RESEARCH & PUBLICATIONS

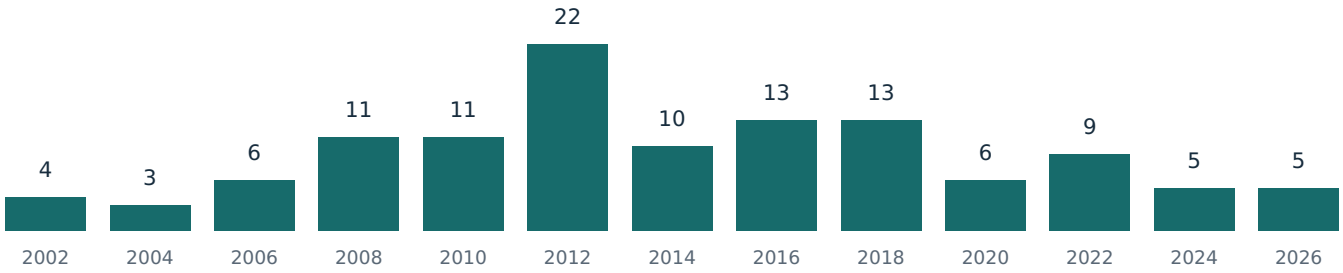
Robert G Beiko

A publication record at a glance

118	24,262	42
ARTICLES	CITATIONS	h-INDEX

PUBLICATION ACTIVITY

Articles grouped into 2-year periods



MOST CITED IN THIS LIST

Predictive Functional Profiling of Microbial Communities Using 16S rRNA Marker Gene Sequences — 8,163

2013 Nature Biotechnology

STAMP: Statistical Analysis of Taxonomic and Functional Profiles. — 3,749

2014 Bioinformatics

CARD 2020: Antibiotic Resistome Surveillance With the Comprehensive Antibiotic Resistance Database. — 2,543

2020 Nucleic Acids Research

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2026

01 Comparison of Spatio-Temporal Dynamics and Composition in Size-Fractionated and Unfractionated Northwestern Atlantic Microbial Communities
Environmental Microbiology Reports · 18, e70206
https://exaly.com/article/210183408
2 citations

02 Effect of Bedrest on the Human Gut and Oral Microbiome: Implications for Frailty.
Experimental Gerontology · 216, 113079
https://exaly.com/article/210849622
3 citations

03 Investigating the Mobility and Host Range of Mobile Genetic Elements Harbouring Antimicrobial Resistance Genes in Enterococci
Microbiology (United Kingdom) · 172, 001720
https://exaly.com/article/215616166
0 citations

04 Sarand: Exploring Antimicrobial Resistance Gene Neighbourhoods in Complex Metagenomic Assembly Graphs
NAR Genomics and Bioinformatics · 8, lqag066
https://exaly.com/article/216051103
1 citations

05 Development of a Lightweight, Fully Integrated qPCR Sensor for Environmental DNA
Sensing and Bio-Sensing Research · 53, 101058
https://exaly.com/article/216274158
0 citations

2025

06 Profiling Lateral Gene Transfer Events in the Human Microbiome Using WAAFLE
Nature Microbiology · 10, 94-111
https://exaly.com/article/196300674
29 citations

07 The Case for Microbiome Stewardship: What It Is and How to Get There
MSystems · 10, e0006225
https://exaly.com/article/199669000
11 citations

08 ParallelEvolCCM: Quantifying Coevolutionary Patterns Among Genomic Features
Genome Biology and Evolution
https://exaly.com/article/200996725
0 citations

2024

09 Mock Microbial Community Meta-Analysis Using Different Trimming of Amplicon Read Lengths
Environmental Microbiology · 26, e16566
https://exaly.com/article/174272190
7 citations

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2024 / continued

10 Identification of Key Drivers of Antimicrobial Resistance in Enterococcus Using Machine Learning
8 citations
Canadian Journal of Microbiology · 70, 446-460
https://exaly.com/article/187770192

