

JOHN DE LA PARRA, PH.D.

The Rockefeller Foundation
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CURRENT AFFILIATIONS AND APPOINTMENTS

The Rockefeller Foundation, New York, NY

- Manager, Global Food Portfolio, May 2020 - present

Harvard University, Cambridge, MA

- Associate, Harvard University Herbarium, July 2018 - present

Tufts University, Medford, MA

- Visiting Lecturer, Experimental College, January 2018 - present
Instructor/Creator: *Medicinal Plants*; *The Cannabis Debate*; *Psychoactive Plants and Fungi*

PAST AFFILIATIONS AND APPOINTMENTS

Harvard University, Cambridge, MA

- Course Assistant, Dept. of Organismic and Evolutionary Biology, January 2020 - May 2020
Redevelopment of the course *Plants and Human Affairs*
- Visiting Instructor, The Arnold Arboretum of Harvard University, July 2018 - August 2020
Introduction to Medicinal Plants; *Ethnobotany at Harvard*; others

Tufts University, Medford, MA

- Lecturer, Environmental Studies Program, September 2018 - May 2020
Instructor: *Introduction to Environmental Fieldwork*; *Directed Study: Capstone*

Northeastern University, Boston, MA

- Lecturer, Biotechnology Program, College of Science, September 2018 - May 2020
Instructor/Course Creator: *Introduction to Biotechnology*; *Agricultural Biotechnology*

Massachusetts Institute of Technology, Cambridge, MA

- Research Scientist, MIT Media Lab, March 2019 - September 2019
Research Lead: *Controlled Environment Plant Phenotyping*
- Ethnobotany Research Associate, MIT Media Lab, August 2018 - March 2019

Northeastern University, Biopharmaceutical Analysis Training Laboratory, Burlington, MA

- Postdoctoral Research Associate, May 2018 - October 2018

ADVISORY COMMITTEES AND LEADERSHIP

Society for Economic Botany

- President (elected), 2021 - present
- Governing Council (elected), 2018 - 2021
- Publications Committee, 2020 - 2021
- Chair, Website Committee, 2019 - 2021

Food Systems Game Changers Lab (IDEO, EAT, Thought for Food, and The Rockefeller Foundation)

- Chair, Committee on Bridging the Digital Divide, 2021

Harvest for Health (Foundation for Food and Agriculture Research)

- Steering Committee, 2020 - present

William L. Brown Center (Missouri Botanical Garden)

- Advisory Committee, 2020 - present

Oregon Botanical Garden Project

- Advisory Committee, 2018 - present

EDUCATION

Northeastern University, Boston, MA

Ph.D., Chemistry, 2018

Dissertation: *Development of Novel Analytical Methods for the Study of Ethnobotanical Diabetes Treatments and Diabetes Biomarkers*

Committee: William Hancock, Jared Auclair, Roman Manetsch, Sunny Zhou, Cassandra Quave

Thomas Edison State University, Trenton, NJ

Bachelor of Arts, Natural Sciences and Mathematics, 2009

The Cooper Union for the Advancement of Science and Art, New York, NY

Four-year full tuition scholarship, Chemical Engineering, 1998 - 2002

Dean's List, 1998 - 1999

Certifications:

Cornell University, Ithaca, NY

Division of Nutritional Science

Certificate in Nutrition, 2020

University of Mississippi School of Pharmacy, Oxford, MS

National Center for Natural Products Research

Certificate in Botanical Authentication and Modern Chromatographic Techniques, 2018

Northeastern University, Boston, MA

Biopharmaceutical Analysis Training Laboratory

Certificates in Glycoprotein Analysis, Recombinant Antibodies and Biosimilars, and Intact Protein Analysis, 2017

Brookdale College, Lincroft, NJ

Certificate in Horticulture, 2008

FELLOWSHIPS AND AWARDS

- National GEM Fellowship
The National Consortium for Graduate Degrees for Minorities in Engineering and Science
Full guaranteed funding and stipend for duration of PhD, 2014 - 2018
- NSF Travel Award
Joint Conference of the Society for Economic Botany and the Society of Ethnobiology, 2018
- ElSohly Award for Excellence and Commitment to Cannabis Chemistry
American Chemical Society Division of Chemical Health and Safety, 2018
- Northeastern University PhD Network Travel Grant
Funding to attend the annual American Chemical Society conference, 2018

