

J. Peter Gogarten

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Education

Postdoc 8/89 UC Santa Cruz, USA, Molecular Biology and Evolution
Ph.D. 7/86 University of Giessen, FRG; Botany (*summa cum laude*)
Diploma 4/82 University of Tübingen, FRG; Botany, Biochemistry, Microbiology, Zoology
Vordiploma 10/78 University of Tübingen, FRG; Botany, Biochemistry, Biomathematics, Zoology

Appointments and Employment History

3/2010-present Board of Trustees Distinguished Professor, Molecular and Cell Biology, University of Connecticut
10/96-present Adjunct Professor of Ecology and Evolutionary Biology, University of Connecticut
Spring 2023 Erskine Fellow at the University of Canterbury, Christchurch, New Zealand
Spring 2016 Visiting Professor at the National Autonomous University of Mexico
1/03-3/15 Co-Head of the Bioinformatics Services Facility at the University of Connecticut Institute for Systems Genomics
9/1996-3/2010 Full Professor of Molecular and Cell Biology, University of Connecticut
Fall 2009 Visiting Professor at Tel Aviv University
Summers '99-'10 Visiting Professor at the Mannheim University of Applied Sciences
Spring 1996 Visiting Professor at the University of Salzburg, Austria
Fall 1995 Offer to chair the Plant Physiology section at the University of Jena, FRG; rejected fall 96
9/95-9/96 Associate Professor of Molecular and Cell Biology, University of Connecticut
3/93-9/98 Co-Head of the Plant Cell Culture Facility of the University of Connecticut Biotechnology Center
9/89-8/95 Assistant Professor of Molecular and Cell Biology, University of Connecticut
8/87-8/89 Postdoctoral Fellow in the Laboratory of Prof. Dr. Lincoln Taiz, U.C. Santa Cruz
5/82-5/87 Research Fellow in the Laboratory of Prof. Dr. F.-W. Bentrup, Institute for Botany, University of Giessen, FRG
6/80-2/82 Research and Teaching Assistant in Plant Physiology, University of Tübingen, FRG

Professional Activities and Honors

5/2020 Mentorship Excellence Award, University of Connecticut
1/2019-present Member of the Institute for Systems Genomics' Scientific Advisory Committee
8/2014-11/2017 Steering Committee Member of the Institute for Systems Genomics
<http://isg.uconn.edu/>
8/2012-present Co-organizer of the Center for Microbial Systems, Ecology and Evolution
<http://cmsee.uconn.edu>
6/2012-6/2016 Chair of the MCB Microbiology Program

7/2011-present	Fellow of the International Society for the Study of the Origin of Life
2/2011-present	Fellow of the American Academy of Microbiology
5/2009-present	Member of the Connecticut Academy of Science and Engineering
2009/2010	Fulbright and Edmond J. Safra Bioinformatics Program Fellow at Tel Aviv University
6/2008-6/2011	Member of the Executive Council of the International Society for the Study of the Origin of Life
12/2007	Member of BioMed Central's list of 'Hot100' scientists
7/2007-6/2010	Senator of the University of Connecticut Senate
10/2006	Alumni Association Distinguished Faculty Award in Research Excellence
9/06-8/08	Member Provost's Library Advisory Committee
9/03-8/09	Member of UConn's Institutional Biosafety Committee
6/02-6/07	Associate of the Canadian Institute for Advanced Research Program in Evolutionary Biology
6/01-8/04	Member of the Committee on the Origins and Evolution of Life of the National Academy of Sciences Space Studies Board
9/02-12/02	Visiting researcher at the University of Queensland with Mark Ragan
7/00	Elected chair for the Origin of Life Gordon Conference 2003 (vice-chair 2002)
5/97-00	Member of the Exobiology Discipline Working Group (NASA)
1/00-12/02	Regional Representative, International Society for the Study of the Origin of Life
9/90-9/95	Chair of the Plant Cell and Molecular Biology Program, Dept. Molecular and Cell Biology, University of Connecticut
9/90-present	University of Connecticut Graduate School Faculty
8/87-8/89	Fellowship from the German Science Foundation (DFG)
9/87	Justus-Liebig-University prize for the best dissertation in the field of natural sciences during 1986

Editorial Appointments

8/2015-present	Associate Editor of Evolutionary and Genomic Microbiology for <i>Frontiers in Microbiology</i> , <i>Frontiers in Genetics</i> and <i>Frontiers in Ecology and Evolution</i>
8/2015-present	Member of the Editorial Board of the <i>International Journal of Microbiology</i>
8/2011-present	Executive Editor of <i>Origins of Life and Evolution of the Biosphere</i>
9/2008-present	Associate Editor of <i>BMC Bioinformatics</i>
1/2008-present	Associate Editor of <i>BMC Evolutionary Biology</i>
1/05-12/07	Member of the Editorial Board of <i>BMC Evolutionary Biology</i>
1/05-present	Member of the Editorial Board of <i>Biology Direct</i>
1/96-8/2011	Member of the Editorial Board of <i>Origins of Life and Evolution of the Biosphere</i>
1/96-12/98	Member of the Editorial Board of <i>Botanica Acta</i>

Research Interests and Accomplishments.

Gogarten is best known for rooting the tree of life using an ancient gene duplication in ATPases/ATPsynthases that predated the divergence of the three cellular domains. Using this information, he inferred properties of the last universal common; and he suggested correlations between molecular phylogenies and Earth's early history.

Genes that adapt organisms to an ecological niche often are exchanged within a niche across species boundaries as exemplified by type 3 secretion systems and the sialic acid utilization gene cluster in *Aeromonads* and related *Gammaproteobacteria*. Whole genome sequencing combined with comparative genomics (phylogenetics and composition-based analyses) allows identification of the gene cluster that are important for the interactions between bacteria and for colonization of ecological niches.

Selection can act on genes, individuals in a population, groups of organisms, and multi-species communities. Inteins, aka self-splicing protein introns, are selfish genetic elements that often also harbor a homing endonuclease domain that allows for invasion of previously uninvaded homologs. These molecular parasites provide a means to trace gene flow, and they illustrate that the apparent result of group selection (increased recombination rate) is better explained using a gene centered view of evolution.

Gogarten was one of the pioneers recognizing the importance of horizontal gene transfer in microbial evolution – he recently was dubbed as one of the four horsemen of the gene transfer apocalypse. The concept of exchange groups and of pan-genomes as a shared genetic resource have dramatically changed the understanding of microbial evolution and of the approaches to reconstruct evolutionary history.

Reviewer

Agencies NSF, USDA, DOE, National Research Council, NASA, BARD, Fonds zur Förderung der wissenschaftlichen Forschung (Austria), Israel Science Foundation, European Science Foundation, German Science Foundation (DFG), Canadian MRC and NSERC, Recherches en sciences et en génie Canada (CRSNG), German Israeli Foundation for Scientific Research and Development

Journals Biochem. Biophys. Archives, Biochemistry Journal, Biology Direct, Botanica Acta, BMC Bioinformatics, BMC Genomics, BMC Molecular Evolution, Cell Stress and Chaperones, Comparative Biochemistry, Gene, Genetics, Genome Biology, Genome Research, Geology, Journal Biological Chemistry, Journal for the Origin of Life and Evolution of the Biosphere, Journal of Molecular Biology, Journal of Molecular Evolution, Molecular Biology and Evolution, Microbial Reviews, Nature, Nature Reviews in Microbiology, Plant Cell, Plant Physiology, Proceedings of the National Academy of Sciences, Science, and Trends in Ecology and Evolution

Books Freeman, Simon and Schuster, Oxford University Press, John Hopkins University Press, MIT Press, and Sinauer

Meetings co-organized:

