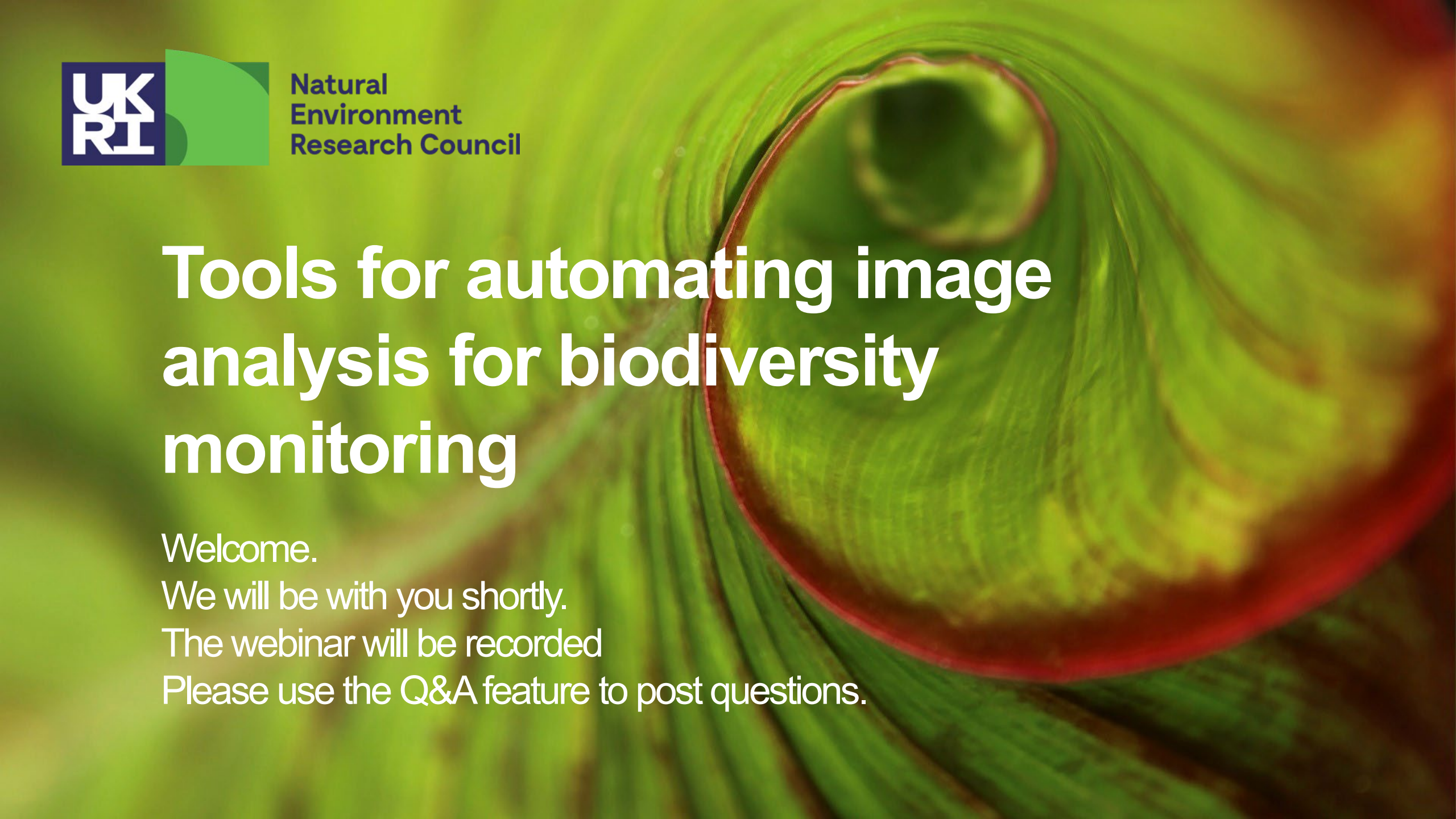

Tools for automating image analysis for biodiversity monitoring

Welcome.
We will be with you shortly.
The webinar will be recorded
Please use the Q&A feature to post questions.

