Conference
Goldsmiths, University of London
Thursday, 6 November 2014
09:00 to 18:25 (GMT)

www.humaninteractive.org.uk **www.creativemachine.org.uk**

Human Interactive

Welcome to Goldsmiths, University of London

Thank you for joining us for this day so that we can collectively explore the current and future interfaces between human beings and the rapidly evolving landscape of novel technologies.

As a research intensive university, we combine new thinking in arts and humanities, social sciences and creative computing to address questions around our developing relationship with technology. Here at Goldsmiths, we believe that the majority of today's challenges cannot be addressed through a single disciplinary perspective on understanding how the human condition is defined in relation to digital, social and creative economies. In short, we seek to understand what it means to be human in the context of technological innovation through multi-disciplinary perspectives.

It has never been more important for universities to make available the knowledge we generate in order to work in partnership and share our collective expertise in a way that can really make a difference in the world. And so our research is undertaken in collaboration with a wide range of businesses, social enterprises, charities, museums and galleries.

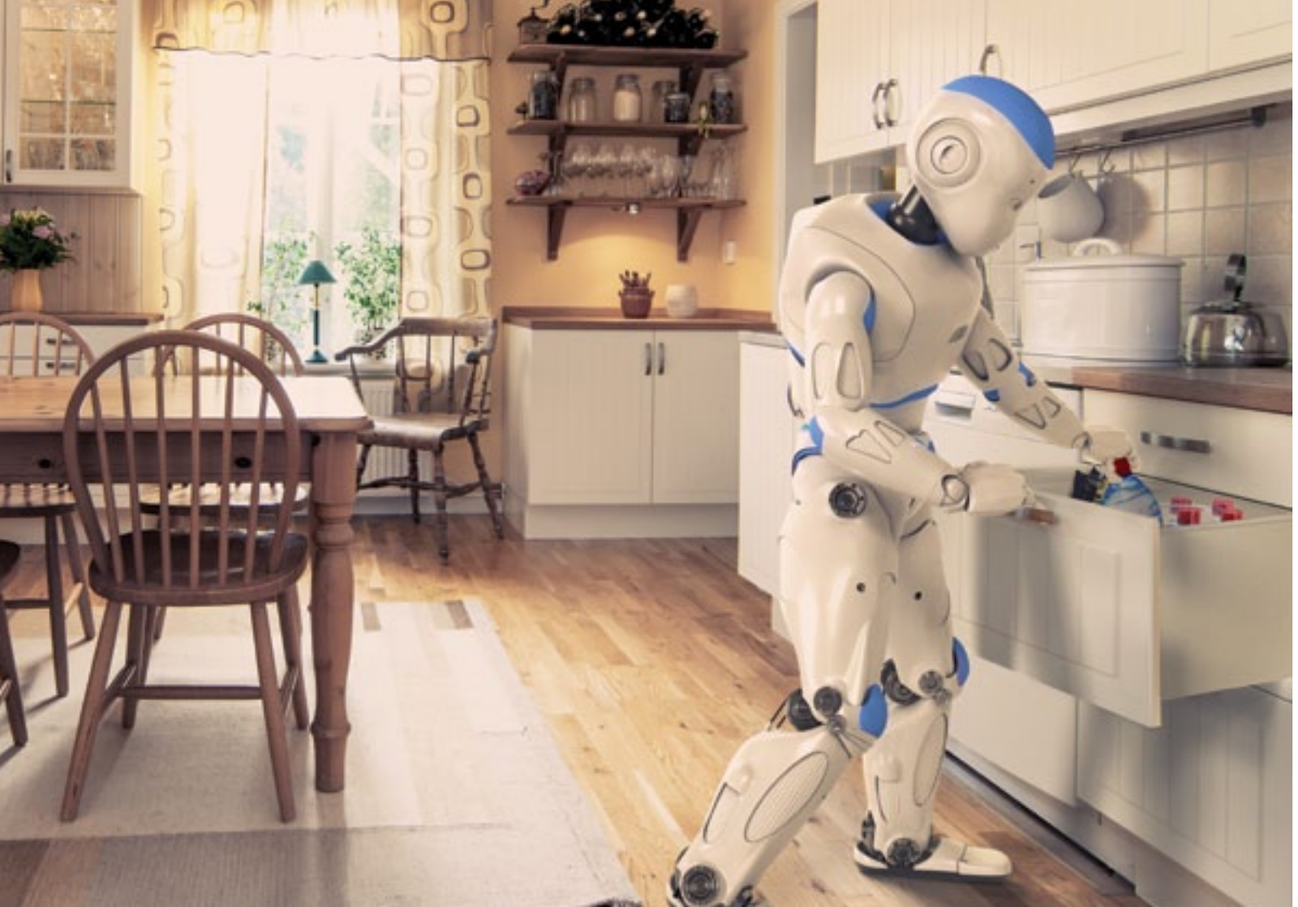
This is the spirit of our coming together today. We hope you enjoy the event, engage with the discussions from our fantastic speakers and meet people you want to connect with beyond this conference.

