Dr Peter Wellham BA MA (Oxon) MRes PhD

Biologist/ Biochemist, Biotechnology Inventor

Biomaterials • Biopesticides • Drug Discovery • Mycology • Molecular Ecology

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Really Clever Co-Founding Scientist, Co-Inventor (2021 – Present)
Head of Biomaterials [Director Level] (2023 – Present)

At Really Clever I invented and scaled a truly sustainable biomaterial – 100% vegan and petrochemical free – powered by fungi and plants. The material balances performance, cost, and volume, meeting requirements for footwear and fashion markets.

- Created core scientific concepts and products, from scratch
- Led technical customer correspondences, helping to achieve a sales pipeline with over 20 brands, incl. contract for 4M units with a tier 1 sportswear brand.
- Technical due diligence with investors, throughout pre-seed, seed, and series A (on-going) rounds; reporting to the board
- Compiled technical evidence to support successful R&D tax credits dispute with HMRC
- Developed AI and bioinformatics-based software discovery platform, to accelerate R&D

Scaled Production of Biomaterial
- Involved in the deployment of £1M CapEx investment into a pilot factory with 100k sqm/year capacity
- Supported technical transfer from lab to industrial scale
- Managed technical relationships with suppliers – incl. a crude novel extraction process from tonnes of mushroom stalk waste

Managing R&D/ Strategy
- Directed all lab activities, protocols, experimental strategy, budget, H&S
- Hired scientists and technicians – advertising, interviews, selection
- Resolved conflicts and grievances

Patents
- First named inventor on 30 patent applications; granted in multiple territories (incl. US, Europe, Japan)
- Led diverse patent strategy (incl. Mathys & Squire's fastest NOAs in US and EPO; divisional applications; PPH; chapter II demand; selective expeditions)

PhD Researcher and Independent Scientific Consultant (2017 – 2021)

During this period, I published research on mycology, entomology, plant science, and applied microbiology, and developed IP relating to biopesticides and drug discovery.

- Molecular biology (incl. RT-qPCR); metabolomics involving LC-MS (independent user); fungal and insect cell culture; live infection assays and rearing of caterpillars
- Consulted biotech firms on fungal culture and genetics. Provided services of strain characterisation and improvement. Worked in large scale production of natural products.
- Supported students at all levels, practical demonstrations and minor teaching activities.

Education
- PhD, Fungal Biochemistry, University of Nottingham (2022)
- MA, Biological Sciences, University of Oxford (2021)
- MRes, DIC, Molecular Biology, Imperial College London (2017)
- BA, Biological Sciences, University of Oxford (2016)

Publications

- **Wellham, P. A. D.,** Jelečević, M. Patent specification: *Fungal Materials.* Earliest priority: GB202208263A (2022-06-06). Granted applications incl. US18/239,656, EP23732644.2A, JP2023551103A.
- **Wellham, P. A. D.,** Jelečević, M. Patent specification: *Enhanced Fungal Material*. Earliest priority: GB202208266A (2022-06-06).
- **Wellham, P. A. D.** (2022): Cordycepin and the entomopathogenic fungus *Cordyceps militaris* (PhD thesis). *University of Nottingham* eprints.nottingham.ac.uk/68586/
- **Wellham, P. A. D.**, Hafeez, A., Gregori, A., Brock, M., Kim, D. H., Chandler, D., de Moor, C. H. (2022): Culture degeneration and the role of cordycepin/pentostatin synthesis in the entomopathogen *Cordyceps militaris*. Poster at *11th International Medicinal Mushroom* Conference, Belgrade, Serbia. DOI: 10.13140/RG.2.2.23303.10400
- **Wellham, P. A. D.,** Hafeez, A., Gregori, A., Brock, M., Kim, D. H., Chandler, D., de Moor, C. H. (2021): Culture degeneration reduces sex-related gene expression, alters metabolite production and reduces Insect pathogenic response in *Cordyceps militaris*. *Microorganisms* 9(8): 1559 DOI: 10.3390/microorganisms9081559
- Radhi, M., Ashraf, S., Lawrence, S., Tranholm, A. A., **Wellham, P. A. D.,** Hafeez, A., Khamis, A. S., Thomas, R., McWilliams, D., de Moor, C. H. (2021): A systematic review of the biological effects of cordycepin. *Molecules* 26(19): 5886 DOI: 10.3390/molecules26195886
- Przydacz, M., Jones, R., Pennington, H. G., Belmans, G., Bruderer, M., Greenhill, R., Salter, T., **Wellham, P. A. D.,** Cota, E., Spanu, P. D. (2020): Mode of action of the catalytic site in the N-terminal ribosome-inactivating domain of JIP60. *Plant Physiology* 183(1): 385-398 DOI: 10.1104/pp.19.01029
- **Wellham, P. A. D.,** Kim, D. H., Brock, M., de Moor, C. H. (2019): Coupled biosynthesis of cordycepin and pentostatin in *Cordyceps militaris*: Implications for fungal biology and medicinal natural products. *Annals of Translational Medicine* 7(3): S85 DOI: 10.21037/atm.2019.04.25
- **Wellham, P. A. D.**, Hafeez, A., Gregori, A., Abdelrazig, S., Kim, D. H., de Moor, C. H. (2018): Metabolic and gene expression signatures of *Cordyceps militaris* sexuality and insect pathogenicity. Poster at *MetaboMeeting 2018* Conference, Nottingham, UK (Metabolic Profiling Forum). DOI: 10.13140/RG.2.2.21618.17604
- McLean, A. H. C., Parker, B. J., Hrček, J., Kavanagh, J. C., **Wellham, P. A. D.,** Godfray, H. C. J. (2018): Consequences of symbiont co-infections for insect host phenotypes. *Journal of Animal Ecology* 87(2): 478-488 DOI: 10.1111/1365-2656.12705
- Simon, A. L., **Wellham, P. A. D.,** Aradottir, G. I., Gange A. C. (2017): Unravelling mycorrhiza-induced wheat susceptibility to the English grain aphid *Sitobion avenae.* *Scientific Reports* 7(1): 46497 DOI: 10.1038/srep46497

Other Professional Activities

- Speaking engagements – all things fungi and biotech. Next event: *Fungi Town*, Hay Castle, Wales, 3-5 Oct. 2025. fungitown.org.uk/programme/fungus-among-us
- University of Nottingham/ Nottingham Trent University – affiliated scientific researcher. Involved with three research groups working on projects with fungal genetics, biomolecular materials, and insect infection.