

Education

Doctor of Philosophy <i>Tropical Forest Ecology and Computational Biology</i> Supported by the Lewis B Cullman Fellowship	Yale University and New York Botanical Gardens <i>August 2024 – May 2030 (expected)</i>
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Bachelor of Science (Honours) <i>Environmental Studies and Life Sciences</i> Current grade: 4.78/5.0, on track for <i>First Class Honours (Highest Distinction)</i>	Yale-NUS College, National University of Singapore <i>August 2020 – May 2024 (expected)</i>
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Visiting Student <i>Environmental Science, Yale College</i> Grade: 3.92/4.0	Yale University <i>June 2022 – December 2022</i>
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Research Experiences

Yale-NUS College Mycology Lab <i>Undergraduate Research Student</i>	<i>May 2023 – Present</i> <i>Singapore</i>
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- Developed a metabarcoding project with the National Parks Board of Singapore to assess the impact of forest fragmentation on *Phytophthora* and mycorrhizal communities in Singapore's forests.
- Designed a field survey comprising sixty plots across Singapore's different forests and parks.
- Carried out testing of soil properties such as soil pH and nitrate concentration, preparation of DNA library for metabarcoding, and bioinformatics and statistical analysis of genetic data from microbial communities.
- Preparing a manuscript for peer review and presentation at ASPB Plant Biology Conference 2024.

Yale Applied Science Synthesis Program <i>Visiting Undergraduate Researcher/Scholar</i>	<i>May 2022 – December 2022</i> <i>New Haven, Connecticut, US</i>
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- Performed systematic literature review on the empirical evidence of regenerative agriculture practices to enhance soil carbon sequestration and restore soil health in Southeast Asian croplands.
- First-authored manuscript published in a peer-reviewed journal and presented the findings at the European Geosciences Union's General Assembly 2023 in Vienna, Austria.

NUS Centre for Nature-based Climate Solutions <i>Tropical Forest Remote Sensing Research Intern</i>	<i>August 2021 – December 2021</i> <i>Singapore</i>
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- Extracted meta-data from published literature on goodness-of-fit parameters of models that used remote sensing techniques to estimate aboveground biomass carbon in tropical forests.
- Ran a meta-analysis via a beta-regression model on the performance of models that predict tropical forest biomass with satellite imagery data and machine learning algorithms.
- Findings were presented by colleague at the Nature-based Solutions Conference 2022 at Oxford University.
- Edited policy [brief](#) for the British High Commission and United Kingdom's COP26 Universities Network on opportunities and challenges in using nature-based climate solutions in Southeast Asia.

Professional Experiences

Eco-Business <i>ESG Intelligence, Programmes, and Partnerships Intern</i>	January – June 2024 <i>Singapore</i>
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- Conduct industry and market analysis to develop and deliver ESG training curriculum materials for Eco-Business clients and internal teams, including C-Suite executives, civil servants, and industry leaders.
- Establish Eco-Business presence and programmes across the Asia Pacific region through flagship events such as The Liveability Challenge, A-List Sustainability Gala, and carbon finance training workshops.

National University of Singapore UNFCCC COP28 Delegation <i>Observer (Research and Independent Non-Governmental Organizations)</i>	<i>October – December 2023</i> <i>Singapore, UAE</i>
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- Selected out of 220+ students to form the inaugural NUS delegation (10 students) at UNFCCC COP28.

- Prepare thematic reports and track policy developments in forest conservation, sustainable agriculture, voluntary carbon markets for climate change mitigation, and global stocktake outcomes.
- Supported NUS public lectures for outreach on the significance of UN Climate Change Conferences.

Yale Center for Business and the Environment

August 2022 – December 2022

Writer, Conservation Finance Network

New Haven, Connecticut, US

- Analysed the socio-political benefits and implications of voluntary carbon markets, with a focus on nature-based carbon projects and jurisdictional programmes, on indigenous communities stewarding ecosystems.
- Authored an [article](#) for the Center to communicate the insights shared by thought leaders from different sectors of the voluntary carbon market ecosystem.

Climate Impact X

January 2022 – May 2022

Technical Analysis and Commercial Operations Intern

Singapore

- Spearheaded technical industry research on carbon accounting methodologies and crediting standards of major credit registries such as Verra for forestry and agricultural land management projects.
- Modeled future supply and demand volumes for emerging types of carbon offset projects, including jurisdictional and nested REDD+, biochar removals, and bioenergy with carbon capture and storage.
- Managed carbon marketplace and exchange customer engagement life cycle, including non-disclosure act delivery, onboarding assistance, and advising on offset acquisition and listings.

GreenPins

January 2021 – December 2021

Co-Founder, Recipient of Singapore Ministry of Sustainability & Environment Eco-Fund

Singapore

- Launched a prototype web-based application to [connect](#) local farms with restaurants in Singapore to reduce food wastage from cosmetic filtering and promote demand for local crop produce.
- Managed the development of strategic partnerships with farms and restaurants, social media publicity, and administrative correspondence with the Ministry about project expenditures and milestones.
- Project was [featured](#) at the Global University Climate Forum's International Sustainable Campus Network conference organized by Yale University's Office of Sustainability.

Peer-reviewed Publications

1. Tan, S. S., & Kuebbing, S. E. (2023). [A synthesis of the effect of regenerative agriculture on soil carbon sequestration in Southeast Asian croplands](#). *Agriculture, Ecosystems & Environment*, 349, 108450.

Research Posters and Presentations

1. Effects of forest edges on arbuscular mycorrhizal fungi in tropical forests. *Plant Biology 2024*. [poster]
2. A synthesis of the effect of regenerative agriculture on soil carbon sequestration in Southeast Asian croplands. *European Geosciences Union General Assembly 2023*. [oral presentation]
3. Regeneration of tropical mangrove forests in Singapore in previously abandoned aquacultures. *Yale-NUS College Summer Research Symposium 2021*. [virtual presentation due to Covid-19]

Awards, Grants and Skills

- Awards: Lewis B. Cullman Fellowship from the New York Botanical Gardens (2024, accepted); Cornell Fellowship (merit fellowship awarded to top 20% PhD applicants to Cornell University, declined); Association of Southeast Asian Nations Young Leaders Summit Best Delegation Award (2021); Wu Hsioh Kwang Family Award (2020-2024).
- Grants: Yale-NUS College Summer Research Student-initiated Project Award (2023: \$5600; 2022: \$4700); Yale-NUS College Developmental Grant (2023: \$3000); Singapore Ministry of Sustainability and the Environment Eco-Fund Grant (2021: \$6000).

Skills

- Skills: Microbiology Techniques and Bioinformatics Analysis; Geospatial Data Management and Analysis (R, QGIS); Statistical Modeling; Writing and Editing; Field Work (Surveys and Experiments).
- Languages: English (Fluent); Mandarin (Fluent); Spanish (Basic).