To conclude the day we warmly welcome you to the private view and opening of the Creative Machine exhibition where we hope you will be able to join us to continue our conversations informally over drinks.

Best wishes

Patrick Loughrey,
Warden

Professor Mark d'Inverno
Pro-Warden, Research & Enterprise



Human Interactive

Foreword

The Human Interactive Conference brings together leading experts from industry and academia to explore current and emerging challenges in human/machine interaction. The conference explores possible futures for human-machine interaction, coming from advances in computer games, AI, neuroscience, AR/VR, psychology, big data analytics, robotics and creative computing.

The conference addresses three key questions:

1. Is machine interaction good enough for humans?
   Is Artificial intelligence rich enough to feel human? Are data analytics powerful enough to pull and cut the data in ways the user instantly wants? Are user interfaces intuitive? Can interactive creative tools create art? Can interactive creative tools help people create better art? Are living computer games worlds genuinely immersive? Are robots becoming companions? Do we want robots as companions?

2. Are humans keeping up with the machine's interaction needs?
   Is the data overload too much to allow humans to respond effectively? Do humans respond quickly and rationally enough?

3. What are the social and psychological effects of the almost continuous online presence that has become the common human condition?
   And what are their neurological implications? And what are the associated economical, ethical, societal and environmental issues involved?

We are delighted to have brought such an eminent group of speakers together to support us and thank them for their energies, enthusiasm and debate.

Prof. Frederic Fol Leymarie and Prof. William Latham

Conference Co-Chairs. Department of Computing, Goldsmiths, University of London.

Human
Interactive

Schedule

MORNING SESSION

09:00 — 11:00	09:00	Registration
	10:00	Welcome & Introduction from Patrick Loughrey, Warden
	10:10	**Keynote - Rodolphe Gelin** Aldebaran
	11:00	Introduction by conference co-chairs Prof. Frederic Fol Leymarie and Prof. William Latham
11:05 — 12:05	**PLAYFUL HUMAN** Exploring the frontiers of computer games and interaction - Chaired by Professor William Latham	
	11:05 **Dr. Steven Collins** CTO Swrve	**11:25** **Guy Davidson** Coding Manager Creative Assembly, SEGA
	11:45 **Dr. Henrietta Bowden-Jones** Founder & Director of The UK National Problem Gambling Clinic	
12:05 — 12:25	BREAK	
12:25 — 13:45	**ANALYSED HUMAN** Capitalising on human capabilities and understanding constraints - Chaired by Professor Elisabeth Hill	
	12:25 **Jed Ashforth** SONY SCEE	**12:45** **Prof. Nilli Lavie** Institute of Cognitive Neuroscience, UCL
	13:05 **Prof. Mike Sternberg** Director, Centre for Bioinformatics, Imperial College London	**13:25** **Prof. Jonathan Freeman** Goldsmiths Department of Psychology
13:45 — 15:05	LUNCH	