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NERC Webinar: Tools for automating image analysis for biodiversity monitoring

3.00-4.00pm BST on 24 July 2023

Agenda

1. Welcome and overview -Anna Angus-Smyth, NERC-UKRI
2. Scientific scope of funding opportunity- Simon Gardner, NERC-UKRI
3. Examples of tools for automating image analysis– Dr Alden Conner, The Turing Institute (invited subject matter expert)
4. Specific requirements of funding opportunity- Blanche Wynn-Jones, NERC-UKRI
5. Q&A -Panel
6. Wrap Up – Simon Gardner, NERC-UKRI

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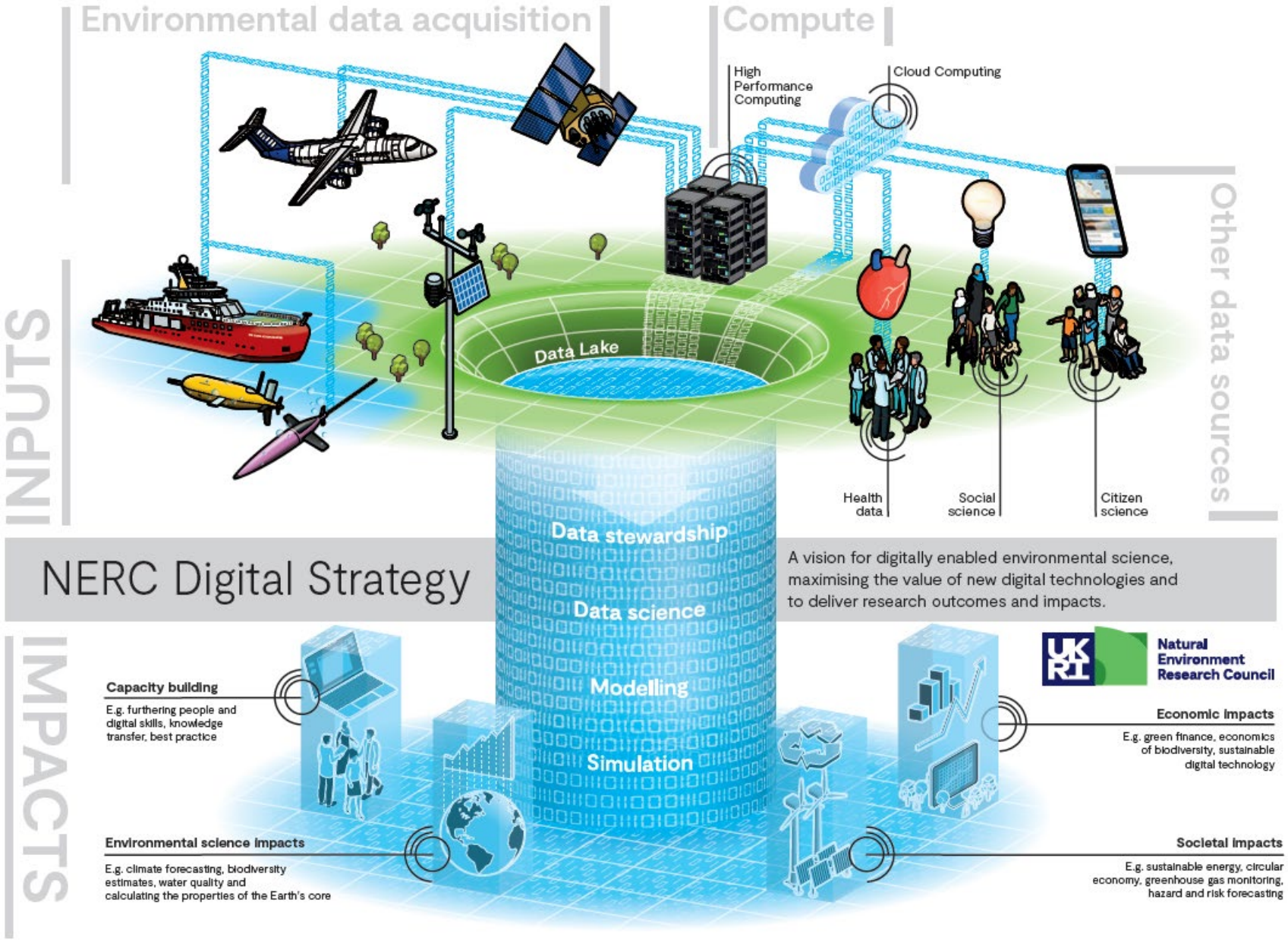
NERC's Digital Strategy

