LUIS PEDRO COELHO
Curriculum Vitæ

Sep 16, 2022

Institute of Science and Technology
for Brain-inspired Intelligence (ISTBI)
Fudan University, Shanghai, China
email : luis@luispedro.org
ORCID : 0000-0002-9280-7885
Erdös-Bacon Nr. : 7
Citizenship : U.K. and Portugal

Education

2011 PhD in computational biology, Carnegie Mellon University
Dissertation topic: *Modeling the Space of Subcellular Location Patterns Using Images and Other Sources of Information*, advised by Prof. Robert F. Murphy.

2006 MSc in computer science, Instituto Superior Técnico (Technical University Lisbon)
Dissertation topic: *Bayesian Network Parameter Estimation Using Noisy Observations or Soft Evidence*, advised by Prof. Arlindo Oliveira.

2004 BSc in computer science, Instituto Superior Técnico (Technical University Lisbon)
Graduated top of my class.

Professional experience

2018–present Junior Principal Investigator (Fudan University)

2013–2018 Postdoctoral researcher at European Molecular Biology Laboratory (EMBL)
Supervisor: Dr. Peer Bork

2012 Postdoctoral researcher at Instituto de Medicina Molecular (Lisbon)
Supervisor: Dr. Musa Mhlanga

Scholarships & awards

2012 Siebel Scholar
Awarded annually for academic excellence and demonstrated leadership to 85 top students from the world's leading graduate schools

2009 Joint CMU–U. of Pittsburgh PhD. in Computational Biology Research Excellence Award

2008 Joint CMU–U. of Pittsburgh PhD. in Computational Biology Academic Excellence Award

2006 Fulbright Fellow

2005 Scholarship from Portuguese Science Foundation

2001 Instituto Superior Técnico (IST) Academic Excellence Award

Highlighted publications

2022 **L. P. Coelho** *et al.* Towards the biogeography of prokaryotic genes *in* Nature *[DOI]*

2022 *S. Pan, ...,* **L. P. Coelho** A deep siamese neural network improves metagenome-assembled genomes in microbiome datasets across different environments *in* Nature Communications *[DOI]*

2019 **L. P. Coelho** *et al.,* NG-meta-profiler: fast processing of metagenomes using NGLess, a domain-specific language *in* Microbiome *[DOI]*

2018 **L. P. Coelho** *et al.,* Similarity of the dog and human gut microbiomes in gene content and response to diet *in* Microbiome *[DOI]*

2015 *S. Sunagawa*,* **L. P. Coelho***, *S. Chaffron* et al.,* Structure and Function of the Global Ocean Microbiome *in* Science *[DOI]*

Grants awarded (selected)

2020 Establishing a Monitoring Baseline for Antibiotic Resistance in Key environments (EMBARK)
International consortium to work on antimicrobial resistance, funded through JPI-AMR.

2019 Using deep learning to understand the microbiome, National Science Foundation of China

Service & outreach (selected)

2021–present Academic Editor for PLoS Computational Biology

2020–present Member of the ISCB (International Society for Computational Biology) Equity, Diversity and Inclusion (EDI) Committee

2016–2021 Associate Editor for the Journal of Open Research Software

2014–2017 Postdoc representative at EMBL
I helped organized the 2015 and 2017 EMBL Postdoc retreats.

2014–2015 Organized Software Carpentry Workshop at EMBL

2012–2013 Member of the Organization of the Lisbon Machine Learning School

2010 Local Committee for Portuguese–American Postgraduate Society National Forum
I headed the local organising committee for the 2010 edition of this annual event. It took place in Pittsburgh and included, as speakers, cabinet-level Portuguese government officials, renowned researchers, artists, as well as participants from all around the US.

Teaching & mentoring (selected)

2019–present Co-teaches *Scientific Communication* at Fudan University, a one-semester graduate course

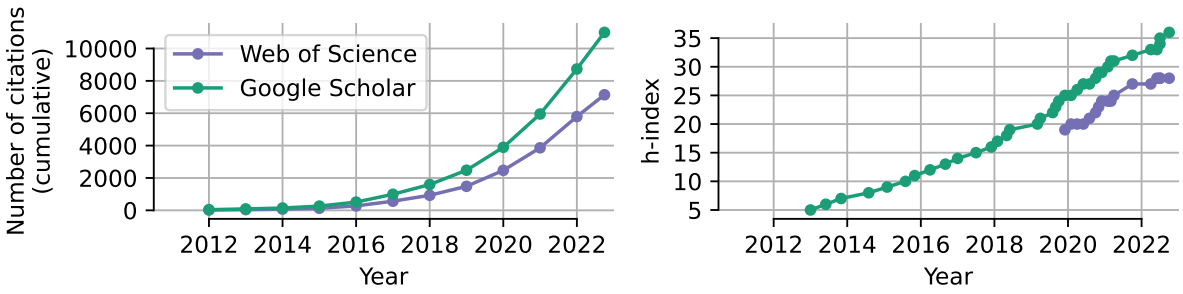
2012–present Certified Software Carpentry Instructor
I have given lectures on Software Carpentry in Germany, Denmark, Cyprus, Jordan, and Spain.

