ohio State University (March 2012); Program Committee Member, International Conference for Systems Biology (ICSB), Barcelona, Spain (Sep. 2016), Lyon (Oct. 2018)

Journal Reviewing *Science, Nature, Nature Genetics, Nature Reviews Genetics, Nature Ecology and Evolution, Proc. Natl. Acad. Sci. U.S.A., Nature Biotechnology, Genetics, Trends in Genetics, Trends in Ecology and Evolution, Trends in Microbiology, Trends in Biochemical Sciences, PLoS Biology, PLoS Computational Biology, PLoS Genetics, Genome Research, Genome Biology, Genetical Research, Brain and Behavior, Evolution, Journal of Theoretical Biology, Journal of Biological Chemistry, Evolution and Development, Journal of Molecular Biology, Molecular Biology and Evolution, Journal of Experimental Zoology/Molecular and Developmental Evolution, Molecular Genetics and Genomics, American Naturalist, Advances in Complex Systems, BioEssays, Bioinformatics, BMC Bioinformatics, BMC Evolutionary Biology, BMC Genomics, BioSystems, Proc. Roy. Soc. London, Journal of the Royal Society Interface, Philosophical Transactions of the Royal Society B, Perspectives on Psychological Science, Origins of Life and Evolution of the Biosphere, Mammalian Genome, Wiley Interdisciplinary Reviews, The Open Evolution Journal, Proteomics, Adaptive Behavior, Scientific Reports, Cell Systems*

Book and Grant

Proposal Reviewing *National Science Foundation, National Institutes of Health, Biotechnology and Biological Sciences Research Council (BBSRC), Swiss National Science Foundation, Deutsche Forschungsgemeinschaft, Dutch Research Council (NWO), Templeton Foundation, European Molecular Biology Organization (EMBO), Wellcome Trust, Science Foundation Ireland, Conicyt (Chile), Marsden Fund (New Zealand), Human Frontier Science Program, Millenium Institute (Chile), Fonds zur Förderung der wissenschaftlichen Forschung (Austria), European Research Council (ERC), Austrian Academy of Sciences, Carl-Zeiss Stiftung, DBT Wellcome Trust India Alliance, AXA Research Foundation, India Alliance, the Santa Fe Institute Publication Series, Oxford University Press, Cambridge University Press, Springer Verlag, Wissenschaftskolleg (Berlin), Institut Pascal (France)*

Review Panels Swiss National Science Foundation Ambizione Fellowship (2013-2021), Univ. Zürich Standing Committee to Support Young Scientists (2020-2023), Review of Centers of Excellence in Complex Biomedical Systems Research, NIH Study Section (2003), Comité d'Evaluation laboratoire De Vienne, Gif-sur-Yvette, France (2004), Center for Genomic Regulation (CRG), Barcelona (2010)

Habil. Committee Daniel Rankin (2011-2012, chair)

Teaching ExperienceClassroom Teaching

2013-	Lecture Course “Evolution” (multiple instructors)
2013-	Laboratory Course “Practical Bioinformatics” (multiple instructors)
2008-	Lecture Course “Functional Genomics“
2007-2017	Lecture Course “Computational Biology” (with C. von Mering, K. Shimizu)
2007-2012	Lecture Course “Foundations of Molecular Evolution”
2007-2012	Lecture Course and Exercises “Bioinformatics I” (multiple lecturers)
2007	Lecture Course “Dynamical Systems Biology” (with A. Becskei, C. von Mering)
2004	Lecture Course “Evolution”
2002, 2005	Lecture Course “Genome and Computational Biology”
1999, 2000, 2001, 2003, 2006	Lecture Courses “Evolutionary Genetics” and “Introductory Genetics”
1999, 2000, 2003, 2004	Seminar Courses “Genome Biology” “Comparative Genomics”, “Computational Genomics”
1995	Laboratory for Development and Reproduction, Yale University
1994	Laboratory for Genetics, Yale University.
1992	Laboratory for Ecology and Evolution, Yale University.
1992	Laboratory for Introductory Biology, Yale University.

Postdoctoral Advisement (chronological)

2000-2003	Susannah Green (with S. Ruby, UNM Health Sciences Center)
2002-2005	Michael Gilchrist
2008-2010	Bing Chen
2016-	Jordi van Gestel (with M. Ackermann, ETH Zürich)
2008-2011	Eric Hayden
2016-	Shraddha Karve
2011-2014	Adrian Lopez
2019-	Andrei Papkou
2011-2017	Joshua Payne
2008-2011	Karthik Raman

2008-2011	Daniel Rankin
2011-2014	Mariana Ricca
2008-2011	Elias Zamora-Silero
2012-2017	Kathleen Sprouffsky
2011-2015	Peter Szoevenyi
2010-2012	Niv Sabath
2014-2017	Athena Chu
2014-2019	Macarena Toll-Riera
2014-2017	Yolanda Schaerli
2015-2017	Charles de Santana
2016-2020	Jia Zheng
2017-2021	Gabriel Schweizer
2017-2020	Shraddha Karve
2017-2020	Bharat Ravi Iyengar
2018-2020	Carla Bello
2018-2020	Eugenio Azpeitia
2019-2022	Tess Brewer
2019-2022	Diego Pesce
2019-	Andrei Papkou
2019-2022	Pouria Dasmeh
2021-	Timothy Fuqua
2022-	Gopinath Chattopadhyay
2023-	Aleks Nivina

Graduate Student Advisement (chronological)

1998-2004	Gavin C. Conant
1999-2004	Mike Fuller
2000-2007	Annette Evangelisti
2004-2012	Jeremiah Wright
2007-2015	Manuel Bichsel
2007-2011	Joao Rodriguez
2007-2010	Saurabh Polyphaly
2007-2011	Nicole de la Chaux
2007-2011	Marc Hafner (w. M. Hasler)
2007-2011	Evandro Ferrada
2008	Giovanni Bussotti
2008-2013	Riddhiman Dhar
2009-2014	Aditya Barve
2010-2014	Tugce Bilgin
2010-	Sinisa Bratulic
2010-2012	Vardan Andriasyan
2012-2018	Jose Aguilar Rodriguez
2012-2018	Ali Rezaee Vahdati
2013-2018	Rzgar Hosseini
2013-2018	Debbie Leigh (w. Lukas Keller)
2013-2017	Kasia Sluzek (w. Lukas Keller)
2014-2015	Malami Koletou
2015-2020	Maria Magdalena San Roman
2016-2020	Pierre Laye
2017-2021	Alexandre Figueiredo (w. Rolf Kümmerli)
2017-2021	Felix Moerman (w. Florian Altermatt)
2017-2022	Michael Schmutzer
2019-	Camille Jourdan
2019-	Caua Westmann
2019	Nadine Thierer
2020	Roman Doronin
2021-	Angel_Garcia-Casillas_delRiego
2022-	Christian Ramos Uria

