

Robbie Hart

Director, William L. Brown Center
William L. Brown Curator of Economic Botany
Missouri Botanical Garden
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EDUCATION

2015 **Ph.D. in Biology (Ecology, Evolution and Systematics)**, University of Missouri-St. Louis
2004 **B.A. in Linguistics**, Swarthmore College, PA
2000 **Associate of Arts with Honors**, Peninsula College, WA

POSITIONS HELD

2020 – ongoing **Director, William L. Brown Center, and William L. Brown Curator of Economic Botany** (Missouri Botanical Garden, St. Louis) I lead an endowed center of excellence within the Missouri Botanical Garden dedicated to the study of useful plants, understanding the relationships between humans, plants, and their environment, the conservation of plant species, and the preservation of traditional knowledge for the benefit of future generations.

2016 – 2020 **Assistant Curator** (William L. Brown Center, Missouri Botanical Garden, St. Louis)
Design and management of programs in high elevation plant ecology, climate change, and ethnobotany, particularly in Himalayan GLORIA network.

2013 – 2015 **Research Specialist** (William L. Brown Center, Missouri Botanical Garden).
International research in high elevation plant ecology, climate change, and ethnobotany, including analyzing data for Himalayan GLORIA plots.

2008 – 2012 **Ph.D. Fellow** (National Science Foundation ‘Southwest China IGERT’)
Research to understand ecological factors, livelihood strategies and governance structures impacting biodiversity and economic development in Himalayan China.

2006 – 2008 **Administrative Services Manager** (North Olympic Library System, Port Angeles WA)
Development of grants, liaison with board and community, supervising administrative workers. Assisting in strategic planning, budgeting, labor negotiations, director hire, and rebranding of four-branch library system.

2004 – 2006 **Research Assistant** (Swarthmore College, Swarthmore PA)
Research, editing, and graphics for *When Languages Die* (David Harrison, Oxford University Press, 2007).

OTHER APPOINTMENTS

2019 – ongoing **Honorary Adjunct Professor of Biology** (Washington University in St. Louis).

2019 – ongoing **Member, Division of Biology and Biomedical Sciences**
(Washington University in St. Louis).

2017 – ongoing **Member, Graduate Faculty, Biology** (University of Missouri - St. Louis).

PUBLICATIONS

Refereed journal articles (*student first author)

