

Telma G. Laurentino

Evolutionary biologist
Author and Educator

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🌐 www.telmagl.com

Interested in multidisciplinary studies on Evolution, Holistic Inclusive Education and socioecological issues
Natural selection • Adaptation • Genetics • Multisensory education • Systems thinking • Belonging

Education

Post-Doc

Sep. 2020 – Jan. 2023

University of California, Berkeley, USA 🇺🇸

Research: *Genomics of rapid & repeated adaptation*

Supervision: Prof. Erica Rosenblum

Ph.D.

Jul. 2016 – Apr. 2020

University of Basel, Switzerland 🇨🇭

Dissertation: *Adaptation genomics of three-spine Stickleback fish*

Supervision: Dr. Daniel Berner & Prof. Walter Salzburger
summa cum laude

MSc

Sep. 2012 – Sep. 2015

Faculty of Sciences, University of Lisbon, Portugal 🇵🇹

Evolutionary biology and Development

Thesis: *Assessing the speciation continuum in the Iberian lizard Timon lepidus.*

Supervision: Prof. Octávio Paulo
excellent

BSc

Sep. 2008 – Jun. 2012

Faculty of Sciences, University of Lisbon, Portugal 🇵🇹

Biology - 3rd year specialization in EvoDevo

Grants & Approved research projects

~151'000 USD in self-acquired funds

Nov. 2022

334 EUR

APBE Outreach grant

Evolution at the multisensory forest: searching for the common ancestors!

In collaboration with the Lisbon school for the teaching of the blind, Helen Keller school

Apr. 2022

495 USD

SSE grant for local and regional outreach

The multisensory (hi)story of the White Sands lizards

Host: New Mexico School for the Blind and Visually Impaired, USA

Oct. 2021

500 USD

IB sci-comm mini-grants

Multisensory outreach at the White Sands

Co-organized with Maggie Grundler (UC Berkeley, USA)

Mar. 2021 - present

81'500 CHF

SNSF Early Postdoc.Mobility fellowship (P2BSP3_195698)

"Dissecting the whole genome landscape of repeated rapid adaptation"

Post-Doc
Rosenblum Lab, ESPM, UC Berkeley, USA

Oct. 2019

1420 EUR

ESEB outreach initiative funds

"To the bones!" An haptic experience of vertebrate evolution

Co-authorship with Dr. Astrid Boehne (Museum Koenig, Germany)

Sep. 2019

317 CHF

Travel grant from the University of Basel

For two oral presentations at ESEB 2019, Turku, Finland

Sep. 2019

33'086 CHF

Nikolaus und Bertha Burckhardt-Bürgin Stiftung for PhD thesis completion

PhD research extension (additional 8 months)

Jun. 2019

230 EUR

APBE Outreach grant

"Game of Branches : Extinction is coming"

Host: Hellen Keller inclusive school, Lisbon, Portugal

Feb. 2019 1000 C HF	Travel grant from the Swiss Zoological Society (SZS) For conference attendance
Feb. 2019 1000 USD	SSE grant for local and regional outreach <i>"evALLution: evolution for all, through multisensory activities"</i> Host: Association for the Teaching of the Blind, Lisbon, Portugal
Aug. 2018 1087 CHF	Travel grant from the University of Basel For an oral presentations at Stickleback'18, Kyoto, Japan
Jun. 2019 500 EUR	APBE Outreach grant <i>"evALLution: evolution for all!"</i> Host: Association for the Teaching of the Blind, Lisbon, Portugal
Mar. 2017 8000 C HF	Career program antelope@university 20218 Excellence equity grant for skill development of female researchers
Sep. 2017 710 C HF	Travel grant from the University of Basel For an oral presentations at ESEB XVI, Groningen, The Netherlands
Aug. 2015 200 G BP	Travel scholarship from the British Ecology Society For the TBA 2015 Tropical Ecology course, held in Uganda
Sep. 2013 3000 EUR	ESEB organizer productivity prize Totality of funds applied towards MSc genetic work
Oct. 2011 - Sep. 2012 1900 EUR	Student research Grant Universidade de Lisboa/Fundação Amadeu Dias <i>"Assessing the influence of Ranavirus on the Age structure of Bosca's newt using skeletochronology"</i> Host: CE3C – Center for Ecology, Evolution and Environmental Change, Lisbon, Portugal; Supervision: Dr. Gonçalo M. Rosa & Prof. Rui Rebelo
Jun. – Oct. 2011 2500 EUR	FCT Technical assistant Grant Genetics labwork and fish bioterium maintenance <i>"A genetic and environmental approach in the resolution of the sex paradox in the Squalius alburnoides complex"</i> Supervision: Prof. Dr. M. M. Coelho Trancoso & Dr. Isa Matos

