

# The Pentland Centre for Sustainability in Business

## Annual Report

1 August 2020 – 31 December 2021

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*L-R: Desna Mackenzie (Centre Co-ordinator) and Professor Jan Bebbington (Centre Director)  
Image credit: Paul Turner*

# Introduction



It has been my ambition since the early 1990s to undertake research that addresses sustainable development challenges faced by organisations, drawing from my discipline background in accounting to inform this work. I have had the pleasure of working alongside individual organisations, as well as collaborating with groups of companies, as they seek to make changes on the ground to support (most recently) the United Nations Sustainable Development Goals. I have also worked in partnership with professional accounting bodies as they have supported organisations to provide clear accounts of their activities, their achievements and what they have yet to achieve. I have learned two valuable lessons from these three decades of work: (1) working in partnership with practice leads to stronger research insights and greater effects 'on the ground'; and (2) drawing from more than one academic discipline allows us to better address 'wicked' problems. These two convictions mean that becoming the Director of the Pentland Centre for Sustainability in Business is the greatest pleasure and privilege of my working life. I am grateful to previous leaders of the Pentland Centre for creating a robust basis for me to build on, especially Professor Jeffrey Unerman who was critical to the Pentland Centre's success over a number of years.

The Pentland Centre for Sustainability in Business is a gathering of scholars (most of whom are based

at Lancaster University) who share the Centre's desire to deliver world-class transdisciplinary research and undertake engagement to support and advance the mainstreaming of social and environmental sustainability into purposeful business strategy and performance. We draw from diverse disciplinary backgrounds to realise the ambitions expressed in key global policy commitments such as the Sustainable Development Goals (SDGs) and the Paris Climate Agreement. These agreements signpost the environmental, social and economic outcomes that we support through our work and they express what is at stake in our attempts to change 'business-as-usual'.

This report arises from our duty to be accountable to our various stakeholders as to what the Centre and its members have done in the last year to advance our mission. We will frame our account to you in terms of the challenge (living in the Anthropocene) and how our work creates impact. We hope that this report may also be read by potential future collaborators. If this describes you, then please do get in touch, it would be great to get to know you better and explore how we might productively collaborate.

**Jan Bebbington**

**Director, Pentland Centre for Sustainability in Business**

February 2022

## Remembering Professor Jeffrey Unerman

During the period covered by this report, the Pentland Centre was supported by its Interim Director, Professor Jeffrey Unerman. It was devastating to the Centre when Jeffrey passed away suddenly in November 2020. In recognition of his contribution to practice, policy and the academy, our 2021 Annual Symposium celebrated the deep and longstanding impact of his work. We also took time to remember what a terrific person he was and how much he is missed. Jeffrey ably led the development of the current Pentland Centre strategy and his legacy is reflected in this report.

# Foreword

## from the Chair of the Advisory Board



As the Pentland Group approaches its 100th year it is good to remember that oak trees start as acorns. We are proud to look back on the small contribution we have tried to make to good corporate citizenship over the years. Corporations are legal entities, but whilst not exactly having minds of their own, they are held responsible for the decisions they make and even sometimes have made for them.

Long gone are the times when economists such as Milton Friedman could state that the sole responsibility that corporations have is to their shareholders, for whom they should maximise profits. Today we talk about 'stakeholders' to cover all those affected by acts or omissions of the corporation itself. This would include not only shareholders but also employees, suppliers and their staff, customers and all those included in the supply chain, together with those who might be affected by the corporation's actions.

We have been on this journey for some time: the Pentland Group was one of the first signatories to the United Nations Global Compact, launched in 2000, and also one of the founder members of the Ethical Trading Initiative. As a family-owned

business and a member of the Institute of Family Business we take a long view without having to make frequent short-term trading updates. This long-term approach led us to join with Lancaster University in founding the Pentland Centre for Sustainability in Business. Whilst we are proud of this association, we invite other organisations to make suggestions for improvements in this area.

We are delighted with the progress of the Pentland Centre as laid out in this report and particularly with the way Professor Jan Bebbington has taken over from the very talented late Professor Jeffrey Unerman. Page 7 shows what has been accomplished and how we intend to proceed. The lists of people in Appendix 1 and publications in Appendix 2 speak for themselves.

We believe that 'sustainability' is one of the greatest challenges of our age and that the Pentland Centre will help businesses contribute to a better world not only for themselves but for us all.