AFTERNOON SESSION

15:05 — 16:05	**EXTENDED HUMAN** Beyond traditional capacities: humans extend their reach to new realms - Chaired by Prof. Frederic Fol Leymarie			
	15:05 **Limor Schweitzer** CEO Robosavvy	**15:25** **Prof. Ajay Kapur** California Institute of the Arts	**15:45** **Dr. Parashkev Nachev** Institute of Neurology, UCL	
16:05 — 17:05	**CREATIVE HUMAN** Blending human and machine creativity - Chaired by Professor Robert Zimmer			
	16:05 **Dr. Rebecca Fiebrink** Goldsmiths, Department of Computing	**16:25** **Dr. Jean-Christophe Baillie** CTO Novaquark	**16:45** **Rich Holleworth** CTO The Imaginarium	
17:05 — 17:25	BREAK			
17:25 — 18:25	**ENGAGED HUMAN** A spectrum of academic research and innovation - Chaired by Professor Atau Tanaka			
	17:25 **Heather Kelley** Carnegie Mellon University	**17:40** **Memo Akten** Goldsmiths IGGI PhD	**17:55** **Dr. Freida Abtan** Goldsmiths Department of Music	**18:10** **Prof. Mark d'Inverno** Goldsmiths Pro Warden for Research and Enterprise

Human Interactive

Registration: 9.00 – 10.00
New Academic Building Atrium

Welcome: 10.00 – 10.10
Room LG02

Patrick Loughrey Warden, Goldsmiths, University of London

Programme and Speakers

Keynote: 10.10 – 11.00

Rodolphe Gelin Research Director, Aldebaran

Humanoid Robots For Everyone

Since its creation in 2005, the objective of Aldebaran Robotics is to commercialise humanoid robots to assist people in their everyday life. As a first product, Aldebaran developed Nao, a 57cm humanoid robot, dedicated to man-robot interaction thanks to its numerous sensors and its embedded CPU. From the very beginning Nao has been designed as a future mass market product and as a platform for innovative development by researchers and developers. As for the mobile phones, Aldebaran knows that the manufacturer of the hardware won't be the only developer of the applications running on its robot. The robot will come with the powerful development tools proposed by Aldebaran. A new ecosystem of robotic application developer will grow around Aldebaran. This will be the way to offer the most relevant applications for each use of it.

Conference Introduction: 11:00 – 11.05

Conference co-chairs: Professor Frederic Fol Leymarie and Professor William Latham

An introduction to the day's proceedings from Professor Frederic Fol Leymarie and Professor William Latham of the Department of Computing, Goldsmiths, University of London.

Human Interactive

Programme and Speakers:

PLAYFUL HUMAN

11:05-12:05

Exploring the frontiers of computer games and interaction

Chair: Professor William Latham, Department of Computing, Goldsmiths, University of London

Dr.Steven Collins CTO, Swrve

Challenges Creating Human Interactive Virtual Environments for Games and Entertainment

In computer games and in movie special effects, we're often striving to create as realistic a portrayal of a world as possible.
Historically, we've seen great improvements in the graphical representations of these worlds, even in real-time applications like computer games, fuelled by big advances in the hardware used to render the worlds and in the algorithms developed to simulate the surfaces, materials and lighting. In contrast, physically plausible motion, and in particular the simulation of human motion, has lagged behind. Even today we're arguably still a long way off having truly realistic and adaptable virtual actors that behave plausibly in arbitrary contexts and that can convey emotional state in the support of a narrative or an interaction with the player. This talk will explore the challenges of simulating realistic virtual worlds and the characters that populate those worlds, drawing on experiences from building the Havok technology, the world's leading physics simulation solution for games and entertainment.

Guy Davidson Coding Manager, Creative Assembly, SEGA

Total War: Creating a Very Large Game

The Total War franchise has developed over the past fifteen years from a twenty man project to a 250 man project. The challenges involved in creating such an absorbing title grow all the time: as we add more features and create greater depth, keeping it hanging together and keeping everyone communicating is an ever-present problem.
In this talk I'll describe how the team has grown, divided, grown again, divided again and grown again, while retaining the required vision to deliver our games to a discerning audience. I'll look at how we have developed an ever-more detailed AI, improved fidelity of audio and visual representation, and collected an awful lot of data from our users along the way. I'll finally take a glimpse at what may be coming next in gaming trends, and why I am still a VR sceptic.

