

Institution: University of Huddersfield
Unit of assessment: 33 (Music and Music Technology)
<p>Section 1. Unit Context and Structure, Research and Impact Strategy</p> <p>1.1. How Research is Structured</p> <p>The subject area of Music and Music Technology (MMT) is one of five in the Department of Music and Humanities, which lies within the School of Music, Humanities and Media (MHM). MMT has 23 academic staff: nine Professors (Adkins, Adlington, Cassidy, Clarke, Harrison, Stras, Thomas, Till and Tremblay; Schmidt is Dean of MHM); two Readers (Colton and Jan); ten Senior Lecturers (Bellamy, Cox, Dobson, d'Escriván, Harker, Haworth, Herbst, Milsom, Worthington and Worthy) and one lecturer (White). There are ten full-time postdoctoral Research Fellows (RFs), four on ERC-funded projects (Dufeu, Green, Roma, Takahashi), and six funded by the British Academy (Contreras), the Leverhulme Trust (Assay, Pistorius, Stanović), and the EC (Marie Skłodowska-Curie Actions; Asaba, Both). These are Early Career Researchers, as defined by paragraph 148 of the REF <i>Guidance on Submissions</i>, but chose not to declare their individual circumstances. The acronym ECR is used in this document in this specific sense.</p> <p>Recognised in REF2014 as a leading UK and international centre for research, MMT has extended this reputation significantly in the current REF period. Detailed evidence of this is given below, but two particular markers of esteem are the award of the Queen's Anniversary Prize (QAP), for contemporary music, in 2015; and the identification of several MMT-related Areas of Strategic Research Importance (ASRIs) in the University's Research Strategy. MMT's closely intersecting research strands are: new music (composition, performance, musicology); music technology (hardware, software, creativity, production); performance (including popular music and research-informed performance); musicology (including medieval and renaissance studies, gender and identity, reception, and theory and analysis); popular music (composition, performance, musicology); and film music (composition, musicology). These are aligned with the undergraduate (UG) teaching provision, which draws significantly on staff research interests.</p> <p>Jan and Thomas, as UoA Coordinators (UoACs), have oversight of MMT's research. They manage strategy, allocate the research budget, advise individual staff, and liaise with the Associate Dean (Research) (ADRes; Adkins, who has overall responsibility for research in MHM) and with the University's Department of Research and Enterprise. Work is organised across three research centres, the establishment of which was the principal objective of REF2014:</p> <ul style="list-style-type: none"> • CeReNeM (<i>Centre for Research in New Music</i>, upgraded in 2016 to an Institute; director Cassidy), covering composition, new music performance, new music studies, music technology and the creative and technical aspects of film music. • CMCI (<i>Centre for Music, Culture and Identity</i>; director Herbst), covering musicology, popular music and the musicological aspects of film music. • ReCePP (<i>Research Centre for Performance Practices</i>; directors Worthington (MMT) and Spatz (Drama, Theatre and Performance)), covering performance, including synergies between musical and dramatic performance. <p>The centres enjoy significant autonomy in planning their activities, while the UoACs maintain oversight of their medium- and long-term direction, their alignment with MMT's overall strategy, and their contribution to Postgraduate Research Student (PGR) provision. Each centre has a directorate which formulates research priorities and plans events, and which is assigned a devolved budget based on the number of primary staff affiliations. All staff and PGRs are affiliated with a centre, and several have secondary affiliations with another centre. Cross-fertilisation between centres is integrated into the planning of their annual programmes, and staff and PGRs are strongly encouraged to participate in the numerous opportunities offered by all three, not just those presented by their primary affiliation.</p>

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Each centre encompasses **research groups** dedicated to specific **projects**. For example, in CeReNeM, a *Creative Coding Lab* (CCL), led by **Harker**, brings together composers and technologists interested in the augmentation of creativity; and *Democracy in Music*, led by **Adlington**, explores intersections between ideas of democracy and musical practice. In CMCI, *Integrated Methodologies for Film Musicology*, led by **Haworth**, explores the complex genesis and structure of film soundtracks; and the *Popular Music Studies Research Group* (PMSRG), led by **Till**, hosts its own seminar series and various specialist activities within CMCI. In ReCePP, a *Nineteenth-Century Performance Research Group*, led by **Milsom**, works on the reconstruction of historical performance techniques; and *(Re)constructing Early Recordings*, led by **Stanović**, explores strategies for preservation and the development of performance practices based on them.

1.2. Research Objectives

MMT's main objective articulated in REF2014 was to 'establish research centres to focus on key areas of research excellence'. The current structure, arrived at through a process of development and consolidation (**Section 3.2**), is intended to achieve the following eight sub-objectives identified in REF2014:

- **REF2014:R1** Maintain excellence in individual outputs, as identified in **RAE2008**, for performance and electroacoustic music;
- **REF2014:R2** Develop composition and musicology to a similar level as performance and electroacoustic music through the development of existing staff and recruitment of internationally leading individuals in the field;
- **REF2014:R3** Increase external grant income;
- **REF2014:R4** Increase our community of postgraduate researchers and PhD completions;
- **REF2014:R5** Increase our international collaborative exchanges and research partnerships;
- **REF2014:R6** Continue to support and develop ECRs;
- **REF2014:R7** Bring internationally excellent researchers into the Department through conferences, symposia, masterclasses and guest lectures;
- **REF2014:R8** Implement, where appropriate, national frameworks for researcher support.

These objectives have all been achieved in the current REF period. To achieve **REF2014:R1** and **REF2014:R2**, we have implemented processes for supporting and monitoring individual research (including additional protected time and a more rigorous process of annual research audits (**Section 2.1**)), and we have developed our profile in musicology by making several strategic appointments, including those of **Adlington** (appointed as QAP Chair in Contemporary Music in 2017), **Haworth**, **Herbst**, **Martin**, **Schmidt** and **Stras**. To achieve **REF2014:R3**, we have drawn upon the University's improved infrastructure for application development and significantly increased our grant capture (**Section 3.1**). To achieve **REF2014:R4**, we have engaged with University initiatives for attracting students to PGR programmes; capitalised on our expanding international network to drive recruitment, particularly in CeReNeM; and pursued externally funded doctoral schemes rigorously (**Section 2.3**). To achieve **REF2014:R5**, we have expanded our complement of Visiting Research Fellows (VRFs) and Visiting Professors (VPs), and have gained **University Research Fund** (URF) income to develop CeReNeM's international research network *Speculations in Sound* (**Section 4.1**). To achieve **REF2014:R6**, we have reduced teaching workload by strategic use of resources; prioritised internal funding for ECRs; and devoted significant resources to recruit and support postdoctoral researchers. To achieve **REF2014:R7**, we have hosted over twenty prestigious conferences and other gatherings, with international keynotes and other speakers. To achieve **REF2014:R8**, we adhere to the relevant national policies, as detailed in REF5a.