NERC's first digital strategy sets out a vision for digitally enabled environmental science for the next decade

[NERC-170522-NERCDigitalStrategy-FINAL-WEB.pdf (ukri.org)]



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Automating Image Analysis for Biodiversity Monitoring

Applications for this new NERC funding opportunity should:

- Outline how tools proposed for development will **improve the monitoring of biodiversity through automated analysis**
- **Develop robust and verified software tools,** to be broadly used across environmental science
- **Include research technical professionals** such as research software engineers and data scientists.

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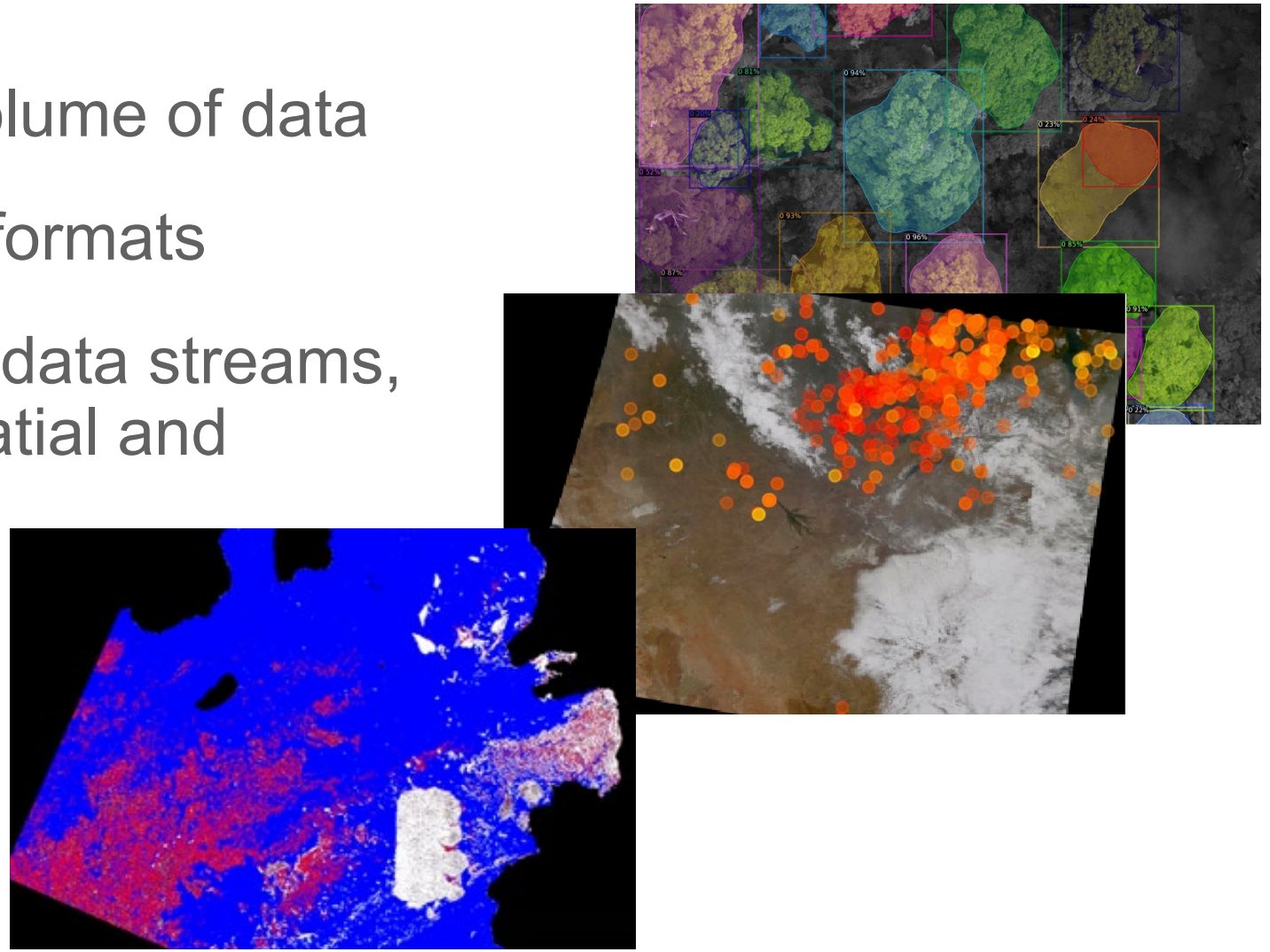
Scientific scope of funding opportunity