Dr. Henrietta Bowden-Jones Founder and Director of the National Problem Gambling Clinic

Internet Addiction Disorder: A Modern Illness

The talk will introduce Internet addiction as a concept, defining it and describing both the international and the UK prevalences. There will be an outline of the different manifestations of IAD which can range from gaming to gambling online to porn addiction. The clinical manifestations of the disease will be explained with a significant emphasis on the negative adverse consequences of each.
Lastly, treatment modes will be discussed and evidence-based outcomes explained. Preventative measures will be given to reduce the risk of developing the illness.

Tea and Coffee: 12:05 - 12:25

Human Interactive

Programme and Speakers:

ANALYSED HUMAN 12:25-13:45

Capitalising on human capabilities and understanding constraints

Chair: Professor Elisabeth Hill, Department of Psychology, Goldsmiths, University of London

Jed Ashforth Senior Game Designer, WWS Immersive Technology Group, Sony Computer Entertainment

Project Morpheus; Bringing VR to the Living Room

With Project Morpheus for PlayStation 4, Sony Computer Entertainment has a unique opportunity to bring Virtual Reality into living rooms world-wide. As the senior game designer for Project Morpheus, Jed Ashforth has spent several years exploring the exciting new gameplay paradigms that virtual reality represents. Tearing up the existing rule books and rebooting game design are the first steps in preparing a console development community focused on traditional gaming to take this journey with us.
In this presentation, Jed discusses many unique advantages of Project Morpheus, and some of the fresh, diverse approaches we are taking to deliver the best possible PlayStation VR experience for our players.

Professor Nilli Lavie Professor of Psychology and Brain Sciences, Institute of Cognitive Neuroscience, UCL

Brain interactive: The attention challenge

Attention affects all information processing from perception and awareness to learning, memory and action. Consideration of attentional abilities and limitations is therefore critical for understanding and improving brain-machine interaction. In this talk I discuss the psychological and brain mechanisms of attention, outlining the fundamental principles as well as challenges of harnessing attention effectively.

Professor Michael Sternberg Director, Centre for Integrative Systems Biology and Bioinformatics, Imperial College London

Interactive Modelling of Biological Macromolecules

This talk will describe the power of interactive molecular graphics for modelling biological macromolecules, especially proteins. The complex interrelationships between the structures, functions and dynamics of biomolecules require diverse visual representations. In my group, Lawrence Kelley and co-workers have developed a web server, Phyre2, which allows a user to input the chemical formulae (the sequence) of a protein and predict its complex 3D structure.
There are over 80,000 users world-wide and we have had more than 4,000 citations to papers describing this resource. A recent development in molecular modelling is the use of crowd-sourced serious games to advance scientific understanding. In the US, a group has developed a community approach to predict protein structure.
The team at Imperial includes Dr. Ioannis Filippis, Dr. Suhail Islam and Dr. Lawrence Kelley. We are working together with the team from Goldsmiths led by Prof. Latham, Prof. Fol Leymarie, Visiting Research Fellow Ian Shaw, Andy Thomason and Kasper Jensen, and are developing a game for users to dock two proteins of known structure into a complex. This game will be available on tablet and we are tackling challenges of developing professional touch gestures and visualisation for users familiar with the standards of computer games and apps.

Professor Jonathan Freeman Department of Psychology, Goldsmiths, University of London

i2 media research: applying psychology to unlock value in the commercial world

Jonny will present a brief introduction to his team's work applying both conscious and subconscious objective measures of human behaviour. He will showcase examples spanning UX in gaming, user responses to big data visualisations to aid human understanding and discovery of meaning in the data, and identifying how smart environments can respond most appropriately to human behaviours within the environments.
The presentation will show how the approach developed, and highlight ongoing research and development projects further developing the method, including the CEEDs project (ceeds-project.eu), MindSee (www.mindsee.eu) and the application of i2 media's work on responsive media environments to connected retail.

