LUIS PEDRO COELHO
Curriculum Vitæ
28 Sep 2025

Centre for Microbiome Research
Queensland University of Technology
Brisbane, Australia
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ORCID : 0000-0002-9280-7885
Erdös-Bacon Nr. : 7
Citizenship : U.K., Portugal, and Luxembourg

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

2023–present Associate Professor (Queensland University of Technology)

2018–2023 Junior Principal Investigator (Fudan University)

2013–2018 Postdoctoral researcher at European Molecular Biology Laboratory (EMBL), Bork Lab

2012 Postdoctoral researcher at Instituto de Medicina Molecular (Lisbon), Mhlanga Lab

Scholarships & awards

2024 QUT Faculty of Health Researcher of the Year

2023 ARC Future Fellowship

2022–present Highly Cited Researcher (*Cross-field* category)

2021 Zhicheng Teaching Award (first prize)

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

2024 *C.D. Santos-Júnior*, M. D. Torres*, ..., C. de la Fuente-Nunez+,* **L. P. Coelho** +Discovery of antimicrobial peptides in the global microbiome with machine learning *in* Cell *[DOI]*

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]*

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

Grants awarded (selected)

2022 Studying small proteins of the global microbiome using deep learning, Shanghai Municipal Science and Technology Commission (SMSTC)

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)

2025–present Member of the Executive Committee for the Australian Bioinformatics And Computational Biology Society (ABACBS)

2025–present Associate Editor for *Microbiome*

2021–2024 Member of the steering committee for mVIF (Microbiome Virtual International Forum)

2021–2023 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

Teaching & mentoring (selected)

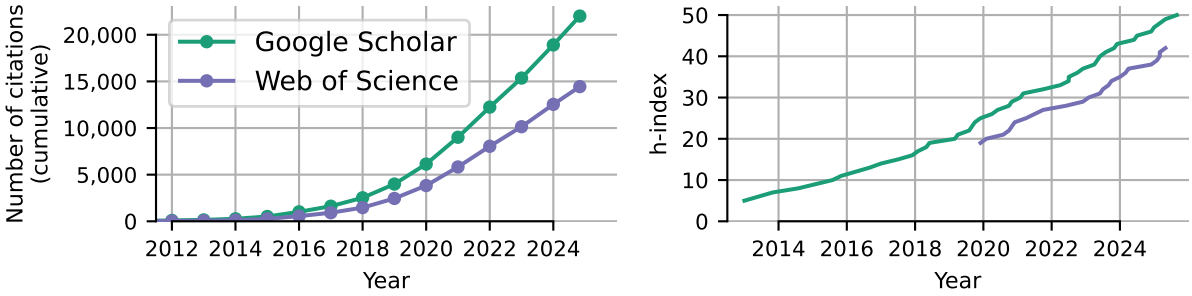
2019–2023 Co-taught *Scientific Communication* at Fudan University, a one-semester graduate course

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.

Bibliometric statistics

Total number of citations: 22,575 (Google Scholar); 13,900 (Web of Science)
h-index: 50 (Google Scholar); 42 (Web of Science)



Language skills

Native speaker of **English** and **Portuguese**; fluent in **German** and **French**; intermediate **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. Anna Cuscó[+], Yiqian Duan, Fernando Gil, Alexei Chklovski, Nithya Kruthi, Shaojun Pan, Sofia Forslund, Susanne Lau, Ulrike Löber, Xing-Ming Zhao, **Luis Pedro Coelho**[+], *Capturing global pet dog gut microbial diversity and hundreds of near-finished bacterial genomes by using long-read metagenomics in a Shanghai cohort*, in bioRxiv, 2025 [DOI]

2. Shaojun Pan, Ivan Tolstoganov, Kristoffer Sahlin, Marcel Martin, Xing-Ming Zhao, **Luis Pedro Coelho**, *AEMB: a computationally efficient abundance estimation method for metagenomic binning*, in bioRxiv, 2025 [DOI]

