Stanford



Deborah L. Narh

Postdoctoral Scholar, Biology

Bio

BIO

Deborah earned her MSc in Biotechnology from Wageningen University and her PhD in Biotechnology from the University of Pretoria, where her research centered on mechanisms employed by Armillaria species for iron homeostasis using a multi-omics approach. She was a 2014 Laureate of the African Women in Agricultural Research and Development (AWARD) Fellowships, a 2016 Agropolis Fondation Fellow at the Laboratoire des Symbioses Tropicales & Mediterraneennes, and a 2018 Fellow of the Norman E. Borlaug International agricultural Science and Technology Fellowship Program at Michigan State University. Currently, her work in the Peay Lab focuses on the impacts of abiotic factors on pine and pine-associated microbiomes using various indicators. She also aims to understand how individual species of ectomycorrhizal fungi respond to environmental stress including temperature and drought at the molecular level, using a multi-omics approach. In addition to her research, Deborah is deeply involved in mentoring young scientists and is committed to using collaborative, interdisciplinary approaches to addressing scientific challenges.

HONORS AND AWARDS

- Inaugural co-recipient of Morgenthaler-Chiariello Grants for Research, Jasper Ridge Docent Community (2026)
- Honorable mention for Best Poster at the 45th New Phytologist Symposium, New Phytologist Foundation (2024)
- Travel Award, ICOM12, International Mycorrhiza Society (2024)
- Travel Award, New Phytologist Pre symposium Workshop and 45th Symposium, New Phytologist Foundation (2024)
- Travel Award, BIO2022: Bioscience, Big Data & the 4th Industrial Revolution, DSI–NRF SARChI in Fungal Genomics (2022)
- Doctoral Scholarship Award, Department of Science and Innovation – National Research Foundation (DSI-NRF), South Africa (2019)
- USDA Norman E. Borlaug International Agricultural Science & Technology Fellowship, United States Department of Agriculture (2018)
- Australian Direct Aid Mushroom Project (Aus DAP), Australian High Commission Direct Aid Program (DAP) (2017)
- Increasing the Development Impact of Agricultural Research - Training sponsorship award, Australian Government Department of Foreign Affairs and Trade (2016)
- Travel Award, 19th Congress of the International Society for Mushroom Science, Microbiology Society; AWARD Fellowships (2016)
- Agropolis Fondation Fellowship, Agropolis Fondation and AWARD Fellowships (2015)
- Project Management Training & Certification sponsorship award, Indian Technical and Economic Cooperation/ Special Commonwealth African Assistance Program (2015)
- AWARD Fellowship Laureate, African Women in Agricultural Research and Development (2014)
- Characterization, Conservation and Domestication of Indigenous Edible and Medicinal Mushrooms, Africa Brazil Agricultural Innovation MKTplace (2013)
- Netherlands Fellowship Program (NFP) Scholarship for MSc., Netherlands Organization for International Cooperation in Higher Education (Nuffic) (2011)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Mycological Society of America (2025 - present)
- Member, Genetics Society of America (2026 - present)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, University Of Pretoria (2023)
- Ph.D., University of Pretoria , Biotechnology (2023)
- MSc., Wageningen University and Research , Biotechnology (2013)
- BSc., Kwame Nkrumah University of Science and Technology , Biological Sciences (2006)

STANFORD ADVISORS

- Kabir Peay, Postdoctoral Faculty Sponsor

LINKS

- ResearchGate: https://www.researchgate.net/profile/Deborah-Narh-Mensah
- Google Scholar: https://scholar.google.com/citations?user=LHUzWfUAAAAJ&hl=en

Research & Scholarship

LAB AFFILIATIONS

- Kabir Peay, Peay Lab (9/1/2024)

Publications

PUBLICATIONS

- **Experimental and genomic evidence clarifies the mycorrhizal helper role of a widespread bacterium in Bishop pine forests.** *The New phytologist*
  Berrios, L., Narh, D. L., Kim, L., Peay, K. G.
  2026

- **Equipped for success: genomes and metabolomes of the European Amanita muscaria are conserved in its novel South African range.** *The New phytologist*
  Nickles, G. R., Stokes, C. K., Narh, D. L., Lynn, K. M., Fuqua, S. R., Bryan, C., Allen, B. M., Bivins, C. P., Woo Bok, J., Brewer, J. S., Buthelezi, S. T., Clark, J. P., Coon, et al
  2026

- **Proteomic and Secretomic Response of an African Armillaria Species to Iron** *JOURNAL OF PROTEOME RESEARCH*
  Narh, D. L., Wingfield, B. D., Coetzee, M. P. A.
  2026