1. "Trash to Treasure and Treasure to Trash: Invasion, Persistence, Neofunctionalization, and Gene Decay in Evolution", Symposium at the Society for Molecular Evolution Annual Meeting, Yokohama, Japan, July 8-12, 2018
2. "The role of Horizontal Gene Transfer in Innovation" Symposium at the Astrobiology Science Conference, Atlanta GA, April 16-20, 2012
3. "6th International Symposium on Bioinformatics Research and Applications (ISBRA'10)", Program Chair, University of Connecticut, Storrs, Connecticut, USA, May 23-26, 2010.
4. "Ancient Life and Synthetic Biology: Crossroad of the Past and Future" Symposium at the Astrobiology Science Conference, League City, TX, April 26-29, 2010
5. "Horizontal Gene Transfer and the Tree/Web of Life." Symposium at the 2009 ASM General Meeting, Philadelphia, May 20, 2009
6. "Lateral Gene Transfer and the Origins of Eukaryotes", Vancouver, British Columbia, May 5-9, 2004
7. "Gordon Research Conference on the Origin of Life", Chair in Summer 2003
8. "Gordon Research Conference on the Origin of Life" Co-Chair in Spring 2002,

9. "Life: from Local Origins to Global Persistence" University of New Hampshire, Durham, June 8-10, 1998
10. Annual New England Molecular Evolutionary Biologists (NEMEB) Meeting, Storrs, November 1995

Member of seven editorial boards, including *Frontiers in Genetics* (Associate Editor), *BMC Bioinformatics* (Associate Editor) and *BMC Evolutionary Biology* (Associate Editor).

Development of undergraduate courses in molecular evolution and bioinformatics, including a course open to freshmen on the analysis of phage genomes (MCB 1201) part of the SEA-PHAGES program), and a hands-on introduction to molecular evolution and bioinformatics (MCB 3421).

Co-organizer of the Center for Microbial Systems, Ecology and Evolution, which facilitates communication and collaboration between the more than forty microbiologists from different campuses, colleges and departments at the University of Connecticut

Participant in programs that provide internships to highschool and college students from underrepresented groups, including the McNair Scholars and Kent Cooke Foundation's Young Scholars Senior Summit program.

Society Memberships

1. International Society for the Study of the Origin of Life
2. American Society for Microbiology
3. Society for Molecular Biology and Evolution

FUNDING HISTORY

Past Funding (last ten years)

- "Rare genes and alleles in halophilic archaeal populations and communities" PI: Johann Peter Gogarten, CoPIs: R. Thane Papke (UConn), Uri Gophna (TAU), Lilach Hadani (TAU), NSF/MCB-BSF, 06/01/2017 – 5/31/2023, Total Award Amount UConn: \$920,628
- "Integrated Research to Improve On-Farm Animal Health in Salmonid Aquaculture": PI: Joerg Graf (UConn), CoPI: J. P. Gogarten, USDA, 09/01/15 - 07/31/20, Total award Amount: \$819,000.-
- "Understanding Horizontal Gene Transfer in Bacteria and Archaea: Units of Transfer and Modes of Integration" PI: Mukul S. Bansal, CoPIs: Joerg Graf, J. Peter Gogarten, NSF, 07/01/2016 - 06/30/2021, Total Award Amount \$ 600,000.-
- "How Selfish Elements Impact and Reflect Speciation and Recombination in Archaea" PIs: U. Gophna (Tel Aviv University), J.P. Gogarten (University of Connecticut); CoPI: R.T. Papke (University of Connecticut), Binational Science Foundation United States Israel, 10/1/2014- 9/31/2018, Total Award Amount \$230,000.-
- "Use of horizontal gene transfer frequencies to place extinct lineages of microorganisms on the Tree of Life" PI: J. Peter Gogarten, NASA Exobiology Program, 3/8/2013 – 3/7/2017, Total Award Amount \$337,287.-
- "Horizontal gene transfer and between phyla relationships", PI: J. Peter Gogarten, CoPIs: Kenneth Noll (UConn), Thane Papke (UConn), Jinling Huang (ECU), Ying Xu (UGA) NSF AToL, 1/1/2009- 12/31/2013, Total award Amount: \$2,500,000.-
- "Genome-based Investigations into the Nature of the Common Ancestor of the Thermotogales" PI: Kenneth Noll, CoPI: J. P. Gogarten, NASA Exobiology Program, September 1st, 2008 – May 13th, 2013, Total Award Amount: \$597,936.-
- "Use of Horizontal Gene Transfer Frequencies to Place Extinct Lineages of Microorganisms on the Tree of Life", PI: J. Peter Gogarten, University of Connecticut Research Foundation, July 1, 2011 - June 31, 2012, \$ 25,000.-

- “Exploration of Sequence Space and the Evolution of the Genetic Code”, PI: J. Peter Gogarten, NASA Exobiology Program, approved (2007-2010), Total award Amount: \$260,507.-
- "Exploration of Novel Methods to Visualize Genome Evolution", PI: J. Peter Gogarten, CoPI: Lutz Hamel (URI), NASA AISR Program, 1/1/05-12/31/08, \$368,477.
- "Horizontal Gene Transfer Into and Among the Thermotogales: Occurrence and Functional Implications" PI: Kenneth Noll, CoPI: J. Peter Gogarten, NASA Exobiology Program, 09/01/05- 08/31/08, Total Award Amount: \$453,557.

PUBLICATIONS AND PRESENTATIONS

Publications in Refereed Journals

(Google Scholar Profile <https://scholar.google.com/citations?user=3bRnCGYAAAAJ>)

1. Feng Y, Arsenault D, Louyakis AS, Altman-Price N, Gophna U, Papke RT, Gogarten JP* (2024) **Using the pan-genomic framework for the discovery of genomic islands in the haloarchaeon *Halorubrum ezzemoulense*.** *Mbio*, e00408-24
2. Weiner S, Feng Y, Gogarten JP, Bansal MS (2024) **Assessing the Potential of Gene Tree Parsimony for Microbial Phylogenomics** RECOMB International Workshop on Comparative Genomics, 129-149
3. Turgeman-Grott I, Arsenault D, Yahav D, Feng Y, Miezner G, Naki D, Peri O, Papke RT, Gogarten JP*, Gophna U* (2023). **Neighboring inteins interfere with one another's homing capacity.** *PNAS Nexus* **2**, 11, pgad354. doi: 10.1093/pnasnexus/pgad354.
4. Gosselin SP, Arsenault DR, Jennings CA\$, Gogarten JP* (2022): **The evolutionary history of a DNA methylase reveals frequent horizontal transfer and within-gene recombination.** *Genes* (Basel) **14**, 288, doi: 10.3390/genes14020288
5. Lee IPA, Eldakar OT, Gogarten JP, Andam CP (2023) **Protocol for an agent-based model of recombination in bacteria playing a public goods game** *STAR Protoc.* **4**:102733.
6. Lee IPA, Eldakar OT, Gogarten, JP, Andam CP* (2023): **Recombination as an enforcement mechanism of prosocial behavior in cooperating bacteria.** *iScience* **26**. <https://doi.org/10.1016/j.isci.2023.107344>
7. Gosselin S, Fullmer MS, Feng Y, Gogarten JP (2022) **Improving Phylogenies Based on Average Nucleotide Identity, Incorporating Saturation Correction and Non-Parametric Bootstrap Support.** *Systematic Biology* **71** (3): 396-409, syab060, <https://doi.org/10.1093/sysbio/syab060>
8. Podgorski JM, Freeman K, Gosselin S, Huet A, Conway JF, Bird M, Grecco J, Patel S, Jacobs-Sera D, Hatfull G, Gogarten JP, Ravantti J, White SJ* (2022) **A structural dendrogram of the actinobacteriophage major capsid proteins provides important structural insights into the evolution of capsid stability.** *Structure* **2**, 282-294.e5. <https://doi.org/10.1016/j.str.2022.12.012>
9. Lee IPA, Eldakar OT, Gogarten JP, Andam CP (2021) **Bacterial cooperation through horizontal gene transfer.** *Trends in Ecology & Evolution* **37**(3) <https://doi.org/10.1016/j.tree.2021.11.006>
10. Rangel LT, Soucy SM, Setubal JC, Gogarten JP, Fournier GP (2021): **An efficient, non-phylogenetic method for detecting genes sharing evolutionary signals in phylogenomic datasets.** *Genome Biology and Evolution* **13** (9), evab187, <https://doi.org/10.1093/gbe/evab187>