Our objectives in the next REF period are designed to ensure vitality and sustainability in a research landscape shaped by new challenges, including: (i) changing priorities for external funding schemes; (ii) the effects of COVID-19; and (iii) increasing pressures on UG recruitment. They are as follows:

- **REF2021:R1** *To develop the centres further by: (i) a greater focus on external grant capture in CMCI; and (ii) developing ReCePP's collaboration with Drama, including their pioneering exploration of multimedia modes of research presentation.*
- **REF2021:R2** *To expand the size and diversity of MMT's research community by: (i) building our cohort of international PGRs by augmenting our online provision for PGRs; (ii) encouraging applicants for funded postdoctoral fellowships across the full spectrum of our subject expertise; and (iii) pursuing internally and externally funded opportunities for attracting VRFs and VPs.*
- **REF2021:R3** *To maintain the international profile of MMT's research community by building on working patterns developed during COVID-19 to develop models of international collaboration that are socially engaged and environmentally responsible.*
- **REF2021:R5** *To enhance support for ECRs, by means of increased allocation of resources to enable teaching and marking relief, and to establish more proactive mentoring arrangements.*
- **REF2021:R6** *To build capacity for successful large-scale funding bids in CMCI and ReCePP by further developing strategic partnerships.*
- **REF2021:R7** *To increase resilience of our research culture at a challenging time for student recruitment by giving particular attention to the further development of research fields (e.g., performance and music production) that attract UG applicants.*

1.3. Enabling Impact

MMT's impact strategy outlined in REF2014 was as follows:

- **REF2014:I1** To continue to develop and embed impact within the established research centres.
- **REF2014:I2** To further the relationship with our existing partners, including the Huddersfield Contemporary Music Festival (HCMF), Ableton, Stonehenge, the National Centre for Early Music and new partners including Sound and Music.
- **REF2014:I3** To involve the central Research and Knowledge Transfer team at a much earlier stage in our development of research impact in order to assist in identifying impact partners and end-users and to maximise the reach and benefit to these communities.
- **REF2014:I4** To acknowledge that not all research projects necessarily yield impact, or do so immediately, but should nevertheless be financially supported and encouraged for their long-term impact.
- **REF2014:I5** To assign more financial support from the research budget for seed-funding future impact case studies.
- **REF2014:I6** To conduct an annual review of research dissemination and impact within the Music Department with the Directors of each of the research centres, the Head of Research for the School and the UoA co-ordinator.

These have all been achieved in the period since REF2014. To achieve **REF2014:I1**, **REF2014:I2** and **REF2014:I3**, activities have been supported by a new MHM infrastructure comprising a 1.0 Impact Officer (appointed 2016 and continuing beyond REF2021), who supports engagement activities and all MHM **Impact Case Studies** (ICSs); a Data and Quality Administrator whose contract involves supporting impact; and an 0.4 Impact Assistant (appointed 2018) to develop MMT's work with diverse communities across Yorkshire and to provide support for MMT's ICSs. To achieve **REF2014:I4** and **REF2014:I5**, each ICS lead is allocated £5,000 per year, and there is funding for other staff to support early-stage work on impact (**Section 3.1**). To achieve **REF2014:I6**, research audits involve discussion of potential impact-related research and strategies to optimise impact. The three ICSs submitted for REF2021 demonstrate the success of this impact strategy: they span all three of our research centres (**REF2014:I1**), involve established and new partners (**REF2014:I2**), and are the outcome of infrastructural and financial support offered across the REF cycle (**REF2014:I3**; **REF2014:I5**).

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Our objectives for impact in the period leading up to the post-2021 REF are:

- **REF2021:I1** *To reserve 25% of the devolved budget for centres for impact-related activities.*
- **REF2021:I2** *To foster research in potentially impactful areas.* These are envisaged to be in established fields, but potential growth areas include film musicologies and research-informed performance.
- **REF2021:I3** *To develop links with a wider range of external, non-academic partners* in order to identify areas where MMT research can support impact, including software houses, record labels and community music organisations.
- **REF2021:I4** *To use the University's networks*, including those fostered by the 3M Buckley Innovation Centre, to explore opportunities to commercialise research in music technology.
- **REF2021:I5** *To build upon the established impact* of MMT's research in the Kirklees area (**Section 4.4**), by wider engagement with rich extant local practices. Contributions are envisaged, for example, to the Kirklees Year of Music (2023) and to the *Sound Space* arts venue developed by Kirklees Council.
- **REF2021:I6** *To maintain momentum with existing ICS projects*, with a view to one or more being submitted as 'continuing' impact in the next REF.

1.4. Supporting Interdisciplinary Research

Centres foster interdisciplinary research by incorporating staff from other parts of MHM and the University. CeReNeM has built strong links with the School of Computing and Engineering (C&E): the CCL is a joint enterprise with C&E, hosting fortnightly meetings on coding practices; and the *Applied Psychoacoustics Laboratory* (APL; led by **Lee**), based in C&E, is affiliated with CeReNeM. The interface between music and computing is also central to the *IRiMaS* and *FluCoMA* projects (**Section 3.1**). CMCI is linked with C&E through **Herbst's** *Heaviness in Metal Music Production* AHRC project, with **Mynett** (C&E) as Co-I (**REF2021:R6**). **Till** and **Lee** have also worked on 3D electronic popular music using the HISS loudspeaker orchestra (**Section 3.3**). The Centre for History, Culture and Memory (CHiCaM), based in History, connects researchers from multiple disciplines through four interlocking research groups; MMT staff are particularly active within the Medieval and Early Modern Culture group. Interdisciplinarity is also fundamental to the projects of our RFs: **Contreras** collaborated with historian Giulia Quaggio on a conference examining artistic models of democracy in post-authoritarian Iberia; **Pistorius** works alongside African Studies scholars on the Black Opera Research Network; and **Assay's** work on Shakespeare and Music entails collaboration with literary scholars, including in her role as Chair of the RMA Shakespeare and Music Study Group (founded by her in 2019). ReCePP brings together specialists in performance studies and artistic research across MMT and Drama, and speakers at seminars are drawn from a wide range of disciplines.

Links are being developed with the School of Human and Health Sciences (HHS) to foster work in music psychology, with collaborations between **Jan** (MMT) and **Peebles** and **Shibazaki** (HHS) being planned. Another area of development is the Yorkshire Film and Television School, which combines subject areas across the University. MMT is closely involved in this, given its strengths in film/media production (**Cox**), composition (**Cox, d'Escrivan**), technology (**Dobson**) and musicology (**Cox, Haworth, White**) (**REF2021:R6**).

1.5. Progress Towards an Open Research Environment

MMT is committed to an open research culture. The URF funding (2015–2020) secured by CeReNeM (**Section 3.1**) enabled a significant move towards open-access publishing, through various platforms. CeReNeM publications issued by **University of Huddersfield Press** have generated substantial public reach: five open-access books authored and edited by MMT staff have had c. 25,000 downloads since 2014. CeReNeM's peer-reviewed online journal *Divergence Press*

averages over 2,000 unique visitors and 3,600 article views per year. CeReNeM's *YouTube* channel, containing videos of guest lectures, workshops and interviews, has had over 65,000 views. The open-access *Journal of Creative Music Systems* (edited by **Jan**) had 5,700 views in 2020. Other outputs of MMT staff available as open-access items include **Cox's** 2018 *Soundings: Documentary Film and the Listening Experience* (UoH Press), downloaded over 2,000 times; and **Mil-som's** 2020 Pennine Records recording of violin and viola sonatas by Brahms. Several MMT-authored codebases are freely available, including **Harker's** *FrameLib* and *iPlug2* software (the latter winning the 2018 FAUST Open Software award); and the *FluCoMa* project's *Fluid Decomposition Toolkit*. Several MMT-hosted conferences (**Section 4.5**) have full texts of presented papers, or videos of presentations, publicly available, including the *First Conference on Computer Simulation of Musical Creativity* (2016) and the IASPM-UK *Biennial Conference* (2018).