- Northeastern University Dissertation Completion Fellowship
Full funding award for final semester of PhD studies, Spring 2018
- CASSS (California Separation Science Society) Student Travel Award
WCBP (Well-characterized Biopharmaceuticals Conference) 2018, Washington DC
Full travel and registration award
- ASMS Travel Award
The American Society for Mass Spectrometry Fall Workshop on Top-Down Proteomics 2017
Full travel and registration award
- Goldenberg Scholarship
International Society for Pharmaceutical Engineering, 2017 (Second consecutive win)
- American Chemical Society Division of Chemical Health and Safety Full Travel Award
ACS National Meeting, New Orleans, LA, Spring 2018
Selected to present “Rapid Biochemical Phenotyping of a Medicinal Plant”
- Excellence in Innovation Award
Northeastern University, RISE 2017 (Second consecutive win)
Out of approximately 450 presenters crossing all academic fields, “given to the single student who discovers the most novel and revolutionary invention or process that can be translated into a real-world application”
- Outstanding Student Research Award (Physical and Life Sciences)
Northeastern University, RISE 2017 (Second consecutive win)
- Best Video Pitch
Northeastern University, RISE ConnectIn 2017
- Best Elevator Speech
American Chemical Society. Northeast Student Chemistry Research Conference, 2017
- NSF Travel Award
XIX International Botanical Congress, Shenzhen China
NSF and Botanical Society of America, 2017
- ASPB Recognition Travel Award
Plant Biology 2017, Honolulu, HI
Minority Affairs Committee of the American Society of Plant Biologists, 2017
- ASPB Travel Award
Phenome 2017, Tucson, AZ, American Society of Plant Biologists, 2017
- Full Scholarship
The May Institute on Computation and Statistics for Mass Spectrometry and Proteomics, Boston, MA, 2017
- President’s Award
Society for Economic Botany, 2016
Awarded only 5 times since 1959. “Bestowed by the Society upon an individual on the basis of outstanding accomplishments [and] outstanding service.”
- Julia F. Morton Award
Society for Economic Botany, Outstanding Poster Presentation at International Conference, 2016
- Excellence in Innovation Award
Northeastern University, RISE 2016
Out of approximately 450 presenters crossing all academic fields, “given to the single student who discovers the most novel and revolutionary invention or process that can be translated into a real-

- world application”
- Outstanding Student Research Award (Physical and Life Sciences)
Northeastern University, RISE 2016
 - Outstanding Graduate Student Poster
International Society for Pharmaceutical Engineering Conference, Boston, MA, 2016
 - NSF Travel Grant
GEM Annual Board Meeting and Conference, Miami, FL, 2016
 - ACS Travel Grant
American Chemical Society’s Summer School on Green Chemistry & Sustainable Energy, Golden, CO, 2016
 - Goldenberg Scholarship
International Society for Pharmaceutical Engineering, 2016
 - Northeastern Future Faculty Program
Selected for the inaugural class, 2015
 - Graduate Dissertation Research Grant
Northeastern University, 2015
 - Cottrell Scholars Travel Grant and Full Scholarship
Cottrell Scholars Collaborative, Master Teaching Assistant Workshop, Atlanta, GA, 2015
 - Petroleum Research Scholar
American Chemical Society, 1999
 - 4-year Full Scholarship,
The Cooper Union, New York, NY, 1998 – 2002

INVITED LECTURES

The Periodic Table of Food Initiative. Biocultural Education and Research Program 2021. Botanical Symposium and Exhibition St. Joseph, Barbados (Virtual). 10-14 April 2021. Session Chair

Developing More Nourishing and Sustainable Food Systems: A History of Innovation and Collaboration. Harvard University. Invited Lecturer for the course *Plants and Human Affairs*. Cambridge, MA. 8 March 2021.

Flavor, Nutrition, and Medicine: Envisioning the Future of Agricultural Innovation. Capgemini. Utrecht, The Netherlands. 6 November 2019. Keynote Address

Plants as Food and Medicine: From Urban Forage to Indigenous Knowledge. Harvard University Food Literacy Project. Cambridge, MA. 22 October 2019. Keynote Address

From Nutrition to Medicine: Future Agricultural Innovations and the Cannabis Industry. Phylos Biotech. Portland, OR. 23 August 2019. Keynote Address

Flavor, Nutrition, and Beyond: Envisioning Future Agricultural Innovations. Indigo Agriculture. Watertown, MA. 14 June 2019. Keynote Address

Tantalizing the Taste Buds and Beyond. United Fresh Produce Association Convention and Expo 2019. Chicago, IL. 10 June 2019. Keynote Address

The Future of Food Systems: Digitization and Optimization of Plant Phenotypes. NetSci 2019, Networks in Food and Nutrition. Burlington, VT. 27 May 2019. Keynote Address

Ethnobotany at Harvard. Harvard University Herbaria. Boston, MA. 22 May 2019. Keynote Address

An Introduction to Medicinal Plants: A Five Part Lecture Series. Harvard University, Arnold Arboretum. Boston, MA. 17 April - 11 May 2019

The Future of Farming: From Indigenous Intelligence to Artificial Intelligence. Biocultural Education and Research Program 2019. Botanical Symposium and Exhibition St. Joseph, Barbados. 10-14 April 2019. Keynote Address

The Science Behind the Cannabis Debate. The Cannabis Debate Symposium. Tufts University. Medford, MA. 29 March 2019.

The Cannabis Debate in Film. Tufts University. Medford, MA. 28 March 2019.

The Internet of Food. Internet of food: Sustainability, Innovation, Discovery. International Center for Food Ontology Operability Data and Semantics (IC-FOODS) IC3 Conference. San Francisco, CA 24 March 2019

Digitizing Flavor. Internet of food: Sustainability, Innovation, Discovery. International Center for Food Ontology Operability Data and Semantics (IC-FOODS) IC3 Conference. San Francisco, CA 23 March 2019

Food Traditions, Generational Wisdom and Contemporary Times. Internet of food: Sustainability, Innovation, Discovery. International Center for Food Ontology Operability Data and Semantics (IC-FOODS) IC3 Conference. San Francisco, CA 22 March 2019

The Past, Present, and Future of Plant Chemistry. Simmons University. Department of Chemistry and Physics. Boston, MA. 30 January 2019. Keynote Address

Medicinal Plants in Harvard's Arnold Arboretum: An Exploration of the Wild and Cultivated Remedies Growing Beneath our Feet. Harvard University, Arnold Arboretum. Boston, MA. 29 September 2018.