11. Feng Y, Neri U, Gosselin S, Louyakis AS, Papke RT, Gophna U, Gogarten JP (2021)
The Evolutionary Origins of Extreme Halophilic Archaeal Lineages.
Genome Biology and Evolution **13** (8) evab166, <https://doi.org/10.1093/gbe/evab166>
12. Kloub L, Gosselin S, Fullmer M, Graf J, Gogarten JP, Bansal MS (2021)
Systematic Detection of Large-Scale Multigene Horizontal Transfer in Prokaryotes.
Mol Biol Evol **38**(6):2639-2659 <https://doi.org/10.1093/molbev/msab043>
13. Trubl G, and 65 others (2021)
On the Past, Present, and Future Role of Biology in NASA's Exploration of our Solar System; Decadal Survey 2023-2032.
Bulletin of the American Astronomical Society 53 LLNL-JRNL-826413
14. Goldman A, Fournier G, Gogarten JP, Petrov AS, Rothschild L, Segrè D, Smith E, Williams L (2021)
Understanding the Early Major Transitions in Evolutionary History Part 1: Stages in the Emergence of Complex Life.
Bulletin of the AAS **53**(4) <https://doi.org/10.3847/25c2cfcb.cb78fd8a>
15. Fournier G, Gogarten JP, Goldman AD, Petrov AS, Rothschild L, Segrè D, Smith E, Williams, L (2021)
Understanding the Early Major Transitions in Evolutionary History Part 2: Ancient Evolution of Biological Systems and the Biosphere.
Bulletin of the AAS **53**(4). <https://doi.org/10.3847/25c2cfcb.2e749fbd>
16. Makkay AM, Louyakis AS, Ram-Mohan N, Gophna U, Gogarten JP, Papke RT (2020)
Insights into gene expression changes under conditions that facilitate horizontal gene transfer (mating) of a model archaeon.
Sci Rep. **10**(1):22297. doi:10.1038/s41598-020-79296-w
17. Pyatibratov MG, Syutkin AS, QuaxTEF, Melnik TN, Papke RT, Gogarten JP, Kireev II, Surin AK, Beznosov SN, Galeva AV, Fedorov OV(2020)
Interaction of two strongly divergent archaeellins stabilizes the structure of the Halorubrum archaeellum
MicrobiologyOpen 2020;00:e1047 <https://doi.org/10.1002/mbo3.1047>
18. Rangel LT, Marden J, Colston S, Setubal JC, Graf J, Gogarten JP (2019):
Identification and characterization of putative *Aeromonas* spp. T3SS effectors
PLoS One **14**(6): e0214035. <https://doi.org/10.1371/journal.pone.0214035>
19. Fullmer MS, Ouellette M, Louyakis AS, Papke RT, Gogarten JP (2019)
The Patchy Distribution of Restriction–Modification System Genes and the Conservation of Orphan Methyltransferases in Halobacteria.
Genes **10**(3), 233. <https://doi.org/10.3390/genes10030233>
20. Feng Y, Louyakis AS, Makkay AM, Guerrero RO, Papke RT, Gogarten JP (2019)
Complete Genome Sequence of *Halorubrum ezzemoulense* Strain Fb21
Microbiol Resour Announc **8** (12), e00096-19. <https://doi.org/10.1128/MRA.00096-19>
21. Beka L, Fullmer MS, Colston SM, Nelson MC, Talagrand-Reboul E, Walker P, Ford B, Whitaker IS, Lamy B, Gogarten JP, Graf J (2018)
Low-Level Antimicrobials in the Medicinal Leech Select for Resistant Pathogens That Spread to Patients.
MBio **9** (4) e01328-18. <https://doi.org/10.1128/mBio.01328-18>
22. Gogarten JF, Davies TJ, Benjamino J, Gogarten JP, Graf J, Mielke A, Mundry R, Nelson MC, Wittig RM, Leendertz FH, Calvignac-Spencer S (2018)
Factors influencing bacterial microbiome composition in a wild non-human primate community in Tai National Park, Côte d'Ivoire.
ISME J. **12** :2559–2574 Jun 28. <https://doi.org/10.1038/s41396-018-0166-1>.
23. Ouellette M, Gogarten JP, Lajoie J, Makkay AM, Papke RT (2018)
Characterizing the DNA Methyltransferases of *Haloferax volcanii* via Bioinformatics, Gene Deletion, and SMRT Sequencing.
Genes **9** (3) 129 Section Microbial Genetics and Genomics, Genetics and Genomics of Extremophiles
<https://doi.org/10.3390/genes9030129>

24. Shalev Y, Soucy SM, Papke RT, Gogarten JP, Eichler J, Gophna U (2018) **Comparative Analysis of Surface Layer Glycoproteins and Genes Involved in Protein Glycosylation in the Genus *Haloferax***
Gene **9** (3) 172 Section: Microbial Genetics and Genomics, Genetics and Genomics of Extremophiles
<https://doi.org/10.3390/genes9030172>
25. Dick AA, Harlow TJ, Gogarten JP (2017) **Short branches lead to systematic artifacts when BLAST searches are used as surrogate for phylogenetic reconstruction.**
Mol Phylogenet **107**: 338-344. <https://doi.org/10.1016/j.ympev.2016.11.016>
26. Omer S, Harlow TJ, GogartenJP (2017) **Does Sequence Conservation Provide Evidence for Biological Function?**
Trends in Microbiology **25**(1):11-18, <https://doi.org/10.1016/j.tim.2016.09.010>
27. Gogarten JP , Deamer D (2016) **Is LUCA a thermophilic progenote?**
Nature Microbiology **1**, 16229; <https://doi.org/10.1038/nmicrobiol.2016.229>
28. Gromek SM, Suria AM, Fullmer MS, Garcia JL, Gogarten JP, Nyholm SV Balunas MJ (2016) ***Leisingera* sp. JC1, a Bacterial Isolate from Hawaiian Bobtail Squid Eggs, Produces Indigoidine and Differentially Inhibits Vibrios.**
Frontiers in Microbiology **7**, 1342; <https://doi.org/10.3389/fmicb.2016.01342>
<http://journal.frontiersin.org/article/10.3389/fmicb.2016.01342>
29. Naor A, Altman-Price N, Soucy SM, Green AG, Mitiagin Y, Turgeman-Grott I, Davidovich N, Gogarten JP*, Gophna U* (2016) **The impact of a homing intein on recombination frequency and organismal fitness.**
PNAS **113** (32) E4654-E4661 <https://doi.org/10.1073/pnas.1606416113> ;
<http://www.pnas.org/content/113/32/E4654>
30. Soucy SM, Huang J, Gogarten JP (2015): **Horizontal gene transfer: building the web of life.**
Nature Reviews in Genetics **16**, 472–482. <https://doi.org/10.1038/nrg3962>
31. Fullmer, M.S., Soucy, S.M., Gogarten, J.P. (2015): **The pan-genome as a shared genomic resource: mutual cheating, cooperation and the black queen hypothesis.**
Frontiers in Microbiology **6**, 728. <https://doi.org/10.3389/fmicb.2015.00728>
32. Fournier G, Andam CP, Gogarten JP (2015) **Ancient horizontal gene transfer and the last common ancestors.**
BMC Evolutionary Biology **15**(1) p. 70 <https://doi.org/10.1186/s12862-015-0350-0>
33. Collins AJ, Fullmer MS, Gogarten JP, Nyholm SV (2015): **Comparative genomics of *Roseobacter* clade bacteria isolated from the accessory nidamental gland of *Euprymna scolopes*.**
Frontiers in Microbiology 2015, **6**. <https://doi.org/10.3389/fmicb.2015.00123>
34. Colston SM, Fullmer MS, Beka L, Lamy B, Gogarten JP, Graf J. (2014): **Bioinformatic genome comparisons for taxonomic and phylogenetic assignments using *Aeromonas* as a test case.**
MBio **5**(6):e02136. <https://doi.org/10.1128/mBio.02136-14>.
35. Soucy SM, Fullmer MS, Papke RT, and Gogarten JP (2014): **Inteins as Indicators of Gene Flow in the Halobacteria.**
Frontiers in Microbiology, 2014, **5**:299 <https://doi.org/10.3389/fmicb.2014.00299>
36. Zhou C, Mao F, Yin Y, Huang J, Gogarten JP, Xu Y (2014): **AST: an automated sequence-sampling method for improving the taxonomic diversity of gene phylogenetic trees.**
PLoS One **9**(6): e98844. <https://doi.org/10.1371/journal.pone.0098844>
37. Fullmer MS, Soucy SM, Swithers KS, Makkay AM, Wheeler R, Ventosa A, Gogarten JP, Papke RT: **Population and genomic analysis of the genus *Halorubrum*.**
Frontiers in Microbiology 2014, **5**:140. <https://doi.org/10.3389/fmicb.2014.00140>