**Stephen Rubin**

**Chair of Advisory Board, Pentland Centre for Sustainability in Business**

February 2022

## Framing the challenges

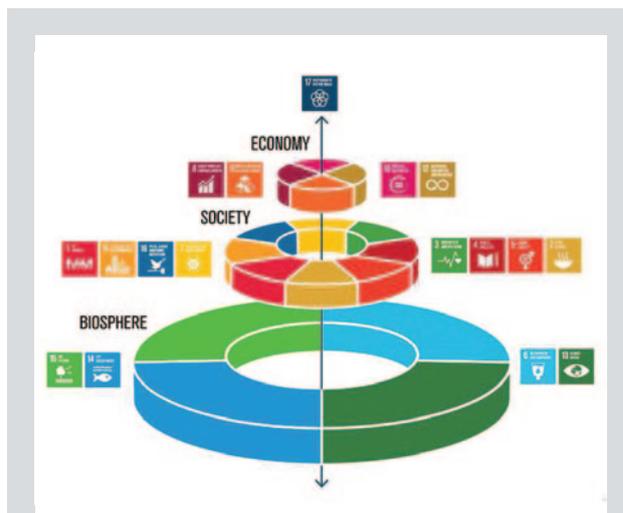
An influential description for our present time is **the Anthropocene**. This term describes a world where human activities drive global environmental changes so significantly that they undermine the functioning of the 'earth system'. This in turn challenges the ability of human populations to meet their needs. We see this in the changes to the global climate system; a global decline in biodiversity and the impact of 'novel material flows' such as concrete and plastic putting pressure on natural systems through both extraction and pollution. These changes have significant social impacts and also affect economic systems, and the intersection of these impacts can be seen in the **Sustainable Development Goals**, reflecting the multi-layered nature of sustainable development dynamics.

Pentland Centre members focus on four broad thematic areas that integrate SDG and climate change concerns:

- Systems perspectives on sustainability in business (see p. 8)
- Information for decision making (see p. 8)
- Business practices and sustainability (see p. 9)
- Social sustainability challenges (see p. 9-10)

In addition to research undertaken by members, this report also highlights links the Pentland Centre has made within Lancaster University, its supportive role within Lancaster University Management School (LUMS) as it addresses Principles of Responsible Management Education (PRME), and educational resources developed during the year. PRME is a United Nations initiative that aims to realise the SDGs through responsible management education, and the Pentland Centre steers the implementation group at LUMS. We were also happy to support the COP26 @ Lancaster University Festival which raised the profile of climate change across the University ahead of the COP26 meeting in Glasgow. Finally, following the launch of the Routledge Handbook of Environmental Accounting, co-edited by our Director, Professor Jan Bebbington, we have a suite of teaching resources for accounting educators hosted on our website.

Collectively, the challenge is that we need to work out a way to live that doesn't cause irreversible damage for future generations of life on Earth: this



*Image credit: Wedding Cake: The Sustainable Development Goals for 2030 can be linked together economically, societally and ecologically. (Illustration: J. Lokrantz/Azote for Stockholm Resilience Centre.)*

To find out more about the Anthropocene and its relevance to the accounting profession, look for the 2021 P.D. Leake Lecture, **Accounting in the Anthropocene**, on the website of the Institute of Chartered Accountants in England and Wales (ICAEW). This professional body promotes, develops and supports chartered accountants and students around the world, and through the thought leadership of Professor Jeffrey Unerman, amongst others, has **embedded sustainability accounting principles** in its own activities.

requires a significant transition and changes to cultural, social and intellectual norms. The activity of the Pentland Centre is key to 'working out' what the changes look like for businesses that are committed to sustainability. Putting value, and our values, at the front of the conversation enables us to engage in a more integrated approach to the way we plan what we do, and assess the success of what we have done. Our decision-making and reporting is based on values of respect, generosity, innovation and reflexivity, understanding the interconnectedness of the elements of our work and how they support business as it seeks to become more sustainable and responsible.