Medicinal and Edible Plants on Campus: An Exploration of the Spontaneous Vegetation on the Tufts Medford Campus. Tufts University, Tufts Institute of the Environment. Medford, MA. 29 September 2018.

Complexity in Medicinal Plants. 9th International Conference on Complex Systems. Cambridge, MA. July 27, 2018.

Medicinal Plants on Campus: An Exploration of the Wild Remedies Growing Beneath our Feet. Tufts University, Environmental Studies Program. Environmental Escapades Series. Medford, MA. 14 April 2018. Keynote Address

Ethnobotany and Biotechnology: How Indigenous Plant Knowledge Can Inform Drug Discovery. Northeastern

University Botany Club, Inaugural Event. Boston, MA. 11 April 2018. Keynote Address.

Phytochemical Warfare: Environmental Impacts on Ethnobotany. Tufts University, Environmental Studies Program. Tufts Institute of the Environment Seminar Series. Medford, MA. 18 January 2018. Keynote Address

Tissue Culture, Metabolic Engineering, and Phenome Analysis: How Plant Biotechnology Techniques Stand to Change the Cannabis Industry. Massachusetts Institute of Technology. MIT Enterprise Forum. Cambridge, MA. 5 December 2017.

The Ethnobotanical Foundations and Biotechnology of Developing Natural Products. Johnson & Johnson Consumer and Personal Products Worldwide, Emerging Science and Technology Headquarters. Skillman, NJ. 4 December 2017. Keynote Address

Chemotaxonomy, Herbariomics, and Indigenous Plant Selection. Brown University, Department of Ecology and Environmental Biology. Invited lecture for Plant Systematics. Providence, RI. 3 October 2017.

The Practice and Theory of Ethnophytotechnology. Cornell University. Department of Molecular Biology and Genetics, Department of Biological and Environmental Engineering. Joint Plant Biotechnology Group Meeting. Ithaca, NY. 17 August 2017.

Traditional Chinese Medicine in the US: Current Regulations and Research. Special address to the China Food and Drug Administration. Boston, MA. 4 May 2017. Keynote Address

Emerging Plant Biotechnologies and the Impacts on Cannabis Production. Live broadcast to the 253rd National Meeting of the American Chemical Society, Chemical Health and Safety Division, Special Symposium on Cannabis Production and Analysis. San Francisco, CA. 2 April 2017.

Ethnophytotechnology: Harnessing the Drug Discovery Potential of Ethnobotany with Biotechnology. Harvard University, Department of Organismic and Evolutionary Biology. Harvard University Herbaria Seminar Series. Cambridge, MA. 21 February 2017. Keynote address

Novel Applications of Ethnobotany in Biotechnology. Harvard University, Department of Molecular and Cellular Biology. Invited lecture for course Plants and Human Affairs. Cambridge, MA. 28 November 2016.

The Legacy of Medicinal Plant Drug Discovery at Harvard: A Discussion and Viewing of El Abraxo de la Serpiente (A two-part lecture). Harvard University. 21-22 November 2016. Keynote address

Implementing a Greener, More Industrially Relevant Laboratory Curriculum. Pfizer Green Chemistry Workshop. Boston, MA. 5 November 2016. Workshop Presentation.

Biosynthesis of Plant-Derived Pharmaceuticals. Presentation to the International Society for Pharmaceutical Engineering Board of Directors. MIT Endicott House. Dedham, MA. 16 August 2016. Keynote address

Public Speaking in the Sciences. Education Unlimited Public Speaking Institute. Tufts University, Medford, MA, 23 July 2016.

Instant Synthesis: Effectively Communicating Scientific Knowledge. Education Unlimited Public Speaking Institute, Brown University, Providence, RI, 7 July 2016

Connecting Islands of Ethnobotany: How to be an Ethnobotanist in Today's Academic Environment. Society for Economic Botany International Conference, Harlan, KY, 6 June 2016. Workshop Presentation

RESEARCH POSTER PRESENTATIONS

A. Vinaya, **J. de la Parra**, O. Fiehn, *Identifying plant natural products in the food we eat by untargeted metabolomics*. 68th ASMS Conference on Mass Spectrometry and Allied Topics, Houston, TX, 31 May 31- 4 June 2020.

J. de la Parra, J. Auclair, F. Jackson, W. Hancock. *Ethnobotanically-Informed Phenotypes: A Path to Treating the Prediabetic Condition*. Society for Economic Botany International Conference, Madison, WI, 3 - 7 June 2018. NSF Travel Grant

J. de la Parra. *Herbariomics: Expanding Possibilities for Herbaria-based Research Pipelines by Defining the Herbariome*. 255th National Meeting of the American Chemical Society, New Orleans, LA, 24 March 2018. Sci-Mix Selection, Travel Grant

J. de la Parra, J. Auclair, F. Jackson W. Hancock. *Building an Accessible Safety Net for the Global Diabetes Crisis: Analytical Rigor Meets Indigenous Ethnobotanical Treatments for Prediabetes*. CASSS- WBCP 22nd Symposium on the Interface of Regulatory and Analytical Sciences for Biotechnology Health Products, Washington, DC. January 30 - February 1 2018. Full Travel Grant

J. Scaria, **J. de la Parra**, M. Tolia, A. Villarreal, W. Hancock, J. Auclair. *Protocol for the Identification of Menstrual Blood Proteins for Personalized Women's Healthcare*. International Society for Pharmaceutical Engineering, International Conference. San Diego, CA 30 Oct. 2017.

