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| Institution: Manchester Metropolitan University |
| Unit of Assessment: C23 Education |
| <p>1. Unit context and structure, research and impact strategy</p> <p>Education at Manchester Metropolitan has an outstanding reputation for research excellence, developed and sustained over a significant period. The UoA was rated 'internationally excellent' in REF 2014 and RAE 2008, with significant elements of our research being identified as world-leading. 67% of our research was rated 3* & 4* in 2014, improving from 55% in 2008. 100% of our Impact Case Studies were rated as 3* & 4* in 2014. We have an exceptional portfolio of research grants and publications, and provide leadership through national and international conferences, seminars and workshops. We are members of the ESRC-funded White Rose Doctoral Training Partnership (WRDTP) with Sheffield, Leeds, York, Hull, Bradford and Sheffield Hallam, securing several excellent PhD awards each year. We also hold an ESRC-funded post-doctoral research fellowship through WRDTP (Rauschenberger). We lead the university's ESRC-recognised research training programme, MA Social Research, based in the Faculty of Education, which forms the '1' of '1+3' doctoral awards.</p> <p>Research excellence has been sustained and further developed since 2014, with a significantly higher return being made at a higher level of quality (n=49=46.3fte compared to 22.5fte in 2014). Research income has more than doubled, and grants won exceed £4.1M from more than 80 awards, including AHRC, ESRC, EEF, EU, GCRF, Australian Research Council, Norwegian Research Council, Swedish Research Council, and Social Science & Humanities Research Council of Canada. Awards have also been won from government departments, agencies, local authorities and leading charities including the British Academy, Leverhulme, Nuffield and Wellcome. 97 books, 629 journal articles, 341 book chapters and 72 research reports have been produced in the period.</p> <p>Educational research is based in the Education and Social Research Institute (ESRI) in the Faculty of Education. ESRI is a designated University Centre for Research and Knowledge Exchange (UCRKE, REF 5a and Code of Practice). Head of ESRI is Professor Kate Pahl who is also Faculty Head of Research and Knowledge Exchange. She succeeded Professor Harry Torrance in 2018 as part of our succession planning strategy (see People, below).</p> <p>The Faculty of Education combines a world-leading research institute with a major teacher education establishment. The Faculty is one of the largest teacher education providers in the UK (3000+ students, graduating c.1000 newly-qualified teachers into the workforce annually). It is one of the few genuinely 'full service' Education faculties in the UK combining high quality research with a full range of large scale u/g and p/g primary and secondary teacher training; education studies programmes including early years, youth work and BPS accredited educational psychology; Masters, PhD and EdD. The strategy is to sustain research excellence while developing research capacity within a professional Faculty responding to other policy and accountability pressures. ESRI includes a mix of experienced and early career researchers (ECRs), maintains a high investment in staff development, and has extensive links with practitioners, funders and policy-makers. Returned members of staff are Core members of ESRI (n=49). They lead and work with a broader group of Associate members (n=21) drawn from across the Faculty, including ECRs and post-docs, who are being supported to become full members (Section 2, People, and Code of Practice). Research students are also members of research groups. Teaching in the Faculty is grounded in research and the two Schools in the Faculty, the School of Teacher Education and Professional Development (STEPD) and the</p> |

School of Childhood, Youth and Education Studies (CYES), work closely with ESRI, with full membership drawn from both schools.

ESRI is distinguished by a capacity to combine theoretical and methodological advance with the conduct of excellent empirical research. Our reputation is based on the intellectual ambition of our theoretical work coupled with a constant iteration of theory and empirical investigation - the development and application of theory to research and practice, and the testing of theory by empirical research. Our research is multidisciplinary and intentionally diverse in terms of focus and methodology. We support a thriving and inclusive research culture and our work strongly engages with stakeholders, nationally and internationally. Our partnerships are extensive and multifaceted, with much of our research co-produced with partners, as is our impact strategy, exemplified in our impact case studies.

ESRI works with an Advisory Board which includes national and international scholars along with key policy and funding partners. The board meets once a year (virtually in 2020) to receive reports and act as a 'critical friend' with respect to horizon scanning and the quality and utility of our research. Current membership comprises:

Professor Becky Francis, Head of the Education Endowment Foundation

Professor Leon Feinstein, Rees Centre, University of Oxford

Professor Merrilyn Goos, University of Limerick

Rod Kippen, Creative Producer, 42nd Street Youth Mental Health Charity

Professor Elina Lehtomäki, University of Oulu

Professor Hillevi Lenz Taguchi, University of Stockholm

Professor Lisa Mazzei, University of Oregon

Julie McCarthy, Greater Manchester Combined Authority

Andrew Mowlah, Director of Research, Arts Council

Professor Julianne Moss, Deakin University

Dr Lisa-Maria Müller, Research Manager, Chartered College of Teaching

Professor Susan Robertson, University of Cambridge

Dr Cilla Ross, Vice-Principal, Projects and Research, Co-operative College

Professor Carol Taylor, University of Bath

Chris Tomlinson, CEO, Co-op Academies Trust

Professor Deborah Youdell, University of Birmingham

Research Expertise

Our research groups have expanded from five to eight in period, reflecting continued growth, new recruitment and development of staff research interests. Our strategy is to sustain and further develop existing strengths while anticipating future research agenda and engaging with new ideas and opportunities. To be established, each group must have a critical mass of members and hold a portfolio of world-leading outputs and external research grants. Each group is led by a Professor or Reader, includes ECRs and PGRs, as well as experienced researchers, and meets regularly to support research activity, draft proposals and plan events. Staff are normally core members of one group but can affiliate with others; hence, groups do not work in isolation but constantly interact and cross-fertilise (e.g. Children and Childhood with Literacy and Language; Maths with Digital Pedagogies). The activities of the explicitly cross-institute group, Theory and Methodology, underpins much of the work of the others.

1. Children and Childhood (led by Holmes)

<https://www.mmu.ac.uk/esri/our-expertise/children-childhood/>

Barron, Flewitt, Fox, Gallagher, Garratt, Hackett, Holmes, MacLure, MacRae, Press and Trafi-Prats with five associates and seven PGRs. The group's sustained programme of research challenges deficit models of young children's capacities and needs, and provides reconceptualised and robust strategies and resources for multi-sensory and culturally-appropriate practice. Funders include AHRC, ESRC, the Australian Research Council and significant charities. Partners and collaborators include Manchester Art Gallery; Curious Minds; Martenscroft Nursery School and Children's Centre, Manchester Museum and Z-arts. We operate a 'researcher-in-residence' model at Martenscroft. Our research has influenced policy, secondary legislation, workforce development, and practices in nurseries, schools, museums and art galleries, reported in the 'Birth to Three' impact case study.

2. Youth and Community (led by Ivinson and Fox)

<https://www.mmu.ac.uk/esri/our-expertise/youth-and-community/>

Batsleer, Bright, Corcoran, Duggan, Fox, Gallagher, Garratt, Hall, Ingram, Ivinson, James, McDonnell, McNicol, Menendez, Pahl, Pais, Pearce, Rowley and Underhill, with two associates and eight PGRs. Research focuses on community forms of knowledge, poverty and education, and empowering youth engagement. The group investigates fundamental processes by which knowledge and practice are produced and acquired through families, communities and non-formal education. Funders include ESRC, AHRC, EU, the Wellcome Trust, the British Academy and Arts Council England. The group has built sustainable networks between the Faculty and a wide range of community partners including the Co-operative College and Co-op Foundation; Company Chameleon (dance company); 42nd Street (youth charity specialising in mental health); the Proud Trust (LGBT charity); The Loneliness Connects Us network; and the Louise Da-Cocodia Education Trust's Supplementary School. The group acts as an anchor organisation for communities in the city and we host an annual Community Learning Festival. Impact is reported in the 'Voices From the Margins' impact case study.

