

ANNA LEE JONES

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"Harnessing spectral data to understand plants and ecosystems under stress."

Research Experience

Postdoctoral Research Associate | Department of Plant Sciences, Cambridge (2025 – 2027)

Optically sensing the effect of elevated temperature on peatland vegetation, Kromdijk Lab, in collaboration with Super Sharp space systems Ltd.

Rokos Postdoctoral Associate | Queens' College (2025 onwards)

DPhil in Environmental Science | University of Oxford | 2020 – 2025

Monitoring the effects of tropospheric O₃ exposure on forests, a spectroscopic approach, supervised by Elizabeth Jeffers (Oxford), Felicity Hayes (CEH), Hugh Mortimer (RAL Space). Developed novel vegetation indices to detect ozone stress using hyperspectral data, statistical modelling & machine learning. Investigated physiological and biochemical leaf responses to elevated CO₂ and O₃. Led multi-institutional field campaigns and secured NERC equipment grants.

PhD Internship Placement | Royal Botanic Gardens Kew | Jan 2024 – April 2024

Developed efficient program to analyse global climate distances at high resolution, applied to the resilience of steep slope agriculture to climate change. Supervised by Dr James Borrell.

Summer Research Experience Placements | University of Oxford | 2019 - 2020

BBSRC funded project investigating the rooting structures of early land plants preserved in the Rhynie Chert using 3D computational modelling, supervised by Prof Liam Dolan and Dr Sandy Hetherington.

Publications

Lee Jones et al. (2025) *The effect of elevated CO₂ on hyperspectral leaf reflectance in mature trees*, *Trees*, <https://doi.org/10.1007/s00468-025-02650-w>

Lee Jones et al. (2025): *On mature reflection: hyperspectral detection of ozone pollution in oak trees*, *Ecological Indicators*, <https://doi.org/10.1016/j.ecolind.2025.113263>

Lee Jones et al. (2024): *Reflections of stress: Ozone damage in broadleaf saplings can be identified from hyperspectral leaf reflectance*, *Environmental Pollution*, <https://doi.org/10.1016/j.envpol.2024.124642>

Hetherington et al. (2021): *An evidence-based 3D reconstruction of *Asteroxylon mackiei*, the most complex plant preserved from the Rhynie chert*, *eLife* 10:e69447, <https://doi.org/10.7554/eLife.69447>.

Lee Jones et al.: *Distance to future climate analogues across global agricultural systems*, (in preparation).

Awards and Acknowledgements

- British Ecological Society's Olivia Norfolk Poster Award (Runner-up, 2024)
- Oxford NERC DTP Speaker Award (2024)
- Full scholarship to WSL Forest Summer School (2024)
- UKRI NERC Studentship (2020), including enhanced research budget.
- Elected to the Scholar's Foundation of Queens' College, Cambridge (2019 and 2020)

Teaching Experience

Oxford Roles: Lecturer/demonstrator for the Ecological Technologies Field course (2020–2024); PG research design tutor (2021–2023); demonstrator for Computational Statistics (2021) and plant biology practicals (2025). **Private Tutoring:** GCSE Biology tutor (2015–2020).

Conferences and Meetings

UNECE ICP Meeting (2025): Talk on spectral detection of ozone damage in forests.

British Ecological Society Annual: Poster presentations (2023–2024) & workshop demonstrator on applications of spectroscopy to biology.

WSL Forest Extremes (2024): Short talk and poster on spectral ozone damage detection.

CAPER Meeting (2023): 20-minute talk on experimental spectral ozone damage detection.

NCEO Earth Observation Conference (2022): “Flash Talk” and poster presentation.

Oxford NERC Student Conferences (2022–2024): Multiple talks.

Education and Training

Postgraduate Courses

WSL

Forest Extremes Summer School, UKCEH Bayesian Statistics, Canopy Access Systems and Working at Heights; Wilderness First Aid (level 2), Doctoral Training Centre Core Courses, Advanced ARCGIS, and Preparing for Teaching.

BA (Hons) Biological Natural Sciences | University of Cambridge | 2017 -2020

First class in part IB and II, specialism in Plant Sciences.

Churchill Community School and Sixth Form | Weston-Super-Mare, UK | 2010 – 2016

A-Levels in Chemistry (A*), Biology (A), History (A*) and AS in French (A)

Other Experience

- Committee member of Wolfson College Sports and Cultural Committee 2023 to 2025.
- Multiple elected leadership roles at Wolfson College Boat Club (Captain, Secretary, Welfare Officer, Social Sec, College Rep, spanning 2021-2025)
- Chemical Lab Technician for Thatcher's Cider (Summer 2019).