

Beatriz Merchel Piovesan Pereira

Davis, CA
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Skills

Microbiology/ Molecular Biology

- Bacterial and fungi cultivation in flasks and bioreactors
- Enzyme activity assays; enzymatic hydrolysis
- Fitness evaluation; competition assays
- RNAseq library preparation

Mentoring/Business/Management

- Understanding of IP, patents, FDA regulations
- Mentoring of elementary, high school and college students

Computer/Bioinformatics

- MS Office: Word, Excel, PowerPoint
- Mol. Biology: BioEdit, Cytoscape, SnapGene
- Database: STRING, EcoCyc, NCBI BLAST
- Graphics software: Inkscape
- Programing: Rstudio

Languages

- English and Portuguese: fluent
- Spanish, Italian and German: basic

Education

PhD in Microbiology with a Designated Emphasis in Biotechnology (DEB)*

University of California, Davis, CA 2014 - expected graduation in 2019

- Thesis: *Escherichia coli* stress response to sub-inhibitory concentrations of antimicrobials
- Thesis advisor: Ilias Tagkopoulos, associate professor, Computer Science
- DEB Advisor: Dr. Judith A. Kjelstrom, director, UC Davis Biotechnology Program

*The DEB graduate program (deb.ucdavis.edu) is an inter-graduate group program involving faculty and students from 29 STEM disciplines. It is focused on providing cross-disciplinary training in critical areas of biomolecular research, promoting interdisciplinary team science, bioethics, entrepreneurship and professionalism as well as coordinating training in a biotechnology or life science company.

MS in Chemical Engineering

State University of Campinas (Unicamp) SP, Brazil 2010 - 2013

- Thesis topic: Enzyme production by filamentous fungi for the hydrolysis of lignocellulosic material
- Advisors: Prof. Aline Carvalho da Costa, Chemical Engineering, and Dr. José Geraldo da Cruz Pradella, Senior Researcher, Brazilian Bioethanol Science and Technology Laboratory (CTBE)

BS in Biotechnology and Bioprocess Engineering

Federal University of Parana (UFPR) PR, Brazil 2006 - 2010

Additional coursework**Science communication program**

- AAAS Winter 2018
- Online course for science communication, public engagement, networking and scientific presentations

Biosecurity education module

- University of Bradford United Kingdom Fall 2011
- MS level, online course on dual use biosecurity

Research/Work Experience**Graduate Student Researcher (GSR)**

- University of California, Davis, CA 2014 – present
- Supervisor: Ilias Tagkopoulos, associate professor, Computer Science department and Genome Center affiliate.
 - Conduct independent research to evaluate microbial response to antimicrobials (disinfectants and antiseptics), including evolution experiments, transcriptional response, fitness evaluation with growth curves and competition assays, and cross-stress response to antibiotics
 - Collaborate with post-doc and graduate students from the computer science department in projects related to synthetic biology and optimal experiment design
 - Schedule meetings, manage room reservations, inventory, and laboratory organization
 - Train and supervise undergraduate students
 - Assist in writing grant proposals

R&D Bioprocess Researcher

- IMCOPA Importação, exportação e indústria de óleos SP, Brazil 2013 - 2014
- Supervisor: Dr. Paula Fernandes de Siqueira, director, R&D
 - Worked with a team on a project for protein recovery and production of second-generation ethanol from soybean hull
 - Responsible for material acquisition, planning and executing experiments and reporting to the R&D director
 - Mentored undergraduate and high school students

Trainee

- Brazilian Bioethanol Science and Technology Laboratory SP, Brazil 2010
- Supervisor: Dr. José Geraldo da Cruz Pradella, Senior Researcher, Brazilian Bioethanol Science, and Technology Laboratory (CTBE)
 - Collaborated with various research groups within the Brazilian Center for Research in Energy and Materials (CNPEM)
 - Assisted in setting up the national laboratory to start operating after its inauguration
 - Responsible for laboratory organization, planning, and execution of bioprocess experiments