2022- Leander Goldbach
 2023- Paula Thiel-Pizarro
 2023- Yiqiao Sun
 2023- Ilya Carey
 2024- Laetitia Britschgi

Publications

Books

Wagner, A. (2023) *Sleeping Beauties. The mystery of dormant innovations in nature and culture.* One World.

Wagner, A. (2019) *Life Finds a Way. What Evolution Can Teach us About Creativity.* Basic Books.

Wagner, A. (2014) *The Arrival of the Fittest. How Nature Innovates.* Penguin Random House.

Wagner, A. (2011) *The Origins of Evolutionary Innovations.* Oxford University Press.

Wagner, A. (2009) *Paradoxical Life.* Yale University Press.

Wagner, A. (2005) *Robustness and Evolvability in Living Systems.* Princeton University Press.

Patents

Wagner, A. (2006) "Method for reconstructing pathways in large genetic networks from genetic perturbations." United States Patent 7,124,032.

Articles and Book Chapters

Submitted and in press

260. **A. Wagner.** (2025) Robustness and evolvability in molecular evolution. Reference Module in Life Sciences (online). doi.org/10.1016/B978-0-443-15750-9.00145-2. Elsevier

259. Chattopadhyay, G., Papkou, A., **Wagner, A.** The fitness landscape of the *E.coli* lac operator is highly rugged in two different environments. (submitted)

258. Casillas del Riego, A., **Wagner, A.** Simple multicellularity can be beneficial in patchy environments. (submitted).

257. Westmann, C.A., Goldbach, L., **Wagner, A.** Entangled adaptive landscapes facilitate the evolution of gene regulation by exaptation. (submitted)

256. Fuqua, T., Sun, Y., **Wagner, A.** The emergence and evolution of gene expression in genome regions replete with regulatory motifs. (in press)

255. Fuqua, T., **Wagner, A.** De novo emergence of more than 1000 promoters through mutagenesis of non-regulatory mobile DNA. (submitted)
254. Westmann, C.A., Goldbach, L., **Wagner, A.** The adaptive landscapes of three global *Escherichia coli* transcriptional regulators. (submitted)
253. Rechsteiner, M., Halliday, F.M., Giolai, M., **Wagner, A.**, Laine, A.-L. Patterns of local adaptation reverse along an elevation gradient in a host-pathogen interaction. (submitted).

Appeared

252. Westmann, C.A., Goldbach, L., **Wagner, A.** (2024) The highly rugged yet navigable regulatory landscape of the bacterial transcription factor TetR. *Nature Communications* **15**, 10745
251. Dasmeh, P., Zheng, J., **Wagner, A.** (2024) Rapid evolutionary change in trait correlations of a single protein. *Nature Communications* **15**, 3327.
250. Zheng, J. Guo, N., **Wagner, A.** (2024) High temperature delays and low temperature accelerates evolution of a new protein phenotype. *Nature Communications* **15**, 2495.
249. Mihajlovic, L., Iyengar, B.R., Baier, F., Barbier, I., Iwaszkiewicz, J., Zoete, V., **Wagner, A.**, Schaerli, Y. (2024) A direct experimental test of Ohno's hypothesis. *Elife*.
<https://doi.org/10.7554/eLife.97216.1.sa2>
248. **Wagner, A.** (2024) Genotype sampling for deep-learning assisted experimental mapping of fitness landscapes. *Bioinformatics* **40** (5), btae317.
247. Brewer, T., **Wagner, A.** (2024) Horizontal gene transfer of a key translation protein has shaped the polyproline proteome of bacteria. *Molecular Biology and Evolution* **41**, msae180
246. Schmutzer, M., Dasmeh, P., **Wagner, A.** (2024) Frustration can limit the adaptation of promiscuous enzymes through gene duplication and specialisation. *Journal of Molecular Evolution* **92** (2), 104-120.
245. Papkou, A., Garcia-Pastor, L., Escudero, J.A., **Wagner, A.** (2023) A rugged yet easily navigable fitness landscape of antibiotic resistance. *Science* **382**, eadh3860.
244. van Gestel, J., **Wagner, A.** Ackermann, M. Pleiotropic hubs drive bacterial surface competition through parallel changes in colony composition and expansion. (2023) *PLoS Biology* **21**, e3002338.
243. **Wagner, A.** (2023) Evolvability-enhancing mutations in the fitness landscape of an RNA and a protein. *Nature Communications* **14**, 3624.
242. Schmutzer, M., **Wagner, A.** (2023) Not quite lost in translation: Mistranslation alters adaptive landscape topography and the dynamics of evolution *Molecular Biology and Evolution* **40**, msad136.
241. **Wagner, A.** (2023) Mutational robustness and evolvability. pp 221-237 in *Evolvability: A unifying concept in evolutionary biology?* Hansen, T., Houle, D. Pavlicev, M., Pelabon, C. (Eds.) MIT Press, Cambridge MA.