Teaching & Mentorship	
Feb. 2023 - present Educator Curriculum designer	Healing Living Systems level: adult, all scholarship levels Depth education for biodiversity & socio-ecological awareness www.healinglivingsystems.org
Oct. 2022 Educator	Introduction to DNA lab: from lizard tail to gene sequence UC Berkeley, USA level: undergraduate Practical laboratory skills in DNA extraction & quantification, PCR and electrophoresis
Aug. – Nov. 2021 Teacher	ESPM 139 " The Environment and the Self: and Eco practicum" UC Berkeley, USA level: graduate Guided discussion and reflection on scientific and philosophical material on engaging with the environmental crisis
Mar. - Apr. 2018 Supervisor	Block course of Zoology and Evolution University of Basel, Switzerland Student level: senior year Biology BSc Supervision and guidance on project design, laboratory work and project presentation.
Apr. 2018 - Sep. 2019 Supervisor	MSc research project co-supervisor (with Dr. Daniel Berner) University of Basel, Switzerland Alicia Welti <i>'The genetic basis of lateral plate height in stickleback fish'</i>

Mar.-Apr.2018	Block course of Zoology and Evolution University of Basel, Switzerland Student level:senior year Biology BSc Supervision and guidance on project design, laboratory work and project presentation.
Supervisor	
May.2017-Sep.2018	MSc research project assistant supervisor (with Dr. Daniel Berner) University of Basel, Switzerland Mirjam Bissegger <i>'Widespread intersex differentiation across the stickleback genome –the signature of sexually antagonistic selection?'</i>
Assistant supervisor	
Oct.–Dec.2017	General Biology "Einführung in die Biologie" University of Basel, Switzerland Student level:1 st year Biology BSc Lectures on: molecular biology, heredity, cellular biology, development, ecology and evolution
Educator	
Oct.2015	Introduction to population genomics – RADseq approaches Faculty of Sciences, University of Lisbon, Portugal Student level: MSc in Computational biology & genomics 1 theoretical & practical lecture on population genomics and GWAS
Educator	

Outreach activities

Jun.2022–Apr.2023	ArtSci - Scientist consultant for Elana Gutman's art project "From Here" Translation and research of scientific information to inspire the artist www.elanagutmannstudio.com
GENERAL PUBLIC	
Jan./Feb./Oct. 2022	Skype a Scientist Virtual interactive lectures about the tree of life - adapted to class-specific 3 rd grade curriculum
2nd & 3rd GRADERS	
Sep.2021	A Scientist just like me! Primary Science Teaching Trust, UK <i>Virtual project to raise awareness of diversity in science-related jobs and to provide illustrated examples of a wide range of science-based careers</i>
GENERAL PUBLIC	
Jul.2021	Feeling the White Sands' history New Mexico School for the Blind, USA <i>Production of multisensory scripts for inclusive guided tours to the white sands national park</i>
CHILDREN WITH BLINDNESS	
Jun.2021	The artistic Tree of Life Hellen Keller inclusive school, Portugal <i>Virtual project of building a phylogeny with students' artistic depictions of endangered species and discussion of speciation & common ancestry</i>
MIDDLE SCHOOL	
Feb.2021	"I'm a Scientist" – virtual public gallery To celebrate the international day of girls and women scientists & Black history month @1mascientist on Instagram
GENERAL PUBLIC	
Apr.2020	Skype a Scientist (COVID-19 relief efforts) Interactive virtual lectures with children (5 to 12 y.o.)
CHILDREN	
Apr.2020	Writer for Nature Ecology and Evolution 'Behind the paper' blog Article titled "Chasing Selection"
GENERAL PUBLIC	
Jun.2018*	evALLution: a multisensory tree-of-life Grant holder, project designer and main organizer of multisensory activities, making fundamental evolution concepts accessible to the blind community (*ongoing: collabs so far: Association for the Teaching of the Blind; Helen Keller school)
PEOPLE WITH BLINDNESS	
Apr.2020	Writer for the SSE (Society for the Study of Evolution) Community Blog <i>"evALLution: 3 lessons the blind community taught us about inclusive teaching of evolution"</i>
GENERAL PUBLIC	

