

## CENTA Project Proposal Form – 2024 entry

<b>Project Title</b>	Exploring the influence of access to nature to diversify participation in Earth and environmental sciences and improve health and well-being for minoritized citizens.
<b>University (where student will register)</b>	The Open University
<b>Which institution will the student be based at?</b>	As above
<b>Theme (Max. 2 selections)</b>	Climate & Environmental Sustainability <input checked="" type="checkbox"/> Organisms & Ecosystems <input type="checkbox"/> Dynamic Earth <input checked="" type="checkbox"/>
<b>Key words</b>	Environment; Ecosystem services; Geology; Ecology; Equity, Diversity, Inclusion and Accessibility; Engaged research; Health and Well-being
<b>Supervisory team (including institution &amp; email address)</b>	<b>PI:</b> Professor Richard Holliman, OU; <a href="mailto:Richard.Holliman@open.ac.uk">Richard.Holliman@open.ac.uk</a> <b>Co-I:</b> Dr Marcus Badger, OU; <a href="mailto:Marcus.Badger@open.ac.uk">Marcus.Badger@open.ac.uk</a> <b>Co-I:</b> Dr Anjana Khatwa, OU Visiting Fellow; <a href="mailto:glaciergirl@gmail.com">glaciergirl@gmail.com</a> <b>Co-I:</b> Dr Yoseph Araya, OU; <a href="mailto:YosephAraya@open.ac.uk">YosephAraya@open.ac.uk</a>
<b>Is the PhD suitable for part time study?</b>	Yes <input checked="" type="checkbox"/> This is a requirement of NERC.

### Project Highlights:

- Ethically informed research exploring the role of minoritized community groups in promoting health and well-being through access to nature, involving a combination of ecological and geological fieldwork, and social research methods.
- Engaged research to identify need, map assets and co-design solutions with minoritized community groups, environmental scientists and other relevant ‘publics’.
- Training in interdisciplinary scientific and social research techniques to generate and evidence forms of social and/or economic impact.

### Overview:

This PhD project builds on previous research. [‘Walking the Walk’](#) (Figure 1) was funded by NERC (2021) as part of a programme to make environmental science more diverse, equitable and inclusive. We interviewed walk leaders and walkers from minoritized<sup>1</sup> grassroot community groups to identify and overcome barriers to make walking in nature more equitable, inclusive and accessible.

Findings from Walking the Walk highlight a strong desire among walk leaders and walkers to improve physical, mental and emotional health and well-being in combination with a commitment to create the conditions where regular, routine and easy access to nature is genuinely available to all (Holliman et al., 2023).

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<sup>1</sup> By ‘minoritized’ we mean groups of people that have been, and continue to be, excluded and oppressed by dominant sections of society.



Figure 1: The Dadimas Community Walking Group and members of the ‘Walking the Walk’ team.  
Photo: Subash Ludhra.

*Alt text: Figure 1 is an outdoor setting in spring. Around 35 walkers from the Dadimas Community Walking Group and four Open University researchers are celebrating walking in nature.*

Drawing on the findings and network developed through ‘Walking the walk’, this PhD project brings together environmental scientists, minoritized, grassroots community groups (e.g. [Dadimas](#)) and other relevant interested and affected parties to diversify participation in Earth and environmental sciences, and improve health and well-being for minoritized citizens.

A core aim will be to conduct ethically informed engaged research *with*, rather than to conduct research *on*, minoritized community groups, environmental scientists and other relevant ‘publics’ (Holliman et al. 2022). The successful candidate will draw on a mix of relevant knowledge, experience and expertise, including: 1) ‘established’ and ‘cutting-edge’ NERC-funded Earth and environmental science, including natural history and conservation (e.g. Badger, 2021; Araya et al, 2017); 2) expertise in the communication of Earth and environmental science to diverse audiences (e.g. Downey et al. 2021; Khatwa, 2019); 3) findings from studies that explore connections between health, well-being and access to nature (e.g. Qwynne Lackey et al. 2021; Saraev et al. 2021); 4) local knowledge and expertise (Irwin and Michael, 2003) from minoritized community groups and other relevant ‘publics’.

