

PATRICIA AZEVEDO

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PROFESSIONAL APPOINTMENTS

Portinari Pretoriano College, Avaré, SP, Brazil. Biology teacher. (Jul 2024 – Dec 2024)

Mundo de Platão College, Avaré, SP, Brazil. Biotechnology and student counseling teacher. (Jan 2023 – Aug)

São Paulo Department of Education, Araras, SP, Brazil. Biology and science teacher. (Oct 2012 – Mar 2015)

University Exam Preparation Course (UFSCurso in Portuguese), Araras, SP, Brazil. Chemistry, grammar, and writing professor. (Jul 2012 – Dec 2013)

Campinas Agronomic Institute (IAC in Portuguese), Cordeirópolis, SP, Brazil. Research internship, Biotechnology Lab. (May 2010 – Jun 2012)

Nanocore Biotechnology, Campinas, SP, Brazil. Laboratory technician, Department of Biotechnology. (May 2008 – May 2010)

Campinas State University, UNICAMP (in Portuguese), Campinas, SP, Brazil. Internship as Biochemistry Technician, Rheumatology Lab, Medical Sciences College. (Apr 2007 – May 2008)

EDUCATION

Ph.D. in Genetics and Molecular Biology. **UNICAMP, Brazil**, Advisors: Maria Imaculada Zucchi, Roberta C. F. Nocelli, and Matthew Hudson (2018 – 2023).

Dissertation: “Exploring the genome, transcriptome, and bacterial communities in *Melipona scutellaris* colonies: an integrated omics approach”

- Note: My Ph.D. studies include a collaborative period at the **University of Illinois – Urbana-Champaign, USA**, where I worked on the draft assembly of the stingless bee genome (Aug 2022 – Feb 2023).

M.S. in Cellular and Molecular Biology. **UNESP, Brazil**. Advisor: Roberta C. F. Nocelli (2016 – 2018). Thesis: “Standardization of nervous tissue *in vitro* culture from Africanized *Apis mellifera*”

B.S. in Biological Sciences. **UFSCar, Brazil**. Advisor: Roberta C. F. Nocelli (2010 – 2015). Honors thesis: “Characterization of the central nervous system of bees and its use in ecotoxicology”

Biochemistry technician. **ETECAP, Brazil** (2006 – 2008).

PUBLICATIONS (PEER-REVIEWED)

*denotes students supervised or mentee by me; †share the first authorship

10. Lourencetti, A. P. S.*; **Azevedo, P.**; Miotelo, L.; Malaspina, O.; Nocelli, R. C. F. Surrogate species in pesticide risk assessments: toxicological data of three stingless bees species.

Environmental Pollution, v. 318, p. 120842, 2023. DOI: <https://doi.org/10.1016/j.envpol.2022.120842> (IF: 7.6)

9. **Azevedo, P.**; Butolo, N. P.; De Alencar, L. D.; Soares-Lima, H. M.; Sales, V. R.; Malaspina, O.; Nocelli, R. C. Optimization of *in vitro* culture of honeybee nervous tissue for pesticide risk assessment. *Toxicology in vitro*, v. 84, p. 105437, 2022. DOI: <https://doi.org/10.1016/j.tiv.2022.105437> (IF: 2.6)

8. Sales, V. R.*; **Azevedo, P.**; Zucchi, M. I.; Nocelli, R. C. F. A systematic review of research conducted by pioneer groups in ecotoxicological studies with bees in Brazil: advances and perspectives. *Environmental Science and Pollution Research*, v. 29, p. 62711-62732, 2022. DOI: <https://doi.org/10.1007/s11356-022-21609-9> (CS: 8.7)

7. Olsthoorn, G.; De Alencar, L. D.; **Azevedo P.**; Zucchi, M. I. A report on the extinction of a population of *Coleocephalocereus pluricostatus* Buning & Brederoo due to ecological imbalance. *Bradleya*, v. 2022, p. 161-168, 2022. DOI: <https://doi.org/10.25223/brad.sp40.2022.a15> (IF: 1.6)

6. Butolo, N. P.*; **Azevedo, P.**; Alencar L. D.; Masaspina, O.; Nocelli, R. C. F. Impact of low temperatures on the immune system of honeybees. *Journal of thermal biology*, v. 101, p. 103082, 2021. DOI: <https://doi.org/10.1016/j.jtherbio.2021.102082> (IF: 2.9)