1.6. Research Integrity

MMT follows the principles of the **Concordat to Support Research Integrity** as enshrined in the University's **Code of Practice for Research**. Compliance is overseen by the **School Research Committee** (SRC), whose meetings begin with consideration of research integrity and ethics business. The University's Research and Enterprise team offers support to staff to help ensure appropriate ethics protocols are integrated into externally funded projects. The induction of PGR students (**Section 2.3**) involves training in research integrity, including compulsory completion of the Research Integrity (Concise) training provided through *Epigeum*. Progression monitoring reviews for PGRs include support with ethical issues.

Section 2. People

2.1. Staffing Strategy and Staff Development

We foster a collegiate and supportive culture for research which takes into consideration the different needs of researchers at various stages of their careers. Of the 23 permanent staff currently in post, 14 (60.9%) were also in post in 2014. This strong retention rate reflects an environment that supports all staff to research productively and thereby enhances prospects for promotion. In the current REF period: **Bellamy, Harker, Haworth, Herbst, Martin** and **Worthington** were promoted from Lecturer to Senior Lecturer (**Haworth** began her career in MMT as a RF); **Cassidy, Harrison, Thomas, Till** and **Tremblay** from Senior Lecturer to Reader and then to Professor; **Colton** and **Jan** from Senior Lecturer to Reader; **Till** from Professor to Associate Dean; and **Adkins** from Professor to Associate Dean to Dean (of the Graduate School).

All research staff are assigned a **research mentor** from the professoriate, who is available at all times for advice on draft publications, grant applications, promotion applications and research audit preparation. UoACs and the ADRes conduct annual **research audits**, which assess progress towards agreed goals for outputs and impact, and determine the support needed to achieve them. Training offered by the University's Researcher Development Programme is mapped against the *Vitae* Framework, and includes best practice in PGR supervision, data collection and management, ethical issues, and using research-related software. Research audits are coordinated with annual **staff appraisals**, undertaken by the Subject Area Leader (SAL) for MMT (**Worthy**), to balance research objectives with those of teaching and administration. Key staff (**Adkins, Cassidy, Colton, Till**) have further developed their competencies in research and PGR leadership by undertaking Level 7 Certificates through the University's Chartered Management Institute Research Leader Development programme.

All academic and research staff have **one research day per week** (*pro rata*) that is kept free of teaching and administrative commitments. Staff receive a minimum annual personal **research allocation** of £750. Requests for additional funding, sometimes amounting to sums of several thousand pounds, are assessed to determine alignment with MMT's and the relevant centre's strategic goals, and the development needs of the applicant. Such additional support takes the

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form of funding for international travel, and also as blocks of teaching and marking relief to facilitate work on specific outputs or grant applications. Unspent 'carry-forward' funds have since 2017 been used to pay for additional **part-time hourly-paid teaching** to alleviate the teaching and marking burden of staff. Adding this to the allocations funded by QR has resulted in an additional 100 hours of research time for grades 7 (Lecturer), 8 (Senior Lecturer) and 9 (Reader), and an extra 50 hours for grade 10 (Professor), compared to the University's standard workload model. Additional relief comes from work undertaken by PGRs (a condition of fee-waivers; **Section 2.3**), which additionally benefits the latter's professional development.

Staff are eligible for a six-month **sabbatical** after seven semesters. **Twenty-eight sabbaticals** have been awarded to MMT staff during the current REF period. Sabbatical applications are assessed first by the UoACs and SAL for MMT, and then by the SRC. Post-sabbatical, the SRC measures outcomes against the proposal and offers advice for further development. Sabbaticals may take different forms, such as **year-long 1.0 FTE**, if matching funding is secured; **year-long 0.5 FTE**, if that better supports the applicant's research goals and workload; or **impact sabbaticals**, designed to initiate or develop ICSs. A year-long 0.5 FTE sabbatical allowed **Cassidy** to complete *Self-portrait, 1996* and to revise *A republic of spaces*, whilst continuing to manage CeReNeM. Six-month, 1.0 FTE sabbaticals have been extended to allow for the completion of a particularly ambitious output, such as **Milsom's** 9-month sabbatical in 2019, during which he undertook the bulk of the work on his *Handbook to Romantic Violin Performing Practices 1840–1920* (with lighter duties on his return in order to complete the monograph). Other examples of major outputs completed during a sabbatical include **Adkins'** edited volume *Music Beyond Airports* and **Colton's** monograph *Angel Song*. **Martin's** ICS (developed but not submitted) benefitted from an impact sabbatical which gave him 268 hours over eighteen months.

Centres have hosted a number of **Visiting Research Fellows** and **Visiting Professors**. These include Sam **Pluta** and Miller **Puckette** (CeReNeM/CCL); Michael **Ahlers**, Franco **Fabbri**, Toby **Martin**, and Philip **Tagg** (CMCI); and Duncan **Druce** and George **Kennaway** (ReCePP). VRFs and VPs have made significant contributions to MMT's research community, through collaborations with staff and presentation of research seminars for PGRs. For example, **Puckette** worked with **Harker** on the *PureData* port of the latter's *FrameLib* software, and **Pluta** has mentored several PGRs and engineered a Huddersfield Contemporary Records (HCR) release featuring work by **Harrison** and **Tremblay**. **Fabbri** gave a keynote lecture for the MMT-hosted *IASPM Conference* (2018). **Kennaway** has given papers at ReCePP seminars and performed in several concerts with **Milsom's** Meiningen Ensemble period-instrument group.

2.2. Early Career Researchers

MMT has substantially increased its complement of ECRs during the current REF period. In addition to the ten fully funded RFs in post at the census date, two others recently completed their fellowships (**Conner** and **Wolfe**), making a **total of twelve funded postdoctoral RFs** during the current REF period, with two more incoming since July 2020. MMT attracts talented ECRs because of the robust opportunities it provides for career development, and its supportive and inclusive research culture. These aspects of our research environment not only meet the core requirements of the **Concordat to Support the Career Development of Researchers**, but they also satisfy the expectations of fellowship funders. For example, the three research centres offer multiple fora for sharing and receiving feedback on work; our physical infrastructure is ideally suited to the organisation of research events attached to RF projects; and the research-only professorial staff provide capacity for meaningful weekly mentoring on publications and career progression (for instance, **Adlington** mentors five RFs as part of his research chair role). RFs are each assigned a **research mentor**, separate from their line manager, and they participate in the same research audit process as permanent staff. RFs are also invited to all staff meetings, and have access to a dedicated research room with individually allocated workstations and printing facilities. RFs have been supported to develop their career profiles through funding from UoH internationalisation streams (**Section 3.1**), organising conferences (**Section 4.1**), convening research seminars (as

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Contreras and **Pistorius** did for the CMCI series in 2019–2020), and contributing to UG teaching where their fellowship permits (examples include *Music and Politics*, designed by **Contreras** and **Pistorius** under the aegis of CeReNeM's *Democracy in Music* project; and *Music on Stage*, redesigned and expanded by **Assay** with a stronger coverage of gender and race). Permanent ECR staff have received additional support designed to meet the **Concordat's** expectations for support in establishing research careers. For instance, our PGR scholarships (**Section 2.3**) have been used to ensure ECRs gain the experience in PGR supervision necessary for career progression; the student recruited to the 'Steinitz' Scholarship in 2019 allowed **Worthington** to undertake her first main supervisory role (**REF2014:R6**). Permanent ECRs have also been prioritised in the allocation of additional research funds: **Haworth** received matching funding for travel costs to make a BA Small Research Grant viable, a project that formed the foundation for a subsequent Leverhulme award; and **Worthington** received funding to support the production of her *Beethoven Transformed* CDs. We recognise that the demands on EC staff are greater than ever before, and are resolved to strengthen EC teaching and marking relief and mentoring arrangements as a key goal for the next REF cycle (**REF2021:R5**).