May.2017 to
Apr.2019

GENERAL PUBLIC

May.2012

GENERAL PUBLIC

Jun.2011 to
Mar.2015

PRIMARY SCHOOL

Writer and creative for SciFive the University of Basel Medium platform Several written articles and outreach comic book design
<https://medium.com/@telma.laurentino>

Public communication

"Society without biodiversity: a XXI century dystopia"
Faculty of Sciences of the University of Lisbon.

Didactic activities on biodiversity, nature conservation and evolution

Main focus: reptiles, amphibians, evolution
Public: children (3-10y.o.)
EB1/JIJorge Mineiro, Portugal

Invited talks & lectures

Jan.2024

Polytechnic Institute, Superior school of technology of Barreiro, Portugal

Invited lecturer for undergraduate course 'Perspectives in Bioinformatics'
"Genomic details / Life overviews: How genomics informs our understanding of the evolution of biodiversity and society"

Nov. 2023

Faculty of Science, University of Lisbon, CE3C

Poster design lecture (theory & practice) for the *MSc in Human Biology and Environment*

Oct. 2023

Southwest Word Fiesta, New Mexico

Invited author for the 'outdoors' author panel
"Do we go into nature as intruders, or as human nature?"

Mar. 2023

Natural History Museum, Basel, Switzerland

Wissenschaftsrunde – museum seminar
"From Wonder to DNA, and back: How studying the evolution of biodiversity contributes to creating inclusive education"

Jan. 2023

Polytechnic Institute, Superior school of technology of Barreiro, Portugal

Invited lecturer for undergraduate course 'Perspectives in Bioinformatics'
"From Ecosystem to DNA, and back: bioinformatics as a language to decode the evolution of biodiversity"

Jan. 2022

Faculty of Science, University of Lisbon, CE3C

Seminars in Evolutionary Biology and Development (MSc)
"Into the genomic wild! What can we learned about natural selection from a release-recapture experiment"

Oct. 2019

Federal University of Viçosa, Brazil

Invited seminar
"Evolutionary forces and biodiversity – the role of Selection"

Oct. 2018

Museum of Vertebrate Zoology @ Berkeley University, California

MVZ lunch seminar
"Observing evolution: Adaptation stories told by the genomes of lizards and stickleback fish"

Apr. 2016

Zoological Institute @ University of Basel, Switzerland

Invited seminar
"Dorsos are green, eyespots are blue, does natural selection shape you?"

Conference contributions

Dec. 2021

TALK

XVII ENBE 2021, Portugal (virtual)

"evALLution: translating evolution into touch, making evolution accessible for people with blindness"

Aug. 2019

TALKS

ESEB 2019, Turku, Finland

I) *"Wild wild test: Release-recapture genomic experiment reveals within-generation polygenic adaptation in stickleback fish"*
II) *"evALLution: Can we make fundamental evolution concepts accessible to the blind community?"*

Jul. 2018

TALK

Stickleback'18, Kyoto, Japan

"Watching evolution: Exploring the tempo and mode of adaptation by combining historical and real-time genomic shifts in lake-stream stickleback"

Aug. 2017

TALK

ESEB 2017, Groningen, The Netherlands

"Into the genomic wild: exploring real-time selective allele frequency shifts in stickleback through a release experience"