2009 Programming for Scientists
I designed and taught a semester-long course on computer programming for scientists at Carnegie Mellon University.

2008 Teaching Assistant for Laboratory Methods for Computational Biologists (CMU)

Bibliometric statistics

Total number of citations: 11,204 (Google Scholar); 7,163 (Web of Science)
h-index: 36 (Google Scholar); 28 (Web of Science)



Language skills

I am bilingual in **English** and **Portuguese**. I speak and write fluent **German** (I attended a German high-school, obtaining an Abitur; and later spent a year as an exchange student at Technical University of Vienna) and speak fluent **French**. I know basic **Luxembourgish**.

Publications

Google scholar profile:
http://scholar.google.com/citations?user=qTYua0cAAAAJ

First or corresponding author

(includes co-first/co-corresponding author publications)

Preprints submitted for publication

1. Senying Lai, Shaojun Pan, **Luis Pedro Coelho**[+], Wei-Hua Chen,[+] Xing-Ming Zhao[+], *metaMIC: reference-free Misassembly Identification and Correction of de novo metagenomic assemblies* in BioRxiv 2021 [DOI]

Peer-reviewed journal publications

2. Shaojun Pan, Chengkai Zhu, Xing-Ming Zhao[+], and **Luis Pedro Coelho**[+] *A deep siamese neural network improves metagenome-assembled genomes in microbiome datasets across different environments* in Nature Communications 2022 [DOI]

3. **Luis Pedro Coelho**, Renato Alves, Álvaro Rodríguez del Río, Pernille Neve Myers, Carlos P. Cantalapiedra, Joaquín Giner-Lamia,Thomas Sebastian Schmidt, Daniel R. Mende, Askarbek Orakov, Ivica Letunic, Falk Hildebrand, Thea Van Rossum, Sofia K. Forslund, Supriya Khedkar, Oleksandr M. Maistrenko, Shaojun Pan, Longhao Jia, Pamela Ferretti, Shinichi Sunagawa, Xing-Ming Zhao, Henrik Bjørn Nielsen, Jaime Huerta-Cepas[+], and Peer Bork[+], *Towards the biogeography of prokaryotic genes* in Nature 2022 [DOI]

4. Célio Dias Santos-Junior, Shaojun Pan, Xing-Ming Zhao, **Luis Pedro Coelho**, *MACREL: antimicrobial peptide screening in genomes and metagenomes* in PeerJ 2020 [DOI]

5. **Luis Pedro Coelho**, Renato Alves, Paulo Monteiro, Jaime Huerta-Cepas, Ana Teresa Freitas, Peer Bork *NG-meta-profiler: fast processing of metagenomes using NGLess, a domain-specific language* in Microbiome vol. 7, 84, 2019 [DOI]

6. **Luis Pedro Coelho**, Jens Kultima, Paul Costea, Coralie Fournier, Yuanlong Pan, Gail Czarnecki-Maulden, Matthew Hayward, Kristoffer Forslund, Patrick Descombes, Janet Jackson, Qinghong Li, and Peer Bork *Similarity of the dog and human gut microbiomes in gene content and response to diet* in Microbiome, vol 6:72, 2018 [DOI]

7. **Luis Pedro Coelho**, *Jug: Software for parallel reproducible computation in Python* in Journal of Open Research Software, 2017 [DOI]

8. Sebastien Colin*, **Luis Pedro Coelho***, Shinichi Sunagawa, Chris Bowler, Eric Karsenti, Peer Bork, Rainer Pepperkok, Colomban de Vargas, *Quantitative 3D-imaging for cell biology and ecology of environmental microbial eukaryotes* in eLife, vol. 6:e26066, 2017 [DOI]

9. Shinichi Sunagawa*, **Luis Pedro Coelho***, Samuel Chaffron*, Jens Roat Kultima, Karine Labadie, Guillem Salazar, Bardya Djahanschiri, Georg Zeller, Daniel R. Mende, Adriana Alberti, Francisco M. Cornejo-Castillo, Paul I. Costea, Corinne Cruaud, Francesco d'Ovidio, Stefan Engelen, Isabel Ferrera, Josep M. Gasol, Lionel Guidi, Falk Hildebrand, Florian Kokoszka, Cyrille Lepoivre, Gipsi Lima-Mendez, Julie Poulain, Bonnie T. Poulos, Marta Royo-Llonch, Hugo Sarmento, Sara Vieira-Silva, Céline Dimier, Marc Picheral, Sarah Searson, Stefanie Kandels-Lewis, Tara Oceans coordinators, Chris Bowler, Colomban de Vargas, Gabriel Gorsky, Nigel Grimsley, Pascal Hingamp, Daniele Iudicone, Olivier Jaillon, Fabrice Not, Hiroyuki Ogata, Stephane Pesant, Sabrina Speich, Lars Stemmann, Matthew B. Sullivan, Jean Weissenbach, Patrick Wincker, Eric Karsenti, Jeroen Raes, Silvia G. Acinas, Peer Bork, *Structure and Function of the Global Ocean Microbiome* in Science 348 (6237), 1261359, 2015 [DOI]