3. Teacher Education and Leadership (led by Hulme)

<https://www.mmu.ac.uk/esri/our-expertise/teacher-education-leadership-curriculum-and-inclusion/>

Ainsworth, Bell, Brown, Dann, Corcoran, Hammersley-Fletcher, Hanley, Harrison, Hulme, Lewin, Pashby, Rauschenberger, Rost, Rowley, Solomon, Thiel and Torrance, with six associates and six PGRs. The group focuses on policy and practice in the field of professional learning, educational leadership and inclusive education. Research encompasses initial teacher education, the early career phase and career-long professional learning. We maintain active collaborations with schools, colleges, local authorities, Trusts and Academy chains. We have worked with the General Teaching Councils of Ireland, Northern Ireland and Scotland to investigate the development needs of new teachers, and with the Education Achievement Service in Wales to revise induction support for new teachers. Research funded by the National Council for Special Education in Ireland (NCSE) has had a direct impact on ITT policy development and this research is included in the Empowering Teachers impact case study.

4. Mathematics Education (led by de Freitas and Nemirovsky)

<https://www.mmu.ac.uk/esri/our-expertise/mathematics-education/>

Brown, de Freitas, Hough, Nemirovsky, Pais and Solomon with two associates and eight PGRs. Members are world leaders in research on mathematics teaching and learning in both formal and informal settings. The group focuses on design research in the mathematics curriculum; mathematics teacher identity and change; the nature of mathematics learning environments and technologies; inclusion and exclusion in mathematics education; gender, diversity and the place of mathematics in the social world; and the philosophy and history of mathematics. Visiting

scholars are regularly hosted to lead small group sessions and workshops with ECRs and PGRs. Funders include ESRC, The Royal Society, EEF, National Science Foundation (USA) and The Norwegian Research Council. Impact is reported in the 'Making Sense of Mathematics' case study.

5. Literacy and Language (led by Pahl)

<https://www.mmu.ac.uk/esri/our-expertise/literacy-and-language/>

Ainsworth, Bell, Flewitt, Hackett, Hall, Hanley, Lui, MacLure, MacRae, James and Pahl. The group developed from key new appointments in the field (Flewitt and Pahl) and includes ten associates and doctoral students. The group investigates literacy in homes, communities and education sectors; the relationship between literacy and place; reconceptualising language and literacy development; studying multilingual literacies; and investigating language and literacy curriculum and policy. The group hosted the British Association of Applied Linguistics (BAAL) annual conference, in September 2019. Funders include AHRC, ESRC and the British Academy. Co-production is an integral part of our methodology, e.g. Pahl's AHRC-funded project 'Taking Yourself Seriously'. Hackett is collaborating with Pool (artist and doctoral student) and local children to devise and install an exhibition in Clifton Park Museum (South Yorkshire) as part of her British Academy three-year research fellowship [The Emergence of Literacy in Very Young Children](#).

6. Digital and Innovative Pedagogies (led by Lewin and Solomon)

<https://www.mmu.ac.uk/esri/our-expertise/science-technology-and-learning/>

de Freitas, Flewitt, Hough, Lewin, Liu, McNicol, Nemirovsky and Solomon with four associates and 16 PGRs. The group researches understanding and developing innovative and critical pedagogies, and how technology can support teaching, learning and assessment. The research explores pedagogic innovation, particularly in computing, mathematics, science and through digital technologies (MOOCs, AI, game-based learning). Funders include ESRC, EU, EEF and Wellcome. Digital pedagogy has become increasingly important as a result of COVID-19, with Lewin presenting at the Westminster Education Forum 'The future for education technology in England' June 2020, and the Education Policy Institute and Apple virtual roundtable in July 2020. EEF's guidance report for teachers deriving from Lewin's research has been disseminated widely both in the UK and globally. Our research has also informed the development of educational technology products for schools and HE through KTPs with SMEs, such as CyberCoach.

7. Education and Global Futures (led by Pashby and Sellar)

<https://www.mmu.ac.uk/esri/our-expertise/education-and-global-futures/>

Corcoran, Curley, Dennis, Hammersley-Fletcher, Ingram, McDonnell, Menendez, Pashby, Rauschenberger, Sant, Sellar, Thiel and Underhill with two associates and 12 PGRs. Pashby and Sellar are new appointments from Canada and Australia, adding critical global policy research to the ESRI portfolio and bringing together existing staff policy interests. Members have expertise in education systems in Africa, Australia, Europe, and North, Central and South America. Funders include ESRC, AHRC, Australian Research Council, Council of Europe, Department of Canadian Heritage, Swedish Research Council. Consultancies include the Alberta Teachers Association, Elections Canada, and the New South Wales Teachers Federation. Members work with international organisations, professional organisations, governments, non-governmental organisations, educational leaders and teachers. The research has impact on international education bodies (e.g. UNESCO, Education International, International Baccalaureate) and professional organisations (e.g. teacher unions).

8. Theory and Methodology (led by MacLure)

<https://www.mmu.ac.uk/esri/our-expertise/theory-and-methodology/>

Ainsworth, Brown, Carlin, Curley, De Freitas, Dennis, Duggan, Gallagher, Hackett, Harrison, Holmes, Ingram, Iverson, Lewin, MacLure, MacRae, Nemirovsky, Pahl, Pais, Pearce, Rousell, Sellar, Torrance and Trafi-Prats, with seven associates and PGRs. A key element of ESRI's long-standing reputation is our world-leading contribution to theory and methodology in educational and social research. The group's research was highlighted in REF 2014 panel feedback as underpinning "a significant number of world-leading and internationally excellent outputs". Each member belongs to at least one other research group, ensuring that theory both informs and is anchored in our empirical projects, publications and PGR programmes. Originally focussing on developments in, and critiques of, qualitative research, the group now encompasses interests in qualitative and quantitative research, exploring the links and boundaries across the human and biological sciences. Specialisms include new materialism, post-humanism, arts-informed methods, digital cultures, accelerationism, cognitive psychology, co-production, post-structuralism, evaluation including Randomised Controlled Trials, decolonizing methodologies and sensory ethnography.

Located within Theory and Methodology is **The Manifold Laboratory for Research on Learning and Behaviour** (formerly the Biosocial Research Lab) led by de Freitas and MacLure. <https://www.biosocialresearchlab.com/> This initiative draws on core members across research groups and seeks to explore the links and congruences across social and biological approaches to research. The Lab has a strong international research network, focusing on four key areas of research: Sense and sensation (affective, sensory and aesthetic dimensions of learning), Ecologies (more-than-human relationality and learning environments), Digital Life (datafication through biosensors and mixed reality), and Dis/ability (neurodiversity and body studies). The Lab has been recognised as undertaking world-leading research by winning an ESRC 'Transformative Methods Call' award: [Mapping spatial practices and social distancing in smart schools](#) (de Freitas).

Research aims and objectives

ESRI is committed to producing the highest quality, theoretically-informed empirical research and impact, coupled with advancing theory and methodology in social research. Our aims are:

- to lead debate, nationally and internationally, on the nature and future of education and educational research;
- to advance the development of theory and methodology in social research;
- to promote research-based understandings of policy and practice in education and the professions;
- to support practitioners and professionals in researching their own practice and contexts of work;
- to work closely with stakeholders and the users of research at all stages of the research process;
- to sustain and further develop a vital and inclusive research culture;
- to provide first-class research training, support and career development for new and developing researchers.

These aims are pursued through:

- investment of QR income via the allocation of research time-on-timetable: members submit annual research plans and bid for time to complete them including pursuing

fieldwork and producing outputs; these plans are evaluated by the Head of ESRI supported by Professors, with time allocated and mentors appointed to support successful outcomes (see 'People' below);

- a research group structure, which draws together and supports individual members' particular research interests and activities including writing for publication and writing proposals (outlined above);
- regularly bidding for, and winning, external research funding to undertake particular projects, ranging from 'blue skies' research funded by research councils and major charities, to focussed evaluations sponsored by local authorities, government departments and other agencies (see 'Income' below);
- mentoring of staff by Professors and Readers to support bidding, publication and career development (see 'People' below).

Our objectives in REF 2014 were to:

- further develop research culture, activity and volume across the Faculty;
- grow and diversify research income including PGR numbers and income;
- further develop international networks and international recruitment;
- maintain a high quality, long-term, sustainable centre of research excellence in the context of mainstream teacher education.

