



Space at Leeds

Dr Anna E. Hogg



UNIVERSITY OF LEEDS



SENSE Centre Excellence

- Number and quality of EO researchers
 - >147 in our four host institutions



THE UNIVERSITY
of EDINBURGH

#1 in REF 2014

31 Active NERC
EO grants



UNIVERSITY OF LEEDS
#2 in REF 2014
48 Active NERC
EO grants



- Exceptional facilities

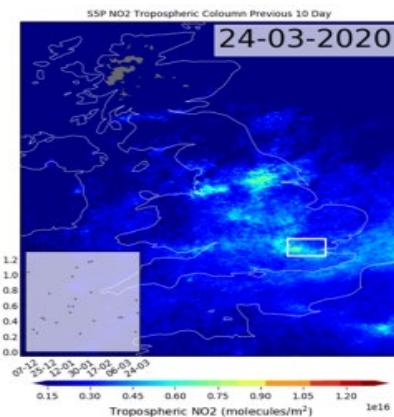
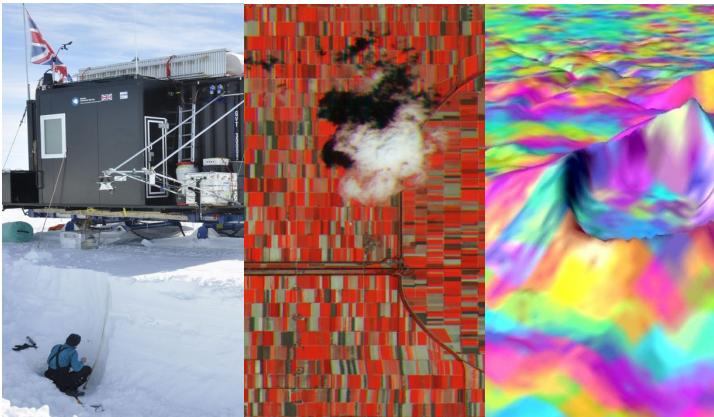
- Maximise use of UKRI facilities
- Alan Turing Institute, Data Driven Innovation & Leeds Institute for Data Analytics





SENSE Centre Excellence

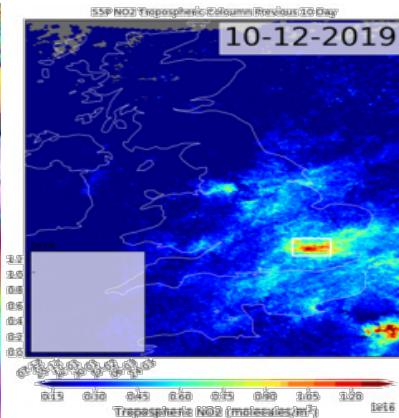
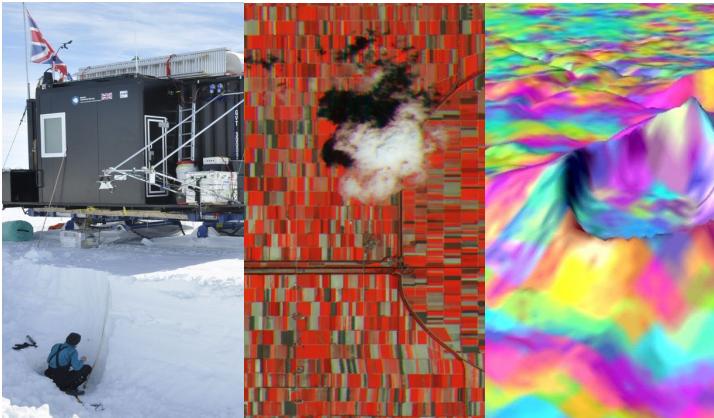
- Number and quality of EO researchers
 - ~ 57 academics in School of Earth and Environment, Geography, Engineering
 - ~ 48 active NERC EO related grants over last 5 years
 - 23 active ESA EO grants (*SEE only*)
 - #2 in REF 2014
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NERC SENSE EO CDT Launched



SENSE – Centre for Satellite Data in Environmental Science

Programme

The Satellite Data in Environmental Science – Centre for Doctoral Training (SENSE CDT) will train the next generation of Earth Observation leaders, with the expertise and knowledge to address Earth System challenges using both advanced **data science** and **remote sensing**.