240. Karve, S., Dasmeh, P., Zheng, J., **Wagner, A.** (2022) Low protein expression enhances phenotypic evolvability by intensifying selection on folding stability. *Nature Ecology and Evolution* **6**, 1155–1164.
239. **Wagner, A.** (2022) AI predicts the effectiveness and evolution of gene promoter sequences. *Nature* **603**, 399-400.
238. Karve, S., **Wagner, A.** (2022) Environmental complexity is more important than mutation in driving the evolution of latent novel traits in *E. coli*. *Nature Communications* **13**, 5904.
237. Toll-Riera, M., Olombrada, M., Castro-Giner, F., **Wagner, A.** (2022) A limit on the evolutionary rescue of an Antarctic bacterium from rising temperatures. *Science Advances* **8**, eabk3511
- 236. Wagner, A.** (2022) Nutrient competition increases invasion resistance during assembly of microbial communities. *Molecular Ecology* **31**:4188-4203.
235. Iyengar, B.R., **Wagner, A.** (2022) Bacterial Hsp90 predominantly buffers but does not potentiate the phenotypic effects of deleterious mutations during fluorescent protein evolution. *Genetics* **222**, iyac154.
234. Iyengar, B.R., **Wagner, A.** (2022) GroEL/S helps to purge deleterious mutations and reduce genetic diversity during adaptive protein evolution. *Molecular Biology and Evolution* **39**: msac047.
233. Brewer, T.E., **Wagner, A.** (2022) Translation stalling proline motifs are enriched in slow-growing, thermophilic, and multicellular bacteria. *The ISME Journal* **16**, 1065-1073
232. Moerman, F., Fronhofer, E.A., Altermatt, F. **Wagner, A.** (2022) Selection on growth rate and local adaptation drive genomic adaptation during experimental range expansions in the protist *Tetrahymena thermophila*. *Journal of Animal Ecology* **91**, 1088-1103.
231. Van Gestel, J., **Wagner, A.** (2021) Cryptic surface-associated multicellularity emerges through cell adhesion and its regulation. *PLoS Biology* **19(5)**, e3001250.
230. Karve, S., **Wagner, A.** (2021) Multiple novel traits without immediate benefits originate in bacteria evolving on single antibiotics. *Molecular Biology and Evolution* msab341
229. San Roman, M., **Wagner, A.** (2021) Diversity begets diversity during community assembly until ecological limits impose a diversity ceiling. *Molecular Ecology* **30**, 5874-5887
228. Dasmeh, P., **Wagner, A.** (2021) Yeast proteins may reversibly aggregate like amphiphilic molecules. *Journal of Molecular Biology* **434**, 167352
227. Schweizer, G., **Wagner, A.** (2021) Both binding strength and evolutionary accessibility affect the population frequency of transcription factor binding sequences in *Arabidopsis thaliana*. *Genome Biology and Evolution* **13**, evab273
- 226. Wagner, A.** Adaptive evolvability through direct selection instead of indirect, second-order selection. (2021) *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution* **338**: 395–404.

225. Dasmeh, P., Doronin, R., **Wagner, A.** (2021) The length scale of multivalent interactions is evolutionarily conserved in fungal and vertebrate phase-separating protein. *Genetics* **220**, iyab184.
224. Figueiredo, A.R.T., **Wagner, A.**, Kümmerli, R. (2021) Ecology drives the evolution of diverse social strategies in *Pseudomonas aeruginosa*. *Molecular Ecology* **30**, 5214-5228
223. Zheng, J., Bratulic, S., Lischer, H.E.L., **Wagner, A.** (2021) Mistranslation can promote the exploration of alternative evolutionary trajectories in enzyme evolution. *Journal of Evolutionary Biology* **34**: 1302-1315.
222. Zheng, J., Guo, N., **Wagner, A.** (2021) Mistranslation reduces mutation load in evolving proteins through negative epistasis with DNA mutations. *Molecular Biology and Evolution* **38**, 4792-4804
221. **Wagner, A.** (2021) Adaptive gene misregulation. *Genetics* **217**, iyaa044 (<https://doi.org/10.1093/genetics/iyaa044>).
220. Dasmeh, P., **Wagner, A.** (2021) Natural selection on the phase-separation properties of FUS during 160 million years of mammalian evolution. *Molecular Biology and Evolution* **38**, 940-951.
219. Zheng, J., Guo, N., **Wagner, A.** (2020) Strong selection enhances protein evolvability by increasing mutational robustness and foldability. *Science* **370**, 6521
218. San Roman, M., **Wagner, A.** (2020) Acetate and glycerol are not uniquely suited for the evolution of cross-feeding in *E. coli*. *PLoS Computational Biology* **16** (11), e1008433
217. Schweizer, G., **Wagner, A.** (2020) Genotype networks of 80 quantitative *Arabidopsis thaliana* phenotypes reveal substantial phenotypic evolvability despite pervasive epistasis. *PLoS Computational biology* **16** (8), e1008082.
216. Schmutzer, M., **Wagner, A.** (2020) Gene expression noise can promote the fixation of beneficial mutations in fluctuating environments. *PLoS Computational Biology* **16** (10), e1007727
215. Azpeitia, E., **Wagner, A.** (2020) Signaling pathways have an inherent need for noise to acquire information. *BMC Bioinformatics* **21**, 1-21
- 214. Wagner, A.** (2020) Information theory can help quantify the potential of new phenotypes to originate as exaptations. *Frontiers of Ecology and Evolution* **8**: 564071
213. Azpeitia, E., **Wagner, A.** (2020) Short residence times of DNA-bound transcription factors can reduce gene expression noise and increase the transmission of information in a gene regulation system. *Frontiers in Molecular Biosciences* **7**: 67
212. Moerman, F., Fronhofer, E.A., **Wagner, A.**, Altermatt, F. (2020) Gene swamping alters evolution during range expansions in the protist *Tetrahymena thermophile*. *Biology Letters* **16**, 20200244.
211. Moerman, F., Arquint, A., Merkli, S. **Wagner, A.**, Altermatt F., Fronhofer, E.A. (2020) Evolution under pH stress and high population densities leads to increased density-dependent fitness in the protist *Tetrahymena thermophile*. *Evolution* **74**, 573-586.