2.3. Research Students

MMT currently has 91 PGRs, one of the largest communities in the UK, undertaking PhD and MA by Research programmes. In the current REF period (to the 2018–2019 academic year), forty-seven (**39%**) PhDs have hailed from outside the UK, including Australia, Canada, China, Colombia, Iran, Russia, South Korea, the USA, and mainland Europe. Seventy-one PhDs have been awarded during the current REF period, an **increase of 222.7%** from the 22 reported in REF2014. Many recent PhD graduates have secured prestigious academic and industry appointments, including Mira **Benjamin** (Goldsmiths College), Diego **Castro Magas** (Catholic University of Chile), Cassandra **Miller** (Guildhall School), Abel **Paúl** (Conservatorio Superior de Malaga), David **Pocknee** (Ableton), Daniel **Portelli** (Western Sydney University), Dominic **Thibault** (Université de Montréal), Hakan **Ulus** (Gustav Mahler Privatuniversität für Musik), and Seth Parker **Woods** (Dartmouth College and University of Chicago).

Each PGR begins their studies by completing a **Research Support Plan** and **Skills Audit** with the assistance of their supervisors (all PGRs have a main and a co-supervisor). **Progression monitoring reviews** take place at months nine and 21 of full-time study, involving a *viva* with two staff members external to the supervisory team. MHM's **Director of Graduate Education** (MMT's **Colton**) leads obligatory induction workshops, serves as Personal Academic Tutor for PGRs, and communicates training and funding opportunities throughout the year. A wide-ranging **Researcher Development Programme** offers training in generic skills such as research integrity, *viva* preparation and grant applications, and MMT runs complementary skills sessions for PGR students, covering, for instance, archival research and practice-based methodologies.

Each centre organises a lively programme of **weekly research events** designed primarily for PGRs. CeReNeM runs two weekly sessions: a staff-taught graduate seminar, and a colloquium featuring guest and PGR speakers. CMCI and ReCePP have coordinated weekly provision, embracing presentations from visiting speakers, practical workshops, and work-in-progress sessions. An additional ReCePP seminar session, run by Drama, is open to all PGRs. These different events are timetabled on separate days, giving MMT PGRs access to a uniquely rich and varied PGR provision. These sessions have continued online during the pandemic.

PGRs are supported by competitive **fee-waiver scholarships** designed to retain and attract the strongest students. These are offered under two separate schemes: (i) a University-wide **Vice Chancellor's Scholarship** (for alumni) and (ii) an **MHM-specific Scholarship** (for all applicants, some carrying an additional bursary of £3,000 per year). During the current REF period, 439 waivers (for MAR and PhD study) have been awarded to MMT students (compared with 132 in the previous REF period). Additionally, seven **stipendiary scholarships** are offered by MMT on a rolling basis to attract outstanding PhD candidates in fields reflecting key research themes. They

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pay £7,000 or £14,000 each per year and offer 100% fee-waivers. In return for a waiver, PGRs undertake various duties, including opportunities to contribute to UG and PGT teaching. This teaching experience may include tutorial support, co-teaching of small groups, seminar tuition, and the delivery of lectures with support from academic staff. All PGRs who teach undertake a mandatory Teaching Assistant Preparation Programme.

Generous financial support has been available for PGRs' research during the current REF period through a variety of schemes. The **Postgraduate Researcher Environment Development Fund** (offering up to £2,000 per project) and its antecedents have awarded a total of £40,778 to MMT PGRs. Additionally, MHM offers a **Postgraduate Support Fund** of up to £800 per student to facilitate the development and dissemination of research. These mechanisms have helped support a PGR environment of great vitality: beyond successful pursuit of their degrees, PGRs have published online journals (e.g., the annual *CeReNeM Journal*, the monthly *the MASS*); founded new ensembles and creative collectives (e.g., DriftEnsemble, Noisebringers, and Creative Coding Hackspace); released acclaimed CDs (e.g., Kathryn **Williams'** *Coming Up For Air*, released on HCR and featured on BBC Radio 3); received prestigious commissions (e.g., from Ensemble Modern, Radio France, and Salzburg Biennale); and won prizes (including the PRSF Oram Award, the Sound and Music George Butterworth Prize, and the Pulsar Prize). PGRs have also been supported to organise conferences relevant to their research interests (**Section 4.5**).

2.4. Equality and Diversity

The SRC oversees compliance with the University's **EDI-related commitments** (see REF5a) in relation to research, operating in dialogue with the School's **Equality, Diversity and Inclusion Committee** (EDIC). This involves ensuring that all aspects of MHM research management are guided by University EDI policies in relation to the protected characteristics or individual circumstances of staff and PGRs. Staff Matters is a standing item on the agenda of EDIC, where research support issues can be raised. MHM's School Executive (including the ADRes) are *ex-officio* members and receive all papers, and EDIC's Chair reports to MHM's School Board. Recognising its work towards gender equality, MHM received the **Athena SWAN Bronze Award** in 2020, complementing the Bronze Award first received by the University in 2015. **Dobson** has also undertaken the **Advance HE Aurora** programme.

These mechanisms and accreditations underpin a culture within MMT that values **equality and diversity** as an essential component of a vital and sustainable research environment. Caring responsibilities and other individual circumstances are acknowledged in research audits and mentoring discussions, with plans and outcomes adapted accordingly. Impact activities and ICSs have continued to be developed on behalf of staff on circumstance-related leave. Carry-forward-funded reduction of teaching and marking and extra research funding have been successfully deployed to support ECR career development (**Section 2.1**); and QR funding has been used to retain fixed-term researchers beyond their contracted project (**Melen**). Staff are also granted an additional six weeks' leave after the end of a sabbatical if their research has been affected by COVID-19, perhaps owing to caring responsibilities. For **PGRs** multiple arrangements are in place to accommodate students' diverse circumstances. Students may alternate flexibly between FT and PT modes of study according to need, and PT students can apply for short interruptions specifically on account of changes in personal circumstances. PGRs with disabilities or chronic health conditions may be granted bespoke timelines – for instance, dropping to 0.25 for a period – to allow continued study and supervision. Fee-waiver eligibility has been extended to PT applicants, increasing the proportion of PT students in MMT (c. 30%) and the diversity of students successfully completing.

MMT also embraces **diversity** through its leadership structures and through the kinds of research conducted. All three of our research centres have been led or co-led by women. Our work on gender and identity spans musicology (**Colton, Haworth, Stras**), composition (**Lim**), and music technology (**Dobson**), and is reflected in many PGR projects. CeReNeM is a signatory to the PRSF *Keychange* initiative (**Section 4.4**), and its *Speculations in Sound* symposia (**Section 4.1**)

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have explored topics of gender, sexuality, disability, migration and race, with guest speakers from three continents. MMT researchers have also engaged with diverse communities locally and internationally (**Section 4.4**). Such activity fosters high levels of awareness around difference and discrimination. More generally, MMT recognises and supports a very broad spectrum of research processes and output types, as reflected in the diverse portfolio of work submitted for REF2. We recognise, however, that there is more to be done to remove barriers to participation in MMT research, hence our identification of this as an objective for the coming cycle (**REF2021:R2**)

All those involved in **the selection of staff and outputs for REF2021** undertook the University's e-training in unconscious bias. An Equality Impact Assessment conducted by the University in relation to the REF submission found that 'the SRR/IR process has had little impact upon gender representation' in MMT. MMT's male : female staff ratio (M 68.57% : F 31.43%) is closely reproduced in the gender of authors of selected outputs (M 67.11% : F 32.89%).