Feb. 2017

POSTER

Biology'17, Bern, Switzerland

"Into the genomic wild: exploring real-time selective allele frequency shifts in stickleback through a release experience"

Feb. 2016 TALK	Biology'16, Lausanne, Switzerland "Dorsos are green. Eyespots are blue. Does natural selection shape you?"
Dec. 2015 POSTER	XI ENBE, Lisbon, Portugal "May the Selection be with you" The interplay of evolutionary forces in the speciation of <i>Timon lepidus</i> "
Dec. 2014 POSTER* <i>Best poster award</i>	CE3C junior researcher meeting, Lisbon, Portugal "Dorsos are green. Eyespots are blue. Does natural selection shape you?"
Dec. 2012 POSTER	TiBE: Integrative Approaches in Evolutionary Biology, Porto, Portugal "Influence of Ranavirus on the age structure of Bosca's newts (<i>Lissotriton boscai</i>)"

Conference organization

Apr. 2016	Darwin's legacy tea party @ Faculty of Sciences, University of Lisbon Main organizer, Fund raiser, scientific content curator, delegate assistance, event outreach Content: 6 multidisciplinary talks, final debate https://www.youtube.com/watch?v=Z6dxix3_RW4&t=114s
Oct. 2015	Public debate: Does evolutionary theory need a re-think? Main organizer, delegate assistance, event outreach and promotion https://www.youtube.com/watch?v=I39d_Fortzg&t=23s
Apr. 2015	Darwin's legacy tea party @ Faculty of Sciences, University of Lisbon Main organizer, Fund raiser, scientific content curator, delegate assistance, event outreach Content: 13 multidisciplinary talks, book presentation, final debate
Jul.–Sep. 2013	XIV ESEB – European Society for Evolutionary Biology, Lisbon, Portugal Congress staff, signage design, childcare service, poster-printing service, collaborators team supervisor (30 people) and delegate assistance

Books

A love letter FROM THE FOREST to you, through me

Mercury heart link publishing, USA; **April 2022** (ISBN 978-1949652192)

A nature memoir based on fieldwork learnings aiming to bring the public closer to biodiversity and evolutionary common ancestry

Scientific Peer-reviewed Publications

- Orton M, Eifler D, Eifler M, Utsumi K, **Laurentino TG**, Siddiqui D, Haddock J, Quock R
***Holbrookia maculata* space use in the Salt Basin Dunes of the Guadalupe Mountains National Park**
accepted in Herpetological Review
- Harer A, Mauro AA, **Laurentino TG**, Rosenblum EB, Rennison DJ
Gut microbiota parallelism and divergence associated with colonisation of novel habitats
Molecular ecology (2023) 32:5661–5672
- Laurentino TG**, Dittmer DE, Grundler M, Pina-Martins F, Haddock J, Hibbitts TJ, Rosenblum EB
Repeated evolution of blanched coloration in a lizard across independent white-sand habitats
Ecology & Evolution (2022) 12:e9555
- Laurentino TG**, Boileau N, Ronco F, Berner D
The EDA receptor (EDAR) is a candidate gene for lateral plate number variation in stickleback fish
G3: Genes, Genomes, Genetics (2022) 12:6
- Laurentino TG**, Xavier M, Ronco F, Pina-Martins F, Domingues I, Penha B, Dias M, de Sousa A, Carrilho T, Rodrigues L, Pinheiro C*, Rato D*, Balata D*, Ayala G*, Matos M M*, Campelo M*, Botelho R*
evALLution: making basic evolution concepts accessible to people with visual impairment through a multi-sensory tree of life
Evolution: education and outreach (2021) 14:5; *Equal contribution
- Haenel Q, Oke KB, **Laurentino TG**, Hendry AP, Berner D
Clinal genomic analysis reveals strong reproductive isolation across a steep habitat transition in stickleback fish
Nature Communications (2021) 12, 4850
- Laurentino TG**, Moser D, Roesti M, Ammann M, Frey A, Ronco F, Kueng B, Berner D
Genomic release-recapture experiment in the wild indicates within-generation polygenic selection in stickleback fish
Nature Communications (2020) 11, 1928
- Bisseger M, **Laurentino TG**, Roesti M, Berner D
Widespread intersex differentiation across the stickleback genome – the signature of sexually antagonistic selection?
Molecular ecology (2019) 29(2), 262-271
- Laurentino TG**, Baur J, Usui T, Eichhorn M
Liana abundance and relationships to sapling and tree hosts in an East African Primary Forest
African journal of ecology (2019) 57(1), 130-136