Peer-reviewed research publications

3. Svetlana Ugarcina Perovic, Vedanth Ramji, Hui Chong, Yiqian Duan, Finlay Maguire, **Luis Pedro Coelho**, *argNorm: normalization of antibiotic resistance gene annotations to the Antibiotic Resistance Ontology (ARO)*, in Bioinformatics, 2025 [DOI]

4. Yiqian Duan, Célio Dias Santos-Júnior, Thomas Sebastian Schmidt, Anthony Fullam, Breno L. S. de Almeida, Chengkai Zhu, Michael Kuhn, Xing-Ming Zhao[+], Peer Bork, **Luis Pedro Coelho**[+], *A catalog of small proteins from the global microbiome*, in Nature Communications, 2024 [DOI]

5. Célio Dias Santos-Júnior[*], Marcelo D.T. Torres[*], Yiqian Duan, Álvaro Rodríguez del Río, Thomas S.B. Schmidt, Hui Chong, Anthony Fullam, Michael Kuhn, Chengkai Zhu, Amy Houseman, Jelena Somborski, Anna Vines, Xing-Ming Zhao, Peer Bork, Jaime Huerta-Cepas, Cesar de la Fuente-Nunez[+], **Luis Pedro Coelho**[+], *Discovery of antimicrobial peptides in the global microbiome with machine learning*, in Cell, 2024 [DOI]

6. Marija Dmitrijeva, Janko Tackmann, João Frederico Matias Rodrigues, Jaime Huerta-Cepas, **Luis Pedro Coelho**[+], Christian von Mering[+], *A global survey of prokaryotic genomes reveals the eco-evolutionary pressures driving horizontal gene transfer*, in Nature Ecology & Evolution, 2024 [DOI]

7. Shaojun Pan, Xing-Ming Zhao[+], **Luis Pedro Coelho**[+], *SemiBin2: self-supervised contrastive learning leads to better MAGs for short- and long-read sequencing*, in Bioinformatics, 2023 [DOI]

8. 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 Genome Biology 2022 [DOI]

9. 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]

10. **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]

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

12. **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]

13. **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]

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

15. 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]

16. 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]

17. **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]

18. **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]

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

20. **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]

21. **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]

22. **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]

23. **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]

24. **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

25. **Luis Pedro Coelho**, *For long-term sustainable software in bioinformatics*, in PLOS Computational Biology, 2024 [DOI]

26. **Luis Pedro Coelho**, Célio Dias Santos-Júnior, Cesar de la Fuente-Nunez, *Challenges in computational discovery of bioactive peptides in 'omics data*, in PROTEOMICS, 2024 [DOI]

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

28. **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

29. Kanta Chechi, Rima Chakaroun, Antonis Myridakis, Sofia Forslund, Sebastienin Froment, Trine Nielsen, Judith Aron-Wisneswky, Eugeni Belda, Edi Prifti, Pierre Bel Lassen, Gwen Falony, Sara Vieira-Silva, Julien Chilloux, Kazuhiro Sonomura, Lesley Hoyles, Laura Martinez-Gili, Francesco Pallotti, Petros Andrikopoulos, Francesc Puig-Castellvi, Hugo Roume, Nicolas Pons, Emmanuelle Le Chatelier, Benoit Quinquis Quinquis, Nathalie Galleron, Magali Berland, Michael T. Olanipekun, Manyi Jia, Angelos Manolias, Bridget Holmes, Solia Adriouch, Matthias Blüher, **Luis Pedro Coelho**, Kévin Da Silva, Pilar Galan, Boyang Ji, Ana Neves, Christine Rouault, Joe-Elie Salem, Valentina Tremaroli, Tue Hansen, Nadja Søndertoft, Christian Lewinter, Helle Pedersen, Peter Mark, Jens Goetze, Lars Køber, Henrik Vestergaard, Torben Hansen, Jean-Daniel Zucker, Taka-Aki Sato, Serge Hercberg, Fredrik Bäckhed, Ivica Letunic Letunic, Jean-Michel Oppert, Jens Nielsen, Jeroen Raes, Ioanna Tzoulaki, Abbas Dehghan, Verena er Zuber, Emmanuelle Bouzigon, Mark Lathrop, Parminder Raina, Philippe Froguel, Fumihiko Mastuda, Florence Demenais, Dominique Gauguier, Michael Stumvoll, Peer Bork, Oluf Pedersen, Stansliv Dusko Ehrlich Ehrlich, Karine Clement, Romina Pacheco-Tapia, Inés Castro-Dionicio, Marc-Emmanuel Dumas, *A gut microbiome-kidney-heart axis predictive of future cardiovascular diseases.*, in Research Square, 2025 [DOI]