# Our plans – a summary

## What we planned to do in 2021 and how we got on

<b>Recruit new members to the Pentland Centre</b>	37 new members joined the Centre between 1/8/20 to 31/12/21, with membership now standing at around 40 colleagues who are championing sustainability in business
<b>Refresh Pentland Centre website</b>	The website was redeveloped in March 2021. Covid-19 pushed us to make better use of our website and social media to connect with our members and the public: something we will continue to build on
<b>Advisory Board refreshed</b>	The Advisory Board has been refreshed and its first meeting will take place in early 2022
<b>Pentland contributes to Lancaster University activities</b>	Pentland supported PRME in LUMS and the COP26 @ Lancaster University Festival activities
<b>Provide opportunity for colleagues to interact around topics of interest</b>	Three Pentland Centre events were held: the introduction to the new Director and her research; a seminar on Threat, Coping and Vitality (presented by Dr Nadine Andrews and part of the COP26 @ Lancaster University Festival); and our Annual Symposium celebrating the life and work of Professor Jeffrey Unerman
<b>Members' community and capacity building programme</b>	Established a facilitated writing programme and reading group for members

## What we plan to do in 2022

<b>Membership development</b>	We will continue to grow Pentland Centre membership in 2022 with a focus on: a membership route for professional staff members who are motivated by sustainability issues in their working and personal lives; providing PhD students working in sustainability in business a space to interact with each other; and increasing membership from outside the Management School, thereby increasing possibilities for inter-disciplinary interactions
<b>Members' community and capacity building programme</b>	Continue with the writing programme and reading group, as well as adding more opportunities for professional development through targeted research assistance and building capacity around members communicating their work to external audiences
<b>Seminars, workshops and annual symposium</b>	Continue to offer a variety of seminars and workshops that will allow members to interact around topics of common interest. The theme of the 2022 Annual Symposium will be 'taking a long view' and focus on how scholarship in sustainability/responsibility issues has evolved over the last 100 years as well as a practice-based symposium where longstanding businesses will bring insight as to how they manage their longevity and what challenges they face in the future
<b>Impact focused interactions</b>	Over the year, a series of briefing papers and interactions with practice will be undertaken around two themes: <ul style="list-style-type: none"> <li>• Business, nature and biodiversity, and;</li> <li>• Forced labour issues in supply chains.</li> </ul> These interactions will involve Pentland members working in partnership with external organisations to progress understanding of the issues in these areas and to co-develop resources to help
<b>Develop capacity within Lancaster University more broadly</b>	We will continue to work with colleagues across the University to promote sustainability issues, including championing actions emerging from the PRME action plan in LUMS
<b>Communications</b>	As appropriate, we will use our various social media channels to promote the work of the Pentland Centre and to champion sustainability in business

## Our research themes

### Systems perspectives on sustainability in business

Sustainability science is an approach to understanding and advancing sustainable development that starts with a problem (such as climate change) and builds up knowledge of how it can be resolved. Projects usually involve collaborative working with colleagues from across several academic disciplines, as well as those who experience the problems being investigated and who are part of the problem resolution.

Current areas of work cover food systems (with *Dr Lingxuan Liu* and PhD candidate Jing Zhang); ocean stewardship (with *Professor Jan Bebbington* – see highlight box) and waste and the circular economy (with Drs *Alison Stowell*, *Savita Verma* and *Charlotte Hadley*, visiting researcher *Dr Lucy Wishart*, and *PhD candidate Marta Ferri*).

#### Research highlight: Ocean stewardship



Professor Jan Bebbington is part of the science team for the *Seafood Business for Ocean Stewardship (SeaBOS)* initiative. This is

a science-business collaborative project led by the Stockholm Resilience Centre, which seeks to identify and work in partnership with 'keystone actors' in the seafood industry. A keystone actor is an organisation (often transnational businesses) that is both ecologically and economically significant and whose actions will have a disproportionate impact on seafood production and hence on the state of the ocean. The project brings together ten keystone actors in a pre-competitive collaboration to co-create with scientists approaches that will drive ocean stewardship. The project considers interactions with endangered species, illegal fishing, forced labour, climate change mitigation, antibiotic use and plastics in the ocean.

### Information for decision making

Providing information to inform decisions is the central purpose of accounting and finance scholarship. This information might be directed at stakeholders or shareholders, and is generated by organisations themselves. At the same time, information is also gathered and communicated to investors who are seeking to understand the environmental, social and governance (ESG) profiles of firms they invest in. Moreover, financial markets need to incorporate such information into their operation in order to accurately reflect all the salient risks for capital markets.

Pentland Centre members working in this area are:

- *Professor Shantanu Banerjee*
- *Dr Patrick Bigger*
- *Dr Marian Iszatt-White*
- *Professor Katy Mason*
- *Dr Argyro Panaretou*
- *PhD candidate Michael Scotney*
- *Dr Dasha Smirnow*
- *Dr Di Wang*
- *Dr Chelsea Yao*
- *Professor Steve Young*

### Business practices and sustainability

All kinds of business practices contribute to the ability of organisations to pursue sustainability and include, but are not limited to, supply chain management and strategy formulation.