210. Zheng, J., Payne, J.L., **Wagner, A.** (2019) Cryptic genetic variation accelerates adaptive evolution by opening alternative paths towards diverse adaptive peaks. *Science* **365**, 347-353
209. van Gestel, J., Ackermann, M., **Wagner, A.** (2019) Microbial life cycles link global modularity in regulation to mosaic evolution. *Nature Ecology and Evolution* **3**, 1184-1196
208. Payne, J.L., **Wagner, A.** (2019) The causes of evolvability and their evolution. *Nature Reviews Genetics* **20**, 24–38.
207. Libby, E., Hebert-Dufresne, L., Hosseini, S.-R., **Wagner, A.** (2019) Syntrophy emerges spontaneously in complex metabolic systems. *PLoS Computational Biology* **15** (7), e1007169
206. Aguilar-Rodriguez, J., Fares, M.,A., **Wagner, A.** (2019) Chaperonin overproduction and metabolic erosion caused by mutation accumulation in Escherichia coli. *FEMS microbiology letters* **366** (10), fnz121.
205. Payne, J.L., Khalid, F., **Wagner, A.** (2018) RNA-mediated gene regulation is less evolvable than transcriptional regulation. *Proceedings of the National Academy of Sciences of the U.S.A.* **115**, E3481-E3490
204. Hosseini, S.-R., **Wagner, A.** (2018) Genomic organization underlying deletional robustness in bacterial metabolic systems. *Proceedings of the National Academy of Sciences of the U.S.A.* **115**, 7075-7080.
203. Sprouffske, K., Aguilar-Rodriguez, J., Sniegowski, P., **Wagner, A.** (2018) High mutation rates limit evolutionary adaptation in Escherichia coli. *PLoS Genetics* **14**, e1007324.
202. Schaerli, Y., Jimenez, A., Duarte, J.M., Mihajlovic, L., Renggli, J., Isalan, M., Sharpe, J., **Wagner, A.** (2018) Mechanistic causes of constrained phenotypic variation revealed by synthetic gene regulatory circuits. *Molecular Systems Biology* **14**, e8102.
201. San Roman, M., **Wagner, A.** (2018) An enormous potential for niche construction through bacterial cross-feeding in a homogeneous environment. *PLoS Computational Biology* **14**, e1006340
200. Aguilar Rodriguez, J., Peel, L., Stella, M., **Wagner, A.** Payne., J.A. (2018) The architecture of an empirical genotype-phenotype map. *Evolution* **72**, 1242-1260.
199. Aguilar-Rodriguez, J., **Wagner, A.** (2018) Metabolic determinants of enzyme evolution in a genome-scale bacterial metabolic network. *Genome Biology and Evolution* **10**, 3076-3088.
198. Bichsel, M., Barbour, A.D., **Wagner, A.** (2018) Dynamics of an insertion sequence infection in a spatially structured environment. *Journal of Biological Systems* **26**, 133-166.
197. Chu, H.-Y., Sprouffske, K., **Wagner, A.** (2018) Assessing the benefits of horizontal gene transfer by laboratory evolution and genome sequencing. *BMC evolutionary biology* **18**, 54
196. Catalan, P., **Wagner, A.**, Manrubia, S., Cuesta, J.A. (2018) Adding levels of complexity enhances robustness and evolvability in a multi-level genotype-phenotype map. *Journal of the Royal Society Interface* **15**, 20170516.

195. Vahdati, A.R., **Wagner, A.** (2018) Population size affects adaptation in complex ways: simulations on empirical adaptive landscapes. *Evolutionary Biology* **45**, 156-169, <https://doi.org/10.1007/s11692-017-9440-9>
194. Bratulic, S., Toll-Riera, M., **Wagner, A.** (2017) Mistranslation benefits adaptive evolution through purging of deleterious mutations. *Nature Communications* **8**, 15410.
193. Aguilar Rodriguez, J., Payne., J.A., **Wagner, A.** (2017) 1000 empirical adaptive landscapes and their navigability. *Nature Ecology and Evolution* **1**, 0045 (doi: 10.1038/s41559-016-0045)
192. Fortuna, M.A., Zaman, L., Ofria, C., **Wagner, A.** (2017) The genotype-phenotype map of an evolving digital organism. *PLoS Computational Biology* **13** (2), e1005414
191. **Wagner, A.** (2017) The White Knight hypothesis, or does the environment limit evolutionary innovations? *Trends in Ecology and Evolution* **32**, 131-140.
190. Hochberg, M. E., Marquet, P.A., Boyd, R., **Wagner, A.** (2017) Innovation: an emerging focus from cells to societies. *Philosophical Transactions of the Royal Society B* **372**: 20160414.
189. Chu, H.-Y., Sprouffske, K., **Wagner, A.** (2017) The role of recombination in evolutionary adaptation of *Escherichia coli* to a novel nutrient. *Journal of Evolutionary Biology* **30**: 1692–1711.
188. Hosseini, S.-R., **Wagner, A.** (2017) Constraint and contingency pervade the emergence of novel phenotypes in complex metabolic systems. *Biophysical Journal* **113**, 690-701
187. **Wagner, A.** (2017) Information theory, evolutionary innovations, and evolvability. *Philosophical Transactions of the Royal Society B* **372**: 20160416.
186. Fortuna, M.A., Zaman, L., **Wagner, A.**, Bascompte, J. (2017) Non-adaptive origins of evolutionary innovations increase network complexity in interacting digital organisms. *Philosophical Transactions of the Royal Society B* **372**: 20160431.
185. Vahdati, A.R., Sprouffske, K., **Wagner, A.** (2017) Effect of population size and mutation rate on the evolution of RNA sequences on an adaptive landscape determined by RNA folding. *International Journal of Biological Sciences* **13**: 1138.
184. Hosseini, S.-R., Martin, O.C., **Wagner, A.** (2016) Phenotypic innovation through recombination in genome-scale metabolic networks. *Proceedings of the Royal Society B: Biological Sciences* **283**: 20161536 (<http://dx.doi.org/10.1098/rspb.2016.1536>)
183. Toll-Riera, M., San Millan, A., **Wagner, A.**, MacLean, R.C. (2016) The genomic basis of metabolic evolutionary innovation in *Pseudomonas aeruginosa*. *PLoS Genetics* **12**(5), e1006005.
182. **Wagner, A.**, Ortman, S., Maxfield, R. (2016) From the primordial soup to self-driving cars: standards and their role in natural and technological innovation. *Journal of the Royal Society Interface* **13**, 20151086.
181. Aguilar-Rodríguez, J., Sabater-Muñoz, B., Montagud-Martínez, R. Berlanga, V. Alvarez-Ponce, D., **Wagner, A.**, Fares, M.A. The molecular chaperone DnaK is a source of mutational robustness. (2016) *Genome Biology and Evolution* **8**: 2979-2991.

