


GIORGIO BIANCHINI



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PUBLICATIONS

- 2024 *Giorgio Bianchini, Martin Hagemann, Patricia Sánchez-Baracaldo*
STOCHASTIC CHARACTER MAPPING, BAYESIAN MODEL SELECTION, AND BIOSYNTHETIC PATHWAYS SHED NEW LIGHT ON THE EVOLUTION OF HABITAT PREFERENCE IN CYANOBACTERIA
Systematic Biology, 2024, DOI: 10.1093/sysbio/syae025
- 2024 *Giorgio Bianchini, Patricia Sánchez-Baracaldo*
TREEVIEWER: FLEXIBLE, MODULAR SOFTWARE TO VISUALISE AND MANIPULATE PHYLOGENETIC TREES
Ecology and Evolution, 2024, DOI: 10.1002/ece3.10873
- 2021 *Giorgio Bianchini, Patricia Sánchez-Baracaldo*
SMAP: EVOLUTION OF INDEPENDENT, DEPENDENT AND CONDITIONED DISCRETE CHARACTERS IN A BAYESIAN FRAMEWORK
Methods in Ecology and Evolution, 2021, DOI: 10.1111/2041-210X.13540
- 2021 *B. David A. Naafs, Giorgio Bianchini, Fanny M. Monteiro, Patricia Sánchez-Baracaldo*
THE OCCURRENCE OF 2-METHYLHOPANOIDS IN MODERN BACTERIA AND THE GEOLOGICAL RECORD
Geobiology, 2021, DOI: 10.1111/gbi.12465
- 2021 *Patricia Sánchez-Baracaldo, Giorgio Bianchini, Jamie D Wilson, Andrew H Knoll*
CYANOBACTERIA AND BIOGEOCHEMICAL CYCLES THROUGH EARTH HISTORY
Trends in Microbiology, 2021, DOI: 10.1016/j.tim.2021.05.008

*Patricia Sánchez-Baracaldo, **Giorgio Bianchini**, Andrea Di Cesare, Cristiana Callieri, Nathan AM Christmas*

2019 **INSIGHTS INTO THE EVOLUTION OF PICOCYANOBACTERIA AND PHYCOERYTHRIN GENES (MPEBA AND CPEBA)**

Frontiers in microbiology, 2019, DOI: 10.3389/fmicb.2019.00045

*Patricia Sánchez-Baracaldo, **Giorgio Bianchini**, John P Huelsenbeck, John A Raven, Davide Pisani, Andrew H Knoll*

2017 **REPLY TO NAKOV ET AL.: MODEL CHOICE REQUIRES BIOLOGICAL INSIGHT WHEN STUDYING THE ANCESTRAL HABITAT OF PHOTOSYNTHETIC EUKARYOTES**

Proceedings of the National Academy of Sciences, 2017, DOI: 10.1073/pnas.1717417114

SOFTWARE AND LIBRARIES



TREEVIEWER

Cross-platform software to draw phylogenetic trees.

<https://treeviewer.org>



sMAP

Evolution of Independent, Dependent and Conditioned discrete characters in a Bayesian framework.

<https://github.com/arklumpus/sMap>



TREENODE

C# and R library to read, write and manipulate phylogenetic trees.

<https://github.com/arklumpus/TreeNode>



VECTSHARP

A light library for C# vector graphics.

<https://github.com/arklumpus/VectSharp>



MUPDFCORE

Multiplatform .NET Core bindings for MuPDF.

<https://github.com/arklumpus/MuPDFCore>

EMPLOYMENT

- 2024 – TO DATE University of Bristol – Bristol, UK
SENIOR RESEARCH ASSOCIATE
School of Geographical Sciences, PI Prof. Patricia Sánchez-Baracaldo
- 2022 – 2024 University of Bristol – Bristol, UK
RESEARCH ASSOCIATE
School of Geographical Sciences, PI Prof. Patricia Sánchez-Baracaldo



EDUCATION

- 2017 – 2022 University of Bristol – Bristol, UK
PHD PHYSICAL GEOGRAPHY
THESIS: Bayesian methods using genomic data to gain insights into the history of photosynthesis
Supervisors: Dr. Patricia Sánchez-Baracaldo and Dr. Fanny Monteiro
- 2015 – 2017 University of Pisa – Pisa, Italy
MS CONSERVATION AND EVOLUTION, 110/110 cum laude
(GPA: 29.52/30)
DISSERTATION: Analysis of the applicability of miRNA clusters as phylogenetic markers, through the development of a method to identify the sequences that best predict a cladogram
Supervisors: [Prof. A. Cellerino \(SNS\)](#) and Dr. R. Marangoni (Unipi)
- 2012 – 2017 Scuola Normale Superiore – Pisa, Italy
ALLIEVO ORDINARIO (STUDENT) of the Faculty of Mathematical and Natural Sciences – Biology



[Scuola Normale Superiore](#) (SNS) is a very prestigious and selective (only about 5 Biology students admitted every year) Italian University Institution based on the college model, planning a parallel and complementary career with respect to the University of Pisa. Every year, an SNS student has to respect academic duties such as timing, additional exams, advanced lectures, research work from very early years and an average exam grade of 27 out of 30 (no exam grade below 24/30). Students of SNS do not pay any fee – it is a 5 years honor scholarship - and the SNS provides its students with all of the basic services, together with a little stipend.