5. Butolo, N. P.*; **Azevedo, P.**; De Alencar, L. D.; Domingues, C. E. C.; Miotelo, L.; Malaspina, O.; Nocelli, R. C. F. A high quality method for hemolymph collection from honeybee larvae. *PLoS One*, v. 15, p. e0234637, 2020. DOI: <https://doi.org/10.1371/journal.pone.0234637> (IF: 2.9)

4. De Alencar, L. D.; **Azevedo, P.**; Latado, R. Mother's command: phenotypes changes resulting from reciprocal interploidy crosses. *Euphytica*, v. 216, p. 21, 2020. DOI: <https://doi.org/10.1007/s10681-020-2557-4> (IF: 1.6)

3. **Azevedo, P.**; Butolo, N. P.; De Alencar, L. D.; Soares-Lima, H. M.; Sales, V. R.; Malaspina, O.; Nocelli, R. C. Standardization of *in vitro* nervous tissue culture for honeybee: A high specificity approach. *Ecotoxicology and Environmental Safety*, v. 189, p. 110040, 2020. DOI: <https://doi.org/10.1016/j.ecoenv.2019.110040> (IF: 6.2)

2. **Azevedo, P.**; Nocelli, R. C. F. Review of *Apis mellifera* central nervous system anatomy: a theoretical basis for ecotoxicological studies. *Revista da Biologia*, v. 20, p. 10-20, 2020. DOI: <https://doi.org/10.11606/issn.1984-5154.v20p10-20>

1. Grando, C.; Amon, N. D.; Clough, S. J.; Guo, N.; Wei, W.; **Azevedo, P.**; López-Urbe, M. M.; Zucchi, M. I. Two Colors, One Species: The case of *Melissodes nigroaenea* (Apidae: Eucerine), an Important Pollinator of Cotton Fields in Brazil. *Sociobiology*, v. 65, p. 645, 2018. DOI: <https://doi.org/10.13102/sociobiology.v65i4.3464> (IF: 0.9)

ORAL PRESENTATIONS/ TALKS

2. Estadual University of São Paulo “Júlio de Mesquita Filho”. Title: Standardization of nervous tissue *in vitro* culture from Africanized *Apis mellifera*. In: Cell and Developmental Biology. Brazil. Dec/06/2017.

1. XXXV São Paulo's Congress of Phytopathology. Title: Comparison between nested and real-time PCR for diagnosis of *Candidatus liberibacter asiaticus* in psyllids. Brazil. Feb/16/2012.

POSTER PRESENTATIONS

*denotes students supervised or mentee by me

14. **Azevedo, P.**; Nocelli R. C. F.; Zucchi. Genomic, transcriptomic and metagenomic in populations

of native stingless bees aiming the search for detoxification genes. In: IV GB Meeting: Postgraduate meeting in genetics and molecular biology, Jan-Feb/31-04/2022, On-Line, Brazil.

13. **Azevedo, P.**; Nocelli R. C. F.; Zucchi. Genomic, transcriptomic and metagenomic in populations of native stingless bees aiming the search for detoxification genes. In: III GB Meeting: Postgraduate meeting in genetics and molecular biology, Jan/25-29/2021, On-Line, Brazil.

12. **Azevedo, P.**; Butolo, N. P.*; Alencar, L. D.; Malaspina, O.; Nocelli, R. C. F. A new approach to ecotoxicological testing: in vitro culture of hemocytes. In: XVI Brazilian Congress of Ecotoxicology, Aug/16-19/2021, On-Line, Brazil.

11. Sales, V. R.*; **Azevedo, P.**; Malaspina, O.; Nocelli, R. C. F. N. Systematic survey of the research carried out by the pioneer group in bee ecotoxicology studies in Brazil: advances and perspectives. In: XVI Brazilian Congress of Ecotoxicology, Aug/16-19/2021, On-Line, Brazil.

10. **Azevedo, P.**; Nocelli R. C. F.; Zucchi. Genomic, transcriptomic and metagenomic in populations of native stingless bees aiming the search for detoxification genes. In: II GB Meeting: Postgraduate meeting in genetics and molecular biology, Jan/27-31/2020, Campinas, SP, Brazil.