### **Methodology:**

The candidate will draw on and extend the map of relevant ‘publics’ produced during the ‘Walking the walk’ project to recruit research participants.

Data collection will draw on a mixed methods methodology (Jensen and Holliman, 2009), involving:

1. A ‘systematic review’ (Miljand, 2020) of relevant research literature and other public documents.
2. Semi-structured interviews with research participants, exploring their perspectives and identifying resources that support access to nature.
3. Identification and co-development of new approaches and resources with environmental scientists, communication experts and research participants\*.

Research participants\* will ‘test, learn and revise’ approaches co-developed under point 3 to bring environmental science directly to those trying to make the UK countryside a more inclusive space.

\*For each of the activities, we expect to recruit minoritized community group leaders and members, ecologists and environmental and Earth scientists and other relevant publics (e.g., representatives from tourist and leisure outlets) as ‘research participants’.

### **Training and skills:**

Students will be awarded CENTA2 Training Credits (CTCs) for participation in CENTA2-provided and ‘free choice’ external training. One CTC equates to 1/2 day session and students must accrue 100 CTCs across the three years of their PhD.

Training in research design, methods and analysis will be provided. Depending on the candidate, specific training in aspects of geology, ecosystems and/or the social aspects of researching minoritized community groups will be provided. It is not expected that applicants would have experience in all of these methods prior to starting the PhD.

The candidate will join a thriving postgraduate community. Our students can gain teaching experience (e.g. [Bradley Neal](#)), alongside skills in engagement through training (e.g. Holliman and Warren, 2017), placements and internships (e.g. [Kate Hand](#)), and by contributing to a range of media (e.g. [Katrina Nilsson-Kerr](#)).

### **Possible timeline:**

Year 1: Revise and extend the existing ‘Walking the walk’ map of relevant ‘public’s; select initial list of research participants to interview. Conduct and analyse interviews. Develop a framework and select initial activities in nature to feature geology and/or ecology. Identify existing resources to support initial activities; co-produce new and/or collate/curate existing resources. Present preliminary project outline/results to the School. Pass probation upgrade.

Year 2: Select further sample of research participants to interview. Conduct and analyse interviews. Re-use framework to select at least two further activities in nature to feature geology and/or ecology. Identify existing resources to support the activities in nature; co-produce new and/or collate/curate existing resources. Present preliminary results at a national conference, prepare article for publication.

Years 3-4: Finalise analytical work on data collected in Year 2, return to existing activities in nature to validate resources with additional community groups. Present results at an international conference. Write thesis, prepare articles for publication.

### **Further reading:**

Dowey, N., Barclay, J., Fernando, B., Giles, S., Houghton, J., Jackson, C., Khatwa, A., et al. (2021) ‘A UK perspective on tackling the geoscience racial diversity crisis in the Global North’, *Nature Geoscience*, **14**, 256–59, <http://dx.doi.org/10.1038/s41561-021-00737-w>.

Holliman, R., Marino, A., Grand, A., Berardi, A., Mistry, J., Jafferally, D., Thomas, R., Roberts, G., Marcus, C.-A., Roopsind I. and Roberts A. (2022) ‘A case study from Guyana of adapting engaged research design to promote ‘fairness in knowing’’, *Research for All*, **6**(1), 1-17, <https://doi.org/10.14324/RFA.06.1.12>.

Khatwa, A. (2019) 'Resonance in rocks: Building a sustainable learning and engagement programme for the Jurassic Coast', *Proceedings of the Geologists' Association*, **130**(3–4), 507–21, <https://doi.org/10.1016/j.pgeola.2018.10.003>.