38. Ram Mohan N, Fullmer MS, Makkay AM, Wheeler RW, Ventosa A, Naor A, Gogarten JP, Papke RT: **Evidence from phylogenetic and genome fingerprinting analyses suggests rapidly changing variation in *Haloarubrum* and *Haloarcula* populations.** *Frontiers in Microbiology* 2014, **5**:143. <https://doi.org/10.3389/fmicb.2014.00143>
39. Butzin NC, Lapierre P, Green AG, Swithers KS, Gogarten JP, Noll KM (2013) **Reconstructed ancestral Myo-inositol-3-phosphate synthases indicate that ancestors of the Thermococcales and Thermotoga species were more thermophilic than their descendants.** *PLoS One* **8**(12):e84300. <https://doi.org/10.1371/journal.pone.0084300>
40. Swithers KS, Soucy SM, Lasek-Nesselquist E, Lapierre P, Gogarten JP (2013) **Distribution and Evolution of the Mobile *vma-1b* Intein.** *Molecular Biology and Evolution* **30** (12): 2676-2687 <https://doi.org/10.1093/molbev/mst164>
41. Butzin N, Secinaro M, Swithers KS, Gogarten JP, Noll K (2013) ***Thermotoga lettingae* can salvage cobinamide to synthesize vitamin B12** *Applied and Environmental Microbiology* **79** (22) 7006-7012 <https://doi.org/10.1128/AEM.01800-13>
42. Green AG, Swithers KS, Gogarten JF, Gogarten JP (2013) **Reconstruction of Ancestral 16S rRNA Reveals Mutation Bias in the Evolution of Optimal Growth Temperature in the Thermotogae Phylum.** *Molecular Biology and Evolution* **30** (11): 2463-2474 <https://doi.org/10.1093/molbev/mst145>
43. Lasek-Nesselquist E, Gogarten, JP (2013) **The effects of model choice and mitigating bias on the ribosomal tree of life.** *Molecular Phylogenetics and Evolution* **69** (1) 17–38 <https://doi.org/10.1016/j.ympev.2013.05.006>
44. Bansal MS, Banay, G, Harlow TJ, Gogarten JP, Shamir R (2013) **Systematic Inference of Highways of Horizontal Gene Transfer in Prokaryotes.** *Bioinformatics* **29** (5): 571-579 <https://doi.org/10.1093/bioinformatics/btt021>
45. Williams D, Gogarten JP, Papke RT (2012) **Quantifying homologous replacement of loci between haloarchaeal species.** *Genome Biology and Evolution* **4** (12) 1223-1244 <https://doi.org/10.1093/gbe/evs098>
46. Lapierre P, Lasek-Nesselquist E, and Gogarten JP (2014) **The impact of HGT on phylogenomic reconstruction methods.** *Briefings in Bioinformatics* **15** (1) 79-90 [first published online August 20, 2012] <https://doi.org/10.1093/bib/bbs050>
47. Swithers KS, Petrus AK, Secinaro MA, Nesbø CL, Gogarten JP, Noll KM, Butzin NC (2012). **Vitamin B12 synthesis and salvage pathways were acquired by horizontal gene transfer to the Thermotogales.** *Genome Biology and Evolution* **4** (8) 842-851, <https://doi.org/10.1093/gbe/evs057>
48. Swithers KS, Soucy SM, Gogarten JP (2012) **The Role of Reticulate Evolution in Creating Innovation and Complexity.** *Int Journal of Evolutionary Biology* **2012**, ID 418964, 10 pages, <https://doi.org/10.1155/2012/418964>
49. Petrus AK, Swithers KS, Ranjit C, Wu S, Brewer HM, Gogarten JP, Pasa-Tolic L, Noll KM (2012) **Genes for the Major Structural Components of Thermotogales Species' Togas Revealed by Proteomic and Evolutionary Analyses of OmpA and OmpB Homologs.** *PLoS One* **7**(6):e40236, <https://doi.org/10.1371/journal.pone.0040236>
50. Mao F, Williams D, Zhaxybayeva O, Poptsova M, Lapierre P, Gogarten JP, Xu Y (2012) **Quartet decomposition server: a platform for analyzing phylogenetic trees** *BMC Bioinformatics* **13**:123, <https://doi.org/10.1186/1471-2105-13-123>
51. Andam CP, Harlow TJ, Papke RT, Gogarten JP (2012) **Ancient origin of the divergent forms of leucyl-tRNA synthetases in the Halobacteriales.** *BMC Evolutionary Biology* **12**:85, <https://doi.org/10.1186/1471-2148-12-85>
52. Papke RT, Gogarten JP (2012) **How Bacterial Lineages Emerge.** *Science* **336**: 45-46 <https://doi.org/10.1126/science.1219241>

53. Fournier GP, Andam CP, Alm EJ, Gogarten JP (2011)
Molecular Evolution of Aminoacyl tRNA Synthetase Proteins in the Early History of Life.
Origins of Life and Evolution of Biospheres **41**:621–632 <https://doi.org/10.1007/s11084-011-9261-2>
54. Barzel A, Obolski U, Gogarten JP, Kupiec M, Hadany L (2011)
Home and Away- The Evolutionary Dynamics of Homing Endonucleases.
BMC Evolutionary Biology **11**:324 <https://doi.org/10.1186/1471-2148-11-324>
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3. Hamel, L, Zhaxybayeva, O., Gogarten, J. P. (2004) PentaPlot: A program to dissect genomes based on their mosaic evolutionary history. <http://pentaplot.sourceforge.net/>

Invited Recent Seminars and Oral Presentations (of at least 100 since Fall 1991)