10. **Luis Pedro Coelho**, Catarina Pato, Ana Friães, Ariane Neumann, Maren von Köckritz-Blickwede, Mário Ramirez, João André Carriço, *Automatic determination of NET (neutrophil extracellular traps) coverage in fluorescent microscopy images* in Bioinformatics 31 (14): 2364–2370, 2015 [DOI]

11. **Luis Pedro Coelho**, Joshua D. Kangas, Armaghan Naik, Elvira Osuna-Highley, Estelle Glory-Afshar, Margaret Fuhrman, Ramanuja Simha, Peter B. Berget, Jonathan W. Jarvik, and Robert F. Murphy, *Determining the subcellular location of new proteins from microscope images using local features* in Bioinformatics, 2013 [DOI]

12. **Luis Pedro Coelho** *Mahotas: Open source software for scriptable computer vision*, Journal of Open Research Software, vol. 1, 2013 [DOI]

13. **Luis Pedro Coelho***, Tao Peng*, and Robert F. Murphy, *Quantifying the distribution of probes between subcellular locations using unsupervised pattern unmixing* in Bioinformatics, vol. 26 (12), pp. i7–i12, 2010 [DOI]

14. **Luis Pedro Coelho**, Amr Ahmed, Andrew Arnold, Joshua Kangas, Abdul-Saboor Sheikh, Eric P. Xing, William W. Cohen, and Robert F. Murphy, *Structured Literature Image Finder: Extracting Information from Text and Images in Biomedical Literature* in Lecture Notes in Bioinformatics, vol. 6004, pp. 23–32, 2010 [DOI]

Peer-reviewed Conference Proceedings

15. **Luis Pedro Coelho**, Aabid Shariff, and Robert F. Murphy; *Nuclear segmentation in microscope cell images: A hand-segmented dataset and comparison of algorithms* in Proceedings of IEEE International Symposium in Biomedical Imaging, 2009 [DOI]

16. **Luis Pedro Coelho** and Robert Murphy; *Identifying Subcellular Locations from Images of Unknown Resolution* in Bioinformatics Research and Development, Communications in Computer and Information Science, vol. 13, pp. 235–242, 2008 [DOI]

17. **Luis Pedro Coelho** and Arlindo Oliveira; *Dotted Suffix Trees: A Structure for Approximate Text Indexing* in String Processing and Information Retrieval, Lecture Notes in Computer Science, vol. 4209, pp. 329–336, 2006 [DOI]

Comments and review articles

18. **Luis Pedro Coelho** *Voices of the new generation: science in a state of benign confusion* in Nature Reviews Molecular Cell Biology 2020 [DOI]

19. **Luis Pedro Coelho**, Estelle Glory-Afshar, Joshua Kangas, Shannon Quinn, Aabid Shariff, and Robert F. Murphy; *Principles of Bioimage Informatics: Focus on machine learning of cell patterns* in Linking Literature, Information, and Knowledge for Biology, Lecture Notes in Computer Science, vol. 6004, pp. 8–18, 2010 [DOI]

Co-authorships

Preprints submitted for publication

20. Álvaro Rodríguez del Río, Joaquín Giner-Lamia, Carlos P. Cantalapiedra, Jorge Botas, Ziqi Deng, Ana Hernández-Plaza, Lucas Paoli, Thomas S.B. Schmidt, Shinichi Sunagawa, Peer Bork, **Luis Pedro Coelho**, Jaime Huerta-Cepas *Functional and evolutionary significance of unknown genes from uncultivated taxa* in BioRxiv 2022 [DOI]

21. Hui Chong, Qingyang Yu, Yuguo Zha, Guangzhou Xiong, Nan Wang, Xinhe Huang, Shijuan Huang, Chuqing Sun, Sicheng Wu, Wei-Hua Chen, **Luis Pedro Coelho**, Kang Ning *EXPERT: Transfer Learning-enabled context-aware microbial source tracking* in BioRxiv 2021 [DOI]

Peer-reviewed journal publications

22. Thomas SB Schmidt, Simone S Li, Oleksandr M Maistrenko, Wasiu Akkani, **Luis Pedro Coelho**, Sibasish Dolai, Anthony Fullam, Anna Glazek, Rajna Hercog, Hilde Herrema, Ferris Jung, Stefanie Kandels, Askarbek Orakov, Thea Van Rossum, Vladimir Benes, Thomas J Borody, Willem M de Vos, Cyriel Y Ponsioen, Max Nieuwdorp, Peer Bork *Drivers and Determinants of Strain Dynamics Following Faecal Microbiota Transplantation* in Nature Medicine 2022 [DOI]