180. Sprouffske, K., Aguilar-Rodriguez, J., **Wagner, A.** (2016) How archiving by freezing alters the genome-scale diversity of *Escherichia coli* populations. *Genome Biology and Evolution* **8** (5), 1290-1298.
179. Hosseini, S.-R., Martin, O.C., **Wagner, A.** (2016) The potential for non-adaptive origins of evolutionary innovations in central carbon metabolism. *BMC Systems Biology* **10** (1), 97
178. Vahdati, A.R., **Wagner, A.** (2016) Parallel or convergent evolution in human population genomic data revealed by genotype networks. *BMC Evolutionary Biology* **16**, 1.
177. Khalid, F., Aguilar-Rodríguez, J., **Wagner, A.**, Payne, J.L. (2016) Genonets server – A web server for the construction, analysis, and visualization of genotype networks. *Nucleic Acids Research*, **44**: W70-W76.
176. Sprouffske, K., **Wagner, A.** (2016) Growthcurver: An R package for obtaining interpretable metrics from microbial growth curves. *BMC Bioinformatics* **17**, 1.
175. Blattner, A.C., Aguilar-Rodriguez, J., Kränzlin, M., **Wagner, A.**, Lehner, C.F. (2016) *Drosophila* Nnf1 paralogs are partially redundant for somatic and germ line kinetochore function. *Chromosoma.*, 1-19. doi:10.1007/s00412-016-0579-4.
- 174. Wagner, A.**, Payne, J. L. (2016) Robustness and Evolvability in Molecular Evolution. In *Encyclopedia of Evolutionary Biology*, Elsevier, pp. 484 - 488.
173. Hayden, E., Bendixsen, D.P., **Wagner, A.** (2015) Intramolecular phenotypic capacitance in a modular RNA molecule. *Proceedings of the National Academy of Sciences* **112**, 12444-12449
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17. Dudgeon, S., **Wagner, A.**, Vaisnys, J.R., Buss, L.W. (1999) Dynamics of gastrovascular circulation in the hydrozoan *Podocoryne carnea*: the one-polyp case. *Biological Bulletin* **196**, 1-17
16. **Wagner, A.** (1998) A computational "genome walk" technique to identify regulatory interactions in gene networks. In: Altman, R.B., Dunker, K.A., Hunter, L., Klein, T.E. (eds.), *Proceedings of the Pacific Symposium for Biocomputing 1998*, 264-278.
15. **Wagner, A.**, Dudgeon, S., Vaisnys, R., and L.W. Buss. (1998) Non-linear oscillations in the marine invertebrate *Podocoryne carnea*. *Naturwissenschaften* **85**, 117-120.
14. **Wagner, A.** (1998) Distribution of transcription factor binding sites in the yeast genome suggests abundance of coordinately regulated genes. *Genomics* **50**, 293-295
13. **Wagner, A.** (1998) The fate of duplicated genes: loss or diversification? *BioEssays* **20**, 785-788
12. Lavorgna, G., Boncinelli, E., **Wagner, A.** and T. Werner (1998) Detection of potential target genes in silico? *Trends in Genetics* **14**, 375-376
11. **Wagner, A.** (1997) Models in the biological sciences. In Falkenburg, B., Hauser, S. (eds.) *Dialektik*, 1997/1, Felix Meiner, Hamburg
10. **Wagner, A.** (1997) A computational genomics approach to the identification of gene networks. *Nucleic Acids Research* **25**, 3594-3604.
9. **Wagner, A.** (1996) Does evolutionary plasticity evolve? *Evolution* **50**, 1008-1023.
8. **Wagner, A.** (1996) Can nonlinear epigenetic interactions obscure causal relations between genotype and phenotype? *Nonlinearity* **9**, 607-629.
7. **Wagner, A.** (1996) Genetic redundancy and its evolution in networks of transcriptional regulators. *Biological Cybernetics* **74**, 559-569.
6. **Wagner, A.**, Blackstone, N., Cartwright, P., Dick, M., Misof, B., Snow, P., Wagner, G.P., Bartels, J., Murtha, M. and J. Pendleton. (1994) Surveys of gene families using polymerase chain reaction: PCR selection and PCR drift. *Systematic Biology* **43**, 250-261.

- 5. Wagner, A.** (1994) Evolution of gene networks by gene duplications: a mathematical model and its implications on genome organization. *Proc. Natl. Acad. Sci. USA.* **91**, 4387-4391.
- 4. Wagner, A.** (1994) Reductionism in Evolutionary Biology: A Perceptual Artifact? in *1993 Lectures in Complex Systems*, eds. D. Stein and L. Nagel, Santa Fe Institute Studies in the Sciences of Complexity, Lect. Vol. X, Reading, MA: Addison-Wesley.
- 3. Wagner, A.,** Wagner, G.P. and P. Similon. (1994) Epistasis can facilitate the evolution of reproductive isolation by peak shifts: a two-locus two-allele model. *Genetics* **138**, 533-545.
2. Belazzi, T., **Wagner, A.**, Wieser, R., Schanz, M., Adam, G., Hartig, A. and H. Ruis. (1991) Negative regulation of transcription of the *Saccharomyces cerevisiae* catalase T (*CTTI*) gene by cAMP is mediated by a positive control element. *EMBO J.* **10**, 585-592.
1. Wieser, R., Adam, G., **Wagner, A.**, Schueller, C., Marchler, G., Ruis, H., Krawiec, Z. and T. Bilinski. (1991) Heat shock factor-independent heat control of transcription of the *CTTI* gene encoding the cytosolic catalase T of *Saccharomyces cerevisiae*. *J. Biol. Chem.*, **19**, 12406-12411.

