

DR ROBERT (BOBBY) HOUSEAGO

Vice-Chancellor Independent Research Fellow - Loughborough University, UK

EDUCATION

2016 - 2021: PhD in Physical Geography. University of Hull, UK.

“On the hydrodynamics of flexible vegetation canopies” - Fully-funded via EU H2020.

2012 - 2015: BSc Geography (First Class Honours). University of Hull, UK

ACADEMIC EMPLOYMENT, EXPERIENCE & SKILLS

Vice-Chancellor Independent Research Fellow (Loughborough University). Sept 2024 – present.

- Independently designed and led field and flume research on porous flow blockages in rivers.
- Development and submission of Independent Fellowships (Leverhulme ECR, NERC IRF, UKRI FLF), and Large Grants (NERC Pushing the Frontiers, EPSRC, TRG).
- Managing and training a Research Assistant working on the effect river-bank roughness on flow.
- Advisor and mentor of PhD Students at Loughborough University and Newcastle University.

Postdoctoral Research Associate (Geography, Durham University, UK). Sept 2022 – Aug 2024.

- Point cloud and DEM analysis to characterise riverbed surface roughness.
- Lead physical modelling (flume) experiments quantifying topographic control on flow resistance.

Postdoctoral Research Assistant (EEI, University of Hull, UK) August 2021 – August 2022.

- EPSRC Supergen ORE Hub Flexible Fund Project on numerical modelling of offshore wind turbine monopile vibrations under non-linear wave loading using big data.
- High-Performance Computing (HPC) to rapidly assess fatigue using machine learning in Python.
- Collaboration with industry partners (including Atkins, TECOSIM, and Eleven-I).

Research Assistant (Energy and Environment Inst. University of Hull, UK). Feb 2021 – July 2021.

- Multibeam bathymetric data processing, analysis, and preparation of manuscripts.

Visiting Researcher (Mech. Science & Engineering, University of Illinois, USA) April – May 2019.

- Development of novel flume experiments on the spatiotemporal hydrodynamics of aquatic vegetation.

Visiting Researcher (School of Engineering, University of Aberdeen, UK). January – March 2018.

- Design and implementation of flume experiments on aquatic canopy flexibility on wave hydrodynamics

Academic Demonstrator (Department of Geology, University of Hull, UK) Sept 2016 – May 2019.

- Delivery of undergraduate and master's practical courses in Geographical Information Systems (GIS).

Graduate Research Assistant (Dept. of Geography, University of Hull, UK). July 2015 – Sept 2016.

- Multibeam data acquisition (RESON, and Norbit), processing, and analysis of fluvial bathymetry.

PUBLICATIONS & OUTPUTS

Houseago, R.C., Hodge, R.A., Asher, B., Ferguson, R.I., Hackney, C.R., Hardy, R.J., Hoey, T.B., Johnson, J.P.L., Rice, S.P., Yager, E.M., Yamasaki T. (2025). Quantifying bed surface roughness in bedrock and boulder-bed rivers. *Journal of Geophysical Research: Earth Surface*. 130, e2024JF007996.

Ferguson, R.I., Hodge, R.A., Hardy, R.J., **Houseago, R.C.**, Yager, E.M., Yamasaki T.N., (2024) Predicting flow resistance in rough-bed rivers from topographic roughness: review and open questions. *Earth Surface Processes and Landforms: State of Science Review*. 49(15), 4888-4907.

Mendrik, F.* , **Houseago, R.C.*** , Hackney, C.R. and Parsons, D.R. (2024). Microplastic trapping efficiency and hydrodynamics in model coral reefs: A physical experimental investigation. *Environmental Pollution*, 342, p.123094. *Joint first authors.

Houseago, R.C., Hong, L., Cheng, S., Best, J.L., Parsons, D.R., & Chamorro, L.P. (2022). On the turbulence dynamics induced by a surrogate seagrass canopy. *Journal of Fluid Mechanics*, 934, A17.

Hackney, C. R., Darby, S.E., Parsons, D.R., ... & **Houseago, R.C.** (2020). River bank instability from unsustainable sand mining in the lower Mekong River. *Nature Sustainability*, 3(3), 217-225.

Houseago, R.C., Mockute, A., Cross, E., et al., (2022). Rapid Assessment of Offshore Monopile Fatigue Using Machine Learning. In *European Workshop on Structural Health Monitoring* (pp. 101-112).

Hong, L., Cheng, S., **Houseago, R.C.**, Parsons, D., Best, J., & Chamorro, L. (2022). On the submerged low-Cauchy-number canopy dynamics under unidirectional flows. *J Fluids Struct*, 113, 103646.

EU HORIZON 2020 SCIENTIFIC REPORTS

Williams, H., **Houseago, R.C.**, McLelland, S., van de Lageweg, W., Grasso, F., Henry, P. and Thom, M., 2018. Sediment-Biota Interactions (Experimental Protocols). Hydralab+.

O'Donoghue, T., ... **Houseago, R.C.**, ... 2020. Guidelines for physical experiments involving complex processes related to climate change impact and adaptation. Hydralab+.

IN PREPARATION

Houseago, R.C., van der A, D., McLelland, S., O'Donoghue, T. and Parsons, D.P., (in prep). On the influence of canopy flexibility on wave attenuation and bulk drag. *Coastal Engineering*.

Houseago, R.C., Hodge, R.A., Ferguson, R.I., Hardy, R.J., Hoey, T.B., Johnson, J.P.L., Rice, S.P., Yager, E.M., Yamasaki T.N (in prep). Topographic roughness and flow resistance in rough-bed rivers: flume experiments. *Geophysical Research Letters*.

PROFESSIONAL ACTIVITIES

Conference Presentations and Invited Talks

- 19 national and international conference presentations (inc. AGU, EGU, RCEM, APS, BSG).
- Invited speaker at Uni. of Illinois (May 2019), Loughborough University (November 2023), European Geoscience Union (May 2025).

Management, Supervision, and Mentoring

- (i) Management of Research Assistant at Loughborough University, (ii) PhD Co-supervisor of PhD Researchers at Newcastle University and Loughborough, (iii) Mentor of students at Durham University.

Conference Organisation and Session Chair

- Session chair British Sedimentological Research Group Meeting. *December 2021*.
- Co-organiser of the 14th UK YCSEC at the University of Hull. *March 2018*.

Research Group Chair: Fluvial Processes Group (Durham) *Oct 2022 – Aug 2024*.

Outreach & Volunteer Roles

- Academic Representative, Professional Geomorphology Committee, British Society of Geomorphology. *October 2024 – present*.
- Peer reviewer for Earth Surface Processes and Landforms, and AGU journals.

FUNDING & AWARDS (selected)

11.2024 British Society of Geomorphology Early Career Research Grant: **£5,000** (PI).

09.2024 Vice-Chancellor Independent Research Fellowship, Loughborough University. **£8,000** (PI).

03.2024 Research Development Fund: Surface roughness in Geomorphology Workshop. **£6,000** (PI)

03.2023 NERC Discipline Hopping: On vegetation hydrodynamics across disciplines. **£5,500** (PI).

05.2022 Supergen ORE Hub Early Career Researcher (ECR) Fund. Industry Internship. **£5,000** (PI).

03.2022 2 x NERC Discipline Hopping: (i) Using vegetation to address interdisciplinary environmental challenges. **£2,800** (PI), and (ii) Hackathon in AI for Sustainability. **£6,000** (Co-I).

– 2018 British Society of Geomorphology Postgraduate Research Grant: **£1,000 & £750**