These objectives have been fully met and indeed exceeded with:

- numbers of staff returned being doubled;
- research income being more than doubled;
- securing ESRC DTP membership, with PGR awards increased by 70%;
- extensive recruitment of international staff and new professorial appointments (11 new professors appointed in the period);
- establishment of an exceptionally successful Teacher Education research group including a new professorial appointment (Hulme) to lead the group.

Strategy for the next five years

We will sustain our commitment to theoretical and methodological innovation, working with partners and stakeholders to co-produce vital knowledge to both inform and challenge policy and practice. We will continue to expand our methodological and interdisciplinary expertise moving beyond the qualitative/quantitative binary. We will pursue additional 'grand challenge' partnerships and respond to the challenge of post-COVID recovery. In particular we will focus on key challenges including equality and diversity, sustainable development, and the role of artificial intelligence in policy, learning and institutional management.

Specifically, we will:

- pursue larger and more collaborative research bidding and awards building on significant success to date (see Income, below);
- sustain collaborative links and seek new partners to grow community involvement and impact;
- further develop our international and interdisciplinary networks;
- increase the number and diversity of research active staff through succession planning and pro-active recruitment;
- increase the number and diversity of PGRs through further development of WRDTP studentships and international PGRs through our international networks.

The University is currently refreshing its ten-year plan (2020-2030) with a specific focus on post-COVID recovery likely to bring additional investments in Education and Health. Thus, the Faculty is already planning for post-REF including new appointments in key areas.

Facilitating Impact

Our approach to impact both grows out of, and feeds into, our theoretical and methodological ambitions. We engage with policymakers and stakeholders to improve the validity, integrity and utility of research, while also publishing methodologically on these matters to inform and challenge scientific debate. We design and conduct excellent research with collaborators in research-based practice locally, nationally and internationally, while also using the activities and experience to test and develop theory, and lead methodological research. Winning ESRC Collaborative studentships with partners is a significant element of our strategy. We have long-standing partnerships with key stakeholders including:

- schools and nurseries e.g. Martenscroft 'researcher in residence' project, Holmes and MacRae; Hammersley-Fletcher with the Griffin Schools Trust and Empower Teaching Schools Alliance;
- museums and art galleries e.g. WRDTP ESRC collaborative studentships with 'Curious Minds' and Manchester Art Gallery (MAG) including a collaboration to develop a new Family Gallery Space at MAG (Holmes, MacRae and Hackett); and the Early Years Learning project at the Science Museum, London (Flewitt);
- The Manifold Lab works with arts collectives, community organisations, museums, galleries and schools. It has organised exhibitions in collaboration with young people, including *Remixing Thick Time* at the Whitworth Gallery, Manchester (May 2019) and *Inheriting the Anthropocene* at Manchester Museum, (July 2019; see Rousell, MacLure *et. al.* 2020);
- the Co-op Foundation (e.g. [Loneliness project](#), Batsleer & Duggan);
- Greater Manchester Combined Authority (GMCA) School Readiness and 'Pathways to Talking' programme (James, including another WRDTP Collaborative studentship with 'Home Start' in Oldham, Stockport and Thameside);
- the Proud Trust (Ainsworth and Fox WRDTP ESRC collaborative studentship investigating bullying of LGBT+ students in schools);
- teacher unions (e.g. Alberta Teachers Association and New South Wales Teachers Federation, Sellar);
- European citizenship education networks (e.g. Bridge 47, Pashby, Partispace, Batsleer and Rowley);
- The Community Learning Festival (Batsleer and Ivanson).

We have secured 'follow-on' funding from sponsors, such as AHRC to develop impact strategies and activities (e.g. Bright's work with 'Songlines' and 'Ghostlabs' reported in the 'Voices from the Margins' case study). The AHRC/GCRF follow-on project 'Questioning the Form' (Pahl) has enabled further collaboration with organisations in Kampala, Uganda and the Poetry Library at Manchester Met. The University also provides funds to support impact activities and we have secured internal funds to support Batsleer's secondment to the GMCA Mayor's Office via the University's think-tank MetroPolis; Holmes's collaborative ESRC studentship with MAG; and McNicol's research using comics to communicate the experiences of Bangladeshi women migrants. An element of the Maths group's pedagogic innovation research, the 'Oubliette' escape room won the 2019 Guardian University Award for Teaching Excellence. Duggan and

Hackett led an online workshop on co-production in the time of COVID-19:

<https://ijssrm.org/2020/08/15/community-research-during-the-time-of-covid-19-solidarity-care-and-radical-thinking/>

These partnerships and the impact of this research are included in our Impact Case Studies. We routinely publish short articles in professional magazines, e.g. [Nursery World](#); [Schools Week](#) and the Chartered College of Teaching's [Education Exchange](#). We also co-publish with non-academic collaborators (e.g. Barron, Taylor, Nettleton & Amin 2017, Barron Taylor & Macrae 2020, and Rousell, Hohti, MacLure & Chalk 2020). Research impact and utility are described in <https://www.mmu.ac.uk/media/mmuacuk/content/documents/esri/ESRI-Report-The-Education-and-Social-Research-Institute.pdf>

Interdisciplinary research

Our research engages with, and leads debate on, theory and methodology across the social sciences (e.g. de Freitas, Hackett, Holmes, MacLure, Pahl and Torrance identified with IDR outputs). Developing from an initial focus on, and expertise in, qualitative and post-qualitative methods, our research now actively seeks to move beyond 'qual/quant' debates, undertaking randomised control trials (RCTs, Lewin, Solomon), and re-thinking the ways in which bio-social research can inform studies of behaviour and learning. In particular the [Manifold Laboratory](#) (de Freitas & MacLure) provides an open space for transdisciplinary collaboration and innovation in response to rapidly changing social, environmental and material conditions of contemporary life. It draws on fields including philosophy, affective computing, science and technology studies, immersive arts and media, adaptive architecture and sensor technologies. Key projects include *Mapping spatial practices and social distancing in smart schools* (de Freitas ESRC), *Listening-2: investigating sensory-motor learning in two-year olds* (MacLure, Froebel Trust), and *Listening in and out of more-than-human worlds* (Gallagher, Leverhulme),

Staff also use arts-based methods to investigate these issues and recently led an [international seminar series](#) exploring its potential. Ivinson worked with a dance artist to evoke girls' responses to poverty and sexism in South Wales (AHRC/ESRC). The AHRC/GCRF 'Questioning the Form' project (Pahl) works with scholars in Humanities. The AHRC 'Odd' project (Holmes) comprises a multidisciplinary team of educational researchers and artists, and a visual ethnographer.

Open access, ethics and research integrity

Outputs are 'green' open access via the University's research management system (*Symplectic*, REF 5a). Research is deposited in the University's institutional repository 'e-space' for open electronic access. Top download (Lewin) has more than 6,000 downloads. RCUK/QR and university funds are available to support the 'gold' Article Processing Costs (APC) route. Staff can apply for the costs of APC through a simple internal process, signed off by the Head of ESRI, for outputs produced from research council funding, and those regarded as particularly significant, especially with regard to impact and supporting Impact Case Studies. Just under £60K has been committed to APCs for outputs included in the submission. We also comply with all Open Data requirements from funders including use of *Symplectic*, *Researchfish*, etc.

All research active staff and PGRs complete rigorous ethics procedures. We comply with the Concordat for Research Integrity via university procedures and follow British Educational Research Association (BERA) ethical guidelines and similar ethical procedures where relevant (e.g. ESRC). Ethical procedures are processed via the University's online system, 'EthOS', designed to manage applications for research ethics approval. EthOS is used by staff, PGRs

and also by undergraduate students who are engaged in research-based projects together with their supervisors. Ethics are formally managed at Faculty level. Nemirovsky is Head of Faculty Research Ethics and Governance with a clear set of responsibilities and associated time allowance and support. He chairs the Faculty REG committee and manages ethical review via EthOS in accordance with standard operating procedures agreed by the University committee. The Committee includes seven Professors and a further 14 staff members from within the submission. A Reader, Fox, is deputy chair. The Committee has approved 1,413 individual projects from staff, PGR students and UG / PGTs since the introduction of EthOS. Staff have access to online training and face-to-face support from a dedicated *Research Ethics and Governance Manager*. Clear procedures are in place for reporting and investigating allegations of research misconduct and each year the ethics committee undertakes an annual monitoring and audit process to feed into the University's reporting around the Concordat for Research Integrity.