Pentland Centre members working in this area are:

- *Dr Allan Discua Cruz*
- *Professor Magnus George*
- *Dr Katherine Ellsworth-Krebs*
- *Dr Marian Iszatt-White*
- *Professor Linda Hendry*
- *Dr Lingxuan Liu*
- *Professor Katy Mason*
- *Dr Ben Neimark*
- *Dr Savita Verma*
- *Dr Zoe Zhu*

#### Research highlight: Domestic energy and the circular economy



Dr Katherine Ellsworth-Krebs is a sustainability researcher focused on domestic energy and the circular economy and she has been working with Dr Lucy Wishart (another Pentland Centre member) and *Reath*, an Edinburgh-based start-up with a mission to build the digital infrastructure required for businesses to shift to reusable packaging and products. Together they have investigated the barriers to uptake of reusable packaging from a business

perspective and the potential of digital technologies to address these issues. Because packaging taxes are based on weight, businesses investing in reusable packaging are penalised because improving durability often results in heavier containers. Digital trackers, or unique barcodes that track individual containers, enables businesses to calculate packaging lifespans and return rates from customers. These 'digital passports' enable business to determine affordability, managing recall and cleaning, and aid marketing. A reusable container may require many uses for its environmental footprint to compare favourably with single-use alternatives, so accurate accounting for refills is core to life cycle assessments. Currently organisations pay environmental taxes when packaging is released onto the market, but with digital trackers it would be possible to exempt organisations from paying every time their packaging is refilled. In this way, track and trace allows governments to create taxation that incentivises reuse.

### Social sustainability challenges

Social aspects of sustainability are central to the realisation of Sustainable Development Goals, and social justice concerns infuse all aspects of our work. Some of our work focuses centrally on social sustainability issues that arise for business organisations.

Pentland Centre members working in this area are:

- *Dr Nadine Andrews*
- *PhD candidate Ophelia Chidgey*
- *Professor Linda Hendry*
- *PhD candidate Meng Jia*
- *PhD candidate Matt Leahy*
- *Dr Dermot O'Reilly*
- *Professor Valerie Stead*
- *Professor Mark Stevenson*

**Research highlight: Sustainability-oriented supplier development**



Meng Jia's research focuses on the interactions and knowledge exchange across supply chain members within sustainability-oriented supplier development (SSD) initiatives. In particular, she looks at the role of suppliers, especially first-tier suppliers, and non-traditional supply chain actors in managing sustainability challenges. Her research aims to reveal the processes and mechanisms of whether and how SSD initiatives can cascade smoothly to suppliers of multi-tiers. The context of her research is the occupational health and safety issues in supplier factories based in China supplying to Western fast fashion brands.

**Research highlight: Leadership, education and ethical understandings**



Dr Dermot O'Reilly has worked on a number of different research strands during the reporting period. He has continued his work on the modes, mechanisms, and relationships of social and organisational domination, developing a theoretical framework for understanding domination, and developing an ethical

understanding of the moral wrong of domination. Collaborating with colleagues, he has jointly developed an overview of leadership in 'alternative' modes of organisation (for example, co-operatives, mutual aid groups, or utopian communes) in order to both develop knowledge about the particularities of leadership in these settings, and to deepen understanding of leadership processes more generally. He has also worked with colleagues to look at how different management educators manifest and describe responsible business education. This has resulted in a conceptual framework of the dynamics of the discourse around responsibility and the processes of 'responsibilisation'. This framework helps highlight the dialectical element of responsibilisation in terms of the reproduction, transformation, and abnegation of responsibilities in management and management pedagogy.

# Highlights

## 'Keystone actors' and hidden connections: a sustainability science approach

5 May 2021

In this seminar, incoming Pentland Centre Director Professor Jan Bebbington, showcased her collaborative work on keystone actors and organisational science. The talk explored the concepts of the Anthropocene, tele-coupling (hidden causal links that pop up in various places in time and space) and stewardship; and considered how the practice of accounting creates shared spaces for organisations like businesses, governments, charities, educators, and others to

communicate and identify where action on sustainability issues is needed. The concept of 'keystone actors' has emerged from Jan's collaborative work with scientists at Stockholm Resilience Centre, on the SeaBOS project (see highlight box on p. 8 for further information). Although SeaBOS looks primarily at the seafood industry, the concept can be extended to any industry sector. A recording of the seminar can be found *on the Pentland Centre website*.