1. “Inteins as a tool to trace the transfer of genetic information”.
Invited lecture at [Genomics Aotearoa](#), Plant and Food Research, Auckland, NZ and online. Feb 7th, 2023
2. “Inteins, parasites of parasites: a tool to trace genetic exchange occurring in nature”.
University of Canterbury, Christchurch, NZ, Feb 23rd 2023
3. “Horizontal Transfer of Genetic Information – Patterns in the Web of Life”.
Invited lecture at the University of Auckland (and online), NZ, April 13th, 2023
4. Lecture at the 2021 Sea Phages Symposium on “Inteins in the Terminase of Actinophages – Parasites all the Way Down?” (Coauthors: Sean Gosselin, Shelly Evia (undergrad), Mahmoud Mazloum (undergrad) 4/9-4/11/2021. A 10 minute YouTube video description of this work is at <https://www.youtube.com/watch?v=mMwH6OP5M2s>
5. “Inteins and Homingendonucleases: Long term survival and constructive neutral evolution.” Presentation at the colloquium on “Trash to treasure and treasure to trash: invasion, persistence, neofunctionalization, and gene decay in evolution” at the SMBE meeting in Yokohama, July 12th, 2018
6. "Organismal and molecular LUCAs in relation to the origin of life and the domain ancestors." Invited presentation at the Workshop on *Biogeochemical Dating in Deep Time*, UConn Storrs CT, May 10th to 11th, 2017
7. “Horizontal Gene Transfer, Antibiotic Resistance, Pan-genomes, and within Population Diversity”, Invited lecture at the ASM Microbe 2016 meeting in Boston
8. “Horizontal Gene Transfer: The Pan-Genome as shared genetic resource of a lineage”, Invited plenary lecture at the meeting “Molecules as Documents of Evolutionary History”, held in Roscoff (Brittany), France, May 9th to 13th, 2016
9. “Molecular evolution before the domain ancestors: Indications for dramatic planetary changes during life’s early evolution”, Invited plenary lecture at the meeting “From star and planet formation to early life” held in Vilnius, Lithuania, April 25th – 28th, 2016
10. “The Role of Horizontal Gene Transfer in Microbial Evolution”, Invited seminar in the Frontiers in Genomics series at the National University of México (UNAM), Campus Morelos, April 14th, 2016
11. “Inteins: Co-evolution between selfish genes and genomes”, Presentation to students in the Genomics program

- at National University of México (UNAM), Campus Morelos, April 14th, 2016
12. "The role of horizontal gene transfer in microbial evolution", Invited seminar at the Instituto Politécnico Nacional, Mexico City, March 12th, 2016
 13. "Gene transfer and antibiotic resistance in *Aeromonas*", Presentation at the Colegio Nacional, Mexico, as part of a conversation on "Genes ambulantes, Una conversación sobre transporte horizontal y resistencia a antibióticos." March 4th, 2016
 14. "Inteins: Co-evolution between selfish genes and genomes", Seminar at the Universidad Nacional Autónoma de México February 22nd, 2016
 15. "The role of horizontal gene transfer in microbial evolution", Invited departmental Seminar at the Instituto de Fisiología Celular Universidad Nacional Autónoma de México, February 5th, 2016
 16. "The roles of shared ancestry and shared genes in niche adaptation in *Aeromonas*", SMBE 2015 annual meeting, Vienna, July 12th to the 16th, 2015
 17. "Molecular evolution before the domain ancestors: Indications for dramatic planetary changes during life's early evolution", invited lecture at the IAP Lecture Series: The Origin of Life at MIT, Jan 28th, 2015
 18. "Molecular evolution before the ancestors of the bacterial and archaeal domains and before the Last Universal Common Ancestor", invited plenary lecture at the ISSOL Meeting, Origins 2014, Nara, Japan, July 6-11, 2014
 19. "Tracing evolution in *Aeromonas*: the role of shared ancestry and shared genes in niche adaptation", International Symposium on *Aeromonas* and *Plesiomonas* in Montpellier, France. (June 26, 2014).
 20. "Inteins as Indicators of Gene Flow in the Halobacteria", Annual SMBE Meeting. (June 8, 2014 - June 12, 2014).
 21. "Molecular evolution before the ancestors of the bacterial and archaeal domains", Annual SMBE Meeting. (June 8, 2014 - June 12, 2014).
 22. "Phylogenomics, Horizontal Gene Transfer, and Darwin's 'Coral-of-Life'", Invited Lecture at the University of Northern Texas, April 4th, 2014
 23. "Microbial Evolution and Phylogenomics in Light of Horizontal Gene Transfer" Invited lecture at the 48th Annual ASM Region I Meeting, University of Connecticut, Storrs, CT, October 25th-26th, 2013
 24. "Phylogenomics and Darwin's 'Coral-of-Life' in light of horizontal gene transfer", invited seminar at the Kunming Institute of Botany, Kunming, China, August 7th, 2013
 25. "Insights from the Study of Molecular Evolution: Types of Selection and Inferring Life's Early History", Invited Lecture at Ben Gurion University, June 10th, 2013
 26. "Darwin's Coral of Life, Gene Transfer, and Inferring Properties of the Early Biosphere", invited lecture in the NASA Astrobiology Institute Director's Seminar Series, April 29th, 2013
 27. "Phylogenomics and Darwin's 'Coral-of-Life' in light of horizontal gene transfer", invited lecture at the Massachusetts Institute of Technology, February 27th, 2013
 28. "Coalescence, gene transfer, and the study of pre-LUCA molecular evolution" lecture at the Origin of Life Conference, Princeton, January 23rd, 2013
 29. "Phylogenomics and Darwin's 'Coral-of-Life' in light of horizontal gene transfer", invited lecture at the Graduate Program in Organismic and Evolutionary Biology, UMass & five college System, Amherst, November 9th, 2012
 30. "Phylogenomics, Horizontal Gene Transfer, and Darwin's 'Coral of Life'", invited keynote lecture at Recomb Comparative Genomics, Niteroi. Brazil, October 17-19, 2012
 31. "Horizontal Gene Transfer (HGT), Homeoalleles, NISEs, and the Formation and Maintenance of Higher Taxonomic Units in Bacteria and Archaea", oral presentation at the SMBE 2012 Annual Meeting, Dublin, June 23rd -26th, 2012
 32. "The rooted Net of Life and molecular evolution before LUCA" Invited lecture at the 2012 Astrobiology Sciences Conference, Atlanta GA, April 16th, 2012
 33. "Phylogenomics and Darwin's Coral-of-Life in Light of Horizontal Gene Transfer." Invited lecture at the MBL in Woods Hole, March 16th, 2012
 34. "Darwin's Coral-of-Life, Horizontal Gene Transfer, and the Evolution of the Genetic Code." Invited lecture at the 8th Georgia Tech, Emory and the Oak Ridge National Lab. International Conference: "From Genomics to Synthetic Biology", Nov. 10—12, 2011
 35. "Biased Gene Transfer and Phylogenomics." Invited lecture at the Society for General Microbiology Autumn meeting, York, GB, September 5-7, 2011