Invited Lectures (since 2000)

2025

- 214 European Soc. of Pediatric Otorhinolaryngology (ESPO) Congress (Keynote), Stuttgart, GERMANY
 213 Department of Philosophy, Vienna, AUSTRIA
 212 Complexity Systems Hub, University of Vienna, Vienna AUSTRIA
 211 Concepts in Evolutionary Biology, MPI for evolutionary Biology, Plön, GERMANY

2024

- 210 The Santa Fe Institute, Santa Fe, NM, USA
 209 Institute for Philosophy in Biology and Medicine, University of Bordeaux, France
 208 Complex Systems Summer School, Santa Fe, NM, USA

2023

- 207 Instituto de Neurociencia, Facultad de Ciencias, Universidad de Valparaíso, CHILE
 206 Dept. Chemistry, Universidad Técnica Federico Santa Maria, Valparaiso, CHILE
 205 LXVI Annual Meeting of the Chilean Society of Biology, Valparaiso, CHILE
 204 Centro Ciencia & Vida, Universidad San Sebastian, Santiago, CHILE
 203 Facultad de Ciencias Biológicas, Pontificia Universidad Católica, Santiago, CHILE
 202 Puerto de Ideas Biobío Festival, Concepcion, CHILE
 201 Complex Systems Summer School, Santa Fe, NM, USA

2022

- 200 The Santa Fe Institute, Santa Fe, NM, USA
 199 Dept. of Bioinformatics, University of Texas Southwestern, Dallas, TX, USA
 198 Complex Systems Summer School, Santa Fe, NM, USA
 197 Institute for Biochemistry and Biology, University of Potsdam, GERMANY
 196 Distinguished Speaker Seminar Series, MPI for biology, Tübingen, GERMANY
 195 "Peregrí Casanova" Honorary Lecture, University of Valencia, SPAIN

2019

- 194 ETH Zurich, Department of Biology PhD lecture series, Zurich, SWITZERLAND
 193 Center for Advanced Study, Oslo, NORWAY

192 European Molecular Biology Laboratory, Heidelberg, GERMANY
191 The Santa Fe Institute, Santa Fe, NM, USA
190 Institute for Biodiversity and Ecosystems Dynamics, Univ. of Amsterdam, THE NETHERLANDS
189 Complex Systems Summer School, Santa Fe, NM, USA
188 Molecular evolution workshop, Jyväskylä, FINLAND

2018

187 The Santa Fe Institute, Santa Fe, NM
186 Department of Genetics, Cambridge University, Cambridge, UK
185 Institute for New Economic Thinking (INET), Oxford University, Oxford, UK
184 Oxford Martin School, Oxford University, Oxford, UK
183 MRC London Institute of Medical Sciences LMS/Imperial College London, UK
182 Complex Systems Summer School, Santa Fe, NM, USA
181 Indo Swiss primer Symposium, University of Zurich, SWITZERLAND

2017

180 Keynote, European Society of Evolutionary Biology (ESEB) 2017, Groningen, THE NETHERLANDS
179 The Santa Fe Institute, Santa Fe, NM, USA
178 Complex Systems Summer School, Santa Fe, NM, USA
177 Gordon Research Conference “Molecular Mechanisms in Evolution”, Easton, MA, USA
176 Department of Biology, University of Konstanz, GERMANY
175 Workshop “Quantifying Biological Complexity”, Arizona State University, Tempe, AZ, USA

2016

174 British Ecological Society meeting, Liverpool, UK
173 Zoological Institute, University of Basel, SWITZERLAND
172 The Santa Fe Institute, Santa Fe, NM, USA
171 XXI Population Genetics and Evolution Seminar, Sitges, SPAIN
170 Lake Como School of Advanced Studies, Como ITALY
169 EMBO Member’s meeting, Heidelberg, GERMANY
168 Workshop “Understanding Life”, University of Bern, SWITZERLAND
167 Conference “Evolutionary Systems Biology”, Hinxton, UK,
166 Department of Molecular Evolution and Development, University of Vienna, AUSTRIA

2015

165 Complex Systems Winter School, IISER Mohali, INDIA
164 Winter School on Quantitative Systems Biology, Intl. Centre for Theoretical Sciences, Bangalore, INDIA
163 Workshop “From Genome to Gene”, Jacques Loeb Centre, Ben-Gurion University of the Negev, Beer-Sheva, ISRAEL
162 Keynote lecture, LyonSysBio Systems Biology Conference, Villeurbanne, FRANCE
161 BioFrontiers Institute, University of Colorado, Boulder, CO, U.S.A.
160 Workshop “Innovation as Search on a Space of Possibilities”, Santa Fe Institute, Santa Fe, NM, USA
159 Laboratoire de Biologie Moléculaire et Cellulaire des Eucaryotes, CNRS, Université Pierre et Marie Curie, Paris, FRANCE
158 Institute of Biotechnology, University of Helsinki, Helsinki, FINLAND

2014

157 The Royal Institution, London, UK
156 Institute for Population Genetics, Vienna, AUSTRIA
155 Conference “From functional genomics to systems biology”, EMBL, Heidelberg, GERMANY
154 Workshop “Origins of novelty in biological, social, and technological systems”, The Santa Fe, Institute, Santa Fe, NM, USA
153 VIBes in biosciences Ph.D student symposium, Antwerp, BELGIUM
152 NTNU Biotechnology Distinguished Speaker Series, Trondheim, NORWAY
151 European Conference on Complex Systems 2014, Lucca, ITALY

150 Symposium “Is Innovation Evolutionary?”, Millbank House, House of Lords, London, ENGLAND
149 Summer School, Santa Fe Institute, Santa Fe, NM, USA
148 Facultad de Ciencias, UNAM, Mexico City, MEXICO
147 Instituto de Fisiología Celular, UNAM, Mexico City, MEXICO

2013

146 Department of Biology, Université Laval, Québec, CANADA
145 Workshop “Out of the box thinking”, Santa Fe Institute, Santa Fe, NM, USA
144 FEBS Congress 2013, Bioinformatics Symposium (keynote), St. Petersburg, RUSSIA
143 Summer School, Santa Fe Institute, Santa Fe, NM, USA
142 Dept. of Bionanoscience, Delft University, The NETHERLANDS
141 Centre for Ecological and Evolutionary Studies, Univ. of Groningen, the NETHERLANDS
140 Systems Biology Program, Centro Nacional de Biotecnología (CNB), Madrid, SPAIN
139 Evolutionary Systems Biology Workshop, Konrad Lorenz Institute, Vienna, AUSTRIA
138 Dept of Genetics & Evolution, University of Geneva, SWITZERLAND
137 Synthetic and Systems Biology Center, University of Edinburgh, SCOTLAND

