
JAVIER A. CEJA-NAVARRO

Research Scientist, Lawrence Berkeley National Laboratory, Berkeley, CA

<https://eesa.lbl.gov/profiles/javier-arturo-ceja-navarro>

WORK EXPERIENCE

06. 2016 – Present	Research Scientist (LBNL's equivalent to UC's Assistant Professor) Lawrence Berkeley National Laboratory, Climate and Ecosystem Sciences Division. Berkeley, CA, USA.
11. 2014 – 06. 2016	Project Scientist Lawrence Berkeley National Laboratory, Climate and Ecosystem Sciences Division. Berkeley, CA, USA.
08. 2010 – 11. 2014	Postdoctoral Researcher Lawrence Berkeley National Laboratory, Climate and Ecosystem Sciences Division. Berkeley, CA, USA.
11. 2009 – 08. 2010	Scientific Consultant International Maize and Wheat Improvement Center (CIMMYT). Texcoco, Mexico.
12. 2008 – 07. 2009	CONACyT Visiting Scholar Fellow UC Berkeley, Physics Department Berkeley, CA, USA.

EDUCATION

11. 2015 – 04. 2016	Leadership Development Program. Berkeley Lab/UC Berkeley Program. Berkeley School of Business.
08. 2005 – 11. 2009	PhD in Biotechnology. Centro de Investigacion y de Estudios Avanzados del I.P.N. Mexico City, Mexico.
08. 2001 – 03. 2005	Bsc. Chemical Engineering. Instituto Tecnológico de Celaya. Guanajuato, Mexico.

AWARDS

2016	LBNL Director's Award for Scientific Outreach and Diversity Achievement.
2008	Recipient of Fellowship by the Mexico's Scientific Council for Research Stay at UC Berkeley.

PUBLICATIONS

- Ceja-Navarro, J.A.,** Karaoz, U., Bill, M., Hao, Z., White, R. A., Arellano, A., Ramanculova, L., Filley, T. R., Berry, T., Conrad, M.E., Blackwell, M., Nicora, C.D., Kim, Y.M., Reardon, P., Lipton, M., Adkins, J.A., Pett-Ridge, J., Brodie, E.L. **Gut anatomical development and microbial functional assembly promote lignocellulose deconstruction and colony subsistence of a wood-feeding beetle.** Nat. Microbiol. In Revision.
- Obadia, B., Gunever, Z.T., Zhang, V., **Ceja-Navarro, J.A.,** Brodie, E.L., Ja, W.J., Ludington, W. **Probabilistic invasion underlies natural gut microbiome stability.** Curr. Biol. 27, R642-R644 (2017).
- Guerrero, E. B., Soria, M. Salvador, R. **Ceja-Navarro, J.A.,** Campos E., Brodie, E. L., Talia, P. **Effect of different lignocellulosic diets on bacterial microbiota and hydrolytic enzyme activities in the gut of the cotton boll weevil (*Anthonomus grandis*).** Frontiers Microb. Front. Microbiol. 7, 2093 (2016).