- In press. MR Poudeyal*, H Meilby, **R Hart**, and SK Ghimire. 'Population recovery of threatened Himalayan medicinal herb *Neopicrorhiza scrophulariiflora* after harvest: Empirical evidence for sustainable conservation' *Perspectives in Plant Ecology, Evolution and Systematics*.
- In press. JF Trani and **R Hart**. 'Student engagement and attendance are central mechanisms interacting with inclusive and equitable quality education: Evidence from Afghanistan and Pakistan'. *PLOS One*.
- 2023 JRF Lima*, TKN Carvalho, RS Souza, **R Hart**, RW Bussmann, HF Magalhães, RCS Oliveira, RFP de Lucena. 'Can the traditional use of native plant species in rural communities in the Brazilian semi-arid region be affected by global warming?' *Ethnobiology and Conservation* 12.
- 2022 J Salick, **R. Hart**, and L. Siyu. 'Naxi Cosmology of Mt. Yulong Sacred Sites with Caveats for Conservation' *Review d'ethnoécologie* 21.
- 2022 IU Rahman*, **R Hart**, F Ijaz, A Afzal, Z Iqbal, ES Calixto, EF Abd_Allah, AA Alqarawi, A Hashem, ABF Al-Arjani, R Kausar, SM Haq. 'Environmental variables drive plant species composition and distribution in the moist temperate forests of Northwestern Himalaya, Pakistan' *PLOS One* 17: e0260687.
- 2021 S Basnett, SK Nagaraju, **R Hart**, and SM Devy. 'Floral traits and community phylogenetic structure shape plant-pollinator interactions in co-occurring *Rhododendrons* in the Himalaya' *Perspectives in Plant Ecology, Evolution and Systematics* 53: 125646.
- 2020 IU Rahman*, A Afzal, Z Iqbal, **R Hart**, EF Abd Allah, AA Alqarawi, MS Alsubeie, ES Calixto, F Ijaz, N Ali, R Kausar, M Shah, RW Bussmann. 'Response of plant physiological attributes to altitudinal gradient: Plant adaptation to temperature variation in the Himalayan region' *Science of the Total Environment* 706: 1357140.
- 2020 WL Applequist, JA Brinckmann, AB Cunningham, **R Hart**, M Heinrich, DR Katerere, T van Andel. 'Scientists' warning on climate change and medicinal plants' *Planta Medica* doi: 10.1055/a-1041-3406
- 2019 J Salick, Fang ZD and **R Hart**. 'Rapid changes in eastern Himalayan alpine flora with climate change' *American Journal of Botany* 106 (4): 520-530. doi: 10.1002/ajb2.1263
- 2019 J Zenderland*, **R Hart**, R Bussmann, NY Paniagua Zambrana, S Shikharulidze, Z Kikividze, D Koikodze, D Tchelidze, M Khutsishvili, K Batatsashvili. 'The Use of "Use Value": Quantifying importance in ethnobotany' *Economic Botany* 73:3 293-303. doi: 10.1007/s12231-019-09480-1.
- 2018 **R Hart** and J Salick. 'Vulnerability of phenological progressions over season and elevation to climate change: *Rhododendrons* of Mt. Yulong' *Perspectives in Plant Ecology, Evolution and Systematics* 34: 129-139. doi: 10.1016/j.ppees.2018.09.001
- 2018 **R Hart** and S Ranjitkar 'Monitoring rhododendron flowering times in a changing climate' *Rhododendrons International* 3.
- 2018 **R Hart** and RW Bussmann. 'Trans-Himalayan transmission, or convergence? *Stauntonia* (Lardizabalaceae) as an ethnoveterinary medicine' *Medicina nei Secoli* 30: 141-160.
- 2018 NY Paniagua Zambrana, RW Bussmann, **R Hart**, AL Moya Huanca, GO Soria, MO Vaca, DO Álvarez, JS Morán, MS Morán, S Chávez, BC Moreno, GC Moreno, O Roca & E Siripi. 'To list or not to list? The value and detriment of freelisting in ethnobotanical studies' *Nature Plants* 4:201–204. doi: 10.1038/s41477-018-0128-7