J. de la Parra. *Using Big Data to Unleash the Drug Discovery Potential of Ethnobotany*. XIX International Botanical Congress 2017, Shenzhen, China, 23 - 29 July 2017. Full Travel Grant

J. de la Parra. *Developing and Implementing Interdisciplinary Teaching Modules in the Undergraduate Chemistry Laboratory*. Plant Biology 2017, PUI Workshop, Honolulu, HI, 24 June 2017. Full Travel Grant

V. Lykourinou, **J. de la Parra**, A. Rovira, E. Navarette. *Students as Co-Developers of Laboratory Curricula: Best Practices in the Design of Sustainable Labs*. 3rd Annual Conference for Advanced Evidence- Based Teaching. Boston, MA, 2 May 2017.

J. Scaria, **J. de la Parra**, M. Tolia, G. Diab, A. Villarreal, W. Hancock, J. Auclair. *Menstrual Blood Profiling for Personalized Women's Therapeutics*. International Society for Pharmaceutical Engineering, Boston Chapter Meeting. Worcester, MA 13 April 2017. Winner, Outstanding Graduate Student Poster

J. de la Parra, J. Scaria, M. Tolia, G. Diab, A. Villarreal, W. Hancock, J. Auclair. *Discovering Novel Biomarkers for Women's Health: A Robust Platform for Disease Detection in the Menstrual Blood Proteome*. RISE:2017, Research,

Innovation, and Scholarship Expo. Northeastern University. 13 April 2017. Winner of the Excellence in Innovation Award, the Outstanding Student Research Award, Physical and Life Sciences, and Best Video Pitch

V. Lykourinou, **J. de la Parra**, C. Lee-Parsons, A. Rovira, E. Navarette, S. Lee. *A Student Designed Curriculum: Developing a Project-Based Introductory Laboratory Course*. RISE:2017, Research, Innovation, and Scholarship Expo. Northeastern University. 13 April 2017 Winner, Outstanding Student Research Award, Interdisciplinary Topics, Centers, and Institutes

J. de la Parra, J. Scaralia, M. Tolia, G. Diab, A. Villarreal, W. Hancock, J. Auclair. *Analyzing the Menses Proteome: A Novel Platform for Biomarker Discovery*. American Chemical Society, Northeast Student Chemistry Research Conference. Harvard University, Cambridge, MA 8 April 2017.

V. Lykourinou, **J. de la Parra**, A. Rovira, E. Navarette. *A Student Designed Curriculum: Developing a Project-Based Introductory Chemistry Laboratory Course*. American Chemical Society, Northeast Student Chemistry Research Conference. Harvard University, Cambridge, MA 8 April 2017.

J. de la Parra. *Using Phenotypic Databases and Biotechnology to Unleash the Drug Discovery Potential of Ethnobotany*. Phenome 2017 International Conference, Tucson, AZ. 10 - 14 February 2017. Full Travel Grant

J. de la Parra, N. Rizvi, P. Le Quesne, J. Auclair, C. Lee-Parsons. *Inducing and Controlling Production of Novel Plant-derived Pharmaceuticals*, International Society for Pharmaceutical Engineering, International Conference. Atlanta, GA 18-21 September 2016. Invited, Full Travel Grant

V. Lykourinou, **J. de la Parra**, C. Lee-Parsons, A. Rovira, S. Subramanian. *Teaching inquiry and sustainability in introductory chemistry by inviting students as participants in the redesign of a green chemistry laboratory curriculum*. European Conference on Research in Chemical Education. Barcelona, Spain 7-10 September 2016.

J. de la Parra, C. Webb, S. Foster, J. Stanley, B. Dale, C. Lee-Parsons, V. Lykourinou. *A Greener Extraction and Analysis of Medicinal Plant Compounds: A Teaching Module for Undergraduates*. 252nd National Meeting of the American Chemical Society, Philadelphia, PA, 21 August 2016. (Paper ID: 2515475) Sci-Mix Selection, Full Travel Grant

J. de la Parra, T. Gilbert, V. Lykourinou. *Development and Implementation of Greener Chemistry Laboratory Modules with a Focus on Current Academic and Industrial Research*. 252nd National Meeting of the American Chemical Society, Philadelphia, PA, 22 August 2016. (Paper ID: 2517634) Sci-Mix Selection, Full Travel Grant

J. de la Parra; C. Webb, S. Foster, J. Stanley, B. Dale, C. Lee-Parsons, V. Lykourinou. *A Greener Extraction and Analysis of Medicinal Plant Compounds: A Teaching Module for Undergraduates*. American Chemical Society's Summer School on Green Chemistry & Sustainable Energy. Golden, CO, 21-28 June 2016. Full Travel Grant

V. Lykourinou, **J. de la Parra**, C. Lee-Parsons, A. Rovira, S. Subramanian. *Teaching inquiry and sustainability in introductory chemistry by inviting students as participants in the redesign of a green chemistry laboratory curriculum*. American Chemical Society's 20th Annual Green Chemistry and Engineering Conference. Portland, OR, 14-

16 June 2016.

J. de la Parra. *Herbivory-induced Metabolite Biosynthesis and Diversification in Ethnopharmacological Context.* Society for Economic Botany International Conference, Harlan, KY, 5 - 9 June 2016. Winner, Julia F. Morton Award for best poster presentation

J. de la Parra, N. Rizvi, P. Le Quesne, J. Auclair, C. Lee-Parsons. *Controlling Biosynthesis of Pharmaceutical Compounds in a Medicinal Plant.* International Society for Pharmaceutical Engineering, Boston Chapter Meeting. Worcester, MA 20 April 2016. Winner, Outstanding Graduate Student Poster

S. Foster, **J. de la Parra,** C. Webb, J. Stanley, C. Lee-Parsons, V. Lykourinou. *A Greener Extraction and Analysis of Medicinal Plant Compounds in the General Chemistry Laboratory.* American Chemical Society. Northeast Student Chemistry Research Conference. Boston, MA 16 - 17 April 2016.