Saraev V., O'Brien L., Valatin G. and Bursnell M. (2021) *Valuing the mental health benefits of woodlands*. Research Report. Forest Research, Edinburgh, <https://www.forestresearch.gov.uk/publications/valuing-the-mental-health-benefits-of-woodlands>.

### Further details:

We invite applications from students with a demonstrable interest in environment, race equity and health and well-being.

Please contact [Richard Holliman](#) for further details. We'd be happy to hear from you.

The successful student will join well-established teams [researching engagement](#) and a vibrant [postgraduate community](#) at the Open University.

### References

- Araya, Y., Bartelheimer, M., Valle, C., Crujeiras, R., and García-Baquero, G. (2017). 'Does functional soil microbial diversity contribute to explain within-site plant beta-diversity in an alpine grassland and a dehesa meadow in Spain?' *Journal of Vegetation Science*, **28**(5), 1018–27, <https://oro.open.ac.uk/48707>.
- Badger, M. (2021). 'Alkenone isotopes show evidence of active carbon concentrating mechanisms in coccolithophores as aqueous carbon dioxide concentrations fall below 7  $\mu\text{mol L}^{-1}$ '. *Biogeosciences*, **18**(3), 1149–60, <https://oro.open.ac.uk/72494>.
- Dowey, N., Barclay, J., Fernando, B., Giles, S., Houghton, J., Jackson, C., Khatwa, A., et al. (2021) 'A UK perspective on tackling the geoscience racial diversity crisis in the Global North', *Nature Geoscience*, **14**, 256–59, <http://dx.doi.org/10.1038/s41561-021-00737-w>.
- Holliman, R., Smith, K., Khatwa, A., Warren, C., Araya, Y., Ansine, J. and Badger, M. (2023). 'Exploring perspectives of minoritized community walking group leaders to make access to nature more equitable, diverse and inclusive.' International PCST Conference, *Creating Common Ground*, Rotterdam, The Netherlands, 11–14 April, <https://oro.open.ac.uk/92375>.
- Holliman, R., Marino, A., Grand, A., Berardi, A., Mistry, J., Jafferally, D., Thomas, R., Roberts, G., Marcus, C.-A., Roopsind I. and Roberts A. (2022) 'A case study from Guyana of adapting engaged research design to promote 'fairness in knowing'', *Research for All*, **6**(1), 1–17, <https://doi.org/10.14324/RFA.06.1.12>.
- Holliman R. and Warren C. (2017). 'Supporting future scholars of engaged research'. *Research for All*, **1**(1), 168–84, <https://doi.org/10.18546/RFA.01.1.14>.
- Irwin, A. and Michael, M. (2003) *Science, Social Theory and Public Knowledge*. Maidenhead: Open University Press.
- Jensen, E. and Holliman R. (2009) 'Investigating science communication to inform science outreach and public engagement'. In: Holliman, R., et al., (Eds.) *Investigating science communication in the information age: Implications for public engagement and popular media*. Oxford: Oxford University Press, pp. 55–71.

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Miljand, M. (2020) 'Using systematic review methods to evaluate environmental public policy: methodological challenges and potential usefulness', *Environmental Science and Policy*, **105**, 47-55, <https://doi.org/10.1016/j.envsci.2019.12.008>.

NERC (2021) *Advancing equity, diversity and inclusivity in the environmental sciences*. NERC: Swindon, <https://www.ukri.org/publications/advancing-equity-diversity-and-inclusivity-in-the-environmental-sciences>.

Qwynne Lackey N., Tysor D.A, McNay G.D., Joyner L., Baker K.H. and C. Hodge (2021) 'Mental health benefits of nature-based recreation: a systematic review', *Annals of Leisure Research*, **24**(3), 379-93, <https://doi.org/10.1080/11745398.2019.1655459>.

Saraev V., O'Brien L., Valatin G. and Bursnell M. (2021) *Valuing the mental health benefits of woodlands*. Research Report. Forest Research, Edinburgh, <https://www.forestresearch.gov.uk/publications/valuing-the-mental-health-benefits-of-woodlands>.