23. Sebastien Fromentin, Sofia K. Forslund, Kanta Chechi, Judith Aron-Wisnewsky, Rima Chakaroun, Trine Nielsen, Valentina Tremaroli, Boyang Ji, Edi Prifti, Antonis Myridakis, Julien Chilloux, Petros Andrikopoulos, Yong Fan, Michael T. Olanipekun, Renato Alves, Solia Adiouch, Noam Bar, Yeela Talmor-Barkan, Eugeni Belda, Robert Caesar, **Luis Pedro Coelho**, Gwen Falony, Soraya Fellahi, Pilar Galan, Nathalie Galleron, Gerard Helft, Lesley Hoyles, Richard Isnard, Emmanuelle Le Chatelier, Hanna Julienne, Lisa Olsson, Helle Krogh Pedersen, Nicolas Pons, Benoit Quinquis, Christine Rouault, Hugo Roume, Joe-Elie Salem, Thomas S. B. Schmidt, Sara Vieira-Silva, Peishun Li, Maria Zimmermann-Kogadeeva, Christian Lewinter, Nadja B. Søndertoft, Tue H. Hansen, Dominique Gauguier, Jens Peter Gøtze, Lars Køber, Ran Kornowski, Henrik Vestergaard, Torben Hansen, Jean-Daniel Zucker, Serge Hercberg, Ivica Letunic, Fredrik Bäckhed, Jean-Michel Oppert, Jens Nielsen, Jeroen Raes, Peer Bork, Michael Stumvoll, Eran Segal, Karine Clément†, Marc-Emmanuel Dumas†, S. Dusko Ehrlich†, and Oluf Pedersen†*Microbiome and metabolome features of the cardiometabolic disease spectrum* at Nature Medicine 2022 [DOI]

24. Supriya Khedkar, Georgy Smyshlyaev, Ivica Letunic, Oleksandr M Maistrenko, **Luis Pedro Coelho**, Askarbek Orakov, Sofia K Forslund, Falk Hildebrand, Mechthild Luetge, Thomas S B Schmidt, Orsolya Barabas, and Peer Bork *Landscape of mobile genetic elements and their antibiotic resistance cargo in prokaryotic genomes* in Nucleic Acids Research 2022 [DOI]

25. Eugeni Belda*, Lise Voland*, Valentina Tremaroli*, Gwen Falony*, Solia Adriouch*, Karen E Assmann*, Edi Prifti, Judith Aron-Wisnewsky, Jean Debédat, Tiphaine Le Roy, Trine Nielsen, Chloé Amouyal, Sébastien André, Fabrizio Andreelli, Matthias Blüher, Rima Chakaroun, Julien Chilloux, **Luis Pedro Coelho**, Maria Carlota Dao, Promi Das, Soraya Fellahi, Sofia Forslund, Nathalie Galleron, Tue H Hansen, Bridget Holmes, Boyang Ji, Helle Krogh Pedersen, Phuong Le, Emmanuelle Le Chatelier, Christian Lewinter, Louise Mannerås-Holm, Florian Marquet, Antonis Myridakis, Veronique Pelloux, Nicolas Pons, Benoit Quinquis, Christine Rouault, Hugo Roume, Joe-Elie Salem, Nataliya Sokolovska, Nadja B Søndertoft, Sothea Touch, Sara Vieira-Silva, The MetaCardis Consortium, Pilar Galan, Jens Holst, Jens Peter Gøtze, Lars Køber, Henrik Vestergaard, Torben Hansen, Serge Hercberg, Jean-Michel Oppert, Jens Nielsen, Ivica Letunic, Marc-Emmanuel Dumas, Michael Stumvoll, Oluf Borbye Pedersen, Peer Bork, Stanislav Dusko Ehrlich, Jean-Daniel Zucker, Fredrik Bäckhed, Jeroen Raes, and Karine Clément *Impairment of gut microbial biotin metabolism and host biotin status in severe obesity: effect of biotin and prebiotic supplementation on improved metabolism* at Gut 2022 [DOI]

26. Boas C.L. van der Putten*, C. I. Mendes*, Brooke M. Talbot, Jolinda de Korne-Elenbaas, Rafael Mamede, Pedro Vila-Cerqueira, **Luis Pedro Coelho**, Christopher A. Gulvik, Lee S. Katz, and The ASM NGS 2020 Hackathon participants *Software testing in microbial bioinformatics: a call to action* at Microbial Genomics 2022 [DOI]

27. Sofia K. Forslund*, Rima Chakaroun*, Maria Zimmermann-Kogadeeva*, Lajos Markó*, Judith Aron-Wisnewsky*, Trine Nielsen*, Lucas Moitinho-Silva, Thomas S. B. Schmidt, Gwen Falony, Sara Vieira-Silva, Solia Adriouch,