- 2018 RW Bussmann, NY Paniagua Zambrana, C Romero, **R Hart**. 'Astonishing diversity — the medicinal plant markets of Bogotá, Colombia' *Journal of Ethnobiology and Ethnomedicine* 14:43. doi: 10.1186/s13002-018-0241-8
- 2018 NY Paniagua Zambrana, RW Bussmann, **R Hart**, AL Moya Huanca, GO Soria, MO Vaca, DO Álvarez, JS Morán, MS Morán, S Chávez, BC Moreno, GC Moreno, O Roca & E Siripi. 'Research methods leading to a perception of knowledge loss—one century of plant use documentation among the Chácobo in Bolivia' *Economic Botany*. doi:10.1007/s12231-018-9401-y
- 2018 RW Bussmann, NY Paniagua Zambrana, **R Hart**, AL Moya Huanca, GO Soria, MO Vaca, DO Álvarez, JS Morán, MS Morán, S Chávez, BC Moreno, GC Moreno, O Roca & E Siripi. 'Who should conduct ethnobotanical studies? Effects of different interviewers in the case of the Chácobo Ethnobotany project' *Journal of Ethnobiology and Ethnomedicine* 14:9. doi: 10.1186/s13002-018-0210-2
- 2017 **R Hart** and J Salick. 'Dynamic ecological knowledge systems amid changing place and climate: Mt. Yulong rhododendrons'. *Journal of Ethnobiology* 37: 21-36. doi: 10.2993/0278-0771-37.1.21
- 2017 H Sher, RW Bussmann & **R Hart**. 'Promoting Sustainable Use of Medicinal and Aromatic Plants for Livelihood Improvement and Biodiversity Conservation under Global Climate Change, through Capacity Building in the Himalaya Mountains, Swat District, Pakistan' *Annals of the Missouri Botanical Garden* 102: 309-15. doi: 10.3417/D-16-00001A
- 2017 NY Paniagua Zambrana, RW Bussmann, **R Hart**, AL Moya Huanca, GO Soria, MO Vaca, DO Álvarez, JS Morán, MS Morán, S Chávez, BC Moreno, GC Moreno, O Roca & E Siripi. 'Traditional knowledge hiding in plain sight – twenty-first century ethnobotany of the Chácobo in Beni, Bolivia' *Journal of Ethnobiology and Ethnomedicine* 13:57. doi: 10.1186/s13002-017-0179-2
- 2016 **R Hart**, EM Georgian, & J Salick. 'Fast and Cheap in the Fall: Phylogenetic determinants of late flowering phenologies in Himalayan *Rhododendron* (Ericaceae)' *American Journal of Botany* 103: 198-206. doi: 10.3732/ajb.1500440
- 2016 RW Bussmann, NY Paniagua-Zambrana, S Sikharulidze, Z Kikvidze, D Kikodze, D Tchelidze, M Khutsishvili, K Batsatsashvili & **R Hart**. 'A comparative ethnobotany of Khevsureti, Samtskhe-Javakheti, Tusheti, Svaneti, and Racha-Lechkhumi, Republic of Georgia (Sakartvelo), Caucasus' *Journal of Ethnobiology and Ethnomedicine* 12: 43. doi: 10.1186/s13002-016-0110-2
- 2016 RW Bussmann, NY Paniagua Zambrana, LA Moya Huanca & **R Hart**. 'Changing markets - medicinal plants in the markets of La Paz and El Alto, Bolivia' *Journal of Ethnopharmacology*. doi: 10.1016/j.jep.2016.07.074
- 2016 RW Bussmann, NY Paniagua-Zambrana, S Sikharulidze, Z Kikvidze, D Kikodze, D Tchelidze, K Batsatsashvili & **R Hart**. 'Medicinal and Food Plants of Svaneti and Lechkhumi, Sakartvelo (Republic of Georgia), Caucasus' *Medicinal and Aromatic Plants*. doi: 10.4172/2167-0412.1000266
- 2016 H Sher, RW Bussmann, **R Hart** & HJ de Boer. 'Traditional use of medicinal plants among Kalasha, Ismaeli and Sunni groups in Khyber Pakhtunkhwa province, Pakistan' *Journal of Ethnopharmacology*. doi: 10.1016/j.jep.2016.04.059
- 2015 RJ Thoni & **R Hart**. 'Repatriating a lost name: notes on McClelland and Griffith's *Cobitis boutanensis* (Cypriniformes: Nemacheilidae)' *Zootaxa* 3999: 291 – 294. doi: 10.11646/zootaxa.3999.2.8
- 2014 S Ranjitkar, R Kindt, NM Sujakhu, **R Hart**, W Guo, XF Yang, KK Shrestha, JC Xu & E Luedeling. 'Separation of the bioclimatic spaces of Himalayan tree rhododendron species predicted by ensemble suitability models' *Global Ecology and Conservation* 1: 2 – 12. doi: 10.1016/j.gecco.2014.07.001
- 2014 **R Hart**, J Salick, S Ranjitkar, and Xu JC. 'Herbarium specimens show contrasting phenological responses to Himalayan climate' *PNAS* 111: 10615 – 10619. doi: 10.1073/pnas.1403376111