2. People

Returned staff comprise n=49=46.3fte, double the number returned in 2014.

The return includes 11 new Professors, six new Readers, six ECRs (13%) and 27 new staff in total. Succession planning and development has involved Pahl succeeding Torrance as Head of ESRI, liaising with the Faculty PVC and Heads of Department to make research-active appointments at every level. Growth has been achieved by:

- supporting high quality research activity and publications by staff submitting annual research plans;
- mentoring staff to complete plans, submit bids for external funding and produce outputs;
- allocating QR income to support research-time-on-timetable in response to research plans;
- using QR income to support sabbatical research leave in response to research plans and specific sabbatical applications;
- continuing staff development including supporting staff to complete doctorates and publish from their research;
- attracting new research-active appointments - ESRI's national and international reputation attracts very high quality applications; new staff have been appointed from Australia, Canada, USA and EU countries, as well as from other UK universities including Russell group.

| F1 (Professor) | I0 (Principal Lecturer and Reader) | JO (Senior Lecturer) | KO (Lecturer, Research Fellow) |
|----------------|------------------------------------|----------------------|--------------------------------|
| 33% | 16% | 30% | 21% |

Table 1: Staff level contract profile

Professorial retirements since 2014 include Jones, Piper, and Schostak; professorial promotions out include Kucirkova to UCL then Stavanger/OU, and Whitton to Durham. New professorial appointments include de Freitas (New York), Flewitt (IoE, UCL), Hulme (Glasgow), Ingram (Sheffield Hallam), Iverson (Aberdeen), James (Northumbria), Nemirovsky (San Diego), Pahl (Sheffield), and Press (Charles Sturt, Australia). New Readers include Fox (Keele), Gallagher (Edinburgh), Pashby (OISE, Toronto) and Sellar (Queensland). Internal promotions include Barron and Holmes to Professor, and Batsleer and Pais to Reader.

A key strategic challenge is to sustain and further advance research excellence while developing research capacity within a professional Faculty. We continue to be successful in achieving this. Mid-career appointments from non-university professions such as school teaching are supported

to complete doctorates by waiving fees for EdD and PhD enrolment in the Faculty, providing some remission from teaching (normally 10%) and allocating very experienced supervisory teams, including Professors and Readers. 31 staff are enrolled for EdD/PhD and there have been 30 staff completions in the period.

The University has a programme of 'seedcorn' small grants for ECR development and research impact (RKE Development Awards, see REF 5a and 'Infrastructure', Section 3 below). 21 staff have been successful in securing these awards, many of whom have gone on to secure external funding (e.g. Bright, Corcoran, Hackett, MacRae, Menendez, McDonnell, McNicol, Rousell, Sant, Trafi-Prats, Underhill).

We also organise a wide range of research activities and support including:

- major international seminars and symposia; see Section 4 below
<https://www2.mmu.ac.uk/esri/research/networks-opportunities/>
- regular ESRI seminars featuring visiting speakers and in-house presentations;
<https://www2.mmu.ac.uk/esri/news-and-events/past-events/>
- research group meetings featuring external speakers and staff presenting work-in-progress;
- theory and methodology seminar series linked to particular initiatives, such as Arts-Based Methods and the Manifold Lab: <https://artsbasedmethods.wordpress.com/> and <https://www.biosocialresearchlab.com/>; these seminars form the core of our engagement with, and support for, interdisciplinary research and routinely feature international scholars;
- 'beginners guide to...' series of seminars, which introduce major theoretical resources to research students and ECRs;
- 'brown bag' seminar series organised by, and for, ECRs discussing research issues and presenting their work;
- weekly PGR seminar series (in addition to research training) where staff introduce topics illustrating issues from their research;
- 'away days' to identify longer-term priorities including planning symposia for conferences and proposals for research programme calls; these meetings also involve workshops in writing and publication, securing funding, and supervision;
- ESRI weekly newsletter, website and staff blogs, including extensive electronic resources for scholars to access <http://www.esriblog.info/>

A key principle informing the development of the above range of activities is that one-size-does-not-fit-all. Everyone is not expected to attend everything; rather, a range of opportunities is provided to maximise staff and student engagement via different forums, providing clear developmental pathways to significant engagement with research and core ESRI membership. Successful researchers with significant time for research become full members of ESRI. Associate members are usually postdocs with a research development plan to transition to become full members.

Seminars and meetings have been sustained during COVID-19 via Teams and Zoom. Indeed, the use of such technology has resulted in even more international speakers being involved,

speaking live from their home countries, often to significantly larger audiences than would be able to attend in person, including other international scholars in their home countries. Research group meetings often attract 100+ attendees from diverse global locations. Similarly, we have contributed to other international seminar programmes (e.g. the Laboratory of International Assessment Studies webinar at Deakin, Australia and the Post-Philosophies webinar series at Missouri/Western Cape). On-line engagement will continue in tandem with face-to-face seminars post-COVID. Diversity of modes and forums maximises quality, reach and inclusivity.

Conference funding is available to all research active staff and research students who are presenting papers at research conferences. Research active staff are expected to present papers annually at one or more 'general' educational research conferences, e.g. the British Educational Research Association (BERA), American Educational Research Association (AERA), Australian Association for Research in Education (AARE), European Conference on Educational Research (ECER), along with presenting at another conference relevant to their specialism (e.g. BAAL, UKLA, ICME, BSRLM, BELMAS, EECERA, etc.). Funding is dependent on presenting one or more papers and having plans (including target journal) to publish the paper(s). Conference attendance without presenting a paper is supported by staff development funds, allocated additionally from Faculty funds.

Funds are also available to support visits to potential collaborators and funders to discuss research programme calls and proposals. Similarly, funds are available to support the development of impact activities, such as dissemination events and on-line engagement surveys. Often these are facilitated via the university's RKE support office (see REF5a) and 'MetroPolis' think tank, e.g. Batsleer's secondment to the GMCA Mayor's office and Holmes's impact activities with MAG, reported above.

Research students

We are members of the ESRC-funded White Rose Doctoral Training Partnership (WRDTP) with Sheffield, Leeds, York, Hull, Bradford and Sheffield Hallam. We lead the university's ESRC-recognised research training programme, MA Social Research, based in the Faculty of Education, which forms the '1' of '1+3' doctoral awards. In addition to the MA, membership of the DTP provides all our research students, not only those that are ESRC-funded, with access to a wide range of training available at all partner universities. This includes advanced methods training and professional/vocational preparation for careers outside academia.

Currently we have secured 15 studentships from the Partnership. There are two types of studentship available:

Pathway Awards, of which we currently hold nine: these are open to applications on any topic related to the Education, Childhood and Youth pathway;

Collaborative Awards, of which we currently hold six in partnership with the Co-op Academies Trust, Manchester Art Gallery, Curious Minds (an Arts Council funded 'bridge organisation'), the Proud Trust, First Draft News and Home Start (GMCA). Collaborative awards are allocated competitively to proposals submitted by supervisors to the DTP. Each award is then advertised for applications and led by an academic supervisor in collaboration with an external organisation.

We have also secured an ESRC post-doctoral fellowship (Rauschenberger). Applying for such fellowships is only now available via membership of DTPs.

We regularly secure one or two internally-funded 'vice chancellor scholarships' per year to support full-time research students. These are awarded competitively for advertised projects to

support research group activity. We also attract self-funded international students, usually supported by government scholarships, and significant numbers of self-funded home students, often part-time. Recruitment is further supported by our undergraduate research internship programme (RISE), through which undergraduates can gain 30 credits by working with research projects. A recent WRDTP award was won by a student who had this experience.

Total enrolments are usually c.100+ PGRs per year = c. 60+ fte; currently we have 117 enrolments including 20 full-time students = 70fte.