## The Routledge Handbook of Environmental Accounting Launch

6 Sep 2021

This Handbook is a landmark publication in environmental and sustainability accounting scholarship and Centre Director Jan Bebbington is one of a team of four co-editors who have brought it to fruition. The Handbook was launched with a half-day online event, hosted by Dr Matt Sorola, of the Toulouse Business School, and structured around three major themes, reflecting the content of the book:

- 'What were we thinking'? A discussion with the co-editors
- Ecological perspectives on environmental accounting, with a focus on water, biodiversity & carbon

- Global perspectives on environmental accounting

Each session included a pre-recorded video of a conversation between editors and key contributors, and was then followed by a Q&A session. The Pentland Centre resourced simultaneous translation in French, Spanish, Portuguese, Mandarin and Japanese to ensure that the event was globally accessible, and the session videos are available as teaching resources on the *Education resources for environmental accounting* page of our website.

## COP26 @ Lancaster University Festival

19-27 Oct 2021

To coincide with, and complement, the 26th UN Climate Change Conference of the Parties (COP) in Glasgow in November 2021, Lancaster University created the COP26 @ Lancaster University Festival. Centre Director Professor Jan Bebbington worked with a team of key leaders at Lancaster University, co-ordinated by Professor Simon Guy, the Pro-Vice-Chancellor Global (Digital, International, Sustainability and Development), to curate events by Lancaster University staff and students relating to climate change. This provided an excellent opportunity to showcase the breadth of climate change and sustainability-related work going on across the institution, and develop new connections.

The Festival was mostly online due to Covid-19 restrictions, and included discussions on disrupting the 'business as usual' mindset, urban farming and citizen-informed policy. In-person events included a visit from the PlanetMark Zero Carbon Battle Bus and Michael Pinsky's 'Pod of the Future'. The Pentland Centre contributed some funds to enable events with our main contribution being Jan's time and expertise, including her involvement in the opening event, a public lecture on *Lancaster University and the Climate Emergency*. We also engaged an intern, Laura Brown, to write a *series of blogs* about events at the Festival.

### **Threat, coping and vitality - exploring the implications of threat responses for wellbeing and decision making in organisational contexts**

**22 Oct 2021**

Dr Nadine Andrews is a Visiting Researcher at the Pentland Centre, with a research focus on the psychology of environmental behaviour. As part of the COP26 @ Lancaster University Festival she presented her work on how people feel they have to suppress emotions related to climate change, and particularly of 'deep green' identities, in the workplace, and how this affects them. Nadine's research showed that, for professionals concerned with sustainability, when their values don't match

the views held by others in their workplace, this can take its toll on them. Nadine also considered the coping strategies that people use to deal with these internal conflicts, including harmful ones (e.g. drinking too much alcohol) and more beneficial ones (e.g. physical exercise). A recording of the seminar can be seen on the *Pentland Speaker Series* page of our website.

### **Pentland Centre Annual Symposium: a celebration of Jeffrey Unerman**

**3 Nov 2021**

This year the Pentland Centre's Annual Symposium celebrated the late Professor Jeffrey Unerman's contribution to sustainability accounting, through his academic work and membership of professional accounting bodies. This was a technically and emotionally complex event, including moving testimonials to Jeffrey's kindness and ability to nurture new talent, an assessment of his contribution to the field of sustainability accounting, and his impact on professional bodies such as the Institute for Chartered Accountants in England and Wales and the British Accounting and Finance Association. Participants included staff and students at Lancaster University, members of

professional bodies, as well as friends and members of Jeffrey's family. Support from LUMS Marketing & Communications and Reception colleagues, as well as the University catering team, meant that we were able to provide a warm welcome for in-person visitors, and huge thanks go to Dr Alison Stowell for welcoming remote participants and ensuring they were included in the event. All the presentations on the day were recorded, alongside 'snippets' - short interviews with some of Jeffrey's key colleagues - and these are gradually being uploaded to the *Annual Symposium 2021* page on our website.



*Attendees at the Pentland Centre Annual Symposium 2021*

*Image credit: Paul Turner*

## PRME

LUMS signed up to PRME in 2019, a move spearheaded by Professor Jeffrey Unerman (and another example of his legacy for the Management School and the Pentland Centre). In 2021, the Centre worked with a PRME implementation group, alongside members of the LUMS Accreditation and

Marketing Teams to undertake the background work to create LUMS's inaugural **Statement of Progress** report along with an action plan for the next two years. The Pentland Centre will support the implementation of the action plan, which was submitted in Jan 2022.