Publications — book chapters

- 2020 J Salick, B Staver and **R Hart**. ‘Indigenous knowledge and dynamics among Himalayan peoples, vegetation and climate change’ In *Changing Climate, Changing Worlds*, M Welch-Devine, A Sourdril and BJ Burke (eds.). Springer.
- 2018 J Salick, A Byg, K Konchar and **R Hart**. ‘Coping with Climate: Innovation and adaptation in Tibetan land use and agriculture’ In *Indigenous Knowledge and Climate Change*. D Nakashima and J Rubin (eds), pp. 123 – 141. Cambridge University Press.
- 2014 **R Hart**, W Law and P W Jackson. ‘Biocultural collections for conservation’ In *Curating Biocultural Collections*, J Salick, K Konchar and M Nesbitt (eds.), pp. 329 – 346. Kew Press.
- 2007 **R Hart**. ‘Written Word, Oral World’ In *Book of Peoples of the World*, Wade Davis, K. David Harrison and Catherine Herbert Howell (eds.), pp. 252-255. National Geographic Society.

Publications — books & theses

- In press. *A Framework for Monitoring Biodiversity in Protected Areas and OECMs – concepts, methods, and technologies*. V. Adams, V. Berger, J. Botha, S. Chaudhary, D. Dalton, S. Halloy, **R. Hart**, M. Jungmeier, H Kirchmeir, V. Švara, K. Torres Riberio.. IUCN.
- 2015 *Climate-driven Change in Himalayan Rhododendron Phenology*. Doctoral Dissertation, Department of Biology, University of Missouri - St. Louis.
- 2004 *Up and Down the Mountain*. BA Thesis, Department of Linguistics, Swarthmore College, PA.

Publications — book reviews

- 2021 **R Hart**. ‘Gathering Medicines: Nation and Knowledge in China’s Mountain South’ *Economic Botany* 75: 327-328.
- 2020 **R Hart**. ‘Flora of the Pacific Northwest (C. L. Hitchcock and A. Cronquist, D.E Giblen et al., eds.)’ *Economic Botany* 73: 530-531.
- 2016 **R Hart**. ‘Food and Environment in Early and Medieval China. (E.N. Anderson)’ *Economic Botany* 70: 92.

FIELDWORK EXPERIENCE

2016 – 2022 Northwest Yunnan, China; Central, Eastern and Western Nepal; Western and Central Bhutan

Led international collaborative teams in ecological and ethnobotanical fieldwork at 33 mountain summits with methodology of the Global Observation Research Initiative in Alpine Environments (GLORIA) to track the effects of climate change on alpine plant communities and local ethnobotanical traditions. Collection of ecological data, collection and curation of botanical specimens; installation and analysis of data from temperature loggers.

2009 – 2013 Mt. Yulong, Lijiang County, China

Organized and implemented ecological & ethnoecological research on phenology of montane plants; ethnobotany with local communities; collection of botanical, entomological, and plant DNA specimens; experimental work on pollination, temperature, and phenology (dissertation and connected fieldwork).

2009 – 2013 Deqen, Weixi and Shangrila Counties, China

Ecological and ethnobotanical fieldwork at 11 mountain summits with GLORIA methods to track the effects of climate change on alpine plant communities and local ethnobotanical traditions.

2003 Ilam, Nepal

Linguistic and sociolinguistic documentation of indigenous minority language Bantawa Rai.