Awards have increased by 70% in the period from 40 reported in 2014 to 68 in July 2020.

| Year of award | EdD | PhD | Total |
|---------------|-----|-----|-------|
| 2013-14 | 9 | 4 | 13 |
| 2014-15 | 4 | 10 | 14 |
| 2015-16 | 4 | 5 | 9 |
| 2016-17 | 7 | 5 | 12 |
| 2017-18 | 4 | 5 | 9 |
| 2018-19 | 2 | 4 | 6 |
| 2019-20 | 2 | 3 | 5 |
| Total | 32 | 36 | 68 |

Table 2: Doctoral conferments split by EdD and PhD

Research training is organised around two PGR programmes: PhD (full-time or part-time) and Doctor of Education (EdD, part-time). The PhD programme is for students who wish to pursue academic research in education and related fields. Students come from a wide range of backgrounds, including recent graduates as well as those with professional experience; some of our part time PhD students are already employed in teaching roles in higher education, including some of our own staff. In addition to following the MA Social Research, PhD students also meet to discuss research design, and ethical and fieldwork issues in more depth. The Doctor of Education (EdD) comprises a taught component of research training (Phase A) followed by a sustained enquiry into the student's own professional situation and the preparation of a thesis (Phase B). This programme is one of the most significant means by which we build on our strong reputation in the fields of practitioner research, school improvement, and professional education across diverse contexts. Part-time access is addressed by running additional PhD seminars in the evening while the EdD meets six weekends per year from Friday evening to Sunday afternoon.

PGR progression and completion is supported by online university systems for Ethical review (*EthOS*) and supervisor reporting (*SkillForge*, REF 5a), ensuring regular monitoring of progress with agreed reports filed after each supervisory meeting. Wider professional development is provided in line with the Vitae Researcher Development Framework and the Concordat to Support the Career Development of Researchers (REF 5a), including a module within the MA Social Research reflecting ESRC guidelines on preparing PGRs for non-academic careers.

Supervision is undertaken by supervisory teams led by an experienced Principal Supervisor with one or two additional supervisors. Supervisors undertake mandatory supervision training including training to act as internal examiners. Vivas are led by an Independent Chair who oversees the conduct of the viva ensuring fairness for students. Independent chairs also attend training in viva procedures and processes.

We were ranked 1st for overall student satisfaction with research degrees in Education in the UK 2019 Postgraduate Research Experience Survey (PRES). We were 1st for the quality of supervision, 5th for the quality of progression, and 2nd for research skills.

Research students are an integral part of the culture of ESRI. Research students have their own dedicated workspace (two large offices) adjacent to the ESRI office, equipped with desktop computers, lockers, phones, printers, etc. including access to a kitchen. Research students join our research groups and attend research seminars and other events. We have an annual postgraduate conference, at which panels of research students present and discuss their work, chaired by ESRI members. PGRs are eligible to apply for conference funding from ESRI to present their work to wider audiences. Students regularly co-publish with supervisors e.g. Boycott-Garnett, MacRae, *et. al.* (2020), Brown, Dore & Hanley (2020), Caton & Hackett (2019), Hulme & Quirke-Marku (2017), Ivanson & Sackville-Ford (2019), MacRae & Arculus (2020), and Pahl & Pool (2018). Our students progress to senior roles in academia and other fields, e.g.: Guery (completed 2014) university lecturer; Chung (2015) executive producer Educational Broadcasting Service, Korea; Mayall (2016) university lecturer; Wood (2017) post-doc Leverhulme Fellow at the University of Florence, now Research Fellow at UCL; Dennis (2018) university lecturer; Evans (2019) university lecturer; Diddams (2020) Clore Leadership Fellow at the Theatre Royal Manchester.

Our PGR programmes responded quickly to COVID-19 and campus closures from March 2020. We surveyed students and supervisors to assess the extent of disruption, and supervisors have worked with students to redesign projects and ensure that they meet doctoral outcomes and can complete on time. From March 2020 we moved to online teaching and supervision, and established additional weekly one-hour online drop-in sessions for PGRs. We instituted a weekly series of staff-led research seminars in addition to our usual seminar programme. These sessions have involved general support, training and student presentations, and continue throughout the 2020/21 academic year. We moved our annual PGR conference online. Research group meetings have continued online. These events have been very well-attended. In addition to monthly supervision meetings, supervisors are also expected to check in with students fortnightly to identify any issues promptly and to maintain support for students working at a distance. Library, specialist facilities and PGR offices remain open as required.

Equality and diversity

Returned staff comprise 34 female (74%) and 13 male (26%), exactly in line with the eligible population. Professors are 12 female (75%) and four male (25%). Six ECRs (13%) are included. 6.5% staff have declared a disability compared with 6% in the eligible population. 91% of staff returned identify as white compared with 88% in the total eligible population. Six part-time staff are returned, including four female and two male. Requests for flexible and part-time working are responded to positively and returned staff include several who have been on maternity leave and extended sick leave in the period. The effect of equality-related circumstances on research productivity is recognised and accommodated in promotion processes. Disclosure of equality-related issues leads to adjustment in expectations regarding research outputs. All staff have equal access to mentoring, conference funding, study-leave and career-development opportunities, and career pathways are equitable for part-time and full-time staff.

All staff involved in REF decision-making and submission preparation – reading outputs, drafting the environment narrative and impact case studies, confirming staff responsibilities and workload – have undertaken mandatory institutional equality and diversity training on ‘Managing Diversity’, ‘Equality and Diversity Essentials’ and ‘Unconscious Bias’. All of our procedures and practices accord with the University’s REF Code of Practice and Equality and Diversity Policy including

relevant quality standards (Athena Swan, Race Equality Charter Self-Assessment, Stonewall, REF5a). Staff are supported to complete the Aurora leadership programme.

We have a Race and Diversity in Teaching and Research working group responding to the Black Lives Matter agenda and a Decolonising the Curriculum working group. Members contributed to a BERA Blog on confronting racism in teacher education [15 October 2020](#). Research partners include Diversity Matters North West, Louise Da-Cocodia Trust (supporting students of African and Caribbean heritage, including a Supplementary School), the Proud Trust (LGBT+) and 42nd Street, a youth homelessness and mental health charity. We are taking a significant role in establishing a University-wide Research Centre for the Study of Race and Racism, including a leading role on the steering committee (Curley).

3. Income, infrastructure and facilities

New awards in period total £4.1m.

Total income is £3,959,954, more than double that reported in 2014 (£1.75M).

Income derives from more than 80 awards, including 20 from research councils, 20 from major charities including the British Academy, Education Endowment Foundation, Leverhulme, Nuffield and Wellcome, and nine from the EU.

Diversity of Income Sources

| <i>Source of Income</i> | BEIS Research Councils | UK Charities, Open Competition & Other | UK Govt, Industry & other UK Sources | European Union | Non-EU |
|-----------------------------|------------------------|--|--------------------------------------|----------------|--------|
| <i>Percentage of Income</i> | 31% | 32% | 15% | 17% | 5% |

Table 3: Diversity of Income Sources

Our strategy for generating income links to our strategy for staff and career development. We understand that producing high quality research over the long-term requires significant external funding, as does the development of successful research careers. Career development is seen in terms of establishing a high-quality post-doc publishing trajectory, bidding for internal seed corn funding (reported under 'People' above) and external small grants (e.g. BA and Leverhulme), then bidding for larger grants, often in collaboration with others in ESRI and partners in other institutions. Bidding is supported by research group workshops and individual mentoring reported under 'People', above. In parallel, ESRI, as a unit, pursues diverse funding sources to spread risk and maintain independence, and collaborates on large multi-institutional and multidisciplinary bids to take up new opportunities and generate sustainable income. We have been particularly successful with large international collaborations (e.g. Batsleer and Lewin with EU, Pashby with Sweden and Canada; Ivinson, Press and Sellar with Australia; Hackett and Solomon with Norway; details below). We have also broadened our methodological expertise to bid to new funders (e.g. Lewin and Solomon, EEF), and specifically engaged with new opportunities related to interdisciplinary research and 'grand challenges' including ESRC (de Freitas), Royal Society APEX funding (Nemirovsky), Newton (Carlin) and GCRF (Corcoran and Pahl).

Bidding is supported by a Faculty and University-level Research and Knowledge Exchange infrastructure (*RKE Systems*) including RKE and Business Development managers. These provide information on programme calls and networks, financial planning, ethical approval, and

post-award contracts, etc. Activity and success are monitored and supported by the Faculty RKE Committee, chaired by Pahl, reporting to the University RKE Committee.

