

Jonathan M. Binder

Curriculum Vitae

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Education

- 2022–2026 **PhD, Biological Sciences**, *Royal Holloway, University of London*, Egham, Surrey, UK.
Participating in the London Interdisciplinary Biosciences Consortium Doctoral Training Partnership. Researching microbiological effects on the longevity of blackgrass (*Alopecurus myosuroides*) seeds in the soil seedbank.
- Supervisors Gerhard Leubner, PhD, *Professor in Plant Biochemistry*
Kazumi Nakabayashi, PhD, *Research Assistant in Molecular Seed Biology*
- 2016–2019 **MSc, Agronomy**, *Penn State University*, University Park, Pennsylvania, USA.
Field-based research examined the effects of cover cropping vs. double cropping cereal rye, broadcasting vs. injecting dairy manure, and timing of fall manure application on rye nutrient uptake, subsequent corn yields, and total forage production. Additional research on field-scale lysimeters explored the effects of cover cropping vs. double cropping on surface and subsurface nitrogen and phosphorus transport.
- Supervisors Heather Karsten, PhD, *Associate Professor of Crop Production/Ecology*
Doug Beegle, PhD, *Distinguished Professor of Agronomy*
- Extracurricular Participated in the Northeastern Weed Science Society's collegiate weed contest which consisted of weed and herbicide identification, sprayer calibration, and role-played "farmer problems."
- 2014–2015 **Korean Language Program**, *Kyung Hee University*, Suwon, South Korea.
Awarded a post-graduate fellowship from Vassar College to study Korean. Took classes 20 hours per week for one academic year.
- 2010–2014 **BA, Environmental Studies**, *Vassar College*, Poughkeepsie, New York, USA.
Concentrated in biology and geography. Coursework included plant biology, genetics, and an experimental course on the American Grasslands. Participated in a learning & living community on the topic of food and farming.

Publications

- 2021 Binder, J. M., Karsten, H. D., Beegle, D. B., and Dell, C. J. Winter annual management to increase nutrient recovery and forage production on dairies. *Agrosystems, Geosciences & Environment*, 4:e20157, 2021. <https://doi.org/10.1002/agj2.20157>.
- 2020 Binder, J. M., Karsten, H. D., Beegle, D. B., and Dell, C. J. Manure injection and rye double cropping increased nutrient recovery and forage production. *Agronomy Journal*, 112, 2968–2977, 2020. <https://doi.org/10.1002/agj2.20181>.

Work Experience

- July 2021 – present **Research technician**, *NIAB-EMR*, East Malling, Kent, UK.
Collect and analyze various kinds of data related to precision agriculture and novel sensors to verify and develop technologies in concert with startup companies. Duties include tractor-mounted LiDAR scans of apple orchards, lab-based soil assays, and plant leaf and fruit imaging.

- Sept 2020 – **Research technician**, *University of Greenwich*, Chatham Maritime, Kent, UK.
 July 2021 Assisted senior researchers and PhD students with projects in entomology and agronomy departments at the Natural Resources Institute. Responsibilities included maintaining insect colonies, plants, greenhouses, and research facilities.
- Mar 2019 – **Research associate**, *Phospholutions*, State College, Pennsylvania, USA.
 May 2020 Developed and expanded understanding of novel phosphorus fertilizers and phosphorus capture and recycle systems. Responsibilities included literature review, in-house adsorption and desorption studies, creation of protocols, data analysis, and communication with industry and academic researchers.
- Sept 2016 – **Graduate research assistant**, *Penn State University*, University Park, Penn., USA.
 Mar 2019 Conducted original research for my master's thesis on the topic of cereal rye and manure management for dairies in the Northeast U.S. Collected and analyzed soil and crop data, scouted for pests, and presented research findings in academic and industry settings as part of a larger long-term, sustainable dairy cropping system project.
- Sept 2015 – **Research technician**, *Hudson Valley Research Lab*, Highland, New York, USA.
 Aug 2016 Assisted with research at an entomology lab primarily focused on apple pests. Tasks included fruit damage assessments, microscope work, scouting, and insect rearing as well as upkeep of the research orchard and facility. Pruned, mowed, managed weeds, and ran tractors and a skid steer. Completed light construction, plumbing, and tractor maintenance.
- May 2015 – **Horticulture intern**, *Quaker Hill Native Plant Garden*, Pawling, New York, USA.
 Sept 2015 Practiced gardening techniques at a private garden including chemical and mechanical invasive plant control, tractor operation, and plant installation.
- May 2012 – **Lab assistant**, *Hope College*, Holland, Michigan, USA.
 Aug 2012 Researched maple tree phylogenetics through an undergraduate summer research program. Learned and practiced lab skills including pipetting, PCR, and plant tissue sample collection and chloroplast extraction.
- Sept 2011 – **Greenhouse assistant**, *Vassar College*, Poughkeepsie, New York, USA.
 May 2014 Watered, repotted, fertilized, propagated, and swept as part of upkeep of Biology Department teaching plant collection and greenhouse.

Skills and Qualifications

- Computer Microsoft Office, SAS, R
 Soft Problem-solving, flexibility, critical thinking
 Dexterous Woodworking, plumbing, electrical
 Qualifications Safe Handling & Application of Pesticides (PA1)
 Hand Held Applicators on Land & Near Water (PA6AW)

Communication

- Presentations **Northeast Cover Crop Council Annual Meeting**, 2018.
ASA, CSSA, SSSA Annual Meeting, 2018.
Pennsylvania Double-Cropping Winter Farmer Workshop, 2018.
 Posters **Northeastern Plant Pest and Soils Conference**, 2018.
Northeast Cover Crop council Annual Meeting, 2017.