RESEARCH FUNDING

- 2021 – 2024 ‘Global change, food security and community-led conservation at the William L. Brown Center’. Wallace Genetic Foundation (PI). \$210,000.
- 2021 – 2023 ‘Restoring access to the Biocultural Collection at the Missouri Botanical Garden’. National Endowment for the Humanities (PI) \$314,011.
- 2020 – 2023 ‘Climate change impacts on alpine plants: a 1500km Himalayan transect completed’. National Geographic Committee for Research and Exploration (PI) \$32,170.
- 2019 ‘Third Re-survey on DXS & RZL of the GLORIA Plan.’ The Nature Conservancy-China (co-PI, with Fang Zhendong as PI) CNY 100,000.
- 2018 – 2019 ‘Grant workshop – climate change effects on Himalayan plants and people’ Living Earth Collaborative (PI) \$1,960.
- 2017 – 2019 ‘Climate change across borders: transboundary patterns in Himalayan alpine vegetation and ethnobotany impacts’ National Geographic Committee for Research and Exploration (PI) \$35,720.
- 2016 – 2017 ‘Climate change in the high Himalaya: effects on alpine vegetation and ethnobotany’ National Geographic Committee for Research and Exploration (PI) \$35,322.
- 2012 – 2013 ‘Climate-driven change in Himalayan *Rhododendron* phenology’ University of Missouri - St. Louis Biology Department Raven Fellowship (Dissertation Fellow) \$9,500.
- 2013 ‘A comparative ethnobotany of rhododendrons in northwest Yunnan, China’ Garden Club of America Anne S. Chatham Fellowship in Medicinal Botany (PI) \$4,000.
- 2008 – 2011 ‘Biodiversity Conservation and Sustainable Development in Southwest China’ National Science Foundation Interdisciplinary Graduate Education & Research Traineeship (Trainee) \$160,000 (amount to Hart including tuition reimbursement, stipend and associated research grants).
- 2011 ‘Climate driven phenological change in Himalayan rhododendrons’ The Explorers Club (PI) \$1,000.
- 2010 ‘Climate change impacts on distribution, phenology and pollination of *Rhododendron*’ University of Missouri TransWorld Airlines Scholarship (research and merit scholarship) (PI) \$7,000.
- 2009 – 2010 ‘Climate change impacts on phenology of Himalayan *Rhododendron* species’ Whitney Harris World Ecology Center (PI) \$7,000.

TEACHING AND MENTORING EXPERIENCE

Missouri Botanical Garden

- 2014, 2016, 2018, 2021, 2022 Mentored National Science Foundation Research Experience for Undergraduates (NSF REU) students in ethnobotany and ecology projects
- 2015 – 2018 Guest lectures for NSF REU seminar series
- 2017 Taught workshop ‘R for ethnobotanical data analysis’

Washington University in St. Louis

- 2023 – ongoing Dissertation advisor for Jasmine Zenderland (Biology)
- 2014 – ongoing Co-organizer for ‘Ethnobiology Journal Club’ (Biology/Anthropology)
- 2019 – 2023 Dissertation advisor for James Lucas (Biology)
- 2022 Dissertation committee member for Mana Hayashi Tang and Kate Farley (Anthropology)
- 2021 Dissertation committee member for Ximena Leomine (Anthropology)
- 2020 Dissertation committee member for Kelsey Nordine (Anthropology)
- 2011, 2015, 2019 Guest lectures for ‘Plants and People’ (Anthropology)

(TEACHING AND MENTORING EXPERIENCE continued)

University of Missouri - St. Louis

2016 – 2017 Thesis committee member for Rinchen Namgay, M.S. 2017 (Biology)
2014, 2015 Guest lectures for ‘Global Climate Change’ (Biology)
2014 Co-taught workshop ‘Statistical Analysis in R’
2010, 2011 Mentored undergraduate research in climate change ecology
2009, 2010 Teaching Assistant for ‘General Biology’ lab and lecture (Biology)

Teaching and mentoring at other institutions

2020 Guest lecture for ‘Ecology and Society’ at UC Berkeley.
2019 Guest lecture for ‘Global Biomes’, Advanced Inquiry Program at Miami University
2012, 2014, 2017, 2019 Guest lectures for ‘Ethnobiology’ at St. Louis University
2017 Taught ‘Estadística avanzada en etnoecología cuantitativa y el uso de R’ course at Universidad Nacional Mayor de San Marcos, Peru
2017 Guest lecture for ‘Taxonomy and Environment’, Tribhuvan University, Nepal
2016 Taught ‘Advanced quantitative methods for ethnoecology using R’ course at Universidad Mayor de San Andrés, Bolivia.
2016 Led ‘Monitoring climate impacts on mountain vegetation’ classroom & field-based training, Tribhuvan University, Nepal
2015 Co-taught ‘Traditional ecological knowledge and landscape stewardship’ field course, Lae Technical University, Papua New Guinea
2010 – 2012 Mentored undergraduates in ecological and ethnobotanical field research, Lijiang Alpine Botanic Garden, Yunnan, China