J. de la Parra, N. Rizvi, P. Le Quesne, J. Auclair, C. Lee-Parsons. *Controlled Biosynthesis and Diversification of Medicinal Alkaloids in Catharanthus roseus.* American Chemical Society NSYCC Annual Conference. Boston, MA 16 - 17 April 2016

J. de la Parra, N. Rizvi, P. Le Quesne, J. Auclair, C. Lee-Parsons. *Controlled Biosynthesis and Diversification of Plant-Derived Pharmaceuticals.* RISE:2016, Research, Innovation, and Scholarship Expo. Northeastern University. 7 April 2016. Winner of the Excellence in Innovation Award and the Outstanding Student Research Award, Physical and Life Sciences

C. Lee-Parsons, N. Rizvi, S. Shaw, **J. de la Parra,** C. Martin. *Engineering plant metabolism for the production of pharmaceutical compounds.* 13th Annual Symposium on Plant Biology. University of Massachusetts, Amherst, MA 3 October 2015.

J. de la Parra; N. Rizvi, J. Auclair, R. Kautz, P. Wang, R. Giese, C. Lee-Parsons. *Specialized metabolism in Catharanthus roseus hairy roots as compared to native roots.* 250th National Meeting of the American Chemical Society, Boston, MA, 16 - 20 August 2015. (Paper ID: 2273665)

J. de la Parra; V. Lykourinou, A. Rovira, H. Harakawa, A. Stoebenau, S. Breselge, C. Lee-Parsons. *Linking learning to real life research goals: Biofuel production and analysis in the classroom and the laboratory.* 250th National Meeting of the American Chemical Society, Boston, MA, 16 - 20 August 2015. (Paper ID: 2273665) Sci-Mix Selection

S. Shaw, N. Rizvi, **J. de la Parra;** C. Lee-Parsons. *Engineering plant metabolism towards the overproduction of pharmaceutical compounds.* RISE:2015, Research, Innovation, and Scholarship Expo. Northeastern University. 9 April 2015. Selected for Innovative Distinction

RESEARCH LECTURES

The Future of Ethnobotany: From Indigenous Intelligence to Artificial Intelligence. Society for Economic Botany International Conference. Cincinnati, OH, 4 June 2019.

Optimizing Plant Growth for High Value Chemical Products. MIT Media Lab Spring Member's Week. MIT Media Lab. Cambridge, MA. 24 April 2019. Keynote Address

Optimizing Chemotypic Variation in Indigenous Ethnobotanical Treatments for Prediabetes. Society for Economic Botany International Conference. Madison, WI, 4 June 2018. NSF Travel Grant

Rapid Biochemical Phenotyping of a Medicinal Plant. 255th National Meeting of the American Chemical Society, New Orleans, LA, 23 March 2018. Full Travel Award

Plants, People, and Proteomics: Exploring Novel Platforms for Drug and Biomarker Discovery. American Chemical Society. Northeast Student Chemistry Research Conference. Harvard University, Cambridge, MA 8 April 2017. Winner, Best Elevator Speech

Development and Implementation of Greener Chemistry Laboratory Modules with a Focus on Current Academic and Industrial Research. 252nd National Meeting of the American Chemical Society, Philadelphia, PA, 21 August 2016. (Paper ID: 2517634) Sci-Mix Selection, Full Travel Grant

Ethnophytotechnology: Ethnobotanical Implications of Stress-Induced Metabolite Production in Medicinal Plants. Society for Economic Botany International Conference. Harlan, KY, 7 June 2016.

Controlled Biosynthesis of Natural Product Pharmaceuticals: Validation and Production of Ethnobotanical Drugs. Department of Chemistry and Chemical Biology Seminar. Northeastern University, Boston, MA. 15 October 2015.

Experiential Learning through Course Development and Implementation of Green General Chemistry Labs. 250th National Meeting of the American Chemical Society, Boston, MA, 16 August 2015. (Paper ID: 2274930)

PUBLICATIONS

R. Chanin, K. Nickerson, A. Llanos-Chea, J. Sistrunk, D. Rasko, D. Kumar, **J. de la Parra**, J. Auclair, S. Dogiparthi, B. Kusber, J. Ding, K. Li, and C. Faherty. *Shigella flexneri Adherence Factor Expression in In vivo-like Conditions*. mSphere. 2019, 4(6): e00751-19.
doi: <https://doi.org/10.1128/mSphere.00751-19>

J. de la Parra. *The Future of Traditional Plant-based Medicines*. Emerging Technology & Human Rights, Government Briefing Book, 2019. <https://bit.ly/2Reb2lZ>

A. Johnson, E. Meyerson, **J. de la Parra**, T. Savas, R. Miikkulainen, C. Harper. *Flavor-Cyber Agriculture: Optimization of plant metabolites in an open-source control environment through surrogate modeling*. PLoS ONE. 2019, 14(4): e0213918. <https://doi.org/10.1371/journal.pone.0213918>

J. de la Parra, C. Webb, S. Foster, J. Stanley, V. Lykourinou. *Crafting A More Environmentally Benign Extraction and Analysis of Pharmaceutical Precursors from a Medicinal Plant*. Preprint. ChemRxiv: <https://doi.org/10.26434/chemrxiv.7791716.v1>

J. de la Parra and C. Quave. *Ethnophytotechnology: Harnessing the Power of Ethnobotany with Biotechnology*. Trends in Biotechnology, 2017, 35(9): 802-806. DOI: 10.1016/j.tibtech.2017.07.003 Invited for special issue on environmental engineering. Highlighted in editor's front matter piece. Ranked in the top 5% of all research outputs tracked by Altmetric.