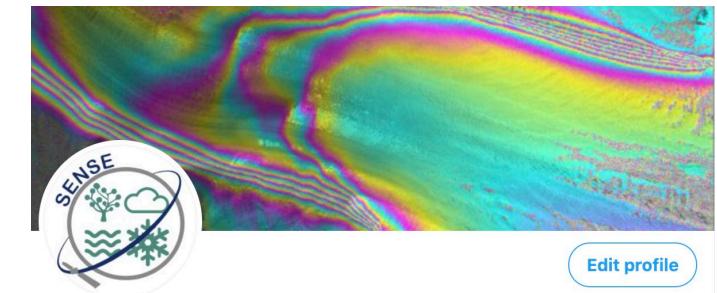
Satellite Data in Environmental Science – Centre for Doctoral Training

Join us to transform environmental science in the UK using both advanced data science and Earth Observation techniques.

Visit our website

www.eo-cdt.org

Follow us on twitter
[@EO_CDT](https://twitter.com/EO_CDT)



SENSE Earth Observation CDT

@EoCdt

The Centre for Satellite Data in Environmental Science (SENSE). Training the next generation of **#EarthObservation** leaders. **#DataScience #AI #ClimateChange**

Edinburgh & Leeds Universities [@eo-cdt.org](https://twitter.com/eo-cdt.org) Joined October 2019

223 Following 724 Followers

Tweets

Tweets & replies

Media

Likes

Pinned Tweet



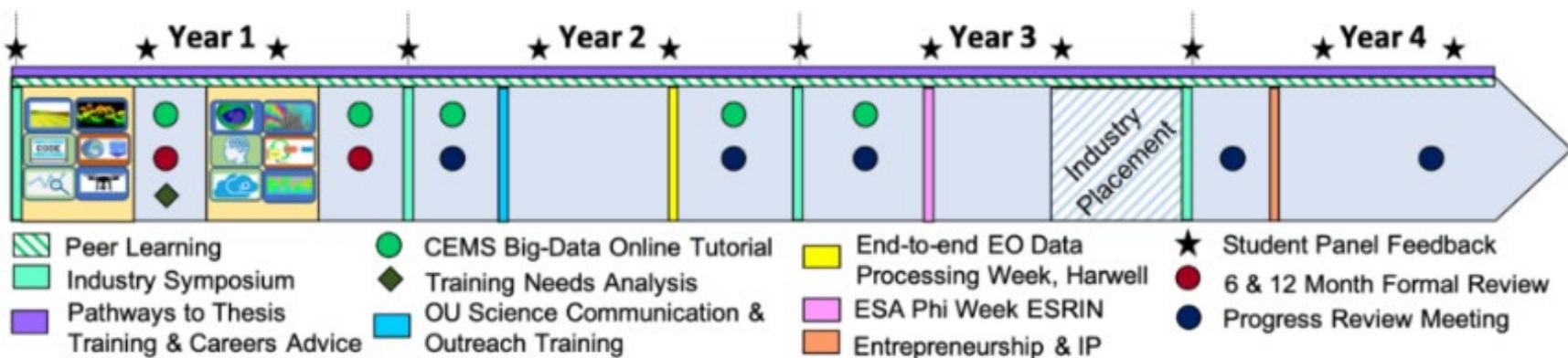
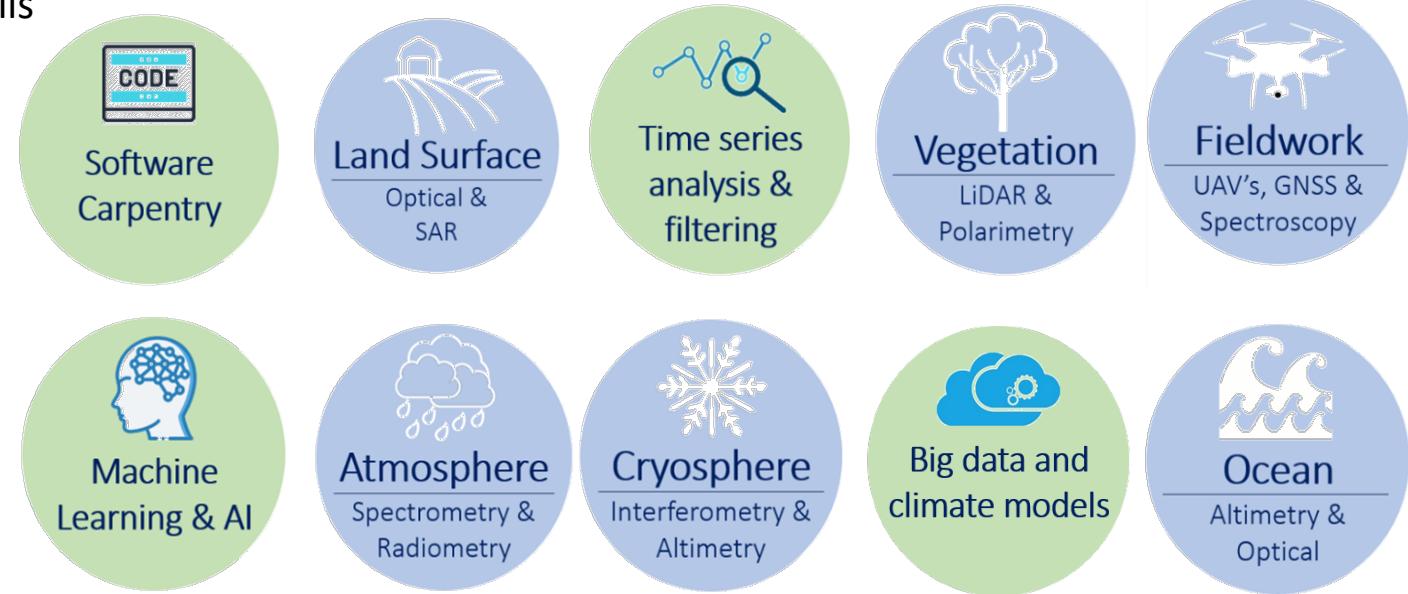
SENSE Earth Observation CDT @EoCdt · Nov 2