Simon Gardner – NERC UKRI

The challenge

- An ever-increasing volume of data
- A wide range of data formats
- Increasingly complex data streams, spanning different spatial and temporal scales



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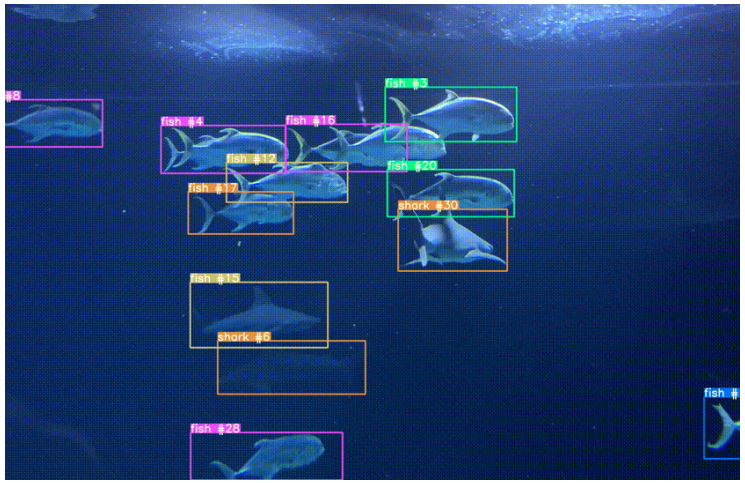
Next generation tools



- Enable accurate, efficient, and timely data collections
- Bridge spatial and temporal scales
- Automate workflows

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What we're looking for

- Software toolkits, pipelines, and workflows for automated analysis of images and videos
  - Automated image annotation and segmentation
  - High-throughput image analysis
  - Development and use of training datasets
  - Development and use of automated pipelines
- Broadly used across environmental science and can be maintained beyond this initial investment

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Examples of tools for automating image analysis for biodiversity monitoring

Dr. Alden Conner, The Alan Turing Institute

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Example tools – sea pen tracking