Section 3. Income, Infrastructure and Facilities

3.1. Research Funding and Strategies for Generating Research Income

MMT has garnered significant **research grant income** from a range of sources (**REF2014:R3**). In the current REF period, it has secured £4,975,527 of external grant income, compared with £757,056 during the previous REF period, an **increase of 557%**. This success has helped to strengthen the staff base at a challenging time for student recruitment, and has underpinned our output and impact activities across the full spectrum of our research expertise, including work showcased in each of our ICSs. MMT's ongoing **strategy for generating and increasing grant income** is twofold: (i) senior colleagues with established research profiles and a history of funding success are expected to make large-scale bids to fund extension and expansion of their work; and (ii) colleagues without significant grant success are mentored by those in category (i) to build skill and experience in grant-writing, initially targeted at achieving smaller grants from schemes with a higher success rate, such as the BA Small Research Grants (**REF2021:R5**).

Funding applications are supported by three means: (i) research audits involve discussion of strategies for securing funding and progress in bid-writing; (ii) research mentors are in regular contact with mentees to discuss how their work might be developed by external funding; and (iii) a **Research Development Manager (RDM) (Fenlon)**, assigned to MHM by the Department of Research and Enterprise, promulgates funding opportunities to staff and supports the development of bids, in conjunction with MHM's Impact Officer. **Grant-writing workshops** have been organised by the RDM, offering support over an intensive two-day period.

A significant portion of MMT income in the current REF period comes from two large **European Research Council** projects with MMT PIs: **Clarke's *Interactive Research in Music as Sound: Transforming Digital Musicology (IRiMaS)*** (€2,471,416, 2017–2022); and **Tremblay's *Fluid Corpus Manipulation (FluCoMa)*** (€1,997,431, 2017–2022). These are examples of category (i) in the strategy outlined above: both PIs have a track record of attracting research funds and, particularly in the case of **Clarke**, experience designing software of which *IRiMaS* represents a significant advance. Thus, these projects are the outcome of extended investment in areas – software for music analysis, and sound-corpora analysis and manipulation, respectively – of particular research strength in MMT. Each has recruited two full-time RfS (*IRiMaS*: **Dufeu, Takahashi**; *FluCoMa*: **Green, Roma**) and a community of three associated PhD students who, while attached to the projects, are fully integrated into the body of MMT PGRs.

Other significant **externally funded projects with MMT staff as PI** include **Adkins' *Gerhard Revealed*** (AHRC; £79,944; 2020–2021; follow-up funding for *The Electronic Music of Roberto Gerhard* (AHRC; £146,202; 2012)), **Bryan's *Making the Tudor Viol*** (AHRC; £286,596; 2009–2014), **Clarke's *The Impact of Technology on the Creative Processes of Composing Electroacoustic Music (TaCEM)*** (AHRC; £312,000; 2012–2015), **Haworth's *Sounds Criminal*** (Leverhulme Trust;

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£37,176; 2019–2021), **Herbst's** *Heaviness in Metal Music Production (HiMMP)* (AHRC; £199,900, of which £157,233 to MHM and £42,667 to C&E; 2020–2023), **Thomas's** *John Cage and the Concert for Piano and Orchestra* (AHRC; £279,778; 2015–2018), and **Till's** *Songs of the Caves: Acoustics and Prehistoric Art in Cantabrian Caves* (AHRC; £79,999; 2013–2014). **Till** was also a Co-I in the *European Music Archaeology Project (EMAP)* (EU; €4,000,000; 2013–2018); his ICS relates to both these projects.

Staff have also been awarded **other types of external funding**, including those that support creative work, such as **Harrison's** Paul Hamlyn Foundation award (£50,000; 2013–2016), which allowed him to compose, among other works, *Receiving the Approaching Memory* (2014). MMT composers have also received significant funding from **commissions**. Examples include **d'Escrivan's** commissions for film trailers from Los Angeles-based Sencit Music (£25,000); **Harrison's** Siemens Foundation commission for *How Things Come Together* (£9,982); **Lim's** commission for *Tree of Codes* (€30,000); and **Tremblay's** Canada Council for the Arts grant (Can\$7,500; associated with his receipt of the Jules Leger Prize in Composition, 2015). As noted in **Section 2.2**, MMT has had significant success in securing funding for postdoctoral fellowships.

MMT has been successful in securing competitive funding via the **URF**. CeReNeM has received two large URF grants: *International Leadership in New Music and Audio Technology* (£336,437) and *Sustainability in Strategic International Research Partnerships and the Establishment of New Research Grouping: Creative Coding Lab* (£152,932), which enabled the partnerships detailed in **Section 4.1**. The URF has also supported initiatives relating to the **internationalisation** of research. These include resources to promote **ECR participation** in international events by funding travel to present papers and for the costs of international speakers attending ECR-convened UoH conferences (**REF2014:R6**). A number of ECRs have been successful in securing funds from this stream, including **Assay** (to present a paper in St Petersburg), **Pistorius** (to present papers in the USA and Turkey), **Stanović** (to present papers in Australia), and **Worthington** (part-funding the *Nineteenth-Century Salon* workshop).

3.2. Organisational Infrastructure

CeReNeM has used its URF funding to build significant capacity, including through the appointment of an Administrator (**Gillies**), who has developed CeReNeM's open-access platforms (**Section 1.5**), its social media presence, and the *Speculations in Sound* network (**Section 4.1**). The Administrator has also supported the development of the **Huddersfield Contemporary Records (HCR)** label, established in 2009, which provides a platform for the international dissemination of compositions and performances by MMT staff alongside work by CeReNeM's network of partners. HCR is exclusively distributed and promoted by NMC, the UK's leading label for contemporary music. Since 2015, HCR has released 15 new CDs, and average annual sales are 1,600% higher than average annual sales before the partnership with NMC. This has resulted in worldwide radio play and reviews in *The New Yorker*, *The Guardian*, *The Sunday Times*, *The Wire*, *BBC Record Review*, *The Nation*, *Tempo*, and *Neue Zeitschrift für Musik*, among others. Download and streaming sales have increased markedly over the last five years, from 2,357 in 2016–2017 to 18,372 so far in 2020–2021.

CMCI and ReCePP were established during this REF period, the former arising from the Music, Gender and Identity (MuGI) group, the latter from a merger between the Huddersfield Centre for Performance Research and Drama's Centre for Psychophysical Performance Research. CMCI's strategic rationale was to expand the reach of MuGI to encompass a wider range of staff research interests while preserving an overarching focus on the cultural mediation of musical production and reception (**REF2014:R2**). The merger which created ReCePP aimed to establish structures for dialogue between practice-researchers (not least PGRs) in MMT and Drama. Both centres have supported projects which reflect these infrastructural changes. These include (in CMCI) **Dobson's** *Gender and Inclusion in Music Technology*, which has fed into her ICS and YSWN; and (in ReCePP) the migration to MMT of the *Collection of Historical Annotated String Editions (CHASE)*

Unit-level environment template (REF5b)

website (part of an AHRC-funded project on historical string editions on which **Milsom** was a co-investigator), and the website's development to support new projects on nineteenth-century performance practice. **Thomas's** *John Cage and the Concert for Piano and Orchestra* project, which combines performance studies with the study of American experimental music, brings together the interests of CeReNeM and ReCePP. ReCePP has also established the **Pennine Records** label, under the direction of **Milsom**, to promote research-informed performance.