Committee The University also supports major internal bids for strategic research development (Strategic Opportunities Fund, SOF) and we have won three such major investments in period. These support our 'researcher-in-residence' initiative with a local nursery, a centre of excellence for early years education (Holmes and MacRae); our Manifold Laboratory for Research on Learning and Behaviour (formerly the Biosocial Lab, de Freitas, MacLure); and a collaboration with Greater Manchester Combined Authority (GMCA) to support early years and school readiness (James). Our research-in-residence programme benefits-in-kind from the use of facilities in the nursery and associated early years settings, which effectively constitute an early years 'research lab' supporting staff development in the nurseries, and undergraduate and postgraduate teaching, as well as research activity (see Birth-to-Three impact case study and Macrae 2019, in <earlychildhoodoutdoors.com>). Similarly the Manifold Lab benefits from collaborations with local schools, museums and art galleries to produce interactive environments for the investigation of affect and innovative pedagogy (e.g. Rousell, MacLure *et al.* 2020).

Indicative highlights by research group, illustrating quality and scale of funding, range of grant holders and partners, and focus on impact, include:

Children and Childhood

Odd: feeling different in the world of education 2018 – 2021 (AHRC, Holmes *et al.*, £294,050)

Early Years Learning in the Science Museum 2019-20, Flewitt with UCL, Helen Hamlyn Trust, £46,500

KINDKNOW The Centre for Systemic Research on Diversity and Sustainable Future 2018 - 2023 (Norwegian Research Council, Co-I Hackett, Kr50M, MMU Kr180,000)

Exemplary early childhood educators at work: a multi-level investigation 2016-2019, Press *et al.* Australian Research Council

Particular collaborative projects supporting impact:

Evaluation and implementation of the speech/language and communication pathway across GMCA 2019-2020 (GMCA and DfE, James & Marshall, £200,000)

2-Curious: more than words (ESRC Collaborative Studentship with Curious Minds, MacRae, Holmes & Hackett, £88,000)

Affecting Space (ESRC Collaborative Studentship with Manchester Art Gallery, Hackett, Holmes & MacRae, £88,000)

Youth and Community

PARTISPACE, 2015-2018 (Batsleer) *Formal, non-formal and informal possibilities of young people's participation in European cities*, EU, €2M (€202,000 to MMU)

Belonging and Learning: Using co-produced arts methodologies to explore youth participation in contexts of conflict in Kenya, Uganda and the Democratic Republic of Congo, 2019, Pahl & Corcoran, AHRC/GCRF £45K

Productive Margins: 'Making, Mapping and Mobilising on Merthyr' 2013-18, Ivanson (with Renold, Cardiff), ESRC/AHRC £31,630K to MMU

Particular projects supporting impact:

Graphic Lives: Telling Bangladeshi migrant women's stories through graphic narratives 2017-18 (Heritage Lottery Fund £23K (McNicol), with Diversity Matters North West

Lost and Found. Co-operative Foundation with 42nd Street. 2016-17, Batsleer, Duggan and McNicol, £60,000.

Song Lines to Impact and Legacy: Creating Living Knowledge through Working with Social Haunting (2017), AHRC (Bright) – With Unite, Co-op College, Ribbon Road (musicians) £64,379.

Teacher Education, Leadership and Curriculum

Understanding the Origins, and International Diffusion of Teach First, 2018-2021,

Rauschenberger, ESRC Postdoctoral Fellowship, £100k;

Whole School SEND 2019-2024 Lewin with Morris & Hick, Education Endowment Foundation, £458,699

Initial Teacher Education for Inclusion, 2015-18, Solomon with Hick, National Council for Special Education, Ireland €173,000.

Particular projects supporting impact:

DfE/Blackpool Opportunity Area project 2019-21: Continuum of Provision: evaluating strategies to reduce school exclusion rates, Hulme, £19,909

EAS Support for Newly Qualified Teachers, 2019, Hulme, Education Achievement Service, £23,000

Research with Griffin Schools Trust 2016-2020, The Griffin Schools Trust, PI Hammersley-Fletcher, successive grants totalling £86,664

Mathematics Education

Inclusive Mathematics Teaching: Understanding and developing school and classroom strategies for raising attainment 2019-22, PI: Solomon, Norwegian Research Council, £1,094,779

Realistic Maths Education in Key Stage 3 2018-21, PI: Solomon, Education Endowment Fund, £844,093

Particular projects supporting impact:

Forces in Translation: Dialogues between Craft, Anthropology, and Mathematics, 2020-21, co-I: Nemirovsky (with St. Andrews) Royal Society APEX award, £98K/£19.9K to MMU.

Innovating the Mathematics Curriculum in Times of Change: Towards a Local and Global Relevance, 2020-21, Partner: de Freitas, (with Coles, Bristol), Worldwide Universities Network, £10K.

Language and Literacy

The emergence of literacy in very young children: place and materiality in more-than-human world, 2017-20, Hackett, British Academy Postdoctoral Fellowship, £250,447.

The Digital and Multimodal Practices of Young Children (DigiLitEY) EU COST Action. 2015-19, Flewitt, with Marsh (Sheffield), €600K

Particular projects supporting impact:

Questioning the form 2020, Corcoran & Pahl, AHRC/GCRF Follow-on project, with Artivism and StrongMinds, Kampala £40K

Translanguaging through Posthumanism: English as an Additional Language (EAL) Children's Transition from Home to Nursery, 2020-23, Hackett & Holmes, ESRC studentship c. £88K.

Digital and Innovative Pedagogies

Digital technology and attainment in schools: A systematic review 2018, Lewin, EEF, £22K

Sci-napse: Neuroscience-informed approaches to science education. Trial of the use of playful collaborative quiz-based learning 2015-18, Whitton & Lewin (with Howard-Jones, Bristol)

EEF/Wellcome Trust, £325K to MMU.

Particular projects supporting impact:

Quick Controls Knowledge Transfer Partnership 2015-2018 Lister & Smith, Innovate UK, £107K

Innovative Technologies for an Engaging Classroom (iTEC) 2010-2014 Lewin, EU €510K.

Education and Global Futures

Universities and Unicorns: building digital assets in the higher education industry. 2020-2023. Sellar with Komljenovic (Lancaster), Birch (York University, Canada), ESRC, £235,877.

The Education of, and by, Machines: The Impact of Artificial Intelligence on Education Policy, 2018-2020, Sellar (with Webb, UBC), Canadian Social Sciences and Humanities Research Council (435-2018-0102): \$129,686CAD;

Collaborative projects supporting impact:

Visual Media Literacy for Combatting Disinformation: Analysing How Teachers Used the Questioning Images Resource During the 2019 Canadian Federal Elections. 2020-2021. Pashby with Shultz (Alberta). CAD\$354 611 (£208,257). Department of Canadian Heritage.

Teaching equity and justice issues through a critical lens, 2018-21, Pashby with Ohman and Lund (Orebro), Swedish Research Council. SKr 4,451,277 (£404K).

Theory & Methodology including the Manifold Research Lab

T&M income is included above with other research groups bidding in substantive fields; recent projects deriving directly from Manifold Lab's work include:

Mapping spatial practices and social distancing in smart schools de Freitas ESRC, 2020-22, £200K

Listening-2: Investigating sensory-motor learning in two-year olds 2019-20 MacLure & MacRae, Froebel Trust, £36,740

Selective mutism in young children 2019-22, MacLure, ESRC studentship, c.£88K

Future literacies in secondary school English: technological innovation and social critique through reading and writing speculative fiction 2017-19, Truman, Post-Doc Fellowship, Supervisor: de Freitas, SSHRC, Canada, \$81,000CAD.

Infrastructure and facilities

The Faculty of Education, including ESRI, moved to a new £139M city-centre building in October 2014. Staff from the Crewe and Didsbury campuses were merged and integrated into the existing University city campus. Derelict land in a disadvantaged area (Hulme) was gifted to the University by Manchester City Council for the building. The development represents a huge investment in, and commitment to, the future of the Faculty of Education, teacher education and educational research at Manchester Met. The building includes dedicated office space for ESRI and for research students, and houses the Manifold Research Lab including specialist equipment, such as wearable biosensors. The building also houses specialist art, craft, music, theatre and science facilities, and hosts our annual Community Learning Festival with collaborating community groups and research partners.