2012 – 2015



University of Pisa – Pisa, Italy

BS BIOLOGICAL SCIENCES, 110/110 cum laude (GPA: 29.07/30)

DISSERTATION: Convergent evolution in three-spined stickleback populations through regulatory modifications in development-related genes

Supervisors: [Prof. A. Cellerino \(SNS\)](#) and Prof. M. Andreazzoli (Unipi)

WORKSHOPS AND CONFERENCES

2024



Life and Planet



University of Reading, Reading (UK)

11TH SYSTEMATICS ASSOCIATION BIENNIAL CONFERENCE

Contributed talk: “TreeViewer: Flexible, modular software to visualise and manipulate phylogenetic trees”

2023



Life and Planet



Geological Society of London (UK)

LIFE AND PLANET 2023

Contributed talk: “The (bacterio-)chlorophyll biosynthetic pathway provides Bayesian insights into the evolution of photosynthesis”

2022



Geobiology
Gordon Research Conference

Ventura, CA (USA)

GEOBIOLOGY GRC & GRC 2022

Poster presentation: “A Bayesian approach using genomic data and biosynthetic pathways to study salt tolerance in Cyanobacteria”

2022



Liverpool (UK)

INTERNATIONAL SYMPOSIUM ON PHOTOTROPHIC PROKARYOTES

Poster presentation: “A Bayesian approach using genomic data and biosynthetic pathways to study salt tolerance in Cyanobacteria”

2021



Heinrich Heine Universität Duesseldorf – Online

MATHEMATICAL, INFERENCE AND COMPUTATIONAL PHYLOGENOMICS (MIC-PHY) MEETING 2021

Contributed talk: “sMap: Evolution of independent, dependent and conditioned discrete characters in a Bayesian framework”

2020



Heinrich Heine Universität Duesseldorf (DE) – Online
CYANO2020
Early Career Researcher Summer School on Cyanobacteria

2018

University of Bristol – Bristol (UK)
USING IMMERSIVE GAMES TO EXPLORE DATA

2018

University of Bristol – Bristol (UK)
**ANALYSING MACROEVOLUTIONARY PROCESSES USING
REVBAYES**

2016

Marine Biological Laboratory – Woods Hole, MA (USA)
WORKSHOP ON MOLECULAR EVOLUTION

[MBL's Workshop on Molecular Evolution](#) is the most prestigious workshop serving the field of evolutionary studies. Founded in 1988, it is the longest-running workshop of its kind and it has earned worldwide recognition for its rich and intensive learning experience. Students work closely with internationally-recognized scientists, receiving high-level instruction in the principles of molecular evolution and evolutionary genomics, advanced training in statistical methods best suited to modern datasets, and hands-on experience with the latest software tools (often from the authors of the programs they are using).

AWARDS

2019

Bristol – UK
NATURAL SYSTEMS AND PROCESSES POSTER SESSION (NSPPS)
3rd prize (poster title: “Cyanobacteria and the geological record of oxygen: insights from the evolution of salt tolerance”)

2012



Singapore – Republic of Singapore
INTERNATIONAL BIOLOGY OLYMPIAD
Silver medal

2009



Taipei – Taiwan
INTERNATIONAL EARTH SCIENCE OLYMPIAD
Bronze medal
International Team Field Investigation best presentation award

ADDITIONAL COLLABORATIONS

2017 – TO DATE



INTERNATIONAL BIOLOGY OLYMPIAD

Jury Member for Italy

2016 – TO DATE



ANISN

Alumnus, member and webmaster of the Italian National Association of Natural Sciences Teachers (ANISN)

The [National Association of Natural Sciences Teacher](#) (*Associazione Nazionale Insegnanti di Scienze Naturali, ANISN*) is an association of over 1000 between Natural Sciences teachers and young members (former winners of the national and international Olympiads for Natural Sciences), which is accredited by the Italian Ministry of Education as a teacher formation body and is in charge of organizing the National Olympiads for Natural Sciences (Biology and Earth Science), which select 4 amongst all of the participating Italian students to compete in the International Biology and Earth Science Olympiads.

2013 – TO DATE



Active collaboration with the National Association of Natural Sciences Teachers for the creation of questions for the National Olympiads for Natural Sciences

2011



Modena – Italy

INTERNATIONAL EARTH SCIENCE OLYMPIAD

Staff member

OUTREACH ACTIVITIES

2024



University of Bristol, Bristol – UK

BEYOND PLANTS: PHOTOSYNTHESIS IN THE BACTERIAL DOMAIN

Teacher Continuing Professional Development (CPD)

2019



Royal Society, London – UK

THE SWEET WORLD OF MICROBES

Summer Science Exhibition Lates 2019

2018



Royal Society, London – UK

THE SWEET WORLD OF MICROBES

Summer Science Exhibition Lates 2018

2018

Bishop Road Primary School, Bristol – UK

OUTREACH EVENT

INTERESTS AND ADDITIONAL SKILLS

In 2018/2019 I organised group meetings and seminars for the BRIDGE research group in Bristol and attended multiple seminar series at the University of Bristol. In 2019/2020 I was IT representative for the Physical Geography PGR students at the University of Bristol.

IT/TECHNOLOGY

I have experienced knowledge of the **C#** programming language, of the **ECMAScript/Javascript** scripting language and of **HTML** and **CSS**, and basic knowledge of the **Java** and **R** programming languages. I have occasionally successfully used other programming/scripting languages for specific tasks (**PHP**, **Python**, **R**, **C/C++** and **Bash**). I have extensive knowledge of Microsoft Office programs and I can write LaTeX documents. I have achieved the European Computer Driving License (ECDL). I have built small projects using the Raspberry Pi SBC and the Arduino platform.

LANGUAGES

I am fluent in Italian (mother tongue) and English (written and oral); I have basic German conversation and writing skills.

14/01/2017



Pisa – Italy (Rome IELTS Administrative Center)

IELTS CERTIFICATE *Test report form number 16IT004501BIAG264A*

Average score 8.5 (Reading 9.0, Listening 9.0, Speaking 7.5, Writing 7.5)