2023

11 The Community Coevolution Model With Application to the Study of Evolutionary Relationships Between Genes Based on Phylogenetic Profiles.
6 citations
Systematic Biology · 72, 559-574
https://exaly.com/article/150055028

12 CARD 2023: Expanded Curation, Support for Machine Learning, and Resistome Prediction at the Comprehensive Antibiotic Resistance Database.
2,224 citations
Nucleic Acids Research · 51, D690-D699
https://exaly.com/article/155943128

13 Integrating Seascape Resistances and Gene Flow to Produce Area-Based Metrics of Functional Connectivity for Marine Conservation Planning
16 citations
Landscape Ecology · 38, 2189-2205
https://exaly.com/article/163523189

2022

14 deepSimDEF: Deep Neural Embeddings of Gene Products and Gene Ontology Terms for Functional Analysis of Genes.
6 citations
Bioinformatics · 38, 3051-3061
https://exaly.com/article/145284555

15 Machine Learning for Antimicrobial Resistance Prediction: Current Practice, Limitations, and Clinical Perspective.
243 citations
Clinical Microbiology Reviews · 35, e0017921
https://exaly.com/article/146006228

16 Genome-Scale Prediction of Bacterial Promoters
4 citations
BioSystems · 221, 104771
https://exaly.com/article/154114213

17 Exploring the Mobilome and Resistome of Enterococcus faecium in a One Health Context Across Two Continents
25 citations
Microbial Genomics · 8, 000880
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2022 / continued

18 **Vaginal Microbiota in Women With Spontaneous Preterm Labor Versus Those With Term Labor in Kenya: A Case Control Study**
14 citations
BMC Microbiology · 22, 1-11
https://exaly.com/article/156462527

19 **A Miniaturized and Automated eDNA Sampler: Application to a Marine Environment**
8 citations
Journal unavailable
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2021

20 **Identifying Novel β-Lactamase Substrate Activity Through in Silico Prediction of Antimicrobial Resistance**
11 citations
Microbial Genomics · 7, 000500
https://exaly.com/article/78849895

21 **Changes in Bacterial Communities During Treatment of Municipal Wastewater in Arctic Wastewater Stabilization Ponds**
6 citations
Frontiers in Water · 3, 710853
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22 **Genome-Scale Prediction of Bacterial Promoters**
1 citations
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2020

23 **CARD 2020: Antibiotic Resistome Surveillance With the Comprehensive Antibiotic Resistance Database.**
2,543 citations
Nucleic Acids Research · 48, D517-D525
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24 **PSORTm: A Bacterial and Archaeal Protein Subcellular Localization Prediction Tool for Metagenomics Data**
16 citations
Bioinformatics · 36, 3043-3048
https://exaly.com/article/77270026

25 **Metagenome-Assembled Genome Binning Methods With Short Reads Disproportionately Fail for Plasmids and Genomic Islands**
120 citations
Microbial Genomics · 6, e000436
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2019

26 **Identification of Primary Antimicrobial Resistance Drivers in Agricultural Nontyphoidal Salmonella enterica Serovars by Using Machine Learning.** 40 citations

MSystems

https://exaly.com/article/71894327

27 **Cellulase–Hemicellulase Activities and Bacterial Community Composition of Different Soils From Algerian Ecosystems** 30 citations

Microbial Ecology · 77, 713-725

https://exaly.com/article/74500965

28 **RADProc: A Computationally Efficient De Novo Locus Assembler for Population Studies Using RADseq Data** 12 citations

Molecular Ecology Resources · 19, 272-282

https://exaly.com/article/74738788

2018

29 **Investigating Biogeographical Patterns Using Point-Based Cartograms** 0 citations

Global Ecology and Biogeography · 27, 380-388

https://exaly.com/article/69184317

30 **Oceanographic Variation Influences Spatial Genomic Structure in the Sea Scallop, Placopecten magellanicus** 17 citations

Ecology and Evolution · 8, 2824-2841

https://exaly.com/article/69289697

31 **Genotyping-by-Sequencing of Genome-Wide Microsatellite Loci Reveals Fine-Scale Harvest Composition in a Coastal Atlantic Salmon Fishery** 66 citations