## Interns

Building on past experience with 'Pentland Centre Champions', we have moved to paid student internships who support a variety of Centre activities. Our internships create value by enabling students to earn money for the work they do for us, which goes towards supporting them during their time in higher education, as well as offering them experiences that will be useful in their future working life. The Centre gains an input of new ideas

and fresh perspectives, and it connects us with different communities within the University. During the reporting period, we engaged one intern specifically to support the Centre's contribution to the COP26 @ Lancaster University Festival, and a further three interns to work with us on a variety of activities. You can find our interns' work on the **blogs** on our website, and on our **twitter** feed.

## Capacity and community building activities

Our team members come from a variety of departments and disciplines across Lancaster University, as well as drawing in staff at external organisations, and one of the key contributions of the Centre is to provide opportunities for members to learn from each other, work together on projects of mutual interest, and inspire each other. This is the focus of our capacity and community building activities.

In response to members' needs, the Centre has funded WriteClub Coaching's Will Medd and Laura Premack to develop a programme of workshops and one-to-one writing support for members. The programme started with a full-day writing workshop in September 2021, and there followed a series of group coaching sessions that made time to work on writing projects, and one-to-one coaching sessions, which will continue into 2022. As well as supporting and developing members' writing, the programme has also provided an opportunity for

newer members of the team to make contact with one another, which has been particularly valuable during the Covid-19 pandemic.

In autumn 2021 the Centre established a reading group, led by Dr Dermot O'Reilly and supported by Meng Jia. The aim of this is to provide a space for Centre members to broaden their reading, and develop and share their thinking about research related to sustainability in business, in a collegial, stimulating, and interdisciplinary manner.

Opportunities to socialise have been thin on the ground over the past two years, but the Centre has tried to make this possible when Covid-19 regulations have allowed, and it has been a welcome relief to be able to meet with people in person rather than view them on a screen. We have picnicked in a local park, celebrated midwinter in a community centre, and held a series of in-person coffee meetings on Lancaster University campus.

## Appendix 1 - People

Jan Bebbington (from Feb 2021)	Centre Director, Rubin Chair of Sustainability in Business
Jeffrey Unerman (to Nov 2020)	Interim Centre Director
Desna Mackenzie	Centre Co-ordinator
Jimena Alvarez (from Jul 2021)	PhD Candidate, LUMS
Mustafa Ali (to Sep 2021)	Research Associate, Pentland Centre
Kostas Amiridis (from Jun 2021)	Senior Lecturer, Organisation, Work and Technology (OWT), LUMS
Nadine Andrews	Visiting Researcher, Pentland Centre
Shantanu Banerjee (from Apr 2021)	Professor of Finance, Accounting & Finance, LUMS
Patrick Bigger	Honorary Researcher, Lancaster Environment Centre (LEC), Faculty of Science and Technology (FST)
Andrea Brown (to Jul 2021)	Honorary Teaching Fellow, Pentland Centre
Laura Brown (Oct-Dec 2021)	Student Intern (COP26 Festival), Pentland Centre
Lucia Cervi (Jun 2021 - Dec 2021)	Senior Teaching Fellow in Management Ethics & Sustainability, OWT, LUMS
Mohammed Cheded (from Aug 2021)	International Senior Teaching Associate in Management, OWT, LUMS
Ophelia Chidgey (from Oct 2020)	PhD Candidate, Management Science, LUMS
Allan Discua Cruz	Senior Lecturer, Entrepreneurship and Strategy (ENST), LUMS
Katherine Ellsworth-Krebs (from Jun 2021)	Senior Research Associate – Sustainability, Faculty of Arts and Social Sciences
Marta Ferri	PhD Candidate, OWT, LUMS
Yuka Fujimoto (from Aug 2021)	Professor / Associate Dean, Sunway University
Magnus George	Professor in Entrepreneurship, ENST, LUMS
Charlotte Hadley (from Jun 2021)	Research Associate, Marketing, LUMS
Noor Hashim (from Jul 2021)	Lecturer, Accounting & Finance, LUMS
Matt Healey (from Nov 2021)	PhD Candidate, ENST, LUMS
Linda Hendry (from Apr 2021)	Professor of Operations Management, Management Science, LUMS
Anthony Hesketh (from Jul 2021)	Senior Lecturer, OWT, LUMS
Stephen Homer (from Oct 2021)	Lecturer, Sunway University
Rodney Irwin (to Jul 2021)	Honorary Teaching Fellow, Pentland Centre
Marian Iszatt-White (from May 2021)	Senior Lecturer, Entrepreneurship And Strategy, LUMS
Meng Jia (from May 2021)	PhD Candidate, Management Science, LUMS
Sarah Jones (from Nov 2021)	Student Intern, Pentland Centre
Joanne Larty (from Nov 2021)	Senior Lecturer, Entrepreneurship And Strategy, LUMS
Lingxuan Liu	Senior Lecturer in Sustainability, LUMS
Trang Kowalkowska (from Nov 2021)	Student Intern
Katy Mason (from Jun 2021)	Professor Markets, Marketing and Management, ENST, LUMS