30. John P. Makumbi, Samuel K. Leareng, Oliver K. Bezuidt, **Luis Pedro Coelho**, Thulani P. Makhalanyane, *Persistence of High-Risk Antimicrobial Resistance Genes in Extracellular DNA Along an Urban Wastewater-River Continuum*, in SSRN, 2025 [DOI]

31. Lombard Fabien, Guidi Lionel, Manoela C. Brandão, Coelho Luis Pedro, Colin Sébastien, Dolan John Richard, Elineau Amanda, Josep M Gasol, Grondin Pierre Luc, Henry Nicolas, Federico M Ibarbalz, Jalabert Laëtitia, Loreau Michel, Martini Séverinne, Mériguet Zoé, Picheral Marc, Juan José Pierella Karlusich, Rainer Pepperkok, Romagnan Jean-Baptiste, Zinger Lucie, Stemmann Lars, Silvia G Acinas, Karp-Boss Lee, Boss Emmanuel, Matthew B. Sullivan, Colomban de Vargas, Bowler Chris, Karsenti Eric, Gorsky Gabriel, Tara Oceans Coordinators, *Ubiquity of inverted 'gelatinous' ecosystem pyramids in the global ocean*, in bioRxiv, 2024 [DOI]

Peer-reviewed research publications

32. Álvaro Rodríguez del Río, Joaquín Giner-Lamia, Carlos P. Cantalapiedra, Jorge Botas, Ziqi Deng, Ana Hernández-Plaza, Martí Munar-Palmer, Saray Santamaría-Hernando, José J. Rodríguez-Herva, Hans-Joachim Ruscheweyh, Lucas Paoli, Thomas S. B. Schmidt, Shinichi Sunagawa, Peer Bork, Emilia López-Solanilla, **Luis Pedro Coelho**, Jaime Huerta-Cepas *Functional and evolutionary significance of unknown genes from uncultivated taxa* in Nature, 2023 [DOI]

33. Thomas S B Schmidt, Anthony Fullam, Pamela Ferretti, Askarbek Orakov, Oleksandr M Maistrenko, Hans-Joachim Ruscheweyh, Ivica Letunic, Yiqian Duan, Thea Van Rossum, Shinichi Sunagawa, Daniel R Mende, Robert D Finn, Michael Kuhn, **Luis Pedro Coelho**, Peer Bork, *SPIRE: a Searchable, Planetary-scale mIcrobiome REsource*, in Nucleic Acids Research, 2023 [DOI]

34. Rémi Gschwind, Svetlana Ugarcina Perovic, Marie Petitjean, Julie Lao, **Luis Pedro Coelho**, Etienne Ruppé *ResFinderFG v2.0: a database of antibiotic resistance genes obtained by functional metagenomics* in Nucleic Acid Research 2023 [DOI]

35. 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 Briefings in Bioinformatics 2022 [DOI]

36. 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]

37. 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]

38. 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]

39. 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]

40. 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]

41. 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]

42. 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]

43. 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]

44. 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]

45. 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]

46. 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]

47. 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]

48. 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]

49. 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

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Review articles

71. Paulina Szymczak, Wojciech Zarzecki, Jiejing Wang, Yiqian Duan, Jun Wang, **Luis Pedro Coelho**, Cesar de la Fuente-Nunez, Ewa Szczurek, *AI-Driven Antimicrobial Peptide Discovery: Mining and Generation*, in Accounts of Chemical Research, 2025 [DOI]