The University's RKE infrastructure (*RKE Systems*) provides support for grant bidding, contracts, etc. as reported above. This includes a *Research Development Team*, an *International Research Development Manager*, and a *Research Delivery Team* including post-award specialists and legal professionals supporting procurement, logistics and financial management. The *Research Impact and Engagement Manager* leads a team of impact and public engagement professionals, and a *Research Ethics and Governance Manager* offers guidance and training. RKE Systems manage: *Symplectic*, the university's research management system, which staff use to maintain records of outputs, OA compliance, and web profiles; *Worktribe*, for the online management of external funding applications and awards; and *EthOS*, for research ethics and governance. RKE Systems also provide management reports and data for annual review processes. We have a dedicated press officer, HR business partner, ISDS support, and Finance and Legal Services.

The University Library is open 24/7 and provides access to extensive online resources for staff and PGRs. A subject-specific librarian supports staff, advocates for extra resources and updates journal provision. Journal titles and online resources are reviewed annually. Subscriptions to SAGE Premier and extra Taylor & Francis collections have expanded online journal access, with the benefit of discounted APC charges. The Library manages Green OA through the university's e-Space repository and funding for Gold OA APC charges. It also offers access to Manchester Met's Special Collections including a *Children's Literature* collection spanning 250 years and other specialist resources, such as the *North-West Film Archive*.

4. Collaboration and contribution to the research base, economy and society

Collaborations, networks and partnerships

We have significant national and international collaborations with major projects funded by the EU (Batsleer, Lewin, Rowley), Australian Research Council (Ivinson, Press, Sellar), Canadian Social Sciences and Humanities Research Council (de Freitas, Sellar), the Norwegian Research Council (Hackett, Solomon), the Spanish National Research Council (Menendez, Sant), and the Swedish Research Council (Pashby). We have extensive international links including through recruitment of international staff who continue to collaborate with colleagues worldwide. These and other networks involve active research links with a wide range of universities including: Alberta, Bristol, Charles Sturt, Cardiff, Deakin, Frankfurt, Illinois, Lancaster, La Trobe, Mälardalen, Melbourne, Michigan State, Missouri, New South Wales, Obrero, Oregon, Oslo Metropolitan, Oulu, RMIT, San Diego, Sheffield Hallam, Southern Cross, St Andrews, St Gallen UAS, Tata Institute of Social Science Mumbai, Toronto, Tromsø, Queensland, QUT, UC Cork, UCL (IoE), Ulster, West of England, and Western Norway UAS. We are members of the ESRC-funded White Rose Doctoral Training Partnership including Sheffield, Leeds, York, Sheffield Hallam, Hull and Bradford.

These and other collaborations have led to extensive international co-edited and co-authored books e.g. Batsleer, Walther *et al.* (2020), de Freitas & Sinclair (2014), de Freitas, Sinclair & Coles (2017), Flewitt, Erstad *et al.* 2020, Ingram & Tarabini (2018), Pahl, Rowsell, *et al.* (2020), Rauschenberger, Thomas and Crawford-Garrett (2020), Sant, Schultz *et al.* (2018), and Sellar, Thompson & Rutkowski (2017). 26% of our outputs in the period were co-authored internationally.

Further high profile networks and links include:

- periodic Maths Education and Contemporary Theory conferences (three to date, Brown, de Freitas and Solomon); these have led to several special issues of *Educational Studies in Mathematics*;
- the biennial Summer Institute in Qualitative Research attracting speakers and delegates from all over the world (Holmes and MacLure);
- Sellar's leading role in [The Laboratory of International Assessment Studies](#);
- Ivinson elected to BERA Council and led the [BERA Poverty and Policy Commission](#);
- Hulme is a member of the BERA/UCET Teacher Education Group investigating divergences in teacher education across the four UK jurisdictions, see TEG 2016, Policy Press;
- Pahl is a strategic panel member for AHRC and panel member for GCRF;
- Torrance was a member of the [ESRC Panel Reviewing Doctoral Training 2014-15](#), which set the framework for the current network of DTPs; and a member of the ESRC Research Methods review panel.

- Torrance is also a Fellow of the Academy of Social Science and a member of the Education REF sub-panel.

Relationships with research users, beneficiaries and diverse communities

We have extensive links with policymakers, research users and practitioners in the field. Key collaborators include: The Chartered College of Teaching, The Cooperative Foundation, Greater Manchester Combined Authority (GMCA), Martenscroft Children's Centre, The North West Maths Hub, The Manchester City Art Gallery, Manchester Museum, and Unite. Our Advisory Group is reported in Section 1. Impact and beneficiaries are reported in our impact case studies. We have presented research evidence to select committees and Houses of Parliament seminars (e.g. Brown, Duggan, Hulme, Ivinson, and Pahl). We regularly lead sessions for the ESRC's Festival of Social Science (e.g. Bright, Duggan, and Hackett). Ivinson is a member of the Independent SAGE 'Eagle' group (led by Visiting Fellow, Wrigley) providing evidence and collating COVID-19 advice for schools to assist teachers and parents.

Many of our funded research projects, reported in Section 3, are designed and undertaken in collaboration with research users, including co-publishing outcomes with non-academic partners. We engage extensively with diverse communities: through individual research projects (e.g. Pahl and Corcoran GCRF project in Kenya, Uganda and DRC; McNicol *Telling Bangladeshi migrant women's stories through graphic narratives*; and Fox and Ainsworth collaborative ESRC PhD with the Proud Trust); more generally through the activities of our Youth and Community research group; and through our annual Community Learning Festival (CLF). The CLF is organised in collaboration with local community groups and involves workshops and a wide range of educational activities attracting large numbers of non-academic and non-traditional research users.

Wider influence and contributions to the field

Each research group maintains national and international networks and makes leading contributions to the field:

Children & Childhood

15 international keynotes in the period including Holmes, Hong Kong 2016, Norway 2014, 2016, Finland 2015, Sweden, 2019; MacRae, New Mexico 2019; Hackett, Norway 2018, and Australia 2016. 21 major international symposia have been organised in period at AERA, BERA, EECERA, ECQI, ICQI, and RECE.

113 paper presentations to international conferences including:

AERA (2019, Toronto; 2018, New York); *Australia Association for Research in Education* (2016); BAAL (2019, UK); BERA (2016, 2017, 2018, 2019, UK); *European Early Childhood Education Research Association* (2016, Dublin; 2017, Italy; 2018, Hungary); *European Conference for Educational Research* (2019, Germany; 2018, Italy); *Gender and Education* (2017 UK); *Reconceptualising Early Childhood Education* (2017, Canada; 2019, New Mexico). Members are on the editorial boards of nine international journals including: *Journal of Early Childhood Literacy* (Hackett); *International Journal of Early Childhood* (Press); *Global Studies of Childhood* (Holmes); Holmes is Director of the WRDTP 'Education, Childhood and Youth' Pathway. Holmes, MacRae and Hackett are key contributors to the national cross-sector 'Birth to Five Matters' coalition, which is developing research-informed curriculum guidance for the early years.

Youth & Community

100+ papers at international conferences including: AERA, AARE, ECER, and BERA along with several international keynotes (Batsleer, Bright, Ivinson). Members serve on 13 editorial boards including: *The British Journal of Sociology of Education*, *Gender and Education*, and *The European Journal of Psychology of Education*. Bright was ethnography network convenor for the European Education Research Association and won best paper from the Working Class Studies Association in 2016. Community research partners include: the Co-operative College and Co-op Foundation; Company Chameleon (dance company); 42nd Street (youth charity specialising in mental health); the Proud Trust (LGBT charity); The Loneliness Connects Us network; Reform Radio; the Louise Da-Cocodia Trust's Supplementary School, and Focus North-West. Ivinson is a member of UNESCO MGIEP International Science and Evidence Based Educational Assessment (ISEE) working group 3 'Experiential Learning'.