PhD applications are open for the SENSE **#EarthObservation** CDT!
Deadline 10th January
[@EdinburghUni](https://twitter.com/EdinburghUni) [@UniversityLeeds](https://twitter.com/UniversityLeeds) [@NOCnews](https://twitter.com/NOCnews) [@BAS_News](https://twitter.com/BAS_News)



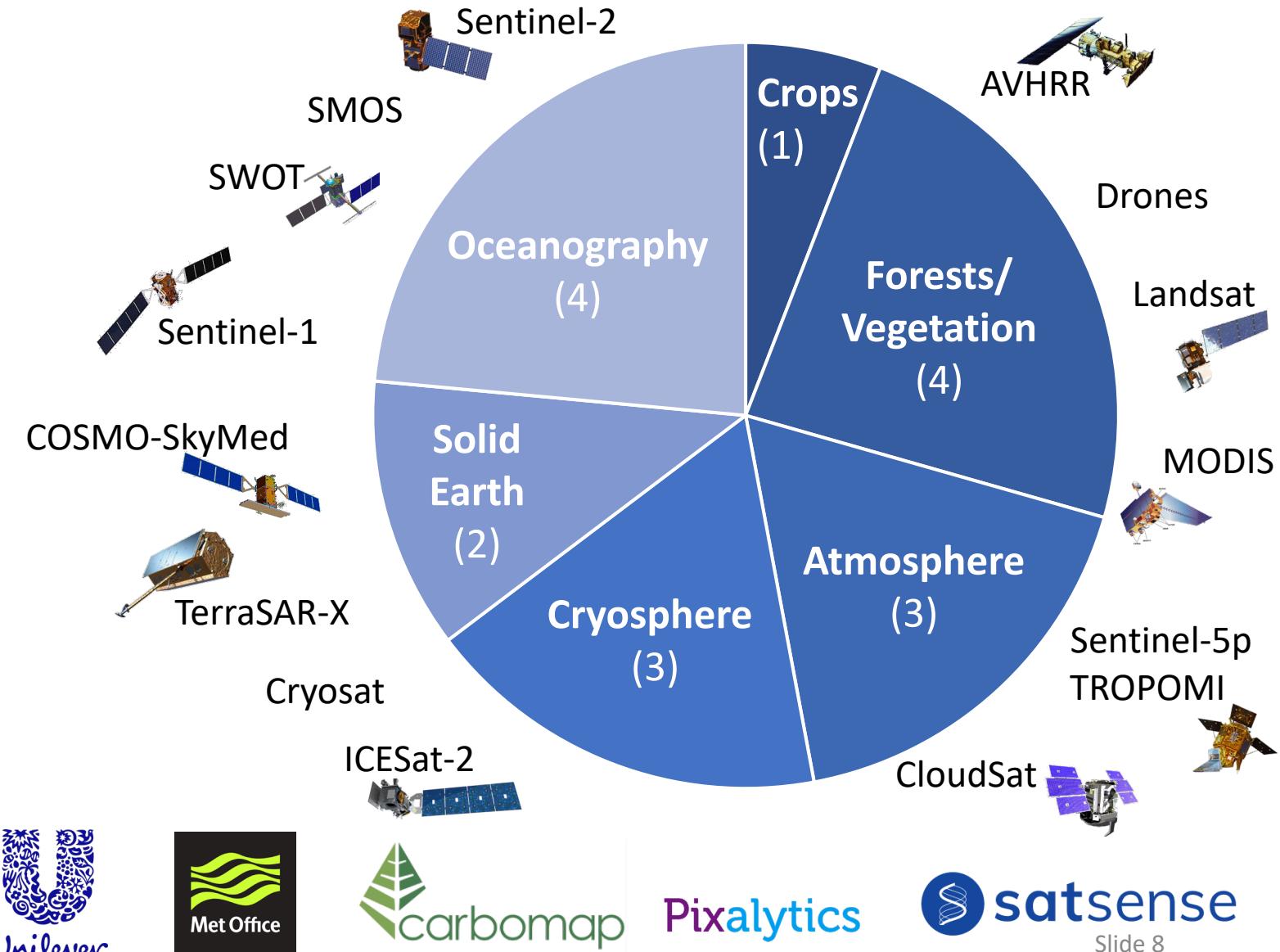
Expert EO Training

- 1st year: Academic training at Leeds, Edinburgh & Southampton
 - Advanced Earth observation skills
 - Advanced computing
 - Climate modelling
- Skills Training
 - Entrepreneurship & IP – run by CEO's of affiliated SME's
 - Science communication and outreach – run by the Open University
 - 3 month placements in industry