Renato J. Alves, Karen Assmann, Jean-Philippe Bastard, Till Birkner, Robert Caesar, Julien Chilloux, **Luis Pedro Coelho**, Leopold Fezeu, Nathalie Galleron, Gerard Helft, Richard Isnard, Boyang Ji, Michael Kuhn, Emmanuelle Le Chatelier, Antonis Myridakis, Lisa Olsson, Nicolas Pons, Edi Prifti, Benoit Quinquis, Hugo Roume, Joe-Elie Salem, Nataliya Sokolovska, Valentina Tremaroli, Mireia Valles-Colomer, Christian Lewinter, Nadja B Søndertoft, Helle Krogh Pedersen, Tue H Hansen, *The MetaCardis Consortium*, Jens Peter Gøtze, Lars Køber, Henrik Vestergaard9,25, Torben Hansen9, Jean-Daniel Zucker7,20,21, Serge Hercberg, Jean-Michel Oppert, Ivica Letunic, Jens Nielsen, Fredrik Bäckhed, S. Dusko Ehrlich, Marc-Emmanuel Dumas, Jeroen Raes, Oluf Pedersen, Karine Clément†, Michael Stumvoll†, Peer Bork†*Combinatorial, additive and dose-dependent drug-microbiome associations* at Nature 2021 [DOI]

28. Askarbek Orakov*, Anthony Fullam*, **Luis Pedro Coelho**, Supriya Khedkar, Damian Szklarczyk, Daniel R Mende, Thomas SB Schmidt† and Peer Bork† *GUNC: Detection of Chimerism and Contamination in Prokaryotic Genomes* at Genome Biology 2021 [DOI]

29. Mohammad Bahram, Tarquin Netherway, Clémence Frioux, Pamela Ferretti, **Luis Pedro Coelho**, Stefan Geisen, Peer Bork, and Falk Hildebrand *Metagenomic assessment of the global diversity and distribution of bacteria and fungi* at Environmental Microbiology 2020 [DOI]

30. Sara Vieira-Silva, Gwen Falony, Eugeni Belda, Trine Nielsen, Judith Aron-Wisnewsky, Rima Chakaroun, Sofia K. Forslund, Karen Assmann, Mireia Valles-Colomer, Thi Thuy Duyen Nguyen, Sebastian Proost, Edi Prifti, Valentina Tremaroli, Nicolas Pons, Emmanuelle Le Chatelier, Fabrizio Andreelli, Jean-Phillippe Bastard, **Luis Pedro Coelho**, Nathalie Galleron, Tue H. Hansen, Jean-Sébastien Hulot, Christian Lewinter, Helle K. Pedersen, Benoit Quinquis, Christine Rouault, Hugo Roume, Joe-Elie Salem, Nadja B. Søndertoft, Sothea Touch, MetaCardis Consortium, Marc-Emmanuel Dumas, Stanislav Dusko Ehrlich, Pilar Galan, Jens P. Gøtze, Torben Hansen, Jens J. Holst, Lars Køber, Ivica Letunic, Jens Nielsen, Jean-Michel Oppert, Michael Stumvoll, Henrik Vestergaard, Jean-Daniel Zucker, Peer Bork, Oluf Pedersen, Fredrik Bäckhed, Karine Clément and Jeroen Raes *Statin therapy is associated with lower prevalence of gut microbiota dysbiosis* in Nature 581, 310–315 (2020) [DOI]

31. Oleksandr M. Maistrenko*, Daniel R. Mende*, Mechthild Luetge, Falk Hildebrand, Thomas S. B. Schmidt, Simone S. Li, **Luis Pedro Coelho**, Jaime Huerta-Cepas, Shinichi Sunagawa, Peer Bork *Disentangling the impact of environmental and phylogenetic constraints on prokaryotic within-species diversity* in ISME Journal 14, 1247–1259 2020 [DOI]

32. Daniel R Mende, Ivica Letunic, Oleksandr M Maistrenko, Thomas S B Schmidt, Alessio Milanese, Lucas Paoli, Ana Hernández-Plaza, Askarbek N Orakov, Sofia K Forslund, Shinichi Sunagawa, Georg Zeller, Jaime Huerta-Cepas, **Luis Pedro Coelho**, Peer Bork *proGenomes2: an improved database for accurate and consistent habitat, taxonomic and functional annotations of prokaryotic genomes* in Nucleic Acids Research 48:D1 D621-D625, 2020 [DOI]

33. Federico M. Ibarbalz, Nicolas Henry, Manoela C. Brandão, Séverine Martini, Greta Busseni, Hannah Byrne, **Luis Pedro Coelho**, Hisashi Endo, Josep M. Gasol, Ann C. Gregory, Frédéric Mahé, Janaina Rigonato, Marta Royo-Llonch, Guillem Salazar, Isabel Sanz-Sáez, Eleonora Scalco, Dodji Soviadan, Ahmed A. Zayed, Adriana Zingone, Karine Labadie, Joannie Ferland, Claudie Marec, Stefanie Kandels, Marc Picheral, Céline Dimier, Julie Poulain, Sergey Pisarev, Margaux Carmichael, Stéphane Pesant, Tara Oceans Coordinators, Marcel Babin, Emmanuel Boss, Daniele Iudicone, Olivier Jaillon, Silvia G. Acinas, Hiroyuki Ogata, Eric Pelletier, Lars Stemmann, Matthew B. Sullivan, Shinichi Sunagawa, Laurent Bopp, Colomban de Vargas, Lee Karp-Boss, Patrick Wincker, Fabien Lombard, Chris Bowler#, and Lucie Zinger# *Global Trends in Marine Plankton Diversity across Kingdoms of Life* in Cell, 2019 [DOI]