2012

136 SMBE 2012 - Annual Meeting of the Society for Molecular Biology and Evolution, Dublin, IRELAND
135 Workshop “Robustness in biological systems”, MBI, Ohio State University, Columbus, Ohio, U.S.A.
134 Department of Genetics, Harvard University, Boston, MA, U.S.A.
133 Institute for Molecular and Cellular Biology of Plants (IBMCP), Valencia, SPAIN
132 Laboratory of Theoretical Physics and Statistical Models (LPTMS), Univ. Paris 11, Orsay, FRANCE

2011

131 John Innes Centre, Norwich, UK
130 The Santa Fe Institute, Santa Fe, NM, USA
129 Mathematical Models in Ecology and Evolution 2011 (Keynote), Groningen, The NETHERLANDS
128 13th Congress of the European Society of Evolutionary Biology (ESEB), Tuebingen, GERMANY
127 13th joint PhD retreat of the MDC and FMP (Keynote), Berlin, GERMANY
126 University of Basel, BC² Seminar Series, Basel, SWITZERLAND
125 Workshop “Trends and Controversies in Evol. Developmental Biology”, Ringberg Castle, GERMANY
124 Institute of Molecular Biology, Academia Sinica, Taipei, TAIWAN
123 Institute Seminar, A*star Bioinformatics Institute (BII), SINGAPORE

2010

122 Seminar on Modeling in Life Sciences, Clusters de Recherche Rhone-Alpes, Lyon, FRANCE
121 Research Priority Program Symposium in Systems Biology, Monte Verita, Ascona, SWITZERLAND
120 Santa Fe Institute, Santa Fe, NM, USA
119 Berlin Summer Meeting 2010, Max Delbrueck Center for Molecular Medicine, Berlin, GERMANY
118 10th SMBE 2010 - Annual Meeting of the Society for Molecular Biology and Evolution, Lyon, FRANCE
117 1st EMBL/CRG Systems Biology Workshop on “The Evolution of Biological Networks”, Center for Genomic Regulation, Barcelona, SPAIN
116 Keynote lecture, XXVII European Society for Biochemistry and Physiology (ESCBP) meeting, Alessandria, ITALY
115 Frontiers of Multidisciplinary Research: Mathematics, Engineering and Biology, University of Exeter, UK
114 Indo-Swiss Bioinformatics Symposium, IIT Delhi, INDIA
113 Jawaharlal Nehru University (JNU), Delhi, INDIA
112 Ludwig Maximilians University Munich, Dept. of Evolutionary Biology, Munich, GERMANY
111 Forschungsmuseum Alexander Koenig, Bonn, GERMANY
110 Westfälische Wilhelms University, Institute for Evolution and Biodiversity, Münster, GERMANY

2009

109 The Abdus Salam International Center for Theoretical Physics, Conference “From biological networks to cellular function”, Trieste, ITALY
 108 Santa Fe Institute, Science Board Meeting and Symposium, “Foundations of Molecular Evolution”, NM, USA
 107 Imperial College, Ctr. for Complexity Science, “On the relationship between robustness and evolutionary innovation”, London, UK
 106 The Abdus Salam International Center for Theoretical Physics, Summer School, Trieste, ITALY
 105 International Symposium on Complex Systems Biology, Tokyo, JAPAN
 104 2009 Meeting of the European Society for Evolutionary Biology (ESEB), Turin, ITALY
 103 Institute of Developmental Biology and Cancer, University of Nice Sophia-Antipolis, Nice, FRANCE
 102 The 10th International Conference on Systems Biology (ICSB), Stanford University, Palo Alto, CA, USA
 101 Keynote lecture, 60th Panhellenic Congress on Molecular Biology & Biochemistry, Athens, GREECE
 100 Institute of Computational Science, ETH Zurich, Molecular Evolution Seminar Series, Zurich, SWITZERLAND
 99 Keynote lecture, 11th Annual Congress of the Italian Life Sciences Federation, Riva del Garda, ITALY
 98 Institut Pasteur, Paris, FRANCE

2008

97 BiRC, University of Aarhus, Denmark
 96 National Academies Keck Foundation Initiative on Complex Systems, Beckman Center, Irvine, CA
 95 Complex Systems Summer School, Santa Fe Institute, Santa Fe, NM
 94 Centre de Regulacio Genomica, Barcelona, Spain
 93 9th International Conference on Systems Biology (ICSB 2008), Goeteborg, Sweden
 92 COMPLEX Meeting on Evolution and Development, University College London, UK
 91 Keynote lecture, Early career scientist symposium, University of Michigan, Ann Arbor, MI
 90 The Santa Fe Institute, Santa Fe, NM

2007

89 Gordon Research Conference “Microbial Population Ecology”, Andover, New Hampshire, USA
 88 The Santa Fe Institute, Santa Fe, New Mexico, USA
 87 Workshop “Evolvability”, Varenna, ITALY
 86 Zoology Department, University of Cambridge, ENGLAND
 85 Department of Anthropology, University of Zurich, Zurich, SWITZERLAND
 84 Kavli Institute for Theoretical Physics, Santa Barbara, California, USA
 83 Department of Physical Chemistry, University of Zurich, Zurich, SWITZERLAND
 82 Department of Biology, California State University, Northridge, California, USA
 81 URPP Systems Biology Retreat, Braunwald, SWITZERLAND
 80 Swiss Institute of Bioinformatics Meeting, Grindelwald, SWITZERLAND
 79 Department of Biology, Indiana University, Bloomington, IN, USA
 78 Biozentrum Basel, Basel, SWITZERLAND
 77 Workshop “Biology without borders”, CoSBI, Trento, ITALY
 76 Department of Ecology and Evolution, University of Lausanne, Lausanne, SWITZERLAND

2006

75 NESCent workshop on genetic networks. National Evolutionary Synthesis Center, Marathon, FL, USA
 74 Workshop “Evolution of gene regulatory logic” The Santa Fe Institute, Santa FE, NM, USA
 73 Gordon Research Conference “Biology of Aging”, Ventura, CA, USA
 72 Complex Systems Summer School, Santa Fe, NM, USA
 71 Systems Biology Research Priority Program, Inst. for Cancer Biology, University of Zurich, SWITZERLAND
 70 Division of Biological Science, Ecology and Evolution, University of Chicago, Chicago, IL, USA
 69 Department of Organismal and Evolutionary Biology. Harvard University, Cambridge, MA, USA
 68 Biochemistry Department, University of Zurich, Zurich, SWITZERLAND
 67 Biotechnology Research Institute, Montreal, CANADA
 66 Complex Systems Summer School, Beijing, CHINA
 65 Department of Zoology, University of Bern, Bern, SWITZERLAND

