Centre for Digital Music

Professor Mark Sandler
Digital Music Research @QMUL began 2001, C4DM formed 2003

World-leading research into digital technologies for new understanding and innovation in music and audio.

Founding member of BBC R&D Audio Research Partnership

>60 people: 16 academics, 35 PhD students, 15 post-docs

Research funding: over £25M since 2007


Teaching: Bachelors, Masters, Masters by Research, PhD

Software: Sonic Visualiser, SoundBite, TONY, …

Partners: BBC, last.fm, Yamaha, Abbey Road, Universal, omnifone, Microsoft Research, Fraunhofer, …
C4DM Academic Staff

Prof Mark Sandler  
Director of C4DM

Dr Simon Dixon  
Deputy Director of C4DM

Dr Mathieu Barthe  
Dr Nick Bryan-Kinns  
Prof Elaine Chew  
Dr Gyorgy Fazekas  
Prof Pat Healey  
Dr Andrew McPherson

Dr Marcus Pearce  
Dr Josh Reiss  
Dr Tony Stockman  
Dr Bob Sturm  
Prof Geraint Wiggins

Dr Emmanoul Benetos  
Dr Dan Stowell  
Dr Matthias Mauch
C4DM Research Areas

- Mathematical Models
- Performance Studies
- Music Informatics
- Interactive Sound
- Digital Music
- Augmented Instruments
- Computational Creativity
- Machine Listening
- Audio Engineering

Queen Mary
University of London
Research Themes

- Audio engineering

Prof Mark Sandler

Dr Josh Reiss

Digital audio effects

Autonomous production

Multitrack signal processing

Spatial audio

Intelligent systems for live sound

Streaming & compression

Digital power, data converters
Research Themes

- Audio engineering
- **Augmented instruments and interfaces**

Dr Nick Bryan-Kinns  
Dr Tony Stockman  
Dr Andrew McPherson

Real-time interactive systems  
Interactive soundscapes  
Automated composition  
Data sonification

New musical instruments  
Sound synthesis  
Gestural control  
Multitouch sensing
Research Themes

- Audio engineering
- Augmented instruments and interfaces
- **Music informatics**

**Music information retrieval**
**Music recommendation and navigation**
**Automatic music transcription**
**Machine listening**
**Semantic analysis**
**Segmentation**
**Music web technologies**
Research Themes

- Audio engineering
- Augmented instruments and interfaces
- Music informatics
- **Music making, creativity, and cognition**

Prof Elaine Chew
Prof Geraint Wiggins
Prof Pat Healey

Dr Marcus Pearce

Psychoacoustics
Empirical aesthetics
Neuroimaging

Ensemble interaction
Performance visualisation
Beat tracking & rhythm analysis
Networked performance

Communication modelling
Innovation and improvisation
Music information dynamics
Research Funding

Over £25 million since 2007

**National Grants (EPSRC, JISC, TSB, ...)**
- OMRAS-2 - Online Music Recognition And Searching
- Information Dynamics of Music
- Sustainable Software for Digital Music & Audio Research
- Making Musical Mood Metadata (M4) with BBC
- FAST-IMPACT Programme Grant £6M (2014-2019)

**European Projects**
- EASAIER- Enabling Access to Sound Archives
- SMALL- Sparse Models, Algorithms & Learning
- SIMAC- Semantic Interaction with Music Audio Contents
Industry Collaboration

fxpansion

last.fm
the social music revolution

BBC R&D

YAMAHA