36. "Phylogeny and Darwin's coral of life in light of horizontal gene transfer." Lecture at the Institute Pasteur, Paris, France, June 9th, 2011
37. "Molecular evolution before LUCA and the rooted Net of Life" Gogarten, J. Peter, Fournier, Gregory P., Andam, Cheryl P.; lecture by JPG at the 2011 ISSOL and Bioastronomy Joint International Conference, Montpellier, France, July 3rd- 8th, 2011
38. "Impact of HGT on Phylogenomic Reconstruction", Presentation at the workshop "Challenges for large scale phylogeny and alignment estimation", National Evolutionary Synthesis Center (NESCent), Durham, NC, April 1st, 2011
39. "Phylogenomics and Darwin's "Coral-of-Life" in Light of Horizontal Gene Transfer." Keynote Address at the 5th Biology New England South (BioNES) 2010 meeting, Roger Williams University, December 3rd, 2010
40. "Phylogenomics and Darwin's "Coral-of-Life" in Light of Horizontal Gene Transfer." Presentation at *Bates College*, Biology Department, November 30th, 2010
41. "Phylogenomics and Darwin's "Coral-of-Life" in Light of Horizontal Gene Transfer." Presentation at the University of Rhode Island, Biology Department, November 22nd, 2010.
42. "Phylogenomics and Darwin's "Coral-of-Life" in Light of Horizontal Gene Transfer." Presentation at the Research Highlights at Noon Series, Tuesday, Homer Babbidge Library, University of Connecticut, November 9th, 2010.
43. "Horizontal Gene Transfer as a Tool in Reconstructing the Net of Life", Tree of Life Workshop, London, UK July 10th and 11th, 2010
44. "Horizontal Gene Transfer as a Tool to Reconstruct the Net of Life", invited lecture at the Annual Meeting of the Society for Molecular Biology and Evolution (SMBE) in Lyon, France, July 4th-8th, 2010
45. "The Tree/Web of Life in Light of Horizontal gene transfer." Invited lecture at UNAM Cuernavaca, Mexico, May 17 2010
46. "Horizontal Gene Transfer, Organismal Evolution, and Darwin's "Coral of Life." Invited seminar at the Undergraduate Program on Genomic Sciences at the Center for Genomic Sciences and the Biotechnology Institute in the city of Cuernavaca, Mexico, May 17 201
47. "Phylogenomics and Darwin's "Coral-of-Life" in Light of Horizontal Gene Transfer." Biology Departmental Seminar, Haifa University, January 10th, 2010
48. "Phylogenomics and Darwin's "Coral-of-Life" in Light of Horizontal Gene Transfer." Invited Seminar at the Weizman Institute, BigRoc Seminar series (see <http://bioinfo.weizmann.ac.il/BigRoc/>), December 28th, 2009
49. "Rooting the ribosomal tree of life using the early expansion of the genetic code", Presentation at the 23rd annual meeting of the ILASOL society (see <http://www.ilasol.org.il/>), Weizmann Institute of Science, December 13th, 2009
50. "Darwin's "Coral of Life" in Light of Horizontal Gene Transfer." Invited lecture at the Department of Life Sciences, Ben-Gurion University of the Negev, Israel, November 30th, 2009
51. "Intertwined evolutionary histories of marine *Synechococcus* and *Prochlorococcus*" Seminar in Safir Bioinformatics program at Tel Aviv University November 11th, 2009
52. "Horizontal Gene Transfer, Organismal Evolution, and Darwin's "Coral of Life." Invited lecture at the Biochemistry Department, Tel Aviv University, October 20th, 2009
53. "ATPsynthases and Inteins: A Personal History." Seminar for Biotechnology group at Tel Aviv University, September 8th, 2009
54. "Population Genetics and the Evolution of higher taxonomic units" invited lecture at the Halifax Workshop on "Perspectives on the Tree of Life", July 30th to August 1st, 2009
55. "The tree-of-life in light of horizontal gene transfer", invited lecture at the "Archaea and the Tree of Life meeting at the Les Treilles Foundation, France, May 11-15, 2009
56. "Phylogenetics in Light of Horizontal Gene Transfer", invited seminar at the University of Georgia, Athens, April 10th, 2009
57. "Phylogenetics in Light of Horizontal Gene Transfer", invited seminar at the School of Biology Georgia Institute of Technology, Atlanta, April 9th, 2009
58. "Phylogenetics in Light of Horizontal Gene Transfer", invited seminar at the University of Vermont, Burlington, March 26. 2009

Other Recent Presentations at Meetings (of at least 100 since Fall 1991)

1. Arsenault, D., Lewis, L.A., and Gogarten, J.P. (April 2024) *Selfish mobile elements as a tool to illuminate genetic exchange pathways between algal plastid genomes*. Poster for the 2024 Northeast Algal Society meeting.
2. Phillips, D.S. (June 2023) Are Inteins Parasitic Genetic Elements? A Phylogenetic Analysis. In depth Symposium talk at the ASM Microbe Meeting, Houston Texas
3. Arsenault, D. and Gogarten, J.P. (June 2022) *Evolutionary escapades of mobile genetic elements in green algal plastid genomes*. Poster for the 2022 Northeastern Microbiologists: Physiology, Ecology and Taxonomy (NEMPET) conference.
4. Feng, Y., Abouaassi, M., Marden, J., Colston, S., Graf, J., and Gogarten, J.P. (June 2022). *A niche adapting genomic island helps microbes colonize the digestive tracts of sanguivorous animals*. Poster for the 2022 ASM Microbe meeting.
5. Phillips, D., Gosselin, S., Gogarten, JP. *The uneven phylogenetic distribution of inteins in Cyanobacteria does not support the assumption of a conserved function beyond self-splicing and homing*. (June 2022) Poster for the 2022 ASM Microbe meeting.
6. Colon-Garcia, G. (undergrad), Phillips, D., Gosselin, S., Gogarten J.P. (April 2022) *The Complex Phylogeny of an Intein Invading an Unusual Cyanophage Terminase*. Poster for UConn Frontiers 2022 Undergraduate Research Exhibition.
7. Phillips, D., Gogarten J.P. (September 2021) *An expanded phylogeny of Cyanobacteria with a focus on intein distribution*. Presentation at 2021 NASA Astrobiology Graduate Conference.
8. Gosselin, Sophia, Evia, Shelly (undergrad), Mazloum, Mahmoud (undergrad), Gogarten, J Peter. *Inteins in the Terminase of Actinophages – Parasites all the Way Down?* ASM World Microbe Forum, June 20-24, 2021
9. Feng Y, Neri U, Gosselin S, Louyakis A, Papke R, Gophna U, Gogarten JP *The Evolutionary Origins of Halophilic Archaea*, ASM World Microbe Forum, June 20-24, 2021
10. Sharawy M, Louyakis A, Gogarten JP, May ER. *CTAG vs. GATC: Structural Basis for Representational Differences in Reverse Palindromic DNA Tetranucleotide Sequences*. Poster presented at the 2021 Biophysical Society Meeting: CTAG vs. GATC: Structural Basis for Representational Differences in Reverse Palindromic DNA Tetranucleotide Sequences, Biophysical Journal 120 (3), 222a
11. Feng, Y., Louyakis, A. D., Soucy, S., and Gogarten, J. P. (2019, August). *Distribution and characterization of inteins in hypersaline environments*. Oral Presentation for the 2019 Mobile Genetic Elements.
12. Feng Y., Louyakis, A., and Gogarten J. P. (2019, August). *Complications in deep phylogeny: Halophilic Archaea*. Poster for the Deep Time Conference at MIT.
13. Feng, Y., Louyakis, A. D., Soucy, S., and Gogarten, J. P. (2019, July) *Intein distribution in halophilic archaea*. Poster for the Gordon Research Conference: Archaea Ecology, Metabolism and Molecular Biology.
14. Feng, Y., Louyakis, A. D., and Gogarten, J. P. (2019, June). *Distribution and characterization of inteins in hypersaline environments*. Poster for the Astrobiology Science Conference.
15. Gosselin, S., Evia, S. (undergrad), Mazloum, M. (undergrad) Gogarten, J Peter. *Inteins in the Terminase of Actinophages – Parasites all the Way Down?* 2021 SMBE meeting, 3-8 July 2021
16. Gosselin, S., Fullmer, M., & Gogarten, J.P. (2018, April). *A Distance-Based ANI Approach for Constructing Phylogenetic Trees and Species Delimitation*. Poster for the UConn's 4th Annual Distinguished Microbiologist Lecture.
17. Feng, Y., Louyakis, A. D., Soucy, S., & Gogarten, J.P. (2018, April). *Intein distribution and dynamics in hypersaline metagenomes*. Poster for the 5th UConn Microbiology Symposium.
18. Feng, Y., Louyakis, A. D., Soucy, S., and Gogarten, J. P. (2018, April). *Intein distribution and dynamics in Metagenomes*. Poster for the 15th Harvard Microbial Symposium.
19. Gosselin, S., Fullmer, M., & Gogarten, J.P. (2018, April). *A Distance-Based ANI Approach for Constructing Phylogenetic Trees and Species Delimitation*. Poster for the 15th Annual Microbial Sciences Symposium, Harvard.
20. Gosselin, S., Fullmer, M., & Gogarten, J.P. (2017, October). *A Distance-Based ANI Approach for Constructing Phylogenetic Trees and Species Delimitation*. Poster for the American Society for Microbiology Region 1 Meeting.
21. Fullmer, M., Papke, T. R., & Gogarten, J.P.. (2017, July). *Methylation and CRISPRs as possible drivers of incipient speciation in archaeal populations*. Poster for the Gordon Conference on Archaea: Ecology, Metabolisms and Molecular Biology, Waterville Valley, NH, NH.