- **Two distinct non-ribosomal peptide synthetase-independent siderophore synthetase gene clusters identified in Armillaria and other species in the Physalacriaceae.** *G3 (Bethesda, Md.)*
  Narh Mensah, D. L., Wingfield, B. D., Coetzee, M. P.
  2023; 13 (12)

- **A practical approach to genome assembly and annotation of Basidiomycota using the example of Armillaria** *BIOTECHNIQUES*
  Mensah, D., Wingfield, B. D., Coetzee, M. P. A.
  2023; 75 (3): 115-128

- **IMA genome-F17 Draft genome sequences of an Armillaria species from Zimbabwe, Ceratocystis colombiana, Elsinoe necatrix, Rosellinia necatrix, two genomes of Sclerotinia minor, short-read genome assemblies and annotations of four Pyrenophora teres isolates from barley grass, and a long-read genome assembly of Cercospora zeina** *IMA FUNGUS*

Wingfield, B. D., Berger, D. K., Coetzee, M. P. A., Duong, T. A., Martin, A., Pham, N. Q., van den Berg, N., Wilken, P., Arun-Chinnappa, K., Barnes, I., Buthelezi, S., Dahanayaka, B., Duran, et al
2022; 13 (1): 19

- **Nonribosomal peptide synthetase gene clusters and characteristics of predicted NRPS-dependent siderophore synthetases in Armillaria and other species in the Physalacriaceae** *CURRENT GENETICS*
  Mensah, D., Wingfield, B. D., Coetzee, M. P. A.
  2023; 69 (1): 7-24
- **Biochemical characterization and efficacy of Pleurotus, Lentinus and Ganoderma parent and hybrid mushroom strains as biofertilizers of attapulgite for wheat and tomato growth** *BIOCATALYSIS AND AGRICULTURAL BIOTECHNOLOGY*
  Mensah, D., Duponnois, R., Bourillon, J., Gressent, F., Prin, Y.
  2018; 16: 63-72
- **Bioprospecting of powdered pineapple rind as an organic supplement of composted sawdust for Pleurotus ostreatus mushroom cultivation** *FOOD SCIENCE & NUTRITION*
  Mensah, D., Addo, P., Dzomeku, M., Obodai, M.
  2018; 6 (2): 280-286
- **Chemical Characterization and Antioxidant Potential of Wild Ganoderma Species from Ghana** *MOLECULES*
  Obodai, M., Mensah, D., Fernandes, A., Kortei, N., Dzomeku, M., Teegarden, M., Schwartz, S. J., Barros, L., Prempeh, J., Takli, R. K., Ferreira, I. R.
  2017; 22 (2)
- **Preliminary Shelf Life Studies of In-vitro Antioxidant Potential of Gamma Irradiated Dried Mushrooms (Pleurotus ostreatus Ex. Fries) Kummer in Ghana** *BRITISH JOURNAL OF PHARMACEUTICAL RESEARCH*
  Kortei, N. K., Odamtten, G. T., Appiah, V., Obodai, M., Mensah, D., Akonor, P. T., Wiafe-Kwagyan, M., Ayim-Akonor, M., Adaboro, R. M.
  2016; 9 (2)
- **Evaluation of the Chemical and Antioxidant Properties of Wild and Cultivated Mushrooms of Ghana** *MOLECULES*
  Obodai, M., Ferreira, I. R., Fernandes, A., Barros, L., Mensah, D., Dzomeku, M., Urben, A. F., Prempeh, J., Takli, R. K.
  2014; 19 (12): 19532-19548
- **Potato and Mushroom Polyphenol Oxidase Activities Are Differently Modulated by Natural Plant Extracts** *JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY*
  Kuijpers, T. F. M., van Herk, T., Vincken, J., Janssen, R. H., Narh, D. L., van Berkel, W. J. H., Gruppen, H.
  2014; 62 (1): 214-221

PRESENTATIONS

- Deciphering molecular mechanisms of fungal iron homeostasis: A multi-omics approach - British Mycological Society
- The fate of bacteria-fungi-plant symbioses in a changing world: Why it matters and what we can do about it - 93rd Annual Meeting of the Mycological Society of America (6/28/2025 - 7/2/2025)
- Deciphering Molecular Mechanisms of Fungal Iron Homeostasis: A Multi Omics Approach - UK Fungus Day international webinar (10/6/2024)
- Phylogenomics of invasive Amanita muscaria in South Africa - 12th International Conference on Mycorrhiza (ICOM12) (8/4/2024 - 8/9/2024)
- NRPS-dependent siderophore synthetase gene clusters and characteristics of NRPS siderophore synthetase genes in Armillaria and other species in the Physalacriaceae - South African Genetics Society & South African Society for Bioinformatics Joint Conference (4/24/2022 - 4/27/2022)