SENSE Students

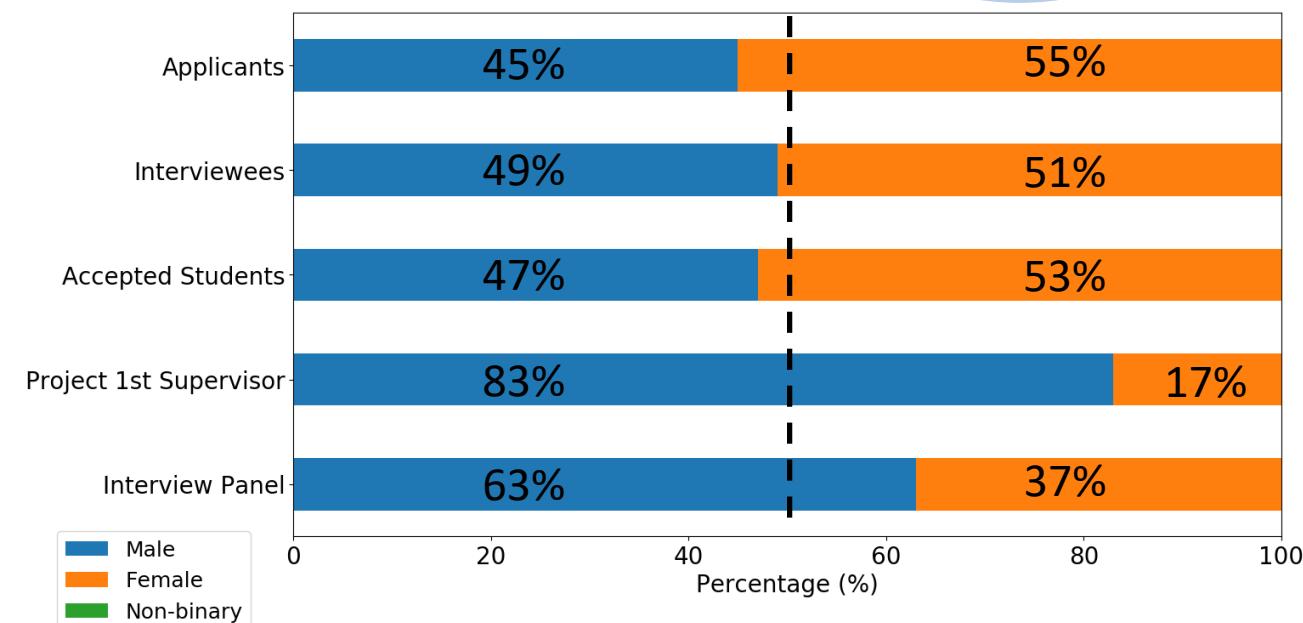
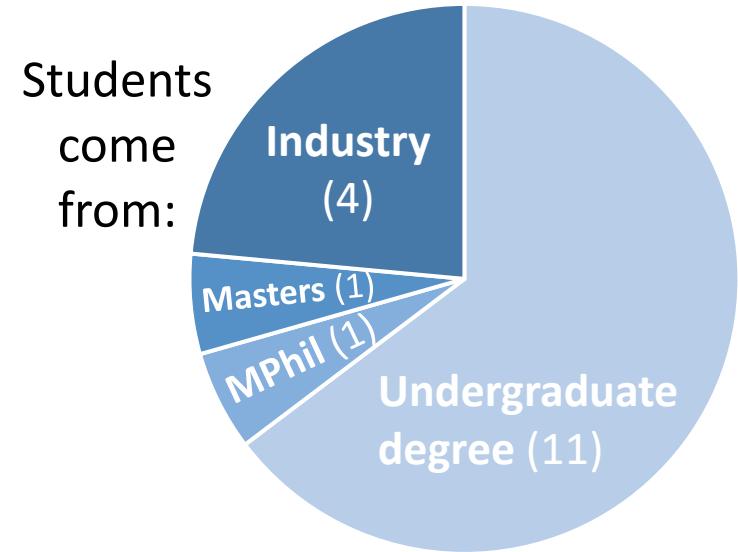
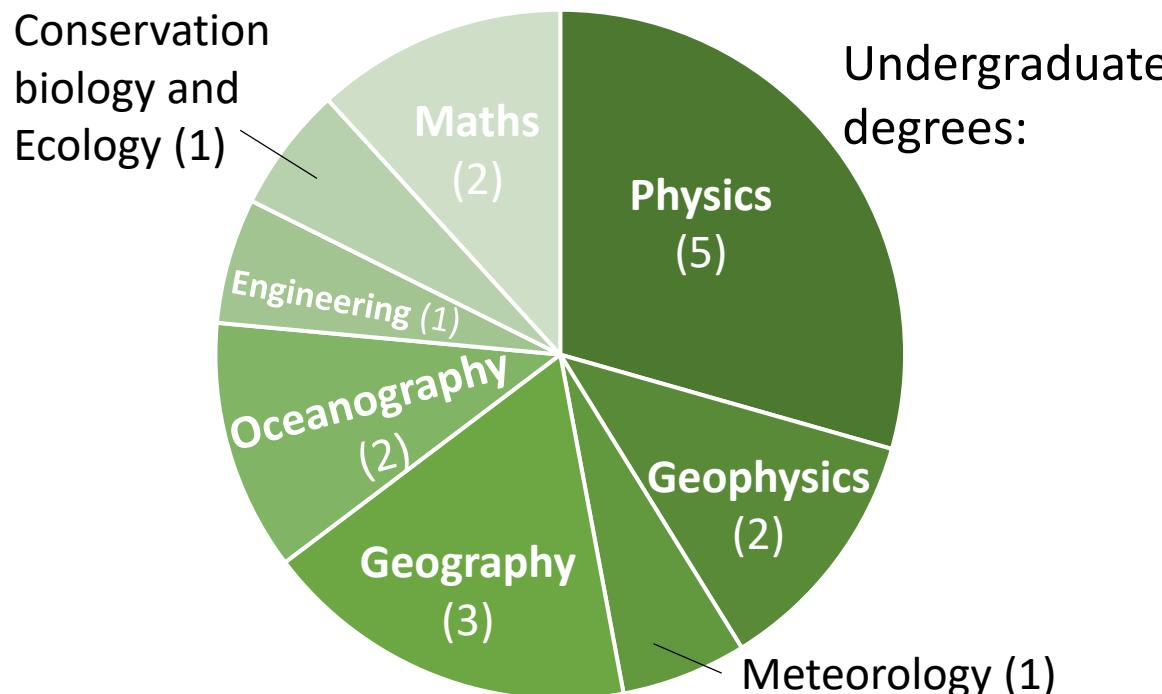
- 17 PhD projects in year 1
- Multi-institute supervision
- University of Leeds is a very exciting place to be!