22. Gosselin, S., Fullmeier, M., & Gogarten, J.P. (2017, June). *A Distance-Based ANI Approach for Constructing Phylogenetic Trees and Species Delimitation*. Poster for the Astrobiology Graduate Conference.
23. Gosselin, S., Fullmer, M.S., Gogarten, J.P. "A Distance-Based ANI Approach for Constructing Phylogenetic Trees and Species Delimitation" Poster presented by SG at 20th Annual Frontiers in Undergraduate Research Poster Exhibition, Storrs, CT on April 7-8, 2017
24. Gosselin, S., Fullmer, M.S., Gogarten, J.P. "ANI as a Tool to Understand Phylogenetic Relationships" Poster presented by SG at Pioneer Valley Microbiology Symposium at UMass-Amherst, Amherst, MA on January 14, 2017 Received PVMS Best Poster Award
25. Fullmer, M.S., Ouellette, M., Papke, R.T., Gogarten, J.P. "Distribution of Restriction Modification Systems in natural populations of *Halorubrum*", Poster presented by MsF at Pioneer Valley Microbiology Symposium at UMass Amherst, Amherst, MA on January 14, 2017
26. Skydel, J.J., Soucy, S.M., and Gogarten, J.P. "Factors promoting the long-term survival on inteins within populations", poster presentation delivered by JJS at the "Pioneer Valley Microbiology Symposium", University of Massachusetts Amherst (USA), January 14, 2017
27. Englander, R.P., Fullmer, M.S., and Gogarten J.P. "How Cheating Leads to Interdependence: The Black Queen Hypothesis Tested in *Aeromonas*", poster presentation delivered by RPE at the "Pioneer Valley Microbiology Symposium" conference, University of Massachusetts-Amherst (Massachusetts), January 14, 2017
28. Englander, R.P., Fullmer, M.S., and Gogarten J.P. "Searching for Niche-Adaptive Genes in *Aeromonas*", poster presentation delivered by RPE at the "Northeastern Microbiologists: Physiology, Ecology, and Taxonomy" conference, Blue Mountain Lake (New York State), June 26-28, 2015
29. Soucy SM, Fullmer MS, Gogarten JP. "Inteins to Illuminate Threads in the Web of Life", Poster presented by SMS at Society for Molecular Biology and Evolution satellite meeting on Reticulated Microbial Evolution in Kiel, Germany on 27-30 April 2014
30. Beka, L., Fullmer M.S., Colston, S., Nelson, M.C., Ford, B., Walker, P., Lamy, B., Gogarten, J.P., Graf, J. "An Analysis of Antibiotic Resistance in the *Aeromonas* population of the Medicinal Leech" Poster presented by LB at 11th International Symposium on *Aeromonas* and *Plesiomonas* in Montpellier, France on 25-27 June, 2014 Received Biovac best poster award.
Also, poster presented by LB at 3rd Annual Connecticut Symbiosis Conference in New Haven, CT on 25 April, 2014.
Also, poster presented at American Society of Microbiologists General Meeting in Boston, MA on 18-20 May, 2014
31. Omer, S., Harlow, J. T., and Gogarten J.P. "Bacterial genes not expressed for function nevertheless experience purifying selection", oral and poster presentations delivered by SO at the "EMBO Viruses of Microbes III" conference, Zurich (Switzerland), July 14-18, 2014
32. Soucy, S., Wegrzyn, J.L., Gogarten, J. P. "Intein Distributions Illuminate the Threads of the Web of Life" poster presented by JPG at the ISSOL Meeting, Origins 2014, Nara, Japan, July 6-11, 2014
33. Soucy, S., Swithers, K. S., Williams, D., Papke, T. R., Gogarten, J. P., "Towards using Halophilic Inteins as a Model of Symbiotic Gene Associations", Halophiles 2013 Conference (University of Connecticut, June 23, 2013 - June 27, 2013).
34. Williams, D., Gogarten, J. P., Papke, T. R., "Haloarchaeal evolution: gaining diversity by sharing experiences", Halophiles 2013 Conference (University of Connecticut, June 23, 2013 - June 27, 2013).
35. Omer, S., Gogarten, J. P., "(dN/dS<1) = Selection for Function – Myth or Reality?", General Meeting of American Association for Microbiology, Denver (CO). (May 18, 2013 - May 21, 2013).
36. Green, A., Gogarten, J. P., "Evolution of low temperature tolerance in a thermophilic bacterium", UConn Biology Undergraduate Research Colloquium. (April 12, 2013 - April 13, 2013).
37. O'Brien, J., Papke, T. R., A. D., Ram-Mohan, N., Lasek-Nesselquist, E., Gogarten, J. P., "Examining Phylogroups through Reconstruction of the Evolutionary History of Bacteriorhodopsin Genes", UConn Frontiers in Undergraduate Research. (April 12, 2013 - April 13, 2013).
38. Green, A., Swithers, K. S., Noll, K. M., Gogarten, J. P., "Horizontal Gene Transfer and the evolution of a thermophilic bacterium", UConn Frontiers in Undergraduate Research. (April 12, 2013 - April 13, 2013)
39. Soucy, S., Gogarten, J. P., "Symbiosis between Genes", 2nd Annual CT Symbiosis symposium. (March 22, 2013). (Oral presentation by SS)
40. Omer, S., Gogarten, J. P., "(dN/dS<1) = Selection for Function – Myth or Reality?", Mechanisms of Protein Evolution II (SMBE satellite meeting) in Denver CO. (February 7, 2013 - February 11, 2013).
41. Dick, A., Gogarten, J. P., "Short Branch Attraction: an Artifact in BLAST Searches", Pacific Symposium for Biocomputing. (January 3, 2013 - January 7, 2013).