CONFERENCE ACTIVITY

2023 1) ‘A swirling offering: climate change impacts on incense and other useful alpine plants of Bhutan’ and 2) ‘Community based conservation and land management’ [session chair]. Joint Meeting of the Society for Economic Botany and Society for Ethnobiology, Atlanta, Georgia.

2023 ‘Language and Biota: Looking for convergence’ [plenary]. Convergence: Establishing a DLI Community of Science, University of Oklahoma.

2022 ‘Unlocking the herbarium: integrating local and indigenous knowledge into scientific schemas’ [plenary]. International Conference on Biodiversity and Bioprospecting, Kathmandu, Nepal.

2022 1) ‘Social Justice Working Group’ [co-organizer], and 2) ‘Agrobiodiversity Symposium’ [session chair]. 61st Meeting of the Society for Economic Botany, Mona, Jamaica.

2021 ‘New potential for conservation and repatriation of local and indigenous knowledge by botanical gardens’. Royal Anthropological Institute Anthropology and Conservation Virtual Conference.

2019 ‘Hosting the mountain: Naxi courtyard gardens as repositories of Himalayan flora’. 60th Annual Meeting of the Society for Economic Botany, Cincinnati, OH.

2019 1) ‘Naxi courtyard gardens conserving Himalayan flora’, 2) ‘Ethnobiology Ethics Lab’, and 3) ‘Applied Ethnobiology-Ethnobotany Practitioners, Professionals and Scholars’. 42nd Annual Conference of the Society of Ethnobiology, Vancouver, B.C., Canada.

2019 ‘Land and conservation: who let the bugs die out’ panel. 29th Annual Conference of the Society of Environmental Journalists, Fort Collins, CO.

2018 ‘Dynamic ecological knowledge systems amid changing place and climate: Mt. Yulong rhododendrons’. 59th Meeting of the Society of Economic Botany, Madison, Wisconsin.

(CONFERENCE ACTIVITY continued)

2017 1) 'Phenological progressions of Mt. Yulong *Rhododendron* flowering over season and elevation' and 2) 'Ethnobotany of climate change in the greater Himalayan Region: a 3000 km transect'. XIX International Botanical Congress, Shenzhen, China.

2017 'Ethnobotany of climate change in the greater Himalayan Region'. 58th Meeting of the Society of Economic Botany, Bragança, Portugal.

2017 'Connecting climate change and biocultural diversity - East Himalayan GLORIA'. Eastern Himalayan Naturenomics Forum, Guwahati, India.

2015 1) 'Change in the Himalayan climate II: alpine community composition' and 2) 'Sacred Mt. Yulong & Naxi perceptions of biodiversity conservation'. 3rd Global Change and the World's Mountains conference, Perth, Scotland.

2015 'Climate change in the high Himalaya: monitoring changes in alpine vegetation and ethnobotany'. Creating a Global Network of Mountain Observatories workshop, Gothic, Colorado.

2014 1) 'Mountain Ethnobiology' [session chair], 2) 'Climate impacts on *Rhododendron* phenology: insights from traditional ecological knowledge and natural history collections', and 3) 'GLORIA resurveys of three Himalayan target areas'. Mountain Observatories: a global fair and workshop on social-ecological systems. Reno, Nevada.