Lunch: 13:45 - 15:05

Programme and Speakers:

EXTENDED HUMAN

15:05-16:05

Beyond traditional capacities: humans extend their reach to new realms

Chair: Professor Frederic Fol Leymarie, Department of Computing, Goldsmiths, University of London

Limor Schweitzer CEO, Robosavvy

3D Printable Social Robots

3D printing is used to quickly fabricate parts of humanoid and other mobile robots used in research and entertainment and human-robot interaction. 3d printing allows time and cost savings for one-off robotic ideas, DIY and education. Off-the-shelf components and other fabrication tools are still needed to complete the robot but with 3d printers the creative process is faster and more fun.

Professor Ajay Kapur Associate Dean for Research and Development in Digital Arts & Director of Music Technology: Interaction, Intelligence & Design (MTIID), California Institute of the Arts

Building A Symbiotic Human/Machine Orchestra

This talk introduces the KarmetiK Machine Orchestra, a mixed ensemble of human and robotic performers. A series of twenty robotic musical instruments have been designed and created to perform with an orchestra of contemporary electronic musicians. In the talk, we will describe the design and production of the robotic instruments, details on the visual and sonic aesthetics of the ensemble, technical considerations of the computer network employed in the performance, and information on an assortment of compositions in the current repertoire.

Dr. Parashkev Nachev Senior Clinical Research Associate, Institute of Neurology, UCL

Distributed Psychophysics

Until recently, we could construct psychophysical models of human behaviour only with specialist, locally-deployable tools, applied to small, poorly sampled populations. This has adversely restricted the complexity of the modelling, and therefore the fidelity to the true underlying behaviour. The advent of networked, commodified, personal hardware now opens the way to distributing such tools globally, on a scale that enables the complexity of modelling needed to stay faithful to human reality.

Human Interactive

Programme and Speakers:

CREATIVE HUMAN

16:05-17:05

Blending human and machine creativity

Chair: Professor Robert Zimmer, Department of Computing, Goldsmiths, University of London

Dr. Rebecca Fiebrink Department of Computing, Goldsmiths, University of London

Data as Design Tool

Typically, computer science treats “data” as measurements of the world that can be modeled, aiding in prediction or understanding of some phenomenon. My work instead examines the use of data as a human interface – a way for people to communicate embodied knowledge, goals, and ideas to a computer. By adapting data mining and modeling techniques from other computing domains, we can turn data into a highly interactive, expressive design tool that allows people to build and customize new technologies more quickly and easily and to explore, discover, and play.
In this talk I will discuss some of my work enabling people to use data as a design tool and I will highlight some of the exciting challenges at the intersection of human-computer interaction, machine learning and creative practice.

Dr. Jean-Christophe Baillie CTO, Novaquark

Dual Universe

Dual Universe is a single-shard sandbox MMO taking place on hundreds of planets, and focusing on massively emergent gameplay. Players are free to create their own economic or political systems, gather in organisations and explore the procedurally generated world for resources and opportunities. Quite uniquely, players are also able to modify the voxel-based world: create cities, various scriptable constructs like vehicles, space ships or giant orbital stations. All players share the same gigantic “single shard” universe: there is only one reality, giving birth to emergent organisations and player specialisation around activities like building, politics, security, pirating, space colonisation and exploration, logistics, harvesting, manufacturing or industry production. Dual is a game where we will see civilisations rise and fall, empires and alliances unite or compete, in a totally free open world where everything will be possible.

Rich Holleworth CTO, The Imaginarium

Putting The Man In The Machine - an overview of performance capture at the Imaginarium

Performance Capture is the technique and technology of transferring an Actor’s dramatic interpretation of a role into that of a Digital Character. In this talk Rich Holleworth will present an overview of the history and rational of performance capture throughout the ages – touching on rotoscoping, the late Ray Harryhausen (and dynamation), Motion Capture, Video Games, and of course the Imaginarium’s own Andy Serkis. Next we will address the practicalities and principles of modern performance capture and its growing adoption and integration into film processes. Finally we will examine the future directions opening at both large scale “Industrial” Performance Capture facilities such as the Imaginarium or WETA, and off-the-shelf “Domestic” systems such as the Kinect and even your own mobile phone.