J. Kritzer, A. Deaconescu, **J. de la Parra**, D. Coluccio, S. Mikhail, K. Demuren, R. Topper. *Benchmarking Potential Energy Models Against Bulk Properties for Simulations of Bismuth Clusters*. Int. J. Chem. 2000, 3, 12

BOOK AND FILM REVIEWS

J. de la Parra. *Review of Handbook of Research on Herbal Liver Protection: Hepatoprotective Plants* by T. Pullaiah, Maddi Ramaiah. Economic Botany. 2021, 75(4): 434.

J. de la Parra. *Review of Wild Edible Underutilized Plants: Nutritional, Antinutritional, and Nutraceutical Aspects* by V.R. Mohan, et al. Economic Botany. 2020, 74(1): 122.

J. de la Parra. *Review of Underexploited Spice Crops* by A. Sharangi. Economic Botany. 2019, 73(3): 424-425.

J. de la Parra. *Review of Weird Plants* by C. Thorogood. Economic Botany. 2019, 73(2): 246.

J. de la Parra. *Review of Ancient Psychoactive Substances*, by S. Fitzpatrick. Economic Botany. 2019, 73(1): 135.

J. de la Parra, *Review of Anti-Diabetes Mellitus Plants. Active Principles, Mechanisms of Action and Sustainable Utilization*, by A. Subramoniam. Economic Botany. 2018, 72(2): 110.

J. de la Parra, *Review of Plant Families*, by R. Bayton and S. Maughan. Economic Botany. 2018, 72(2): 116.

J. de la Parra, *Review of Ethnobotany of India*, by T. Pullaiah, K. Krishnamurthy, B. Bahadur, Eds., Economic Botany, 2017, 71(2): 195.

J. de la Parra, *Review of Plants with Anti-Diabetes Mellitus Properties*, by A. Subramoniam. Economic Botany, 2017, 71(2): 197-198.

J. de la Parra, *Review of Marine Biomedicine*, by B. Baker, ed., Economic Botany, 2016, 70(3).

J. de la Parra. *Economic Botany meets Ethnobotany: A Review of El Abrazo de la Serpiente* directed by C. Guerra, People and Plants. 2016, 31, 4.

J. de la Parra, *Review of Phytomedicines, Herbal Drugs, and Poisons*, by B. Van Wyk and M. Wink, Economic Botany, 2016, 70(2): 209-210.

J. de la Parra, *Review of Hidden Histories and Ancient Mysteries of Witches, Plants, and Fungi*, by F. Dugan, Economic Botany, 2015, 69(4): 622-623.

J. de la Parra, *Review of Medicinal Plants in Australia*, by C. Williams, Economic Botany, 2014, 68(4): 455- 456.

J. de la Parra, *Review of Handbook of African Medicinal Plants*, by M. Iwu, *Economic Botany*, 2014, 68(3): 357-358.

J. de la Parra, *Review of CRC World Dictionary of Medicinal and Poisonous Plants*, by U. Quattrocchi, *Economic Botany*, 2014, 68(2): 226-227.

J. de la Parra, *Review of Medicinal Plants and the Legacy of Richard E. Schultes*, by B. Ponman and R. Bussmann, Eds, *Economic Botany*, 2014, 68(1): 118-119.

PATENTS AND PATENTS PENDING

Device, kit, and method for plant sample collection, preservation, and extraction. Inventor: **J. de la Parra**. Filed July 13, 2018. U.S. Patent Application No. 62/697,807.

Analysis of the Menstrual Blood Proteome. Inventors: **J. de la Parra**, A. Villareal, J. Auclair. Filed July 26, 2017. U.S. Patent Application No. 62/534,882; International Publication Number WO 2019/018755 A1.

Prospects of Alpha-1 Antitrypsin as an Alzheimer Disease Biomarker in Menstrual Fluid. Inventors: **J. de la Parra**, A. Villareal, J. Auclair. Filed September 8, 2017. U.S. Patent Application No. 62/555,852.

PUBLICATIONS IN PROGRESS

J. de la Parra and E. Anemone. *Medicinal Plants: From the Sacred to the Scientific*. Springer Nature. Monograph. Under Contract and In Preparation for 2021 release.