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73. 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. *The global microbiome. Big data & small genes* at Nanjing Agricultural University (Nanjing, China), April 2023
2. *The global microbiome. Big data & small genes* at INRAE (Paris, France), April 2023
3. *SemiBin: using self-supervised deep learning for better metagenomics binning* at Faculty of Mathematics University of Belgrade and the Serbian Society for Bioinformatics and Computational Biology (remote), February 2023
4. *Big catalogs and small genes* at the Novel challenges in the quest for orthologs workshop (part of ECCB 2022), September 2022
5. *The global microbiome. Big data & small genes* at the Gothenburg Bioinformatics Network, September 2022
6. *Analysing the microbiome at a global scale* Novo Nordisk Prize Symposium, June 2022
7. *Micropeptides: Biogenesis and Function*, Micropeptides: Biogenesis and Function/GPCRs Keystone Symposium, April 2022
8. Invited seminar at University of Innsbruck, March 2022
9. Invited seminar at Luxembourg Institute of Health, March 2022
10. Invited seminar at JGI (remote), March 2022
11. *Microbes and antimicrobes at the global scale* at Institut Pasteur Shanghai, December 2020
12. *The use of animal models for assessing antimicrobial impact on the gut microbiome* at ICOHAR, April 2019
13. *High-throughput fluorescence microscopy of environmental samples obtains single-cell phenotypic measurements*, Paris Single Cell Day 2018, October 2018
14. *Metagenomics based investigations of microbial communities*, Symposium on Computational Biology at Fudan University, Shanghai, August 2018
15. *Life in Words and Pictures: sequencing and imaging for analysing microbial communities*, Dept. of Biomedical Research, University of Bern, November 2017
16. *Statistical tools for analysing the microbiome in environmental and clinical applications*, Novo Nordisk Foundation Center for Basic Metabolic Research, October 2017
17. *Looking at the oceans with computer vision in Python*, invited keynote at PyCon Firenze (Italy), April 2016
18. *Structure and function of the ocean microbiome*, lecture at the course *Biology of ecological systems*, Ecole Nationale Superior (France), December 2015
19. *Life in words and pictures: Sequencing and microscopy for the analysis of microbial communities*, Luxembourg Centre for Systems Biomedicine, September 2015
20. *An analysis of 243 metagenomes collected by the Tara Oceans Projects*, Station Biologique de Roscoff, July 2015
21. *Machine Learning: What it can do for you (and what it cannot)*, BrightTalk online seminar, May 2015
22. *Webcast: Penalized Linear Regression in Python*, O'Reilly Webcasts, October 2014
23. *Python for Computer Vision in Biology and Beyond*, Python San Sebastian, keynote, September 2014
24. *Large Scale Analysis of Bioimages Using Python*, International Workshop on Technical Computing for Machine Learning and Mathematical Engineering, Leuven (Belgium), September 2014
25. *Mahotas and the Python Ecosystem for Bioimage Informatics Applications*, European Bioimage Analysis Symposium, Barcelona, October 2013

26. *Organizing the Proteome with Location and Function Topics*, Freiburg Institute for Advanced Studies, April 2013
27. *Modeling Subcellular Location from Images and Other Sources of Information*, Luxembourg Centre for Systems Biomedicine, July 2012
28. *Modeling Subcellular Location from Images and Other Sources of Information*, Priberam Machine Learning Lunch Seminar, June 2012
29. *Modeling Subcellular Location from Images and Other Sources of Information*, EAO Seminar (Instituto Gulbenkian da Ciência), Oeiras, March 2012
30. *Learning Subcellular Location from Images and Other Sources of Information*, KDBIO (Knowledge Discovery and Bioinformatics) seminar, Lisbon, February 2012
31. *Bioimage Informatics: Computer Vision for Biology*, EMBO Practical Course on Microscopy: from single molecules to animals, Pretoria, November 2011
32. *Studying the subcellular location space with bioimages and other data modalities*, University of Delaware, Computer and Information Sciences Department, September 2011
33. *Proteome-scale analysis and modeling of subcellular location*, 4th CeBiTec Symposium BioImaging, Bielefeld (Germany), 25–27 August 2009
34. *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