4. **J. A. Ceja-Navarro**, F. E. Vega, U. Karaoz, Z. Hao, S. Jenkins, H. C. Lim, P. Kosina, F. Infante, T. R. Northen, and E. L. Brodie. **Gut microbiota mediate caffeine detoxification in the primary insect pest of coffee.** *Nat. Commun.* **6**, 7618 (2015).
5. F. E. Vega, S. M. Brown, H. Chen, E. Shen, M. B. Nair, **J. A. Ceja-Navarro**, E. L. Brodie, F. Infante, P. F. Dowd, and A. Pain. **Draft genome of the most devastating insect pest of coffee worldwide: the coffee berry borer, *Hypothenemus hampei*.** *Sci. Rep.* **5**, 12525 (2015).
6. **J. A. Ceja-Navarro**, N. H. Nguyen, U. Karaoz, S. R. Gross, D. J. Herman, G. L. Andersen, T. D. Bruns, J. Pett-Ridge, M. Blackwell, and E. L. Brodie, **Compartmentalized microbial communities, oxygen gradients and nitrogen fixation in the gut of *Odontotaenius disjunctus*.** *ISME J.* **8**, 6 (2014).
7. **J. A. Ceja-Navarro**, E. L. Brodie, and F. E. Vega, **J. A technique to dissect the alimentary canal of the coffee berry borer (*Hypothenemus hampei*), with isolations of internal microorganisms.** *Entomol. Acarol. Res.* **44**, e21 (2012).
8. **J. A. Ceja-Navarro**, F. N. Rivera-Orduña, L. Patiño-Zúñiga, A. Vila-Sanjurjo, J. Crossa, B. Govaerts, and L. Dendooven. **Phylogenetic and multivariate analyses to determine the effect of different tillage and residue management on soil bacterial communities: Phylogenetic and multivariate analyses.** *Appl. Environ. Microbiol.* **76**, 3685 (2010).
9. **J. A. Ceja-Navarro**, F. Rivera, L. Patiño-Zúñiga, B. Govaerts, Marsch, R., L. Dendooven. **Molecular analysis of soil bacterial communities in contrasting zero tillage systems.** *Plant Soil* **329**, 127 (2010).
10. A. Montoya-González, O. E. González-Navarro, B. Govaerts, K. D. Sayre, I. Estrada, M. Luna-Guido, **J. A. Ceja-Navarro**, L. Patiño-Zúñiga, R. Marsch, and L. Dendooven. **Effect of straw management, crop rotation and nitrogen source effect on carbon and nitrogen dynamics and nitrous oxide emissions: a laboratory study.** *Plant Soil* **325**, 243 (2009).
11. L. Patiño-Zúñiga, **J. A. Ceja-Navarro**, B. Govaerts, M. Luna-Guido, K. D. Sayre, and L. Dendooven, **The effect of different tillage and residue management practices on soil characteristics, inorganic N dynamics and emissions of N₂O, CO₂ and CH₄ in the central highlands of Mexico: a laboratory study.** *Plant Soil* **314**, 231 (2008).

FUNDED PROJECTS

- a) **Establishment to senescence: plant-microbe and microbe-microbe interactions mediate switchgrass sustainability, Role: Co-PI, Agency: DOE-BER, Duration: 2015-2020.**
- b) **Directing traffic in the rhizosphere: how phage and fauna shape the flow and fate of root carbon through microbial pathways, Role: Co-PI, Agency: DOE-BER, Duration: 2016-2019.**
- c) **Burkholderia Ecology and Virulence, Role: Co-PI, Agency: DTRA, Duration: 2016-2019.**
- d) **The Soil Metazoan Microbiome: A compartment of nutrient cycling, Role: PI, Agency: LBNL's Laboratory Directed Research and Development program, Duration: 2014-2017**

TEACHING EXPERIENCE

2018 -	Guest lecture at IB UC Berkeley: Host-Microbe Interactions
2014 - present	Guest lecture at ESPM UC Berkeley: The Soil Food Web.
2013 - 2017	Guest lecturer at Sonoma State University: Microbes and Evolution.

OUTREACH CONTRIBUTIONS

Selected Events:

- a) Science at Cal, Los caminos de la ciencia. Speaker: From Chemical engineering to microbiology and back, February, 2018. (<http://scienceatcal.berkeley.edu/caminos-de-la-ciencia-feb>)
- b) A bioinformatics workshop for Guatemalan students. Organizer. September, 2017. (<https://eesa.lbl.gov/berkeley-lab-ecologist-welcomes-latin-american-students-who-research-insect-gut-microbiome>).

- c) Talentum at the Berkeley Lab. Organizer and Speaker. Event co-organized with the Mexican Consulate in SF and Mexico's Talentum Program. July, 2015.
(<https://today.lbl.gov/lab-scientists-seek-to-educate-inspire-top-mexican-students-visiting-berkeley-lab>)

Videos:

- a. *Bugs, Microbes, Biofuels and Coffee*. Video animation describing Ceja-Navarro's research at the Berkeley Lab. Co-production and illustration work also by Javier Ceja-Navarro, **more than 6800 views**.
<https://www.youtube.com/watch?v=cWuAK6IMRQM>
- b. *Insectos, Microbios, Biocombustibles y Café*. Spanish Version, **more than 2600 views**.
<https://www.youtube.com/watch?v=wsRvD8JtPb4&feature=youtu.be>
- c. *Do insects contain the secrets for sustainable food and energy production?* LBNL's Science at the Theater: 5 Big Questions, **more than 7800 views**.
<https://www.youtube.com/watch?v=kwCi0fD00zg&feature=youtu.be>