34. Guillem Salazar*, Lucas Paoli*, Adriana Alberti, Jaime Huerta-Cepas, Hans-Joachim Ruscheweyh, Miguelangel Cuenca, Christopher M. Field, **Luis Pedro Coelho**, Corinne Cruaud, Stefan Engelen, Ann C. Gregory, Karine Labadie, Claudie Marec, Eric Pelletier, Marta Royo-Llonch, Simon Roux, Pablo Sánchez, Hideya Uehara, Ahmed A. Zayed, Georg Zeller,1Margaux Carmichael, Céline Dimier, Joannie Ferland, Stefanie Kandels, Marc Picheral, Sergey Pisarev, Julie Poulain, Tara Oceans Coordinators, Silvia G. Acinas, Marcel Babin, Peer Bork, Chris Bowler, Colomban de Vargas, Lionel Guidi, Pascal Hingamp, Daniele Iudicone, Lee Karp-Boss, Eric Karsenti, Hiroyuki Ogata, Stephane Pesant, Sabrina Speich, Matthew B. Sullivan, Patrick Wincker, and

Shinichi Sunagawa, *Gene Expression Changes and Community Turnover Differentially Shape the Global Ocean Metatranscriptome* in Cell, 2019 [DOI]

35. Jakob Wirbel*, Paul Theodor Pyl*, Ece Kartal, Konrad Zych, Alireza Kashani, Alessio Milanese, Jonas S Fleck, Anita Y Voigt, Albert Palleja, Ruby P Ponnudurai, Shinichi Sunagawa, **Luis Pedro Coelho**, Petra Schrotz-King, Emily Vogtmann, Nina Habermann, Emma Niméus, Andrew M Thomas, Paolo Manghi, Sara Gandini, Davide Serrano, Sayaka Mizutani, Hirotsugu Shiroma, Satoshi Shiba, Tatsuhiro Shibata, Shinichi Yachida, Takuji Yamada, Levi Waldron, Alessio Naccarati, Nicola Segata, Rashmi Sinha, Cornelia M. Ulrich, Hermann Brenner, Manimozhiyan Arumugam, Peer Bork, Georg Zeller *Meta-analysis of fecal metagenomes reveals global microbial signatures that are specific for colorectal cancer* in Nature Medicine vol. 25, pp. 679–689 (2019) [DOI]

36. Alessio Milanese*, Daniel Mende*, Lucas Paoli, Guillem Salazar, Hans-Joachim Ruscheweyh, Miguelangel Cuenca, Pascal Hingamp, Renato Alves, Paul Costea, **Luis Pedro Coelho**, Thomas Schmidt, Alexandre Almeida, Alex Mitchell, Robert Finn, Jaime Huerta-Cepas, Peer Bork, Georg Zeller, and Shinichi Sunagawa *Microbial abundance, activity and population genomic profiling with mOTUs2* in Nature Communications, vol. 10, pp. 1014, 2019 [DOI]

37. Thomas SB Schmidt*, Matthew R Hayward*, **Luis Pedro Coelho**, Simone S Li, Paul I Costea, Anita Y Voigt, Jakob Wirbel, Oleksandr M Maistrenko, Renato J Alves, Emma Bergsten, Carine de Beaufort, Iradj Sobhani, Anna Heintz-Buschart, Shinichi Sunagawa, Georg Zeller, Paul Wilmes, Peer Bork *Extensive Transmission of Microbes along the Gastrointestinal Tract* in eLife, vol. 8, pp. e42693, 2019 [DOI]

38. Luigi Caputi*, Quentin Carradec*, Damien Eveillard*, Amos Kirilovsky*, Eric Pelletier*, Fabio Rocha Jimenez Vieira, Emilie Villar, Shruti Malviya, Eleonora Scalco, Silvia G. Acinas, Adriana Alberti, Jean-Marc Aury, Alexis Bertrand, Tristan Biard, Lucie Bittner, Martine Boccara, Jennifer R. Brum, Christophe Brunet, Anna Carratalà, Samuel Chaffron, Hervé Claustre, **Luis Pedro Coelho**, Sébastien Colin, Salvatore D'Aniello, Corinne Da Silva, Marianna Del Core, Hugo Doré, Stéphane Gasparini, Florian Kokoszka, Jean-Louis Jamet, Christophe Lejeusne, Cyrille Lepoivre, Magali Lescot, Gipsi Lima-Mendez, Fabien Lombard, Julius Lukeš, Nicolas Maillet, Elodie Martinez, MariaGrazia Mazzocchi, Mario B. Néou, Javier Paz-Yepes, Julie Poulain, Simon Ramondenc, Jean-Baptiste Romagnan, Simon Roux, Daniela Salvagio Manta, Remo Sanges, Sabrina Speich, Mario Sprovieri, Shinichi Sunagawa, Vincent Taillander, Atsuko Tanaka, Leila Tirichine, Camille Trottier, Julia Uitz, Jana Veseláy, Flora Vincent, Sheree Yau, Stefanie Kandels- Lewis, Sarah Searson, Céline Dimier, Marc Picheral, Tara Oceans Coordinators, Emmanuel Boss, Colomban de Vargas, Mick Follows, Nigel Grimsley, Lionel Guidi, Pascal Hingamp, Eric Karsenti, Paolo Sordino, Lars Stemmann, Matthew B. Sullivan, Adriana Zingone, Laurence Garczarek, Fabrizio d'Ortenzio, Pierre Testor, Fabrice Not, Maurizio Ribera d'Alcalà, Patrick Wincker, Chris Bowler, Daniele Iudicone, *Community-Level Responses to Iron Availability in Open Ocean Planktonic Ecosystems* in Global Biogeochemical Cycles, vol. 33, 2019 [DOI]