- Zéle F¹, Matos G¹, Figueiredo A, Eira C, Pinto C, **Laurentino TG**, Sucena E², Magalhães S²
Spider mites escape bacterial infection by avoiding contaminated food
Oecologia (2019) 189(1), 111–122; ¹ co-first authorship; ² co-last authorship
- Silva SE, Seabra SG, Carvalheiro LG, Nunes VL, Marabuto E, Mendes R, Rodrigues ASB, Pina-Martins F, Yurtsever S, **Laurentino TG**, Figueiredo E, Rebelo MR, Paulo OS
Population genomics of *Bombus terrestris* reveals high but unstructured genetic diversity in a potential glacial refugium
Biological Journal of the Linnean Society (2019) blz182
- **Haenel Q*, Laurentino TG***, Roesti M, Berner D
Meta- analysis of chromosome-scale crossover rate variation in eukaryotes and its significance to evolutionary genomics
Molecular ecology (2018) 27 (11), 2477-2497
*co-authorship, alphabetical order
top 10% of most read papers in *Molecular Ecology* (2018-2019)
- Seabra S, Silva S, Nunes VL, Sousa VC, Martins J, Marabuto E, Rodrigues AS, Pina-Martins F, **Laurentino TG**, Rebelo MT, Figueiredo E, Paulo OS
Genomic signatures of introgression between commercial and native bumblebees, *Bombus terrestris*, in western Iberian Peninsula – implications for conservation and trade regulation
Evolutionary applications (2018)
- Costa GJ, Nunes VL, Marabuto E, Mendes R, **Laurentino TG**, Quartau JA, Paulo OS, Simões P
Morphology, songs and genetics identify two new cicada species from Morocco : *Tettigettalna afroamissa* sp. nov. and *Berberigetta dimelodica* gen. nov. & sp. nov. (Hemiptera: Cicadettini)
Zootaxa (2017) 4237(3), 517-544
- Rosa GM, Sabino-Pinto J, **Laurentino TG**, Martel A, Pasmans F, Rebelo R, Griffiths RA, Stöhr AC, Marschang RE, Price SJ, Garner TWJ, Bosch J
Impact of asynchronous emergence of two lethal pathogens on amphibian assemblages *Scientific Reports* (2017) 7, 43260
- **Laurentino TG**, Pais MP, Rosa GM
From a local observation to a european-wide phenomenon: Amphibian deformities in Serra da Estrela Natural Park, Portugal
Basic and Applied Herpetology (2016) 30, 7-23
- Rosa GM, **Laurentino TG**, Madeira M
Field observation of foraging behavior by a group of adult diving beetles *Agabus (Gaurodytes) bipustulatus* preying on an adult *Lissotriton boscai*.
Entomological Science (2012) 15: 343-345