MMT enjoys a relationship of 'allied autonomy' with the **Huddersfield Contemporary Music Festival** (HCMF), directed by **McKenzie**, which was established in 1979 by emeritus MMT staff member **Steinitz**. MMT composers and performers regularly present their work at HCMF; there is an annual CeReNeM Guest Lecture; and there are free 'shorts' concerts co-curated by MMT staff and PGRs (**REF2014:R7**). The international audience drawn annually to Huddersfield for HCMF has provided opportunities for MMT's work to be distributed widely; projects co-produced by CeReNeM and HCMF have received further performances in Australia, Canada, Mexico, Norway, Serbia, Switzerland, Taiwan, and the USA, as well as broadcasts on BBC Radio 3 and on eight CD recordings since 2014. Given the synergies between the HCMF and CeReNeM in particular, MMT supports HCMF with c. £9,000 per year and the University provides HCMF with two offices. Similar opportunities are afforded by the MMT-curated **Electric Spring Festival**, which brings staff, PGRs and visiting researchers together for the exploration of cutting-edge electronic music. The MMT-curated University concert series regularly presents research-driven performances given by MMT staff.

3.3. Operational and Scholarly Infrastructure

MMT is based in the **Richard Steinitz Building** (RSB), a £14,800,000 facility completed in 2008 and home to a range of equipment used specifically for research. Equipment includes the **Huddersfield Immersive Sounds System** (HISS), a loudspeaker orchestra created in 2008 by **Tremblay**; and the 25.4-channel **SPIRAL Lab**, a sophisticated environment for sound experimentation. In addition to support from CeReNeM's URF funds, the HISS receives a subsidy from QR to ensure its ongoing development. **Harker's** cross-disciplinary collaboration with C&E centres on HISS: there is co-development and exchange of software and hardware between the two staff teams, and participation from PGRs from both schools. The HISS is also regularly used by the HCMF and at Electric Spring, and a residency at the local Marsden Jazz Festival is planned (**REF2021:I5**). Technical staff (**Peters**, plus a team of UG placement students), working with School- and University-level staff, maintain MMT's research-related technology and IT infrastructure.

MMT maintains a substantial collection of modern and historical instruments, including three organs (one a replica baroque chamber organ), a c. 1830 Clementi square piano, an 1897 Broadwood piano, and several harpsichords. Some of these are available to PGRs in an **Early Music Room** (which also houses a collection of violins, viols and sackbuts) in RSB adjacent to **Phipps Concert Hall**, and some are located in MMT's main concert venue, **St Paul's Hall**, a converted nineteenth-century church. Many of these instruments are used for research activities, particularly in relation to the work of ReCePP. The £28,000,000 **Oastler Building**, completed in 2017, has a dedicated **Postgraduate Space** with 52 networked PCs, work areas, photocopying facilities, seating/discussion zones and a kitchen. Forming a superb physical infrastructure, St Paul's Hall, Phipps Hall and the Oastler Building have hosted many large-scale research events organised by MMT (**Section 4.5**).

MMT works closely with the **University Library** (which employs a specialist **Music Librarian**), whose substantial **Music Library** occupies its own room, and with the **University Archive** which, in 2014, transferred to its new £2,000,000 premises **Heritage Quay** (HQ). HQ houses several nationally significant music archives, including the former collection of the British Music Information Centre (40,000 scores and recordings), the archives of the Society for the Promotion of New Music (SPNM) and the HCMF, and collections relating to a number of local ensembles and

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musical organisations. HQ has three full-time, professionally accredited staff, who have collaborated closely with MMT staff on grant applications and research events relevant to the collections. HQ's PD5454-compliant standards for storage and its reputation for nationally significant music collections continue to attract new depositors, including most recently prominent figures in British improvisation and London concert life. HQ hosts regular study days on its music collections, often involving MMT staff, and supports training in archival research for MMT PGRs.

Section 4. Collaboration and Contribution to the Research Base, Economy and Society

4.1. Research Collaborations, Networks and Partnerships

The University's strategic focus upon internationalisation (REF5a) has supported MMT's goal of developing collaborative exchanges and research partnerships (**REF2014:R5**). Two URF grants totalling £490,000 enabled CeReNeM to create an ambitious international research network, *Speculations in Sound* (2015–) bringing together new music researchers from leading institutions in North America, Europe and Australasia in a series of symposia and exchange residencies. The network has enabled: 11 MMT researchers to present work at Stanford, Cornell, Columbia, Chicago, Northwestern, NoTAM, Princeton, Harvard, Montreal, NYU, CUNY, Wesleyan, and Dartmouth College; visits to Huddersfield from researchers at Monash, Montreal, Graz, Columbia, Northwestern, Chicago, UCSD, Oxford, Oslo, Leuven, Harvard, and Princeton; three network-wide gatherings in Huddersfield and Queen's University Belfast; three commercial CDs (on HCR) arising from artistic exchanges with Chicago, Northwestern, Harvard and Sydney; and symposia publications involving network partners arising from conferences at Darmstadt and Huddersfield. In 2019 **Cassidy** and **Till** obtained further Huddersfield funding (£25,500) to support collaborative projects in new music, music archaeology and popular music with researchers in Australia, Spain and the USA.

Other partnerships have arisen from externally funded projects (**Section 3.1**). The *IRiMaS* project brings MMT researchers together with Co-Is at Cork, Bath Spa and IRCAM (Paris), the last of these continuing a relationship established by **Clarke** in the 1980s. MMT-led AHRC projects have enabled new partnerships with researchers at Durham (*TaCEM*, PI **Clarke**; *Songs of the Caves*, PI **Till**), Leeds (*John Cage and the Concert for Piano and Orchestra*, PI **Thomas**) and Cambridge (*Gerhard Revealed*, PI **Adkins**). MMT researchers have collaborated as Co-Is on the AHRC projects *French Opera and the Revolutionary Sublime* (**Cowgill**; with Nottingham, Leeds, Copenhagen, Warwick, KCL, Bristol; 2014–2015) and *Modelling a Virtual Violin* (**Harker**; with Edinburgh and Royal Conservatoire of Scotland; 2015–2016), and on European projects including the *European Music Archaeology Project* (**Till**; with institutions in Cyprus, Germany, Austria, Spain and Italy) and *Música y danza en los procesos socioculturales* (**Contreras**; with universities in Barcelona and Granada; 2019–2022). Our funded postdoctoral RFs have created new international knowledge exchange partnerships with Africa Open Institute (**Pistorius**; 2018–2021) and University of Osaka (**Asaba**; 2019–2022).

Our superb physical infrastructure has supported other research collaborations. Several of the music conferences held at Huddersfield (**Section 4.5**) have arisen from cross-institutional partnerships: *Michael Finnissy Dialogues* (with Manchester); *Arts and Models of Democracy in Post-Authoritarian Iberian Peninsula* (with Sheffield); *Sound and Music in Documentary Film* (with Leeds); and *Finding Democracy in Music* (with Fondazione Giorgio Cini, Venice). The last two of these resulted in substantial edited volumes: *Soundings: Documentary Film and the Listening Experience* (2018), edited by **Cox** and John Corner (Leeds); and *Finding Democracy in Music* (2020), edited by **Adlington** and Esteban Buch (EHES, Paris). Our studio facilities have enabled creative collaborations, such as a new acousmatic work for HISS by Jonty Harrison (Birmingham), co-produced for HCMF (2015) by **Tremblay**. MMT staff have additionally co-authored scholarly and creative work with researchers from UK institutions including Cambridge, Manchester, Oxford and UCL; and overseas institutions such as University of Chicago, Humboldt University, Université Paris 8, the Sydney Conservatorium, and Vienna University.