Original

Enhanced

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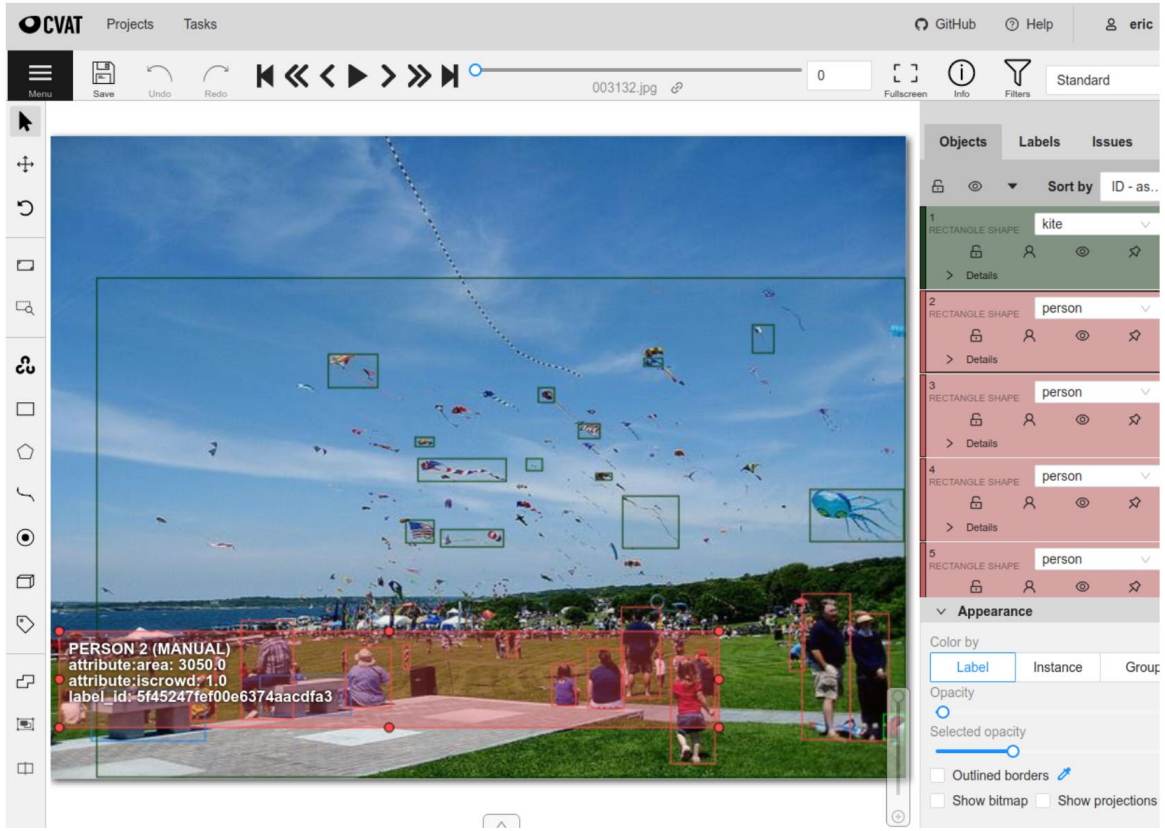
The Alan Turing Institute

Centre for Environment Fisheries and Aquaculture Science

Example tools – CVAT automated image annotation in FiftyOne



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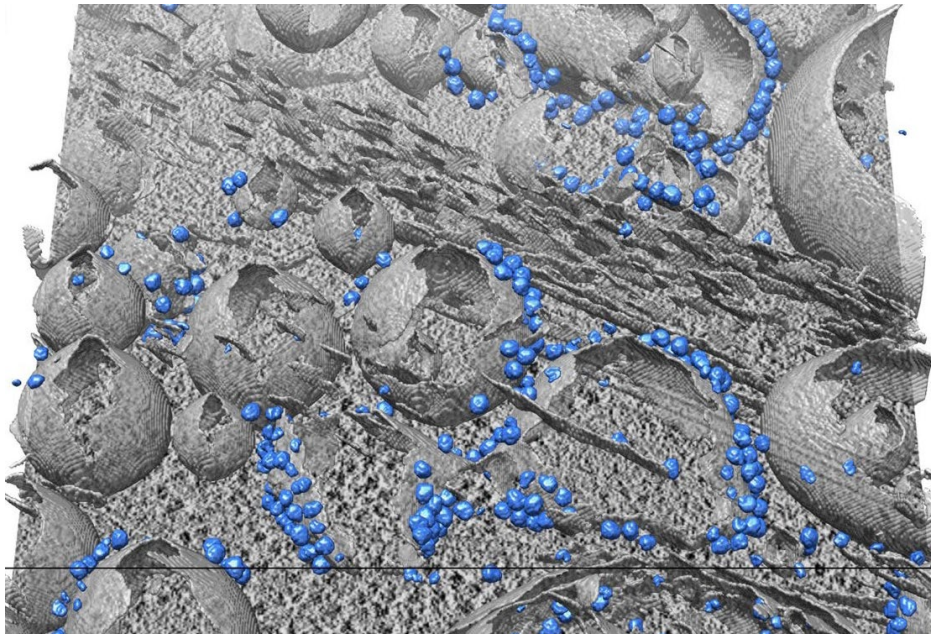
Beyond biodiversity



Paper: Corcoran, E., Hosseini, K., and Ahnert, S. 2022. Automated extraction of dynamic phenotype data from whole plant images collected under controlled conditions. *Frontiers in Plant Science*. (under review).