Peer reviewing work for: Herpetological Notes; Ecology and Evolution

Courses and Workshops

July. 2023	Sensing harm by design online 6-week depth education course on decolonization tools to expand capacity to navigate increasing volatility, uncertainty, complexity and ambiguity. <i>Gesturing Towards Decolonial Futures, Collective of social and biological scientists, educators & artists</i>
Nov. 2022	Rewilding mythology online 8-week course on the relationships between myth, sociology, politics, natural history and belonging <i>Sophie Strand, David Abram, Anoor Ladha, Toko-pa Turner, Patricia Kaishian, Minna Salami, Bayo Akomolafe</i>
Oct. 2022	Pathways to Scientific Teaching with Diane Ebert-May @UCBerkeley Student-centered, active, 3D learning for large scale introductory STEM classes
Aug. 2022	Return of the Matriarchs: Healing Water series @UCBerkeley Black elders, healers, and educators teaching the intersections of land, ethnobotanics, ritual, and health <ul style="list-style-type: none"> • Herbs as medicine: the story of Osain by Nedra Williams • Storytelling and land ritual: Orisha Oko and the African Agricultural tradition by Luisa Teish
Oct. 2021	Othering and Belonging 2021 conference workshops <ul style="list-style-type: none"> • Cultural strategies for belonging + Breaking Patterns & Heirlooms and Accessories: Using Arts to Look at Lineage and Narrative (<i>Studio Pathways</i>)
Aug. 2021	Authentic academic online Guided reflections for a transformative and inclusive academic culture (<i>Prof. Bree Rosenblum</i>)
Apr. 2021	Science Storytelling online Berkeley SciComm, University of California, Berkeley, USA
Mar. – Oct. 2018	Antelope@University workshops <ul style="list-style-type: none"> • How to become a more efficient researcher (<i>Tress & Tress GbR</i>) • Negotiate with success (<i>Negoservices, Inc</i>) • Action! The making of a video abstract (<i>Hoppenhaus & Grunze</i>)

Jun. 2017

Evolutionary Biology in Guarda

University of Basel and ETH, Switzerland

Evolution • Project design • Grant proposal writing

Aug. 2015

Tropical Ecology field course, Uganda

Tropical Biology Association, Kibale research station & Queen Elizabeth National Park

Tropical Ecology • Data collection • Project design • Data analysis

Aug. 2014

EcoEvoDevo summer school

Department of Biological and Medical Sciences, Oxford Brooks University

EvoDevo theory • Field work • CRISPR/Cas9 • In situ hybridization

Honors & Awards

- **Direction board member** for APBE-Portuguese Association of Evolutionary Biology (2023 - present)
- **Invited spokesperson** for APBE-Portuguese Association of Evolutionary Biology (2015)
- **Elected student representative** for the MSc in Evolutionary Biology and Development (2012-2014)
- 2022 Berkeley Rausser College **photo contest winner** [Link](#)
- SSE **Sponsorship Highlight** (2019) [Link](#)
- First author of one of the **most read papers of Molecular Ecology** (2018-2019)
- **Best poster award** @ CE3C junior research meeting (2014)

Media engagement

Aug. 2023 – presente
Vento e Água magazine

Columnist on socio-ecologic issues and ecosystemic awareness for the Portuguese online magazine *Vento e Água - Ritmos da Terra*
[Link](#)

Mar. 2023
Marfa public radio

Radio program "Nature notes" featuring PostDoc research on local desert lizards
[Link](#)

Apr. 2021
Expresso do Oriente

Newspaper article featuring evALLution work with people with blindness
[Link](#)

Apr. 2020
Science Daily

Article featuring PhD research work on genomics of adaptation in stickleback fish
[Link](#)

Nov. 2019
TIME

Tweet feature on *Time* article on Climate Strike "Fridays for future"
[Link](#)

Fev. 2013 & Mar. 2017
Terras da Beira

Newspaper article featuring research on local amphibian epidemiology '13 [Link](#) '17 [Link](#)

Additional skills

Languages

Portuguese native • **English** C2

Spanish B1 • **German** A1+

R>Unix shell >Slurm >Python
user in bioinformatics context
(Data parsing and analysis)

Lab

Genomics (Rad & Poolseq)

Genetics (PCR, primer design, Sangerseq...)

Skeletochronology, CT scanning, 3D printing, collection specimen prep. (Basics)

Field

Lizards (tomahawk traps & lasso)

Birds (>50 ringed passerines) **Fish** (Electrical, rod, underwater gillnet and minnow trap)

Arthropods (net sampling: butterflies, bumblebees, cicadas)

Amphibians (net sampling, Chytrid swabbing)

Certified in field hygiene protocols & ethical handling of field and laboratory animals (rat, mouse, reptiles, amphibians).



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