CASE partners:

Equality, Diversity and Inclusion

- Wide range of undergraduate degrees (majority physics)
- Students from University and industry
- Good student Male-Female ratio
 - Need to significantly increase female first-supervisor projects
- Need to improve BAME applications





PhD Recruitment – EDI Best Practice

PhD Project Design

- Request **diverse supervisory teams**: mix of gender, ethnicity and career stage, in the same way that breadth of subject expertise is considered
- Collaborate with **industry** partners on PhD projects, as the visibility of career opportunities beyond academia
 - 3-month industry internship
- Use **inclusive language** in the PhD project description
- **Clear statement of eligibility**, encourages applications from underrepresented groups

Advertisement

- Advertise PhD's **beyond findaphd.com**, with adverts also posted specifically to diverse networks
- Advertise PhD project opportunities to **ethnically diverse universities**
- Create **fact sheets**, run short webinars and set up discussion groups to freely and openly communicate advice
- **Social media campaign** discussing why PhD's are great

Interview Selection

- **Unconscious bias training**
- **Anonymise** all application documents
- Academics asked to write gender neutral references
- Grade all applications **quantitatively on pre-defined criteria**
- **Guarantee interviews** for appointable applicants from underrepresented groups
 - If ring-fencing interviews fails, ringfence PhD studentships