Dr Evangeline Corcoran
The Alan Turing Institute

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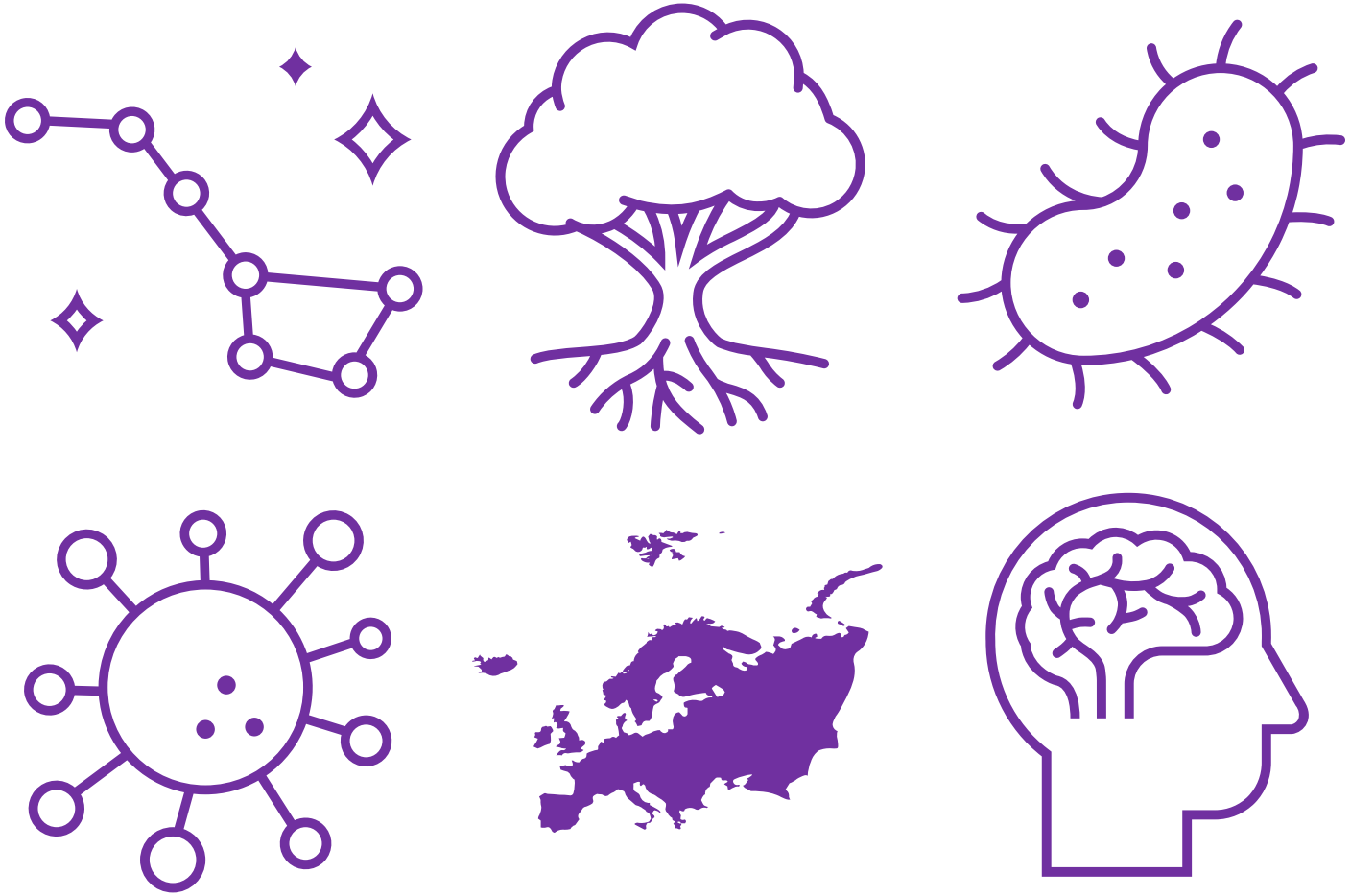
Generalisable platforms



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https://sci.vision

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Specific requirements of funding opportunity

Blanche Wynn-Jones, NERC - UKRI

Who can apply

Open to eligible researchers at:

- higher education institutions (HEIs)
- research council institutes (RCIs)
- approved independent research organisations (IROs)
- public sector research establishments (PSREs)
- Catapults

Who is not eligible to apply

- You may be involved in **no more than two** applications submitted to this funding opportunity. Only one of these can be as project lead
- project leads and project co-leads **based outside the UK are not permitted**

You should include any international collaborators or UK partners not based at approved organisations as project partners. This includes organisations from the business or financial sectors.