Undergraduate Researcher

- Federal University of Parana (UFPR) PR, Brazil 2007 - 2009

- Supervisor: Dr. Adriane Bianchi Pedroni Medeiros, associated professor, Bioprocess, and Biotechnology Engineering Dept.
- Worked together with MS students for the bioconversion of agroindustry residues into natural flavors
- Responsible for performing enzymatic analysis, designing and optimizing conditions for fungi cultivation

Honors/Awards	Fully funded Ph.D. Scholarship	2014 –2018
	▪ Science without Borders LASPAU (CAPES, Brazil)	
	SET-F type, RHAЕ Program Research Scholarship	2013 - 2014
	▪ National Council of Technological and Scientific Development (CNPq, Brazil)	
	MS Scholarship	2010 - 2013
▪ Sao Paulo Research Foundation (FAPESP, Brazil)		
	US Department of State Bursary	Fall 2011
	▪ BioEngagement Program	
	Scholarship for Undergraduate Research	2007-2009
	▪ National Council of Technological and Scientific Development (CNPq, Brazil) and Fundação Araucária (Parana, Brazil)	

Community Service

	Teaching assistant	
	Willett Elementary School	Spring 2018
	▪ Volunteered to help with classroom activities (math and reading) for third-grade students	
	Tutor	
	Davis School for Independent Study, Davis, CA	Spring 2018
	▪ Volunteered to tutor a high school student in math and chemistry	
	ESTEME volunteer	
	Shirley Rominger Intermediate School, Woodland, CA	April 26, 2018
	▪ Volunteer for an event (STEM Stars) organized by ESTEME (Equity in STEM and Entrepreneurship, UC Davis)	
	▪ Guided 5 th -grade students on hands-on activities involving chromatography	
	Picnic day volunteer	
	University of California, Davis	April 21, 2018
	▪ Interacted with the community members, explaining concepts of Microbiology and antibiotic resistance (organized by ASM - American Society for Microbiology UC Davis Chapter)	

- Guided hands-on activities of DNA extraction from strawberries (activity organized by the DEB – program from UC Davis)

Mentor

California

Winter 2018

- E-mentoring (online) of high school students from SHS (Sacramento) and VHS (Vallejo) as part of the Biotech Academy program
- Guided two high school students through their choices for career and bachelor's degrees.

DEB Volunteer

Sacramento State University, Sacramento, CA

Oct 8, 2016

- Expanding Your Horizons Conference: motivating young women in science & mathematics
- Assisted in setting up the "DNA: That Something That Makes You Unique" workshop
- Interacted with middle school girls

Volunteer

Curitiba, PR, Brazil

Fall 2013

- Community in the School Program, Curitiba City Hall
- Designed art craft activities for children and teenagers as part of an after-school program

Presentations

Pereira B.M.P., Wang, X, Tagkopoulos, I. *Escherichia coli* response to biocides. 27th Annual Biotechnology Training Retreat, GBSF, UC Davis, Davis, 2018.

Pereira B.M.P., Wang, X, Tagkopoulos, I. *Escherichia coli* response to biocides. MGG recruitment week, UC Davis, Davis, 2018.

Pereira B.M.P., Miranda L.C., Strum I., Gonçalves A., Pedroso C.F., Siqueira P.F.. Soybean hull characterization for evaluation as substrate for second generation ethanol production. (Caracterização da casca de soja para avaliação da sua potencial aplicação para produção de etanol de segunda geração). XIX Simpósio Nacional De Bioprocessos. X Simpósio De Hidrólise Enzimática De Biomassas. Foz do Iguaçu, PR, Brasil, 2013.

Merchel B.P.P., Pradella J.G.C., Costa A.C. Composition and carbon concentration effect on lignocellulolytic enzyme production by *Trichoderma reesei* RUT-C30. (Efeito Da Composição E Concentração Do Meio De Cultivo Sobre A Produção De Enzimas Lignocelulolíticas Por *Trichoderma reesei* Rut-C30). XXI Congresso Latinoamericano de Microbiologia (XXI ALAM), Santos, SP, Brazil, 2012.