4.2. Relationships with Key Research Users, Beneficiaries and Audiences

The centrality of creative practice within MMT's research culture has enabled the development of strong relationships with industry professionals and audiences, some involving partners as co-researchers. MMT staff are **active as professional performers**, enjoying enduring relationships with high-profile ensembles, festivals, venues and audiences around the world. **Worthington** leads Boxwood and Brass (founded 2013), whose performances of neglected eighteenth- and nineteenth-century wind chamber music have been described by the *BBC Music Magazine* as 'dazzlingly persuasive'. **Worthington's** research on period performance and repertoire informs the ensemble's practice, benefitting audiences for the group's regular concerts and three critically acclaimed CDs (2016, 2019, 2020; two supported by MMT funding), as well as participants in their annual adult education weekend for wind players. **Stras** is co-director of Musica Secreta, whose revival of female-voice polyphony from the fifteenth to the eighteenth century is based in substantial part on **Stras's** archival and historical research. In addition to their commercial recordings (most recently in 2017 and 2019) and performances at leading early music festivals, **Stras** and Musica Secreta run an annual summer school in Italy focused upon repertoire discovered through **Stras's** research. **Thomas** has for twenty years been pianist with the ensemble Apartment House, recently appointed an Associate Ensemble of London's Wigmore Hall. **Thomas's** research contribution to the group extends well beyond the New York School repertoire documented in our ICS, to include recent pioneering explorations of the music of Laurence Crane and Jürg Frey, on each of whom **Thomas** published substantial articles. **Bryan's** research on viol repertoire and performance practice contributes significantly to the activities of the Rose Consort of Viols, with whom he has given 27 concerts since 2014 in historical venues across Europe and the UK, and has recorded five CDs. **Milsom's** research on nineteenth-century performing practices has been explored practically and theoretically through regular performances with the Meiningen Ensemble.

Industry partnerships are central to other areas of MMT research. **Herbst's** AHRC-funded *HiMMP* project incorporates seven music producers as co-researchers, with the goal of creating innovative learning resources for the industry. **Tremblay's** *FluCoMA* project involves eight freelance composers, commissioned to explore the creative potential of the project's tools as they are being developed. CeReNeM's URF funding has enabled MMT composers to work collaboratively with leading new music groups, resulting in 10 new compositions by **Adkins, Bellamy, Cassidy, Harrison** and **Lim** for Ensemble Musikfabrik, ELISION, the Bozzini Quartet, and Wet Ink. MMT staff have developed key relationships with record labels, including the exclusive distribution agreement between HCR and NMC (**Section 3.2**), and the extended relationships with Delphian Records and Another Timbre documented in our ICSs. MMT staff also act as consultants to leading organisations: for instance, **Bryan** was Artistic Adviser for the York Early Music Festival (2014–2020); **Stras** was consultant for Kings Place's *Venus Unwrapped* concert series (2018); **Worthington** was consultant for major recordings by Paul McCreesh and the Gabrieli Consort (2018, 2020); and **Till, Dobson** and **Thomas** provided consultancy to media professionals, technology companies and ensembles, as described in our ICSs.

4.3. Wider Contributions to the Economy and Society

Beyond the extended relationships described above, MMT research has contributed to the economy and society in myriad ways. In the assessment period, MMT staff gave 393 research-related **public performances**, and had 761 **public performances of their compositions**. This extensive presentation of creative work has circled the globe, encompassing performances in Australia, Canada, Chile, China, Iceland, Japan, Mexico, Serbia, Taiwan, the USA, and throughout Europe. Since 2014 MMT research has been presented at festivals including the Darmstadt Ferienkurse, November Music, Sonorities, TRANSIT, Tectonics, Spoleto, HCMF, and early music festivals in Utrecht, York, Beverley, and Brighton. MMT **composers** have produced new repertoire for ensembles including Klangforum Wien, Ensemble Modern, Ensemble Contrechamps, Ensemble für neue Musik Zürich, Speak Percussion, and the Riot Ensemble; and MMT **performers** have performed with the Kings Consort, the Academy of Ancient Music, the Gabrieli

Unit-level environment template (REF5b)

Consort and Players, the Orchestre de Champs-Élysées, and the Orchestra of the Age of Enlightenment. MMT research has been distributed globally by **record labels** based in the UK (Amon Ra, audiobulb, Delphian, NMC, Obsidian, Resonus), Australia (Ivy League Records), Austria (Kairos), Belgium (Sub Rosa), Canada (empreintes DIGITALes), Germany (cpo, Wergo), Hong Kong (Naxos), Portugal (Crónica), Switzerland (HatHut), and the USA (Divine Art). Staff have acted as **mentors** for young composers and performers at leading international events including the LSO's Soundhub scheme, Barcelona's Mixtur Festival, HCMF, the Darmstadt Ferienkurse, and MMT's own five-day *Nineteenth-Century Salon* (2018; **Worthington**), which explored period performance practice with 30 postgraduate and professional chamber musicians from ten countries.

UoA researchers have been active in **public engagement**, delivering 152 invited talks during the assessment period, for venues including the South Bank Centre, Kings Place, Spectrum (NYC), the Luxembourg Philharmonie, the Spoleto Festival (Charleston), the Boom Festival (Portugal), Club Transmediale Festival (Berlin), the Sydney Recital Hall, the Ethnografilm Festival (Paris), the British Library, and the EU Researchers' Nights. **Cassidy, Colton, Dobson, Stras, Thomas, Till, Tremblay** and **Worthington** have all contributed to BBC national radio programmes during the assessment period, and **Till** has appeared several times on BBC television. **Herbst, Jan, Till** and **Wolfe** have contributed to programmes made by broadcasters in Australia, Germany, France, the USA and Japan. MMT staff have written on their research for the general readerships of *The Guardian*, *The Conversation*, the *New European*, the *New Scientist* and *The Wire*.

4.4. Engagement with Diverse Communities and Publics

MMT researchers have been actively engaged with the **local communities** of Kirklees. **Cassidy** and **Schmidt** serve on Kirklees Council's Music Development Group, created following the Council's successful bid for £300,000 funding from Leeds City Region to place the region's 'rich and diverse musical heritage' at the centre of local regeneration. One of the cornerstone activities enabled by the Council's funding was devised and led by **Martin**: the *Roots to Inspire* programme (2019) highlighted the diversity of musical traditions in Kirklees through creative collaboration, drawing upon **Martin's** research on song-writing and cross-cultural collaboration. The programme paired four experienced musicians with community music groups in Kirklees to create new music fusing diverse styles and traditions. The project, delivered with £20,000 funding from Kirklees Council, involved 127 participants from local schools, an Urdu community centre, a centre providing support for women experiencing mental health difficulties, a gospel choir, and a brass band, in workshops, public performances, recordings and a project film. A predecessor project, *Momentum II* (2017), run by **Martin** in association with HCMF, involved vulnerable and stigmatised local communities. Over 50 participants, including refugees, asylum-seekers, and inmates at HMP Leeds, developed song-writing skills, and recorded their compositions.