2005

64 Workshop “Complex biomolecular networks: structure, evolution, and function” Montauk, LI, USA

63 Genopole Complexity Advanced Course, Evry, FRANCE
62 Workshop "Technology of Nature, Nature of Technology", UNM, NM, USA
61 Institut Jacques Monod, Paris, FRANCE
60 Institut National de la Recherche Agronomique (INRA), Versailles, FRANCE
59 Department of Ecology and Evolutionary Biology, Tucson, AZ
58 Workshop "Stochastic phenomena in gene regulation", Rice University, Houston, TX, USA
57 Biocomplexity Seminar, UNM Biology, NM USA
56 Institut Curie, Paris, FRANCE
55 Conference "Bioinformatics 2005", Soc. for Bioinformatics in the Nordic Countries, Tartu, ESTONIA
54 Spring School "Modelisation de systemes biologiques complexes", Montpellier, FRANCE

2004

53 University of Pennsylvania, Bioinformatics Forum at the Penn Center for Bioinformatics, PA, U.S.A.
52 University of Illinois at Urbana-Champaign, Symposium "Understanding Complex Systems", IL, U.S.A.
51 Gordon Research Conference on Molecular Evolution, Ventura, CA, USA
50 Department of Genetics, University of Georgia, Athens, GA, USA
49 Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, NM, USA
48 ETH Zurich, SWITZERLAND
47 Max Planck Institut für Physik Complexer Systeme, Workshop "Molecules, networks, populations", Dresden, GERMANY
46 INRIA and Universite Claude Bernard, Seminar on Computational Biology, Lyon, FRANCE
45 UMR de Génétique Végétale INRA/CNRS/UPS/INAPG, Ferme du Moulon, Gif-sur-Yvette, FRANCE
44 University of Zurich Medical School, SWITZERLAND
43 Institut Pasteur, Paris, FRANCE

2003

42 Erwin Schrödinger Institute for Mathematical Physics, Vienna, AUSTRIA
41 Institute of Biochemistry, Technical University Graz, AUSTRIA
40 Instituto de Ecología, Universidad Autónoma de México, Mexico City, MEXICO
39 Lorne Genome Conference, Lorne, AUSTRALIA
38 Center For Advanced Study, University of New Mexico, Albuquerque, U.S.
37 Genopole, Evry, FRANCE
36 Center for Nonlinear Studies, Los Alamos National Laboratory, 23rd annual conference; "Networks: structure, dynamics, and function", Santa FE, New Mexico, U.S.
35 Institut Henri Poincaré, Paris, FRANCE
34 Virtual Conference on Genomics and Bioinformatics, North Dakota State University, Fargo, N.D., U.S.
33 International Conference on Bioinformatics, Atlanta, U.S.
32 Aegean Conference "Pathways, networks, and systems: theory and experiments", Santorini, GREECE

2002

31 Department of Physiology, Johns Hopkins Univ., Baltimore, MD, U.S.A.
30 Workshop "Statistical mechanics of complex networks", Asia-Pacific Ctr. for Theoret. Phys., Pohang, KOREA
29 Inaugural New Mexico Genomics Symposium, Univ. New Mexico, NM, U.S.A.
28 Workshop "Robustness and Evolvability of Molecules and Microbes", Santa Fe Institute, U.S.A
27 Symposium on Macromolecular Networks, Institut Pasteur, Paris, FRANCE
26 Workshop "Genetics of phenotypic robustness", Santa Fe Institute, U.S.A
25 Advanced Materials Laboratory, Sandia National Laboratory, New Mexico, U.S.A.
24 Dept. of Genetics and Ctr. for Comput. Genomics, Case Western Reserve Univ. Cleveland, OH, U.S.A.
23 Santa Fe Institute Summer School, U.S.A.
22 Center for Nonlinear Studies, Los Alamos National Laboratory, New Mexico, U.S.A.
21 Symposium "Complex Regulation Across Species Boundaries", Harvard University, U.S.A.

2001

20 Centre for Cellular and Molecular Biology, Hyderabad, INDIA
19 Gordon Research Conference on "Quantitative Genetics and Genomics", Ventura, California, U.S.A.
18 Business Network Meeting on "Network Dynamics", Santa Fe Institute, New Mexico, U.S.A.
17 Cologne Spring Meeting on Evolutionary Genomics and Bioinformatics, Cologne, GERMANY
16 Center for Interdisciplinary Research, Bielefeld, GERMANY

- 15 Program in Proteomics and Bioinformatics, University of Toronto, CANADA
- 14 Institute for Theoretical Physics, University of Santa Barbara, U.S.A.
- 13 Workshop on mathematical models in molecular biology, The Santa Fe Institute, New Mexico, U.S.A.
- 12 VIIIth international congress of the European Society for Evolutionary Biology, Aarhus, DENMARK.
- 11 Symposium on the evolution of genetic networks, University of Oregon, Eugene, Oregon, U.S.A.
- 10 Division of Biological Sciences, UC Davis, California, U.S.A.
- 9 DOE Workshop “Beyond the identification of transcribed sequences” Washington D.C., U.S.A.

2000

- 8 Southwest Genomics and Biotechnology Alliance Workshop, Sandia Natl. Lab., New Mexico, U.S.A.
- 7 Department of Biology, Arizona State University, Tempe, Arizona, U.S.A.
- 6 Symposium on the consequences of gene duplications; Univ. of Oregon, Eugene, U.S.A.
- 5 Charles Darwin Research Station, Galápagos, ECUADOR
- 4 Workshop “Structure and Dynamics of Complex Interactive Networks”, The Santa Fe Institute, NM, U.S.A.
- 3 National Center for Genome Research, Santa Fe, New Mexico, U.S.A.
- 2 Center for the Study of Complex Systems, University of Michigan, Michigan, U.S.A.
- 1 University of New Mexico School of Medicine, New Mexico, U.S.A.