Teacher Education

Members presented 47 papers to international conferences including BERA, ECER, BELMAS, Political Studies Association, and The Society for Educational Studies. Members serve on six editorial boards including *Assessment in Education*, *Educational Research* (Journal of the NFER), *International Journal of Educational Research* (Torrance), and *Management in Education* (Hanley). Hammersley-Fletcher presented a keynote to the Association of Study for Primary Education. Fox is Chair Elect for the Psychology of Education Section for the British Psychological Society.

Members hold key leadership roles: e.g. Hulme BERA and UCET networks on comparative UK studies of Teacher Education, including being BERA Teacher Education SIG convenor, Hanley (Curriculum & Pedagogy BERA SIG convenor). Hulme is a member of the Professional Pathways Advisory Group for the Chartered College of Teaching, 2017-18, and, from 2018, the Faculty has co-hosted, with the Chartered College of Teaching, the annual Early Career Teacher conference. With UCL, the group is part of a [consortium](#) leading the early roll-out of the DfE Early Career Framework from September 2020, national rollout from September 2021.

Mathematics Education

Core members have extensive leadership roles throughout the field including: 61 invited and keynote presentations in period e.g. de Freitas, Teachers College, Columbia University 2018; Nemirovsky, University of California – Berkeley 2020, Nemirovsky, Mathematical Ability Conference, Utrecht, 2019; and Pais, Thessaly University, Greece, 2019; Nine edited books and journal special issues, bringing together researchers from around the world on ground-breaking topics, including the 2020 *Digital Experiences in Mathematics Education* special issue on 'The intertwined contributions of physical and digital tools for the teaching and learning of mathematics' (co-editor Nemirovsky), and the 2019 *ZDM* special issue 'Body studies in mathematics: Diverse scales of mattering' (co-editor: de Freitas); Editing roles in seven highly-ranked journals, including *Educational Studies of Mathematics* (de Freitas), *Curriculum Inquiry* (de Freitas), *Journal for the Study of Education and Development* (Nemirovsky), and *Research in Mathematics Education* (Solomon).

de Freitas (2014) *Mathematics and the body* won the Curriculum Studies Book Award from AERA. Solomon is a fractional Professor of Mathematics Education at OsloMet University in Oslo, Norway. Nemirovsky continues to work on the ['InforMath' project](#) (NSF grant DRL-1323587) with former colleagues at San Diego and led a workshop on embodied mathematics at the Exploratorium, San Francisco, 2018.

Language and Literacy

The group have presented ten keynotes and 20 seminars and papers to international conferences since 2018 including: AERA, BAAL, BERA, ECER, and UKLA. It hosted the British Association of Applied Linguistics (BAAL) annual conference in September 2019. The group has members on six editorial boards including: *Journal of Literacy Research* and *Journal of Early Childhood Literacy*. Pahl is a strategic panel member for AHRC, a panel member for GCRF, and a reviewer for ESRC. Flewitt is a member of DfE Expert Panel on Early Language, Literacy and Communication apps; and the EU Literacy Network (ELINET); a member of Froebel Trust Research Committee; and a member of UKLA Literacy Education Award Panel. Flewitt is also on the Canada Social Sciences and Humanities Research Committee and the Freiburg Institute for Advanced Studies Fellows Scheme, is a reviewer for the AHRC Leadership Fellows Scheme and a reviewer and rapporteur for ESRC.

International visitors hosted to give seminars include: Duhn (Monash), Powell (Maquarie), Somerville (Western Sydney), Myrstad (Tromsø), Jokinen (Oulu), Hohti (Oulu), Kuby (Missouri), Thiel (Georgia, USA), Rautio (Oulu), Vladimirova (Oulu), Olsson (Södertörn, Sweden), Rowsell (Brock University, Canada), and Truman, Visiting Scholar (2017-2019), now University of Melbourne.

Digital and Innovative Pedagogies

The group has presented 30 papers to international conferences including: BERA, ECER and specialist conferences. Lewin was vice-chair of The International Federation of Information Processing (IFIP) Technical Committee 3 (Education), 2015-2018, and is chair of this group from January 2019. She was awarded an IFIP Service Award in 2019 in recognition of her contributions to the organisation. Lewin co-led thematic working groups at two EDUsummitTs (2017, 2019). This network published the Second Handbook of Information Technology in Primary and Secondary Education, which has over 45,000 downloads.

Lewin, McNicol and Nemirovsky are on four editorial boards: *Learning, Media and Technology*; *Journal of Librarianship and Information Science*; *Digital Experiences in Mathematics Education*; and *Infancia y Aprendizaje*. de Freitas co-edited a Special Issue of *Cultural Studies-Critical Methodologies* (2020) to review what educational research can learn from Science and Technology Studies. She also co-edited a special issue on the future of STEM education (2017). Nemirovsky has given five keynotes and plenary talks on learning technologies, embodiment and science learning, including Copernicus Science Centre, Warsaw, 2019; Department of Anthropology, University of St. Andrews, 2018; and Michigan State University, 2017. Corcoran and Lewin received a BERA SIG (Science Education) best paper award in 2019.

Education & Global Futures

Members have given 11 keynotes and plenary presentations at international conferences including AARE (Sellar 2015); American Anthropological Association (Curley 2015); International Conference on Higher Education Advances (Menendez 2019); and the University Society of Didactics of the Social Sciences (Sant 2019). They have presented 70 papers at international conferences including: AARE, AERA, The American Educational Studies Association, BERA, BELMAS, The British Association for International and Comparative Education, The Canadian Society for Studies in Education, ECER, The Political Studies Association, and The Philosophy of Education Society. Members edit leading journals including: *Discourse: Studies in the Cultural Politics of Education* (Sellar) and *Educational Studies*, the journal of the American Educational Studies Association (Curley). Members sit on 18 other editorial boards including: *The British Educational Research Journal* and *The British Journal of Sociology of Education*. Sellar has also edited special issues of *Educational Philosophy and Theory* and *The Cambridge Journal of Education*. Ingram is co-convenor of the British Sociological Association's Education Study

Group (2012–present) and co-founder and co-convenor of the BSA's Bourdieu Study Group (2011-present).

Members have given 14 invited presentations and workshops to policy audiences, including: *Bangladesh Ministry of Education World Teacher's Day, 2020* (live streamed to over 1 million people, Curley online), the European Commission's *Global Learning Project* (Pashby, Italy 2018), and the Alberta School Board Association (Sellar, 2018). Pashby is an invited member of the European Roadmap for Action on Sustainable Development Goal (SDG) Target 4.7 drafting group and Oxfam UK's *Our Shared World Reference Group*. She was an invited expert speaker for the *UNESCO Global Forum on Global Citizenship Education and Education for Sustainable Development* (Ottawa, 2017).

Theory and Methodology

The group leads international debate and supports the next generation of educational researchers, nationally and globally, through seminars and international symposia and special journal issues. 30+ international keynotes include:

de Freitas (2017) European New Materialism COST Network conference, UNESCO, Paris – invited response to Bruno Latour;

de Freitas (2018) European Congress of Qualitative Inquiry, Leuven;

de Freitas (2019) New Materialist Reconfigurations of Higher Education, South Africa;

MacLure (2016) 12th International Congress of Qualitative Inquiry, University of Illinois;

MacLure (2017) European Congress of Qualitative Inquiry, Leuven;

Rousell (2019) SenseLab, Concordia University, Canada;

Rousell won the AERA Division D - Measurement and Research Methodology Dissertation Award (2020).

Members have presented 80+ papers at international conferences including: AERA, AARE, BERA, ECER, RECE, ECEERA, ICQI, and ECQI. Members sit on nine editorial boards and have edited seven special issues including: *Journal of Early Childhood Education* (Hackett; Pahl); *Gender and Education* (Ivinson); *British Journal of Sociology of Education* (Ivinson); *European Journal of Psychology of Education* (Ivinson); *Journal of Cultural Research in Art Education* (Trafi-Prats); *Cultural Studies-Critical Methodologies* (de Freitas); and *Children's Geographies* (Gallagher, Holmes & MacRae).

MacLure and Torrance are on the organising committee of the annual International Congress of Qualitative Inquiry (University of Illinois). Torrance is a member of the editorial committee of the 5th edition of the *Sage Handbook of Qualitative Research*, eds Denzin & Lincoln 2017, and MacLure, the forthcoming 6th edition (2022).