Evolutionary Applications · 11, 918-930

https://exaly.com/article/69325149

32 **A Climate-Associated Multispecies Cryptic Cline in the Northwest Atlantic** 108 citations

Science Advances · 4, eaaq0929

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33 **Applications of Random Forest Feature Selection for Fine-Scale Genetic Population Assignment** 118 citations

Evolutionary Applications · 11, 153-165

https://exaly.com/article/69616822

34 **Predicting the Functional Potential of the Microbiome From Marker Genes Using PICRUSt** 211 citations

Methods in Molecular Biology · 1849, 169-177

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2018 / continued

35 **16S rRNA Gene Analysis With QIIME2** — 548 citations
Methods in Molecular Biology · 1849, 113-129
https://exaly.com/article/70717767

36 **Environmental Extremes Drive Population Structure at the Northern Range Limit of Atlantic Salmon in North America** — 26 citations
Molecular Ecology · 27, 4026-4040
https://exaly.com/article/70974456

37 **PMERGE: Computational Filtering of Paralogous Sequences From RAD-Seq Data** — 12 citations
Ecology and Evolution · 8, 7002-7013
https://exaly.com/article/71239797

38 **Phylogenetic Clustering of Genes Reveals Shared Evolutionary Trajectories and Putative Gene Functions** — 26 citations
Genome Biology and Evolution · 10, 2255-2265
https://exaly.com/article/71618041

2017

39 **Megasat: Automated Inference of Microsatellite Genotypes From Sequence Data** — 73 citations
Molecular Ecology Resources · 17, 247-256
https://exaly.com/article/65877785

40 **Scaling Up the Phylogenetic Detection of Lateral Gene Transfer Events** — 4 citations
Methods in Molecular Biology · 1525, 421-432
https://exaly.com/article/66341264

41 **RAD Sequencing Reveals Genomewide Divergence Between Independent Invasions of the European Green Crab (Carcinus Maenas) in the Northwest Atlantic** — 41 citations
Ecology and Evolution · 7, 2513-2524
https://exaly.com/article/66622273

42 **Range-Wide Parallel Climate-Associated Genomic Clines in Atlantic Salmon** — 37 citations
Royal Society Open Science · 4, 171394
https://exaly.com/article/67435198

43 **Inter-Personal Diversity and Temporal Dynamics of Dental, Tongue, and Salivary Microbiota in the Healthy Oral Cavity** — 192 citations
Npj Biofilms and Microbiomes · 3, 1-7
https://exaly.com/article/67568547

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44 SNVPhyl: A Single Nucleotide Variant Phylogenomics Pipeline for Microbial Genomic Epidemiology — 130 citations
Microbial Genomics · 3, e000116
https://exaly.com/article/68728045

45 Ananke: Temporal Clustering Reveals Ecological Dynamics of Microbial Communities — 17 citations
PeerJ · 5, e3812
https://exaly.com/article/90754115

46 Ananke: Temporal Clustering Reveals Ecological Dynamics of Microbial Communities — 0 citations
PeerJ Preprints
https://exaly.com/article/111189986

47 Ananke: Temporal Clustering Reveals Ecological Dynamics of Microbial Communities — 0 citations
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https://exaly.com/article/144265033

2016

48 Discovery of an Expanded Set of Avian Leukosis Subgroup E Proviruses in Chickens Using Vermillion, a Novel Sequence Capture and Analysis Pipeline — 12 citations
Poultry Science · 95, 2250-2258
https://exaly.com/article/63461004

49 A New Way to Contemplate Darwin's Tangled Bank: How DNA Barcodes Are Reconnecting Biodiversity Science and Biomonitoring — 64 citations
Philosophical Transactions of the Royal Society B: Biological Sciences · 371, 20150330
https://exaly.com/article/64476208

50 simDEF: Definition-Based Semantic Similarity Measure of Gene Ontology Terms for Functional Similarity Analysis of Genes. — 25 citations
Bioinformatics · 32, 1380-7
https://exaly.com/article/65667954