39. Albert Palleja*, Kristian H. Mikkelsen*, Sofia K. Forslund*, Alireza Kashani, Kristine H. Allin, Trine Nielsen, Tue H. Hansen, Suisha Liang, Qiang Feng, Chenchen Zhang, Paul Theodor Pyl, **Luis Pedro Coelho**, Huanming Yang, Jian Wang, Morten F. Nielsen, Henrik Bjorn Nielsen, Peer Bork, Jun Wang, Tina Vilsbøll, Torben Hansen, Filip K. Knop*, Manimozhiyan Arumugam*, Oluf Pedersen* *Recovery of gut microbiota of healthy adults following antibiotic exposure* in Nature Microbiology vol. 3(11) pp. 1255–1265, 2018 [DOI]

40. Mohammad Bahram*, Falk Hildebrand*, Kristoffer Forslund, Jennifer L. Anderson, Nadejda A. Soudzilovskaia, Peter M. Bodegom, Sten Anslan, Johan Bengtsson-Palme, **Luis Pedro Coelho**, Helery Harend, Mia R. Maltz, Sunil Mundra, Pål Axel Olsson, Mari Pent, Sergei Põlme, Shinichi Sunagawa, Martin Ryberg, Leho Tedersoo, and Peer Bork *Towards the structure and function of the global topsoil microbiome* in Nature, vol. 560, pp. 233–237, 2018 [DOI]

41. Katri Korpela, Paul Costea, **Luis Pedro Coelho**, Stephanie Kandels-Lewis, Gonneke Willemsen, Dorret I Boomsma, Nicola Segata, Peer Bork *Selective maternal seeding and environment shape the human gut microbiome* in Genome Research vol. 28(4), pp. 561–568, 2018 [DOI]

42. Paul I. Costea, **Luis Pedro Coelho**, Shinichi Sunagawa, Robin Muench, Jaime Huerta-Cepas, Kristoffer Forslund, Falk Hildebrand, Almagul Kushugulova, Georg Zeller, Peer Bork *Subspecies in the global human gut microbiome* in Molecular Systems Biology, vol. 13(12), pp. 960, 2017 [DOI]

43. Paul I Costea, Georg Zeller, Shinichi Sunagawa, Eric Pelletier, Adriana Alberti, Florence Levenez, Melanie Tramontano, Marja Driessen, Rajna Hercog, Ferris-Elias Jung, Jens Roat Kultima, Matthew R Hayward, **Luis Pedro Coelho**, Emma Allen-Vercoe, Laurie Bertrand, Michael Blaut, Jillian R M Brown, Thomas Carton, Stéphanie Cools-Portier, Michelle Daigneault, Muriel Derrien, Anne Druesne, Willem M de Vos, B Brett Finlay, Harry J Flint, Francisco Guarner, Masahira Hattori, Hans Heilig, Ruth Ann Luna, Johan van Hylckama Vlieg, Jana Junick, Ingeborg Klymiuk, Philippe Langella, Emmanuelle Le Chatelier, Volker Mai, Chaysavanh Manichanh, Jennifer C Martin, Clémentine Mery, Hidetoshi Morita, Paul W O'Toole, Céline Orvain, Kiran Raosaheb Patil, John Penders, Søren Persson, Nicolas Pons, Milena Popova, Anne Salonen, Delphine Saulnier, Karen P Scott, Bhagirath Singh, Kathleen Slezak, Patrick Veiga, James Versalovic, Liping Zhao, Erwin G Zoetendal, S Dusko Ehrlich, Joel Dore, and Peer Bork *Towards standards for human fecal sample processing in metagenomic studies* in Nature Biotechnology vol. 35(11), pp. 1069–1076, 2017 [DOI]

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Review Articles

57. Aabid Shariff, Joshua Kangas, **Luis Pedro Coelho**, Shannon Quinn, and Robert F. Murphy; *Automated Image Analysis for High Content Screening and Analysis* in Journal of Biomolecular Screening, August 2010, pp. 726–734 [DOI]

Books

1. **Luis Pedro Coelho**, Willi Richert; *Building Machine Learning Systems with Python*, Packt Publishing, 2013 (first ed.); 2015 (second ed.); 2018 (third ed.)