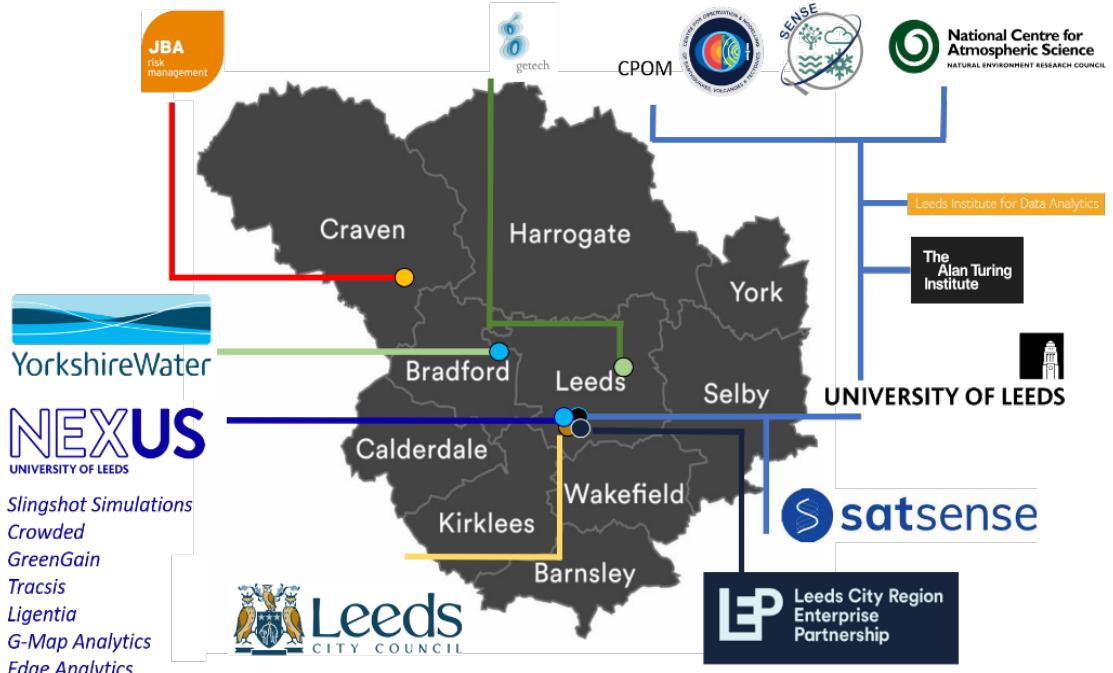
Interviews

- Invitations to interview sent with sufficient notice
- In-person or virtual interview has no bearing on the outcome
- Check interview questions with an EDI committee
 - same interview questions are asked to all students
- No single-sex interview panels
- Quantitatively grade the interviewee responses on pre-defined criteria
 - calibration grid
- Some interview questions are a practical test

Leeds Regional Space Hub

Space@Leeds

1. Establish Local Space Leadership Group for Leeds region
2. Map current Space industry activity
3. Identify priority areas and establish a regional niche
4. Develop and implement a local growth strategy in partnership with the LEP
5. Further develop and grow our emerging Local Space Cluster in the Leeds City, and wider Yorkshire region



- Bring together universities, local councils, government agencies, and commercial partners
- Cover a geographic area across the Yorkshire council district, with a focus on Leeds city region



The September 2020 workshop was attended by *over 40 participants*, including:

- *Local governance* (Leeds City Region Enterprise Partnership (LEP) and Leeds City Council)
- *12 representatives from commercial companies* (e.g. Getech, JBA Risk Management, Deloitte, One Medical Group, SatSense, Slingshot Simulations, R&R Space, AstroAgency, Yorkshire Water, Harlette Capital Ltd)
- *19 cross-faculty academics* at the University of Leeds and the *Nexus Research & Innovation (RIS) team*
- *8 space agency (ESA, UKSA) or Satellite Applications Catapult advisors.*

Space@Leeds Thematic Niches					
Space Expertise	Health Technology	Risk Mitigation	Net Zero Solutions	Space Skills Training	
	Earth Observation	Air Quality monitoring from S5p	SatSense Land deformation	Forest biomass monitoring	NERC Earth Observation CDT
	Instrumentation and Robotics	Personal Mobility Sensors	Terahertz Quantum Cascade Lasers	Autonomous Vehicles	Institute of High-speed Rail
	Advanced Computer Techniques	Machine Learning for tumor detection	Simulation Technology in LIDA – digital twinning	MIT REAP Smart Cities	UKRI AI for Medical Diagnosis CDT

Building entrepreneurial teams

- Launch innovative Space start ups
- Collaborative project design with industry
- Create hundreds of new jobs for the Yorkshire region

Growing UK's Space sector capability

- Hub of training expertise
- Develop UK knowledge economy
- Deliver the next generation of space industry leaders!

Delivering real world impact

- Advance research on important topics
- Develop new climate solutions through satellite products and services





What does success look like?

- Over 50 new research leaders
- Growing UK EO research community
- At least 150 scientific papers published
- Addressing EO skill gap in the UK Space Sector
 - New EO products
 - Hundreds of new jobs
 - New companies formed
- Real world impact
 - Climate solutions