51 Fixed-Parameter and Approximation Algorithms for Maximum Agreement Forests of Multifurcating Trees — 9 citations
Algorithmica · 74, 1019-1054
https://exaly.com/article/65802169

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2015

52 **Genomic Comparison of Non-Typhoidal Salmonella enterica Serovars Typhimurium, Enteritidis, Heidelberg, Hadar and Kentucky Isolates From Broiler Chickens**
55 citations
PLoS ONE · 10, e0128773
https://exaly.com/article/61043934

53 **Transfer of Energy Pathway Genes in Microbial Enhanced Biological Phosphorus Removal Communities**
9 citations
BMC Genomics · 16, 1-13
https://exaly.com/article/61397196

54 **Frailty and the Microbiome**
15 citations
Interdisciplinary Topics in Gerontology and Geriatrics · 41, 54-65
https://exaly.com/article/62500020

55 **Phylogenetic Approaches to Microbial Community Classification**
46 citations
Microbiome · 3, 47
https://exaly.com/article/62576855

2014

56 **A Phylogenomic View of Ecological Specialization in the Lachnospiraceae, a Family of Digestive Tract-Associated Bacteria.**
650 citations
Genome Biology and Evolution · 6, 703-13
https://exaly.com/article/57713904

57 **Bioinformatics: Hypothesis Free—Or Hypotheses Freed?**
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BioScience · 64, 844-845
https://exaly.com/article/58131435

58 **Microbial Shifts in the Aging Mouse Gut**
376 citations
Microbiome · 2, 1-12
https://exaly.com/article/58439276

59 **Interactions in the Microbiome: Communities of Organisms and Communities of Genes.**
192 citations
FEMS Microbiology Reviews · 38, 90-118
https://exaly.com/article/58768416

60 **Supertrees Based on the Subtree Prune-and-Regraft Distance**
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61 STAMP: Statistical Analysis of Taxonomic and Functional Profiles.
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62 Predictive Functional Profiling of Microbial Communities Using 16S rRNA Marker Gene Sequences
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63 Fixed-Parameter Algorithms for Maximum Agreement Forests
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64 Measures of Phylogenetic Differentiation Provide Robust and Complementary Insights Into Microbial Communities
ISME Journal · 7, 173-183
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65 SPANNER: Taxonomic Assignment of Sequences Using Pyramid Matching of Similarity Profiles.
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66 Being Aquifex aeolicus: Untangling a Hyperthermophile's Checkered Past.
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26 citations

67 GenGIS 2: Geospatial Analysis of Traditional and Genetic Biodiversity, With New Gradient Algorithms and an Extensible Plugin Framework
PLoS ONE · 8, e69885
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68 STAMP: Statistical Analysis of Metagenomic Profiles
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70 RITA: Rapid Identification of High-Confidence Taxonomic Assignments for Metagenomic Data — 1 citations
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71 GenGIS 2: Geospatial Analysis of Traditional and Genetic Biodiversity, With New Gradient Algorithms and an Extensible Plugin Framework — 0 citations
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72 Supertrees Based on the Subtree Prune-and-Regraft Distance — 0 citations
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73 A Phylogenomic View of Ecological Specialization in the Lachnospiraceae, a Family of Digestive Tract-Associated Bacteria — 1 citations
PeerJ Preprints
https://exaly.com/article/144260627

74 Supertrees Based on the Subtree Prune-and-Regraft Distance — 1 citations
PeerJ Preprints
https://exaly.com/article/144268549

75 GenGIS 2: Geospatial Analysis of Traditional and Genetic Biodiversity, With New Gradient Algorithms and an Extensible Plugin Framework — 0 citations
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https://exaly.com/article/144295434

2012

76 Algal Genomes Reveal Evolutionary Mosaicism and the Fate of Nucleomorphs — 383 citations
Nature · 492, 59-65
https://exaly.com/article/53099259