9. **Azevedo, P.**; Nocelli R. C. F.; Zucchi. Genomic, transcriptomic and metagenomic in populations of native stingless bees aiming the search for detoxification genes. In: I GB Meeting: Postgraduate meeting in genetics and molecular biology, Jan/28-30/2019, Campinas, SP, Brazil.

8. Sales, V. R.*; **Azevedo, P.**; Butolo, N. P.; Nocelli, R. C. F. Nerve tissue processing of bee *Apis mellifera* to confirm the viability of in vitro culture. In: VII SemeBIO, May/17/2019, Araras, SP, Brazil.

7. **Azevedo, P.**; Butolo, N. P.; Lima, H. M. S.; Alencar, L. D.; Zucchi, M. I.; Malaspina, O.; Nocelli, R. C. F. Standardization of in vitro nervous tissue culture of Africanized bee *Apis mellifera*. In: XII Meeting on bees, Oct/12-14/2018, Uberlândia, SP, Brazil.

6. Butolo, N. P.*; **Azevedo, P.**; Alencar, L. D.; Malaspina, O.; Nocelli, R. C. F. Variation in the hemocyte count of Africanized honey bee (*Apis mellifera*) according to temperature. In: XII Meeting on bees, Oct/12-14/2018, Uberlândia, SP, Brazil.

5. Grando, C.; Amon, N. D.; Clough, S. J.; Guo, N.; Wei, W.; **Azevedo, P.**; López-Urbe, M. M.; Zucchi, M. I. Two colors, one species: the case of *Melissodes nigroaenea* (Apidae: Eucerinae), an important pollinator of cotton fields in Brazil. In: XII Meeting on bees, Oct/12-14/2018, Uberlândia, SP, Brazil.

4. **Azevedo, P.**; Lopes, P. C.; Lopes, J. C. Environmental educational action: construction of a vertical vegetable garden with 6th-grade students in a state school in the city of Araras/SP. In: II University School Meeting I Teach Internship Workshop and PIBID Meeting I Teach Materials Exhibition for Undergraduate Degrees, Dec/03/2014, Araras, SP, Brazil.

3. **Azevedo, P.**; Lopes, P. C.; Lopes, J. A. C. Didactic game for teaching science: food chain. In: II University School Meeting I Teach Internship Workshop and PIBID Meeting I Teach Materials Exhibition for Undergraduate Degrees, Dec/03/2014, Araras, SP, Brazil.

2. de Azevedo, M. T. A.; Ramirez, R. P. C.; Pavan, M. C. F.; Reis, C.; **Azevedo, P.**; Lima, C. M., Junior, J. M. R.; Santos, S. A. C. Optimization of cultivation conditions to produce plasmid DNA for therapeutic purposes. In: VI Brazilian Biosafety Congress and Latin American Symposium on Biotech Products. Sep/21-25/2009.

1. de Azevedo, M. T. A.; Pavan, M. C. F.; Ramirez, R. P. C.; Reis, C.; **Azevedo, P.**; Lima, K. M.;

Junior, J. M. R.; Santos, S. A. C. Quality control of cell banks to produce recombinant products. In: VI Brazilian Biosafety Congress and Latin American Symposium on Biotech Products. Sep/21-25/2009.

PUBLISHED BOOK CHAPTERS

Miotelo, L.; Nocelli, R. C. F.; Azevedo, P.; Dorigo, A. S.; Rosa-Fontana, A.; Lourencetti, A. P. S.; Tavares, D. A.; Malaspina, O. CAN AN EXOTIC SPECIES REPRESENT THE BIODIVERSITY OF BRAZILIAN SOCIAL BEES IN RISK ASSESSMENTS OF AGROCHEMICALS? In: Ana Lúcia Delgado Assad; Kátia Paula Aleixo. (Org.). A Ciência das Abelhas Pesquisa e desenvolvimento sobre polinizadores e polinização. 1ed. São Paulo: Associação Brasileira de Estudos das Abelhas A.B.E.L.H.A., 2024, v. 1, p. 1-197. Available in: <https://abelha.org.br/formulario-e-book-a-ciencia-das-abelhas/>