42. Dick, A., Gogarten, J. P., "Histones and what they can tell us about Eukaryogenesis", AbGradCon (Astrobiology Graduate Conference) CalTech, Pasadena CA. (October 24, 2012 - October 30, 2012).
43. Kristen Swithers, J. Peter Gogarten: "*The Chimera Hypothesis for the Thermotogae Phylum*", Poster presented by KS at the 2012 SMBE meeting in Dublin, 6/23-6/36/2012
44. J. Peter Gogarten, Shannon M. Soucy, Kristen S. Swithers, Pascal Lapierre, David Williams: "*Interdomain transfer of an intein residing within the archaeal-type ATP synthase catalytic subunit.*" Poster presented by JPG at the 2012 SMBE meeting in Dublin, 6/23-6/36/2012
45. Kristen Swithers, Nicholas Butzin, Amanda K. Petrus, Camilla L. Nesbø, Kenneth M. Noll and J. Peter Gogarten. "*Ancestral states and origins of Vitamin B12 synthesis and Cobinamide Salvaging in the Thermotogae phylum*" Oral presentation by Kristen Swithers at Astrobiology Science Conference 2012. April 16-20, 2012
46. Kristen Swithers and J. Peter Gogarten. *The Chimera: When did the Acquisition of Archaeal and Clostridial genes occur in the Ancient Thermophilic Thermotogae phylum?* Poster presented by KS at the Thermophiles meeting, Sept 11-16, 2011.
47. Kristen S. Swithers, Nicholas Butzin, Amanda K. Petrus, Camilla L. Nesbø, Kenneth M. Noll and J. Peter Gogarten. *Comparative analyses of cobalamin (Vitamin B12) synthesis and usage among the ancient thermophilic Thermotogae phylum reveals novel biosyntheses pathways.* Poster presented by Kristen Swithers at the Applied and Environmental Gordon Research Conference at Mount Holyoke College on July 10-15, 2011
48. Kristen Swithers, David Williams, Kenneth Noll and J. Peter Gogarten: "*Gene Flow into and among the Thermotogae Phylum.*" Poster presented at the 2011 Boston Bacterial Meeting (BBM), Boston, Massachusetts, June 16-17, 2011.
49. Cheryl Andam, J. Peter Gogarten: "*Biased gene transfer and the pre-LUCA origins of rare aminoacyl-tRNA synthetases in Archaea.*" Selected oral presentation in the session on "*Sex in Microbes*" at the 111th General Meeting of the American Society for Microbiology, New Orleans LA, May 21-24, 2011
50. A. G. Green, K. S. Swithers, O. Zhaxybayeva, K. M. Noll, J. P. Gogarten: *Genomic Signals for Thermophily in the Thermotogales.* Poster presented by Anna Green in the session on "*Patterns and Processes of Microbial and Molecular Evolution*" at the 111th General Meeting of the American Society for Microbiology, New Orleans LA, May 21-24, 2011
51. Kristen Swithers, David Williams, Nicholas Butzin, Kenneth Noll and J. Peter Gogarten. *Gene Flow into and among the Thermotogae Phylum.* Poster presented by Kristen Swithers at the 111th American Society for Microbiology General Meeting, New Orleans, Louisiana May 21-24, 2011.
52. Cheryl Andam, J. Peter Gogarten: *Biased gene transfer and the pre-LUCA origins of rare aminoacyl-tRNA synthetases in Archaea.* Selected oral presentation by Cheryl Andam in the session on "*Sex in Microbes*" at the 111th General Meeting of the American Society for Microbiology, New Orleans LA, May 21-24, 2011
53. Chan Zhou, Fenglou Mao, Yanbin Yin, Jinling Huang, Johann Peter Gogarten, and Ying Xu: *Automated sequence sampling approach over taxa generates informative phylogenetic trees.* Poster presented by CZ at the workshop "Challenges for large scale phylogeny and alignment estimation", National Evolutionary Synthesis Center, Durham, NC, March 31st, 2011
54. Kristen Swithers, David Williams, Olga Zhaxybayeva and J. Peter Gogarten: *Quartet Decomposition and Its Application to Study Evolutionary Histories of Genes in Genomes.* Poster presented by JPG at the workshop "Challenges for large scale phylogeny and alignment estimation", National Evolutionary Synthesis Center, Durham, NC, March 31st, 2011
55. Kristen Swithers, David Williams and J. Peter Gogarten: *Quartet Decomposition as a Means to Visualize Intergenous Recombination.* Poster presented by JPG at the 5th Biology New England South (BioNES) 2010 meeting, Roger Williams University, December 3rd, 2010
56. Anna G. Green, K. S. Swithers, O. Zhaxybayeva, K. M. Noll, J. P. Gogarten: Signals for thermophilic adaptation and phylogeny in the genome of Thermotogales. Poster presented by AG at the Annual Meeting of the Society for Molecular Biology and Evolution (SMBE) in Lyon, France, July 4th-8th, 2010
57. Fenglou Mao, Maria Poptsova, David Williams, Olga Zhaxybayeva, Peter Gogarten and Ying Xu: *Quartet Decomposition Server: A Platform for Analyzing Phylogenetic Trees.* Proceedings ISBRA 2010, May 23-26, 2010, poster presented by FM
58. Olga Zhaxybayeva, David Williams, Kristen Swithers and J. Peter Gogarten: *Quartet decomposition and its applications to study evolutionary histories of genes in genomes.* Proceedings ISBRA 2010, May 23-26, 2010, oral presentation given by OZ

59. Fournier G. P., Gogarten J. P.: *Inferring the Early Evolution of Translation: Ancestral Reconstruction, Compositional Analysis, and Functional Specificity*. Proceedings of the Astrobiology Science Conference April 26-29, 2010 League City, Texas, oral presentation given by GPF
60. Kristen S. Swithers Gregory P. Fournier and J. Peter Gogarten: *Evolutionary Conservation of Intein and Intron Insertion Sites*. 2nd ASM Conference on Mobile DNA April 24 - 28, 2010, Montreal, Canada (invited talk by KSS)
61. Kristen Swithers, Maria Poptsova, Pascal Lapierre, Kenneth Noll, J. Peter Gogarten: *Evolutionary study of gene gains and losses in the Thermotogales genome*. ASM General Meeting, San Diego, May 2010. (Poster by KS)
62. Andam, C. P., Williams, D., Gogarten, J. P.: *Phylogenetic analysis of tyrosyl tRNA synthetases: Biased gene transfer mimics patterns created through shared ancestry*. ASM General Meeting, San Diego, May 2010 (poster by DW)
63. Pascal Lapierre and J. Peter Gogarten: *Mapping the prokaryotic world using random protein samplings of genomes*. ASM General Meeting, San Diego, May 2010 (Poster by PL)
64. Nicholas C. Butzin, Danielle M. Bradnan, J. Peter Gogarten, and Kenneth M. Noll: *A genome sequence-directed investigation of D-tagatose utilization by Kosmotoga olearia*. Astrobiology Science Conference April 26-29, 2010 League City, Texas (Poster presented by NB).
65. Amanda.Dick, David Williams, J. Peter Gogarten: *Woese's Trinity, Eukaryogenesis, and the Tubulin/FtsZ family*. Origin of Life GRC, January 10-15, 2010, Galveston, TX (Poster presented by AD).
66. M.Poptsova, K. Swithers, D. Williams, P. Lapierre, K. Noll, J.P. Gogarten. "*Detection and Analysis of Horizontal Gene Transfer in Thermotogales*" Poster presented by MP at the "Genome Informatics" meeting at Cold Spring Harbor, October 27-30, 2009
67. Greg Fournier, J.Peter Gogarten: "*Protein evolution before the MRCA: Ancestral Reconstruction, Compositional Analysis, and Functional Specificity*", Origin of Life GRC, January 10-15, 2010, Galveston, TX (invited talk presented by GF)
68. P. Lapierre, J. P. Gogarten: *Gene Transfer as a Problem for Phylogenomic Reconstruction*. Poster presented by PL at the American Society for Microbiology 109th General Meeting, Philadelphia, PA, May 17-21, 2009
69. Greg Fournier, J.Peter Gogarten: "*Horizontal Gene Transfer and the Evolution of Methanogenesis*". Lecture Presented by Greg Fournier at the American Society for Microbiology 109th General Meeting, Philadelphia, PA, May 17-21, 2009
70. Greg Fournier, J.Peter Gogarten: "*Rooting the Ribosomal Tree of Life*". Poster presented by GF at the American Society for Microbiology 109th General Meeting, Philadelphia, PA, May 17-21, 2009
71. Cheryl Andam, David Williams, J. Peter Gogarten: *Horizontal gene transfer shapes microbial taxonomy*. Poster presented by CA at the 74th Cold Spring harbor Symposium on Quantitative Biology, *Evolution: The molecular landscape*, Cold Spring Harbor, NY, May 27 – June 1, 2009
72. Kristen Swithers, Derek Bickhart, Pascal Lapierre, Kenneth Noll, J. Peter Gogarten: *Mobile Genetic Elements and their Role in the Evolution of Genome Structure across the Thermotogales Order*. Poster presented by KS at the American Society for Microbiology General 109th Meeting, Philadelphia PA , May 17-21, 2009."
73. C. P. Andam, J. P. Gogarten: "*Horizontal Gene Transfer Shapes Microbial Taxonomy*" Poster presented by CPA at the American Society for Microbiology General 109th Meeting, Philadelphia, PA, May 17-21, 2009