Project partners fund their own involvement. We will only fund minor incidental expenses, such as some travel costs, if needed for project partners.

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What we're looking for

3.6M funding from NERC to fund 5- 7 projects:

- Award range: £500k - £750k at 100% of the full economic cost (FEC)
- Applicants must make the case for capital investment to develop tools, software and learning datasets to address biodiversity challenges
- Applicants can include staff time directly associated with preparation of these assets

We encourage:

- ➢ applications from interdisciplinary, cross-disciplinary and multidisciplinary teams and collaborations between UK organisations.
- ➢ inclusion of digital research technical professionals such as research software engineers and data scientists in applications

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How to apply

We are running this funding opportunity on the **new UKRI Funding Service**. You cannot apply on the Joint Electronic Submissions (Je-S) system.

The project lead is responsible for completing the application process on the UKRI Funding Service, but we expect all team members and project partners to contribute to the application.

Only the lead research organisation can submit an application to UKRI.

Closing date for applications: 18 October 2023 at 4.00pm UK time

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How will we assess your application?

Panel of independent experts will review all proposals based on the following criteria:

- Vision
- Approach
- Applicant and team capability to deliver
- Ethics and responsible research and innovation

Find details of assessment questions and criteria under the 'Application questions' heading in the How to apply section.

We are looking to fund work that is:

- is of excellent quality and importance within or beyond the fields or areas
- has the potential to advance current understanding, generates new knowledge, thinking or discovery within or beyond the field or area
- is timely given current trends, context and needs
- impacts world-leading research, society, the economy or the environment

To note this funding opportunity is not linked to any particular geographical region

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Thank you

digitialenvironment@nerc.ukri.org

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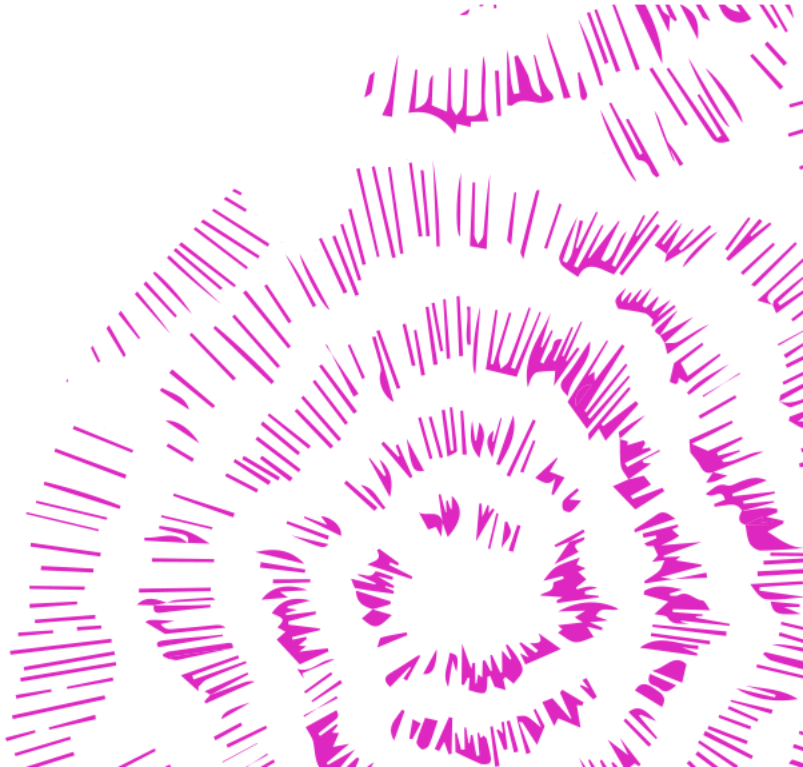
Questions?



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