Ben Neimark	Senior Lecturer, LEC, FST
Dermot O'Reilly (from Jun 2021)	Senior Lecturer in Management Learning and Leadership, OWT, LUMS
Argyro Panaretou (from Nov 2021)	Senior Lecturer, Accounting & Finance, LUMS
Duncan Pollard (from Dec 2021)	Honorary Professor, Pentland Centre
Caitlin Rees (from Nov 2021)	Student Intern, Pentland Centre
Matteo Saltalippi (from Sep 2021)	Research Associate, Marketing, OWT, LUMS
Michael Scotney (from Apr 2021)	PhD Candidate, Accounting & Finance, LUMS
Mark Shackleton (from Apr 2021)	Professor, Accounting & Finance, LUMS
Dasha Smirnow	Lecturer in Accounting, Accounting & Finance, LUMS
Valerie Stead (from Jun 2021)	Professor, ENST, LUMS
Mark Stevenson (from Apr 2021)	Professor of Operations Management, Management Science, LUMS
Alison Stowell	Senior Lecturer, OWT, LUMS
Savita Verma (from May 2021)	Research Associate, Management Science, LUMS
Di Wang	Lecturer in Accounting, Accounting & Finance, LUMS
Peter Watt (from Sep 2021)	Lecturer, Lancaster University Leipzig
Lucy Wishart (from May 2021)	Visiting Researcher, Pentland Centre
Chelsea Yao (from Apr 2021)	Senior Lecturer, Accounting & Finance, LUMS
Paul Young	Senior Lecturer, LEC, FST
Steve Young (from May 2021)	Professor, Accounting & Finance, LUMS
Jing Zhang	PhD Candidate, LEC, FST
Zoe Zhu (from Aug 2021)	International Teaching Fellow in Management, OWT, LUMS

### Advisory Board Members

Stephen Rubin	Chair of the Pentland Group plc
Sara Brennan	Positive Business Director, Pentland Brands
Edwin Charnaud	EMEA Chairman for Aon M&A and Transaction Solutions
Linden Edgell	Global Sustainability Director, ERM
Chris Loughlin	Member of LUMS Dean's Council
Tom Trezise	Chairman, Patient Privacy Rights

## Appendix 2 - Publications

All the members of the Pentland Centre have 'academic homes' either in specific departments at Lancaster University, at other higher education institutions or with external organisations. The publications listed below are an indication of how their work aligns with our aims. It is not that we are claiming any credit for these publications. Rather, this represents the insights that Pentland Centre members have brought to the business/sustainability literature.

**Ali, M., Liu, L.,** Geng, Y., Khokhar, S. / *Emergy based sustainability evaluation of a hydroelectric dam proposal in South Asia*. Journal of Cleaner Production. 2020, Vol. 264.

**Ali, M., Liu, L., Zhang, J.** / *Exploring spatio-temporal variations in environmental impacts from eating out in the United Kingdom*. Science of the Total Environment. 202, Vol. 801.

Antheaume, N., **Bebbington, J.** / *Externalities and Decision Making*. Routledge Handbook on Environmental Accounting. (eds.

**Bebbington, J.,** Larrinaga, C., O'Dwyer, B., Thomson, I.). Abingdon: Routledge, 2021. pp. 224-235 (Routledge International Handbooks)

Atkins, E., Follis, L., **Neimark, B.,** Thomas, V. / *Uneven Development, Crypto-regionalism, and the (Un-)tethering of Nature in Quebec*. Geoforum. 2021, Vol. 122. pp. 63-73.