2014 1) 'Himalayan Climate Change and Ethnobotany' [session chair], 2) 'Climate change impacts on *Rhododendron* phenology: insights from historical collections, observational studies, and traditional ecological knowledge', and 3) 'Ethnobotany of climate change in the Eastern Himalaya: a 2,000 km transect, and two sites in Bhutan'. 14th Congress of the International Society for Ethnobiology, Bumthang, Bhutan.

2012 'Rhododendron phenologies changing with climate'. 13th Congress of the International Society for Ethnobiology, Montpellier, France.

INVITED TALKS

2023 Vin University, Hanoi

2022 Explorers Club – EC50 Symposium

2021 Denver Botanical Garden – A Night With National Geographic Explorers

2019 Kunming Institute of Botany, Chinese Academy of Sciences

2019 Washington University in St. Louis – Biology Department Seminar

2018 Washington University in St. Louis – Living Earth Collaborative Seminar

2018 Field Museum – Seventh John Armour Seminar

2018, 2014 St. Louis Ecology, Evolution and Conservation Retreat

2018, 2014 St. Louis University – Biology Departmental Seminar

2017 Ashoka Trust for Research in Ecology and the Environment, Bangalore

2017 University of Arkansas for Medical Sciences – College of Pharmacy Seminar Lecture Series

2017 Holden Arboretum – Scientist Lecture Series

2015 Royal Botanic Garden Edinburgh

2015 Washington University in St. Louis – Tibetan Plateau Symposium

2013, 2010 Lijiang Alpine Botanic Garden, Chinese Academy of Sciences

PROFESSIONAL

Offices

2021 – ongoing Board of Directors, BioOne
2020 – ongoing Associate Editor, *Economic Botany*
2018 – ongoing Advisory Board, Southern Illinois University Interdisciplinary Research and Informatics Scholarship Center
2019 – 2022 Secretary, Society for Economic Botany
2018 – 2022 Ethics Committee, Society of Ethnobiology
2018 – 2021 Steering Committee, Rhododendron Research Network
2013 – 2015 Executive Committee, Whitney R. Harris World Ecology Center

Society Membership

Botanical Society of America; Society for Economic Botany; Society of Ethnobiology; Explorers Club (Fellow National and Vice Chair St. Louis Chapter); Living Earth Collaborative (Biodiversity Fellow)

Grant review

2022 – ongoing William L. Brown SEED Prize
2021 – ongoing William L. Brown Medal
2018 – ongoing Award Committee, Chatham Fellowship in Medicinal Botany, Garden Club of America
2018, 2022, 2023 Fulling (presentation) and Morton (poster) Awards, Society for Economic Botany
2019 – 2021 National Geographic Society Early Career Grants
2018 – 2021 Chair, Schultes Research Award Committee, Society for Economic Botany
2016 – 2018 Schultes Research Award Committee, Society for Economic Botany
2014 – 2017 National Geographic Society Committee for Research and Exploration Grants
2014, 2015 Whitney R. Harris World Ecology Center Student Grants
2014 University of Missouri Research Board Grants

Peer review

American Journal of Botany; Alpine Botany; Annals of Botany; Arctic, Antarctic and Alpine Research; Journal of Biogeography; Biological Conservation; Climatic Change; Climate Research; Ecography; Ecology and Evolution; Economic Botany; Ecosphere; Environment and History; Journal of Ecology; Journal of Ethnobiology and Ethnomedicine; Frontiers in Plant Science; Global Change Biology; Human Ecology; Journal of Mountain Science, Mountain Resources and Development, New Phytologist; Novon; Oecologia; PLOS One; PNAS.

AWARDS AND HONORS

2020 The Explorers Club 50: Fifty People Changing the World
2018 BioOne Ambassador Award
2013 University of Missouri - St. Louis Biology Department Raven Fellowship
2011 University of Missouri TransWorld Airlines Merit Scholarship
2010 Graduate Teaching Excellence Award, University of Missouri - St. Louis
2001 – 2004 Swarthmore College Class of 1925 Scholarship