77 Genome and Low-Iron Response of an Oceanic Diatom Adapted to Chronic Iron Limitation — 239 citations
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78 Measuring Community Similarity With Phylogenetic Networks. — 25 citations
Molecular Biology and Evolution · 29, 3947-58
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79 Comparative Metagenomics of Three Dehalococcoides-Containing Enrichment Cultures: The Role of the Non-Dechlorinating Community
106 citations
BMC Genomics · 13, 1-19
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80 Lateral Gene Transfer of an ABC Transporter Complex Between Major Constituents of the Human Gut Microbiome
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81 Rapid Identification of High-Confidence Taxonomic Assignments for Metagenomic Data
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82 Human Microbiome: A Genetic Bazaar for Microbes?
6 citations
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83 Comparative Genomic and Phylogenetic Approaches to Characterize the Role of Genetic Recombination in Mycobacterial Evolution
19 citations
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2011

84 Classifying Short Genomic Fragments From Novel Lineages Using Composition and Homology
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https://exaly.com/article/51141493

85 Telling the Whole Story in a 10,000-Genome World
40 citations
Biology Direct · 6, 1-36
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86 Lateral Transfer of Genes and Gene Fragments in Staphylococcus Extends Beyond Mobile Elements.
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87 Gene Sharing and Genome Evolution: Networks in Trees and Trees in Networks
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88 **Assembling Networks of Microbial Genomes Using Linear Programming**
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89 **Genetic Recombination and Bacterial Population Structure**
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91 **Efficient Learning of Microbial Genotype-Phenotype Association Rules.**
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92 **Monitoring Associations Between Clade-Level Variation, Overall Community Structure and Ecosystem Function in Enhanced Biological Phosphorus Removal (EBPR) Systems Using Terminal-Restriction Fragment Length Polymorphism (T-RFLP)**
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93 **Identifying Biologically Relevant Differences Between Metagenomic Communities.**
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94 **Fast FPT Algorithms for Computing Rooted Agreement Forests: Theory and Experiments**
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95 **Are Protein Domains Modules of Lateral Genetic Transfer?**
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96 **Lateral Transfer of Genes and Gene Fragments in Prokaryotes**
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97 **Radié: Visualizing Taxon Properties and Parsimonious Mappings Using a Radial Phylogenetic Tree.** 0 citations

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98 **GenGIS: A Geospatial Information System for Genomic Data** 108 citations

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99 **Prokaryotic Evolution and the Tree of Life Are Two Different Things** 192 citations

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100 **Untangling Hybrid Phylogenetic Signals: Horizontal Gene Transfer and Artifacts of Phylogenetic Reconstruction** 17 citations

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102 **Lateral Genetic Transfer: Open Issues** 73 citations

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103 **Detecting Lateral Genetic Transfer** 27 citations

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104 **Large-Scale Detection of Recombination in Nucleotide Sequences** 1 citations

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105 **The Impact of Reticulate Evolution on Genome Phylogeny.** 48 citations

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106 **Virulence Profiling of Streptococcus dysgalactiae Subspecies Equisimilis Isolated From Infected Humans Reveals 2 Distinct Genetic Lineages That Do Not Segregate With Their Phenotypes or Propensity to Cause Diseases.**
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108 **Do Different Surrogate Methods Detect Lateral Genetic Transfer Events of Different Relative Ages?**
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109 **Detecting Recombination in Evolving Nucleotide Sequences**
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112 **A Word-Oriented Approach to Alignment Validation.**
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113 **Highways of Gene Sharing in Prokaryotes**
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Proceedings of the National Academy of Sciences of the United States of America · 102, 14332-14337
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114 **GANN: Genetic Algorithm Neural Networks for the Detection of Conserved Combinations of Features in DNA**
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115 **Characterization of Species-Specific Genes Using a Flexible, Web-Based Querying System.**

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116 **Microbial Phylogenomics: Branching Out**

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117 **Inferring Genome Trees by Using a Filter to Eliminate Phylogenetically Discordant Sequences and a Distance Matrix Based on Mean Normalized BLASTP Scores.**

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