AWARDS AND GRANTS

7. IV GB Meeting – Best works in the field of animal genetics and evolution. UNICAMP, Brazil (2022) **Award**
6. Ph.D. International Research Fellowship (2022 - 2023). FAPESP, Brazil (\$12,160).
5. Ph.D. Research Fellowship (2019 - 2023). FAPESP, Brazil (\$24,000).
4. Ph.D. Research Fellowship (2018 - 2019). CAPES, Brazil (\$6,600).
3. M.Sc. Research Fellowship (2016 - 2018). CAPES, Brazil (\$33,000).
2. Ferdinando Galli award – Best undergraduate research, XXXV São Paulo Phytopathology Congress, Brazil (2012) **Award**
1. Undergraduate Research Grant (2010 - 2012). FUNDAG, Brazil (\$9,600).

SUPPLEMENTAL PROFESSIONAL DEVELOPMENT

29. Bulk RNA-seq workshop (40h). HPCBio, Illinois University, USA. 2022.
28. Research methodology – II module (76h). UnB, Brazil. 2022.
27. Research methodology – I module (25h). UnB, Brazil. 2021.
26. Planning of teaching conditions (36h). (EA)² – UNICAMP, Brazil. 2021.
25. Higher education practices: learning experiences at Tempere University (24h). (EA)² – UNICAMP, Brazil. 2021.
24. Environmental risk assessment of pesticides for bees (20h). IBAMA, Brazil. 2021.
23. University extension in meliponiculture and citizen science (25h). USP, Brazil, 2020.
22. Exploring confocal microscopy and nonlinear optics (20h). INFABIC-UNICAMP, Brazil. 2020.
21. PED- Studying strategies and resources for higher education (15h). UNICAMP, Brazil. 2020.
20. Algorithms and computational techniques for genome assembly and analysis (30h). LACTAD-UNICAMP, Brazil. 2020.
19. Meliponiculture: stingless bees breeding (12h). EMBRAPA, Brazil. 2020.
18. Next generation sequencing webinar (32h). GGGC, Brazil. 2020.
17. New generation sequencing (30h). APTA, Brazil. 2019.
16. Introduction to Python programming language and Biopython library (15h). LACTAD-UNICAMP, Brazil. 2019.
15. Identification, annotation, and analysis of transcript expression (RNA-Seq) (30h). LACTAD-UNICAMP, Brazil. 2019.
14. Maps and ecological niche modeling (16h). USP-ESALQ, Brazil. 2019.
13. Ring test: Risk assessment protocol for adult stingless bees (40h). APTA, Brazil. 2019.
12. I Summer course in bioinformatics – Omics analysis (30h). APTA, Brazil. 2019.
11. II ICT Bioinformatics winter course (24h). UNIFESP, Brazil. 2018.
10. Ecotoxicology data analyses (30h). UNESP, Brazil. 2017.
9. University extension in photography, science, and society: bringing the university closer to the community (60h). UFSCar, Brazil. 2016.
8. Inclusion of the target student of special education in higher education (100h). UNESP, Brazil. 2016.

7. The assessment of learning I higher education and educational technologies (100h). UNESP, Brazil. 2016.
6. Innovative pedagogical practices in higher education and educational technologies (100h). UNESP, Brazil. 2016.
5. Apicultural updates (16h). UFSCar, Brazil. 2016.
4. University extension in pro-teaching (60h). UFSCar, Brazil. 2014.
3. Better management, better teaching (60h). São Paulo department of education, Brazil. 2014.
2. Better management, better teaching (80h). São Paulo department of education, Brazil. 2013.
1. Risk Assessment Applied to Biotechnology (16h). Nanocore Biotechnology S.A., Brazil. 2008.

TEACHING EXPERIENCE

Teacher

Biology, Portinari Pretoriano College, Brazil. (Jul 2024 – Actual)
Biotechnology and student counseling, Mundo de Platão College. (Jan 2023 – Aug)
Biology and Sciences, São Paulo department of education, Brazil. (Oct 2012 – Mar 2015)
Chemistry, grammar, and writing, University exam preparation course (UFSCar), Brazil. (Jul 2012 – Dec 2013).