FUNDED RESEARCH PROPOSALS

Primary Investigator (\$12,250,000):

“*The Periodic Table of Food Initiative: Database and Analytical Platform*” The Rockefeller Foundation, 2021-2022. \$5,000,000 (PI)

“*The Periodic Table of Food Initiative*” The Foundation for Food and Agriculture Research, 2021-2023. \$5,000,000 (PI)

“*The Periodic Table of Food Initiative: Understanding Soil Health for Human Health*” Seerave Foundation, 2021-2022. \$500,000 (PI)

“*The Periodic Table of Food Initiative*” The Rockefeller Foundation, 2020-2021. \$1,750,000 (PI)

Co-written Proposals (\$684,000):

“*Optimizing the Production of Essential Anti-Cancer Drugs in Catharanthus roseus and Assessing the Translatability of Controlled Environment Agriculture to Traditional Greenhouse Horticulture and In-Field*”

Agriculture", Co-written for MIT Media Lab Initiative. Schmidt Futures, 2019. \$400,000

"The National Produce Chemotyping Project", Co-written for MIT Media Lab Initiative. Rockefeller Foundation, 2019. \$250,000

"Development of Novel Analytical Methods for the Study of Ethnobotanical Diabetes Treatments and Diabetes Biomarkers", Northeastern University Graduate Dissertation Completion Grant, 2018. \$17,000

"Easter Island's Toromiro Tree: Chemical Characterization and Bioassay Guided Fractionation of a Plant Now Extinct in the Wild", Northeastern University Early Research and Creative Endeavor Grant, 2017, \$2,000

"Neem in the Classroom: A Greener Extraction, Analysis, and Evaluation of a Medicinal Plant", Northeastern University Advanced Research and Creative Endeavor Grant, 2017. \$5,000

"An Ethnobotanical and Phytochemical Investigation of Treatments for Chagas Disease", Northeastern University Graduate Dissertation Research Grant, 2016. \$5,000

"Examining the Anti-Microbial Properties of Catharanthus roseus Hairy Root Cultures", Northeastern Scholars Research Assistant Grant, 2015. \$5,000

TEACHING ACTIVITIES

Instructor, Semester-Length Courses:

- **Tufts University, Medford, MA**

Environmental Studies Program

Part-Time Lecturer. Instructor of Record

Introduction to Environmental Fieldwork

Fall 2018, Spring 2019, Fall 2019, Spring 2020

Directed Study: Capstone Fall 2019, Spring 2020

Experimental College

Visiting Lecturer. Instructor of Record and Course Creator

Medicinal Plants: From the Sacred to the Scientific Spring 2018, Summer 2019, Summer 2020, Fall 2021

The Cannabis Debate: The Intersection of Science, Culture, and the Law Spring 2019

Psychoactive Plants and Fungi: Remedies, Rituals, and Regulations Spring 2020

- **Northeastern University, Boston, MA**

Department of Chemistry and Chemical Biology

Part-Time Lecturer. Instructor of Record and Course Creator

Agricultural Biotechnology, Graduate level course Spring 2020

Part-Time Lecturer. Instructor of Record.

Introduction to Biotechnology Graduate level course. Fall 2018, Spring 2019, Fall 2019, Spring 2020

Graduate Student Instructor and Curriculum Redevelopment
General Chemistry for Chemical Science Majors, Laboratory Developed and implemented greener chemistry laboratory modules. Fall 2015, Spring 2016, Summer 2016

Graduate Student Instructor
Protein Mass Spectrometry, Laboratory Summer 2017, Fall 2017
Bioanalytical Chemistry, Laboratory Fall 2016, Spring 2017
General Chemistry, Laboratory Spring 2016
Chemistry for Health Sciences, Recitation Fall 2015

- **Brookdale College, Lincroft, NJ**
Chemistry Department Adjunct Instructor
Organic Chemistry Laboratory Summer 2011, Summer 2012
Chemistry in Life Laboratory
Fall 2010, Spring 2011, Spring 2012, Fall 2012, Spring 2013
Introduction to Inorganic, Organic, and Biological Chemistry Laboratory
Spring 2010, Fall 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012, Spring 2013
General Chemistry Laboratory
Spring 2010, Fall 2010, Spring 2011, Spring 2012, Fall 2012
- **The Alabama School of Mathematics and Science, Mobile, AL**
Visiting Instructor
Medicinal Plants: From the Sacred to the Scientific Spring 2022

Short Courses and Guest Lectures:

- **Harvard University, Cambridge, MA**
Visiting Instructor and Course Creator
An Introduction to Medicinal Plants, 5-week course, Arnold Arboretum, Boston, MA. Spring 2019
Visiting Instructor and Creator, Short Course/Lecture
Ethnobotany at Harvard. Harvard University, Harvard University Herbaria. Cambridge, MA. Spring 2019

Guest Lecturer
Plants and Human Affairs, Presented course material on “Informing Biotechnology with Ethnobotany”
Fall 2016
- **Northeastern University, Boston, MA**, Biopharmaceutical Analysis Training Laboratory
Graduate Student Instructor
Recombinant Antibodies and Biosimilars (3-day course) Summer 2017, Fall 2017, Summer 2018
Glycoprotein and Glycan Analysis (3-day course) Summer 2017, Fall 2017
Intact Protein Analysis (3-day course) Summer 2017, Fall 2017

- **APEC LSIF RHSC (Asia-Pacific Economic Cooperation, Life Sciences Innovation Forum, Regulatory Harmonization Steering Committee), Burlington, MA, APEC Center of Regulatory Excellence in Biotherapeutics**
Program Faculty
Biologics and Biosimilars, Facilitated classes with an international cohort of regulatory scientists, led hands-on training sessions on the analysis of protein therapeutics. (Week-long course)
Fall 2017
- **IHC (International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use), Burlington, MA**
Program Faculty
Pharmaceutical Stability Training, Facilitated classes with an international cohort of regulatory scientists, led hands-on training sessions on the analysis of protein therapeutics. (Week-long course)
Fall 2017
- **Brown University, Providence, RI**
Department of Ecology and Evolutionary Biology Guest Lecturer
The Evolution of Plant Diversity, Presented course material on “Chemotaxonomy, Herbariomics, and Indigenous Plant Selection”
Fall 2017