MMT staff have deployed their research expertise to support greater **gender equity** in musical life. One of our ICSs documents the work of YSWN, initiated and co-led by **Dobson**, which has offered training in music technology to over 850 women and girls across the north of England. A complementary initiative was the Professional Development Programme for Female Composers of Electronic Music (2018–2019), which gave five female-identifying emerging composers access to MMT's extensive multichannel studios and mentoring from **Cassidy** and **Tremblay** in preparation for premieres at HCMF. CeReNeM is a signatory to the PRS Foundation *Keychange* initiative, committing to achieve at least 50% representation of female-identifying artists and guests across its academic, performance and recording programmes.

MMT staff have also brought benefit to **diverse communities overseas**. **Martin's** critically acclaimed album *Songs from Northam Avenue* (2017) originated in a commission from Urban Theatre Projects in Sydney to create songs responding to the lives of people from the multicultural suburb of Bankstown. Beginning with a residency during which residents collaborated on song lyrics, the project developed into a collaboration with local musicians from various backgrounds,

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including Iraqi, Lebanese, Vietnamese and Western. The album's success has created new opportunities for several of **Martin's** collaborators (including festival performances and recordings), and through workshops and extensive media coverage has contributed to new public appreciation of the benefits of Australia's multiculturalism.

4.5. Contribution to Sustainability of the Discipline and the Research Field

MMT staff have contributed to the discipline through **roles with academic and professional organisations**. They have filled significant positions within the leading UK subject associations, including the RMA (**Assay, Schmidt**), MusicHE (**Dobson**), and IASPM-UK (**Herbst, Till**); and in subject associations overseas, including the Society for Ethnomusicology (**Asaba**), the International Council for Traditional Music (**Both**), and the South African Society for Research in Music (**Pistorius**). Staff serve on the boards of scholarly organisations including the Digital Image Archive of Medieval Music, the Plainsong and Medieval Music Society, the Répertoire International des Sources Musicales, and the British Academy's Early English Church Music series. **Adlington** and **Clarke** are members of the subpanel for REF2021. **Adkins, Adlington, Cowgill, Schmidt** and **Thomas** were all appointed to the AHRC Peer Review College during the assessment period. Staff also serve on the boards of non-academic organisations, including Sound and Music's British Music Collection Working Group, HCMF and the York Early Music Festival.

MMT has hosted twenty national and international **conferences** since 2014. These include major meetings of the musicological calendar, such as the *BFE/RMA Research Students' Conference*, the *Biennial International Conference on Nineteenth-Century Music*, IASPM-UK's *Biennial Conference*, and the *Biennial International Conference on Music Since 1900*. Complementing these fixtures has been an array of events reflecting new avenues for the discipline, encompassing education (*Research in Popular Music Education*, 2015), technology (*Visual Interactive and Sound Technology in Archaeology*, 2015; *First Conference on Computer Simulation of Musical Creativity*, 2016), new music (*Michael Finnissy Dialogues*, 2016), film music (*Sound and Music in Documentary Film*, 2017), social inclusion (*Activating Inclusive Sound Spaces*, 2017), popular music (*Re-contextualising Ragtime*, 2017; *Ambient @40*, 2018), and four international symposia on music and democracy (2017–2020). Two conferences have been organised by PGRs under the mentorship of MMT staff: *Vocality/Instrumentality* (2017) and *Capitalist Realism: 10 Years On* (2020).

MMT research has responded to **Global Challenge priorities** by addressing the refugee and environmental crises. **Martin's** work with refugee communities in Huddersfield (**Section 4.4**) led to the innovative *Sounding Out Refugee Stories* project (2019), raising awareness of the plight of Syrian refugees in Jordan; **Martin** collaborated with Jordanian musicians to create new songs using transcripts of interviews with refugees, and was interviewed about the project on Jordanian TV. **Cox's** 45-minute documentary film *Tree People* (2014) makes creative use of location sound and music to communicate the environmental contribution of the Colne Valley Tree Society; the film has since been used by the society to publicise its achievements and to recruit new members. **Lim's** compositions engage extensively with ecological interconnection and the effects of the Anthropocene, topics on which she has spoken regularly in interviews and invited talks, notably around her works *How Forests Think* (2017) and *Extinction Events and Dawn Chorus* (2019).

4.6. Leadership and Recognition

MMT staff have acted as **editors** for prestigious journals and book series, serving as editors for the journals *Analitica* (**Herbst**), *Journal of Creative Music Systems* (**Jan**), *South African Music Studies Journal* (**Pistorius**), *Music Archaeology of the Americas* (**Both**), and *Metal Music Studies* (**Herbst**); as editorial board members for journals in the UK (*Early Music*, *IASPM Journal*, *Music, Sound and the Moving Image*, *Journal of the Royal Musical Association*, and *Metal Music Studies*), and overseas (*Journal of the Alamire Foundation*, *Journal of Music Research Online*, *Nielsen Studies*, *Polifonie*, *Revue de Musicologie*, *Transposition*, *Tijdschrift voor de Nederlandse Muziekgeschiedenis*, and *Искусство музыки (Art of Music)*); and as editors for the book series *Elements in Popular Music* (CUP), *Music in Britain 1600–1900* (Boydell and Brewer), and *Musical*

Unit-level environment template (REF5b)

Cultures of the Twentieth Century (Routledge). MMT staff have served as **peer reviewers for journals** including *Cambridge Opera Journal*, *Contemporary Music Review*, *Early Music*, *Journal of the American Musicological Society*, *Journal of the Royal Musical Association*, *Journal of Musicology*, *Music and Letters*, *Organised Sound*, *Psychology of Music*, and *Twentieth-Century Music*; and **for publishers** including CUP, OUP, Palgrave Macmillan, Routledge, and Springer. In addition to serving on the AHRC Peer Review College (**Section 4.5**), MMT staff have acted as reviewers for the national **research councils** of Germany, Canada, Switzerland, Austria and the European Science Foundation. Staff have also served on **juries** for leading composition prizes including the ISCM, British Composer Awards, Ivor Composer Awards, Young Nordic Music Days, and the Geneva International Composition Programme.

MMT staff have achieved **international recognition** for their research. They have received prizes, including the AMS's Otto Kinkeldey Award for most distinguished book in musicology (**Stras**, 2019), the American Musical Instrument Society's Nicholas Bessaroff Prize for the best book in English on musical instruments (**Bryan**, 2017), the Mariangela Tempera Award in Shakespearean Studies (**Assay**, 2020), and the Paul Hamlyn Foundation Award for Artists (**Harrison**, 2013–2016). They have been appointed to prestigious residencies, including the Hartley Residency at the University of Southampton (**Cowgill**, 2019), and a DAAD Guest Professorship at TU Berlin (**Tremblay**, 2014–2015). They have received high-profile media attention: for instance, the *New Yorker's* influential music critic Alex Ross singled out **Thomas's** five-CD set of Morton Feldman and an HCR disc as two of his top ten recordings of 2019; and BBC Radio 3's *Record Review* programme reviewed discs containing work by **Adkins, Harrison, Stras, Thomas** and **Worthington**. MMT staff have been keynote speakers for the *RMA Annual Conference*, the *Conference for Medieval and Renaissance Music*, and the *International Society for the Study of Greek and Roman Music and its Cultural Heritage*, and at overseas conferences in Derry, Colombia, Treviso, Shanghai and Sydney. Since 2014, staff have examined a total of 36 PhDs at leading research institutions in the UK, Europe and North America.