Teaching Assistant

Genome Expression: regulatory RNAs and epigenetics, UNICAMP, Brazil. 2021. *1 semester*
Ethical foundations for the biologist's professional practice, UNICAMP, Brazil. 2021. *1 semester*
Biotechnology of animal cells, UNESP, Brazil. 2009. *1 semester*
Cell biology, UFSCar, Brazil. 2016. *1 semester*

Guest Lectures and Workshops

10. West Chester University, USA. 2023. **Guest lecture.**
9. Bebedouro Municipal Higher Education Institute, Brazil. 2021. **Guest lecture.**
8. Federal University of São Carlos - UFSCar. Brazil. 2021. **Guest lecture.**
7. Hermínio Ometto Foundation, Brazil. 2021. **Guest lecture.**
6. Federal Institute *campus* Ponta Porã, Brazil. 2021. **Guest lecture.**
5. São Paulo's Agency for Agribusiness Technology, Brazil. 2020. **Guest lecture.**
4. Hermínio Ometto Foundation, Brazil. 2020. **Guest lecture.**
3. University of São Paulo – ESALQ – USP, Brazil, 2019. **Guest lecture.**
2. Estadual University of São Paulo “Júlio de Mesquita Filho”, Brazil. 2016. **Guest lecture.**
1. Federal University of São Carlos - UFSCar, Brazil. 2013. **Guest lecture.**

THESIS COMMITTEE MEMBER

2. Daniella Zutin Castelani. (UNESP). Undergraduate Honor Thesis, Brazil. 2022.
1. Luciano da Silva. (UFSCar). Undergraduate Honor Thesis, Brazil. 2018.

MENTORING ACTIVITIES

Graduate students

2. Victor Ribeiro Sales. MSc, UNESP, Brazil. 2022 – current (Co-advisor with Roberta C. F. Nocelli).
1. Nicole Pavan Butolo. MSc, UNESP, Brazil. 2019 – 2020 (Co-advisor with Roberta C. F. Nocelli).

Undergraduate students

2. Victor Ribeiro Sales. MSc, UNESP, Brazil. 2018 – 2022 (Co-advisor with Roberta C. F. Nocelli).

1. Nicole Pavan Butolo. MSc, UNESP, Brazil. 2018 – 2019 (Co-advisor with Roberta C. F. Nocelli).

LEADERSHIP

5. Organizer of First Steps in Science for high school students in Rio Claro city. UNESP extension program, Rio Claro, SP, Brazil. 2017.
5. Organizer of Extension Course GAP Junction: Undergraduate to graduate for UNESP undergraduate students get to know the graduate program in cell and molecular biology. UNESP extension program, Rio Claro, SP, Brazil. 2017.
4. Organizer of V Symposium on Cell and Molecular Biology at UNESP (regional public), Rio Claro, SP, Brazil. 2017.
3. Organizer of Workshop for the International Cooperation Project University of Nottingham – University of Birmingham, UNESP, Rio Claro, SP, Brazil. 2016.
2. Organizer of I Workshop on growing flowers in pots at UFSCar (regional public), Araras, SP, Brazil. 2016.
1. Organizer of Extension Course GAP Junction: Undergraduate to graduate for UNESP undergraduate students get to know the graduate program in cell and molecular biology. UNESP extension program, Rio Claro, SP, Brazil. 2016.

RESEARCH PROPOSAL AND RESEARCH REPORT REVIEWS

3. Committee member for Undergraduate Researcher fellowship PIBIC (in Portuguese). UFSCar, Brazil. 2020.
2. Committee member for Undergraduate Researcher fellowship PIBIC (in Portuguese). UNICAMP, Brazil. 2019.
1. Committee member for Undergraduate Researcher fellowship PIBIC (in Portuguese). UNICAMP, Brazil. 2018.

Peer-reviews for scientific journals Journal:

PloSone 2023 - Current
Journal of Apicultural Research 2022 – Current
Environmental Science and Pollution Research 2022 – Current

OUTREACH AND SCIENCE COMMUNICATION

2. The curious anatomy of bees. New In: Biology Journal. 2021. In: Biology Journal. 2021. (<https://www.revistas.usp.br/revbiologia/announcement/view/1077>)
1. Ecotoxicology and Conservation Lab (LECA in Portuguese), social media about the bee's importance. 2020 – current. (<https://www.instagram.com/lecaunesp/>)

LANGUAGE SKILLS

English (advanced), Spanish (basic), Portuguese (native)