ACADEMIC AND PROFESSIONAL SERVICE

Society Offices and Committee Membership (Elected):

- **Society for Economic Botany**
President, 2021 - present
Governing Council Member, 2015-2016, 2018 - 2021
Publications Committee, 2020 - present
Chairperson of the Website Committee, 2019 - 2021
Oversaw redevelopment and launch of new website: www.econbot.org
Nominations and Awards Committee, 2018 - 2020
Membership Committee, 2015 - 2018
Student Committee President, 2015-2016

Symposia, Workshops, and Panels:

SynbioBeta Panel on New Opportunities for climate resilient, nutritious, and delicious food. (Virtual)
March 3, 2021.
Workshop Creator/Presenter: Making Ethnobotanical Short Films. Society for Economic Botany
Annual Meeting, Cincinnati, OH, June 5, 2019
Symposium Panelist: American Chemical Society Younger Chemists Committee (Northeast Section),
Alternative Careers in Chemistry, Boston, MA, November 2018
Workshop Presenter: *Protein Purification and Analysis*, Massachusetts Biotechnology Education
Foundation, Biotech Futures Day. Boston, MA, March 8 - 9, 2017

Workshop Participant: Beyond Benign, Green Chemistry Innovation Student Workshop. Warner Babcock Institute for Green Chemistry, Wilmington, MA, February 4, 2017

Workshop Presenter: Pfizer Green Chemistry Workshop, University of Massachusetts, Boston, MA, November 10, 2016

Symposium Panelist: 10th Anniversary of the GEM GRADLAB, "Voices From the Field", The Broad Institute. Cambridge, MA, October 16, 2016

Workshop Creator/Presenter: Student Involvement in the Society. Society for Economic Botany Annual Meeting, Harlan, KY, June 5, 2016

Symposium Panelist: American Chemical Society Younger Chemists Committee (Northeast Section), Alternative Careers in Chemistry, Somerville, MA, April 3, 2015

Workshop Participant: MIT Program in Science, Technology, and Society Workshop: "What do Science, Technology, and Innovation Mean from Africa?", Cambridge, MA, November 7, 2014

Academic Manuscript Referee:

Chemistry and Biodiversity
Economic Botany
Parasitology
PLoS Neglected Tropical Diseases
PLoS ONE
Scientific Reports

University and Departmental Service:

- **Department of Chemistry and Chemical Biology Colloquium Coordinator** 2014 - 2017
Solely responsible for selecting, organizing, and inviting over 75 faculty speakers to weekly seminars pertinent to the department's research interest
- **Senator, Graduate Student Government** - representing the College of Science 2014 - 2016
- **Excellence in Teaching Award Committee** 2015 - 2016
- **Graduate Dissertation Research Award Committee** 2015 - 2016
- **Northeastern University Library Student Advisory Council** 2014 - 2016
- **Outstanding Graduate Student Researcher Award Committee** 2016

SOCIETY AFFILIATIONS

Society for Economic Botany
American Society of Plant Biologists
American Chemical Society

INDUSTRY/NON-PROFIT EXPERIENCE

Taylor & Francis Group
Freelance Textbook and Content Reviewer, 2019-2020
Vine Biotech, LLC, Tampa, FL

Chief Scientist, 2018
LifeStory Health, Inc, Boston, MA
Scientific Advisory Board, Appointed Founding Member 2017 - 2018
Proteomics Research Consultant 2017-2018
Vine Research and Consulting, Red Bank, NJ, Tampa, FL, Cambridge, MA
Founder and Principal Scientist, 2001 - 2017
Providing scientific consulting for industry and academia
Theraplant, LLC, Watertown, CT
Strategic Plant Biology Consultant 2014 - 2016
University of South Florida Department of Biology, Tampa, FL
Ethnobotanical Consultant, 2013
BioTechnic Products, LTD, Worcester, MA
Plant Tissue Culture Consultant, 2012 - 2015

SELECTED SKILLS

Analytical Techniques: Compound extraction, isolation, and identification, Chromatography method development, HPLC, UPLC, SFC, GC-MS, LC/MS/MS, ICP-MS, TLC, HPTLC, Non-targeted and targeted small molecule analysis, Protein Mass Spectrometry, Post-translational modification analysis, In-gel and In-solution protein digestion, Macroscopic and Microscopic Botanical Identification

Molecular Biology Techniques: PCR and qPCR, Plant tissue culture, Aseptic technique, Gel electrophoresis, Expression Cloning, Transgenic line development via bacterial transformation, electroporation, and particle bombardment

Controlled Environment Agriculture Techniques: Hydroponics, Greenhouse management, Vertical Farming, Growth Chamber Experimentation, Vertical Farm Experimental Design, Controlled Environment Sensing and Data Collection, Computer Vision Data, Integrated Pest Management, Production Maximization, Applications of Machine Learning and Artificial Intelligence to Agriculture

Data Analysis Software and Programming Skills: Excel, Python, GIS mapping including ArcGIS Online, Empower, MassLynx, Xcalibur, UNIFI, BioPharma Finder, MASCOT

Editorial Skills: Proofreading, Textbook and Content Reviewing, Website Development

REFERENCES

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