Bassett, R., **Young, P.J.,** Blair, G., Cai, X., Chapman, L. / *Urbanisation's contribution to climate warming in Great Britain*. Environmental Research Letters. 2020, Vol. 15, No. 11.

Bassett, R., **Young, P.J.,** Blair, G., Samreen, F., Simm, W. / *The megacity Lagos and three decades of urban heat island growth*. Journal of Applied Meteorology and Climatology. 2020, Vol. 59, No. 12. pp. 2041-2055.

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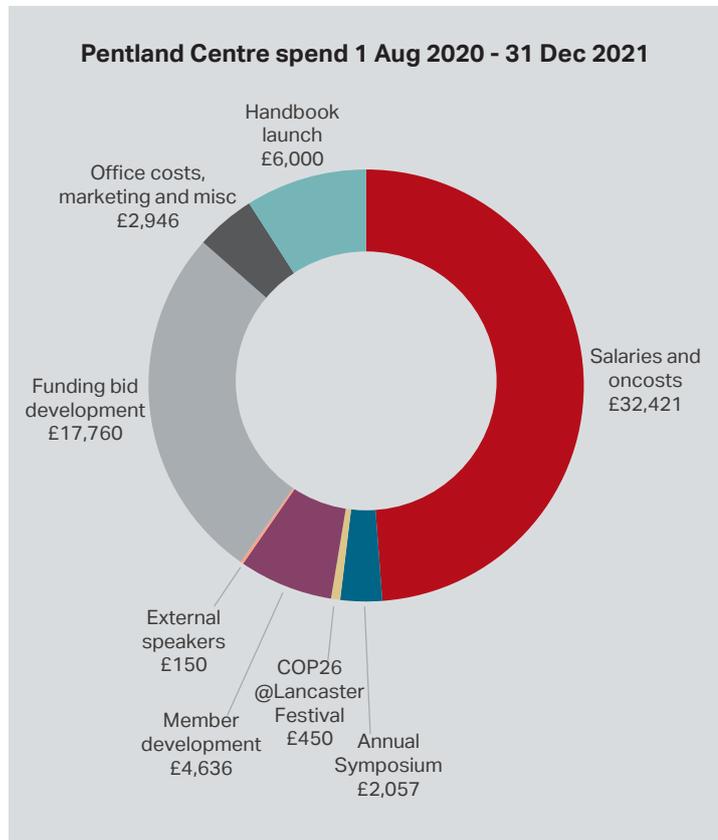
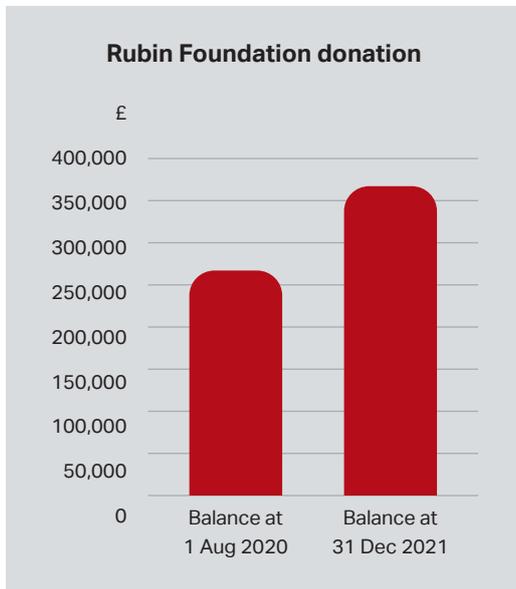
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# Appendix 3 – Financial report

The Pentland Centre is funded via a philanthropic donation from the Rubin Foundation Charitable Trust. The core grant was £100K per annum (2015-2020), rising to £125K per annum (from 2021 for five years).

Between 2015-2020 spending was below target, resulting in a build-up in funds. This is due in large part to the lack of spending activity during the pandemic, with activities going online between Mar 2020 and Sep 2021. From 2022 onwards, we anticipate that spending will increase to more 'normal' levels and the unspent funds from prior years increases our capacity to support members currently.

In this reporting period £66,420 was spent, with the majority of this being salaries and oncosts for the Centre Co-ordinator and our interns. Other key items of spending were investment in support for a doctoral network funding bid, member development activities (including the Writing Programme), the Annual Symposium, and a contribution to various costs associated with the COP26 @ Lancaster Festival in October 2021. All spend was from the core donation, apart from interpretation costs for the Routledge Handbook of Environmental Accounting launch, which came from Lancaster University match funding.







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