Selected Invited Talks

1. *Micropeptides: Biogenesis and Function/GPCRs*, Micropeptides: Biogenesis and Function/GPCRs Keystone Symposium, April 2022
2. *Micropeptides: Biogenesis and Function/GPCRs*, Micropeptides: Biogenesis and Function/GPCRs Keystone Symposium, April 2022
3. *High-throughput fluorescence microscopy of environmental samples obtains single-cell phenotypic measurements*, Paris Single Cell Day 2018, October 2018
4. *Metagenomics based investigations of microbial communities*, Symposium on Computational Biology at Fudan University, Shanghai, August 2018
5. *Life in Words and Pictures: sequencing and imaging for analysing microbial communities*, Dept. of Biomedical Research, University of Bern, November 2017
6. *Statistical tools for analysing the microbiome in environmental and clinical applications*, Novo Nordisk Foundation Center for Basic Metabolic Research, October 2017
7. *Looking at the oceans with computer vision in Python*, invited keynote at PyCon Firenze (Italy), April 2016
8. *Structure and function of the ocean microbiome*, lecture at the course *Biology of ecological systems*, Ecole Nationale Superior (France), December 2015
9. *Life in words and pictures: Sequencing and microscopy for the analysis of microbial communities*, Luxembourg Centre for Systems Biomedicine, September 2015
10. *An analysis of 243 metagenomes collected by the Tara Oceans Projects*, Station Biologique de Roscoff, July 2015
11. *Machine Learning: What it can do for you (and what it cannot)*, BrightTalk online seminar, May 2015
12. *Webcast: Penalized Linear Regression in Python*, O'Reilly Webcasts, October 2014
13. *Python for Computer Vision in Biology and Beyond*, Python San Sebastian, keynote, September 2014
14. *Large Scale Analysis of Bioimages Using Python*, International Workshop on Technical Computing for Machine Learning and Mathematical Engineering, Leuven (Belgium), September 2014
15. *Mahotas and the Python Ecosystem for Bioimage Informatics Applications*, European Bioimage Analysis Symposium, Barcelona, October 2013
16. *Organizing the Proteome with Location and Function Topics*, Freiburg Institute for Advanced Studies, April 2013
17. *Modeling Subcellular Location from Images and Other Sources of Information*, Luxembourg Centre for Systems Biomedicine, July 2012
18. *Modeling Subcellular Location from Images and Other Sources of Information*, Priberam Machine Learning Lunch Seminar, June 2012
19. *Modeling Subcellular Location from Images and Other Sources of Information*, EAO Seminar (Instituto Gulbenkian da Ciência), Oeiras, March 2012
20. *Learning Subcellular Location from Images and Other Sources of Information*, KDBIO (Knowledge Discovery and Bioinformatics) seminar, Lisbon, February 2012
21. *Bioimage Informatics: Computer Vision for Biology*, EMBO Practical Course on Microscopy: from single molecules to animals, Pretoria, November 2011
22. *Studying the subcellular location space with bioimages and other data modalities*, University of Delaware, Computer and Information Sciences Department, September 2011

23. *Proteome-scale analysis and modeling of subcellular location*, 4th CeBiTec Symposium BioImaging, Bielefeld (Germany), 25–27 August 2009

24. *Unsupervised Mixture Pattern Unmixing*, University of Bielefeld International Graduate School of Bioinformatics and Genome Research, July 2008

Selected Conference Talks

1. Shaojun Pan, Chengkai Zhu, Xing-Ming Zhao, and **Luis Pedro Coelho** *SemiBin: Incorporating information from reference genomes with semi-supervised deep learning leads to better metagenomic assembled genomes (MAGs)*, mVIF.2 (Microbiome Virtual International Forum), Online, 2021

2. **Luis Pedro Coelho***, Sebastien Colin*, Shinichi Sunagawa, Eric Karsenti, Peer Bork, Rainer Pepperkok, and Colomban de Vargas *Environmental High-content Fluorescence Microscopy (e-HCFM) of Tara Oceans Samples Provides a View of Global Ocean Protist Biodiversity*, Ocean Sciences, New Orleans, 2016

3. Shinichi Sunagawa, **Luis Pedro Coelho**, Samuel Chaffron, Eric Karsenti, Jeroen Raes, Silvia Acinas, Peer Bork *Structure and function of the global ocean microbiome*, ASLO, Granada (Spain) 2015

4. **Luis Pedro Coelho** *Jug: Reproducible Research in Python*, BOSC, Berlin 2013

5. Rita Reis and **Luis Pedro Coelho**; *Using Theatre to Fight HIV/AIDS in Mozambique*, National Conference of the Association for Theatre in Higher Education, Chicago 2011

6. **Luis Pedro Coelho** and Robert F. Murphy; *Determining Resolvable Subcellular Location Categories as a Function of Image Resolution*, 24th ISAC Congress, Budapest 2008