INVITED TALKS

10.2018	Critters, microbes, and ecosystem function. California Academy of Sciences Seminar Series, San Francisco, CA.
09.2018	Beyond microbes: Characterizing the soil food web and the multitrophic interactions that mediate ecosystem services. Biosciences seminar series, Berkeley, CA.
06.2018	Gut properties and microbial assembly drive lignocellulose degradation in a wood-feeding beetle. Entomological Society of America Pacific Branch Meeting. Reno, NV.
08.2017	Microbial and environmental arrangements in the gut of the wood-feeding beetle <i>Odontotaenius disjunctus</i> illustrate mechanisms for energy and nutrient extraction from lignocellulose. SIMB meeting, Denver, CO.
05.2017	Artrópodos son Bioreactores Microbianos que Controlan Servicios Ambientales. Seminar Series of the Universidad del Valle de Guatemala.
04.2017	Arthropods are Living Microbial Bioreactors that Support Ecosystem Services. Entomological Society of America Pacific Branch Meeting. Portland, OR.
04.2017	Arthropod-Microbiome Interactions and their Role in the Host's success to Environmental Adaptation. UC Merced Science Week. Merced, CA.
02.2017	Arthropod-Microbiome Interactions and their Role in the Host's success to Environmental Adaptation. Entomology Seminar Series of UC Berkeley. Berkeley, CA.
02.2017	The Soil Metazoan Microbiome: A Compartment of Importance to Soil Nutrient Cycling. Earth and Environmental Sciences Area Review, LBNL. Berkeley, CA.
01.2017	Multi-domain Microbial Pathways for Lignocellulose Transformation are Spatially Segregated through the Passalid Beetle Digestive Tract. DOE Genomic Sciences Meeting. Arlington, VA.

CONFERENCE ORAL CONTRIBUTIONS

1. Arellano, A., Ramanculova, L., Kvietok, M., **Ceja-Navarro, J. A. Arthropods are hotspots of microbial diversity.** West Coast Bacterial Physiology Meeting. December, 2016. Monterey, CA.
2. **Javier A. Ceja-Navarro.** Multi-omics approach to study the biotechnological potential for lignocellulose degradation of the Passalid Beetle. **AGU meeting. December, 2015.** San Francisco, CA.
3. **Javier A. Ceja-Navarro,** Fernando E. Vega, Zhao Hao, Hsiao-Chien Lim, Petr Kosina, Francisco Infante, Eoin L. Brodie. **The microbiome of the primary coffee pest**

- Hypothenemus hampei*, and its role in caffeine detoxification.** Seventh International Symposium on Molecular Insect Science. July 2014. Amsterdam, The Netherlands.
4. **Javier A. Ceja-Navarro**, Fernando E. Vega, Ulas Karaoz, Hsiao-Chien Lim, Peter K. Weber, Zhao Hao, Hoi-Ying Holman, Jennifer Pett-Ridge, Eoin L. Brodie. **Microbial communities associated with the coffee berry borer (*Hypothenemus hampei*; Coleoptera: Curculionidae) and their role in caffeine metabolism.** ISME14 The Power of the Small. 2012. Denmark, Copenhagen.

SYNERGISTIC ACTIVITIES

- *Proposal reviewing activities:*
 - a) Reviewer of applications to the DOE Office of Science Graduate Student Research Program. February 2018.
 - b) Reviewer for DOE-BER Climate and Environmental Sciences Division. May, 2016
- *Invited panelist:* Secretary of Department of Energy Advisory Board Meeting. Berkeley Lab. January, 2016.
- *Leadership in Broadening Participation:* Mentor of Mexican Students for the TALENTUM program of the Secretary of Public Education in Mexico (2015- present). Mentor and supervisor for the DOE's SULI program that seeks to engage community college students into different fields of science.
- *Undergraduate and Graduate Mentoring:* Mentored and sponsored undergraduate students from underrepresented minorities (13 students from 2010 to this date). Gave several presentations in Mexico and different USA universities to engage minorities into science. Hosted graduate students and postdocs at the Berkeley Lab from USA and Europe.
- *Reviewer for different scientific journals:* Nature Communications, Applied and Environmental Microbiology, Soil Biology & Biochemistry, Microbial Ecology, ISME Journal, BMC Genomics, Arthropod Structure and Development.