Robl D., Mergel C.M., Delabona S.P., Costa P.S., **Pereira B.M.P.**, Pradella J.G.P, Padilla G. Hemicellulolytic Enzymes Profile Of Endophytic Actinomycetes Extracts. In: XXI Congresso Latinoamericano de Microbiologia (XXI ALAM), Santos, SP, Brazil, 2012.

Delabona P.S., Farinas C.S., Lima D.J., **Pereira B.M.P.**, Pradella J.G.C. Use of a new *Trichoderma harzianum* from the Amazon rainforest for on-site cellulase production. In: X Seminário Brasileiro de Tecnologia enzimática ENZITEC, Blumenau, SC, Brasil, 2012.

Merchel B.P.P., Delabona P.S., Costa A.C., Pradella J.G.C. Strategies for lignocellulolytic enzyme production by *Trichoderma reesei* RUT-C30 with

sugarcane bagasse. (Estratégias para produção de enzimas lignocelulolíticas por *Trichoderma reesei* RUT-C30 empregando bagaço de cana-de-açúcar). 6º Congresso Internacional de Bioenergia, Curitiba, PR, Brazil, 2011.

Pradella J.G.C., **Merchel B.P.P.**, Dillon A.J.P., Lima D.J.S., Delabona P.S. Pretreated bagasse for cellulase production by *Penicillium echinulatum*. (Bagaço pré-tratado para produção de celulases por *Penicillium echinulatum*). XVIII Simpósio Nacional de Bioprocessos, Caxias do Sul, RS, Brazil, 2011.

Merchel B.P.P., Pradella J.G.C. Enzyme production by *Penicillium echinulatum* for lignocelulosic material hydrolysis. (Produção de enzimas por *Penicillium echinulatum* para hidrólise de material lignocelulósico). 5º Congresso Internacional de Bioenergia, Curitiba, PR, Brazil, 2010.

Rossi S.C., **Pereira B.M.P.**, Medeiros A.B.P., Vandenberghe L.P.S., Carvalho J.C., Paca J., Soccol C.R. Production of natural fruity aroma by fungi in solid state fermentation employing citric pulp as substrate. International Congress of Chemical and Process Engineering, Praga, 2008.

Rossi S.C., Medeiros A.B.P., Vandenberghe L.P.S., **Pereira B.M.P.**, Gago F.D., Rizzolo J.A., Pandey A., Soccol C.R. Optimization of Nutrients to Produce Fruity Aroma by Fungi in Solid State Fermentation. Congress on Bioprocesses in Food Industries ICBF, p. 61, Hyderabad, 2008.

Publications

Pereira B.M.P., Wang, X, Tagkopoulos, I. *Escherichia coli* stress response to sub-inhibitory concentration of biocides. (in preparation).

Pereira B.M.P., Zorraquino, V. Tagkopoulos, I. The genetic basis of *Escherichia coli* long-term adaptation to antimicrobials. (in preparation).

Pereira B.M.P., Alvarez T.M., Da Silva Delabona P., Dillon A.J.P., Squina F.M., Da Cruz Pradella J.G. Cellulase On-Site Production from Sugar Cane Bagasse Using *Penicillium echinulatum*. Bioenerg. Res., v. 6, p. 1052-1062, 2013.

Ribeiro D.A., Cota J., Alvarez T.M., Brüchli F., Bragato J., **Pereira B.M.P.**, Pauletti B.A., Jackson G., Pimenta M.T.B., Murakami M.T., Camassola M., Ruller R., Dillon A.J.P., Pradella J.G.C., Paes Leme A.F., Squina F.M. The *Penicillium echinulatum* Secretome on Sugar Cane Bagasse. Plos One, v. 7, p. e50571, 2012.

Rossi S.C., Vandenberghe L.P.S., **Pereira B.M.P.**, Gago F.D., Rizzolo J.A., Pandey A., Soccol C.R., Medeiros A.B.P. Improving fruity aroma production by fungi in SSF using citric pulp. Food Research International, p. 10.101, 2009.

Hobbies/ Interests

- Social dancing: salsa, samba, forró, tango
- Travel Blogging for Brazilians willing to visit California
- Science Book club from ScienceSays (UC Davis student organization)