Tea and Coffee: 17:05 - 17:25

Human Interactive

Programme and Speakers:

ENGAGED HUMAN

17:25-18:25

A spectrum of academic research and innovation

Chair: Professor Atau Tanaka, Department of Computing, Goldsmiths, University of London

Heather Kelley Designer at Perfect Plum and Assistant Teaching Professor, Entertainment Technology Centre, Carnegie Mellon University, USA

Mind and Body: Engaging Humans with Play

New directions in digital, physical, social and blended reality games highlight the ability of play to continually engage the human senses. Games have an outstanding capacity to direct human attention toward particular dynamics (social, psychological, power, etc), and to enable artistic expression and aesthetic experience. This talk will examine some of the best current examples in “art games” featuring experimental works allow us to sketch the outlines of our playful future.

Memo Akten Goldsmiths IGGI Centre for Doctoral Training, Department of Computing, Goldsmiths, University of London

Data Dramatization

Inspired by the processes that shape our lives, Memo uses the tools of science as a lens to the world. Through visual, sonic and behavioural metaphors he creates artefacts that reveal, extract, amplify and abstract the unseen harmonies, tensions and poetry found within these phenomena. His work plays at the boundaries between abstract and figurative, and spans multiple disciplines including images, videos, sound, light, digital sculptures, dance, large scale installations, performances, software and online works.

Dr. Freida Abtan Programme Convenor, Music Computing, Department of Music, Goldsmiths, University of London

Dislocated Presence

Technologies which capture and represent human gestures don’t all function the same way and reduce human engagement and performance to different essential properties. What is human presence when it’s no longer centred on the body? How do different kinds of representations speak about their origins?

Professor Mark d’Inverno Pro-Warden for Research and Enterprise, Goldsmiths, University of London

Creative Feedback

Arguably one of the most important activities of universities is to provide environments where students develop the wide variety of social and intellectual skills necessary for giving and receiving feedback. We are not talking here about the rather dreary compliance-inflected pre-existing notions of feedback but the profoundly creative and human act of giving and receiving feedback in order to validate, challenge and inspire. So as to emphasise we are talking about this kind of feedback, we coin the term “creative feedback”.
In this talk I will aim to characterise its qualities and take a historical look at the concepts of creativity/creative in order to ground our use of this specific term. I will then present Music Circle – that has been developed as part of a large European grant – which is an innovative technology supporting creative feedback in communities of learners that has been successfully employed with several thousand engaged users.

Human
Interactive

Speaker Biographies

Patrick Loughrey
Warden, Goldsmiths, University of London

Patrick Loughrey joined Goldsmiths as Warden (or vice-chancellor) in April 2010. Goldsmiths is a College of the University of London. It spans a range of disciplines in the humanities, arts, social sciences and sciences and in the 2008 Research Assessment Exercise was ranked 9th in the league tables for the very peak of world-leading research, shown by the top 4* grade.

Previously Patrick was the BBC's Director of BBC Nations and Regions here he had overall responsibility for the BBC's television, radio and online programmes and services in Scotland, Wales, Northern Ireland and the 12 English regions. He led more than 6,500 staff based in more than 50 centres across the UK. He was Head of the BBC's Project North. The Project included the creation of MediaCityUK, a massive new enterprise dedicated to media production in which Goldsmiths is also involved.

Originally from County Donegal, Ireland, he studied at the University of Ulster (BA Hons Contemporary History), The Queen's University of Belfast (MA History) and Trent University, Ontario (Doctoral Research Fellowship). He received the University of Ulster's Distinguished Graduate Award in 1997 and was awarded an Honorary Doctorate from Leeds Metropolitan University in 2009. Patrick is a Visiting Professor at University of Ulster, Department of Journalism.

KEYNOTE: Rodolphe Gelin
Research Director, Aldebaran

Rodolphe Gelin was born in 1965. He received his diploma from the École des Ponts et Chaussées (French School of Civil Engineering) in 1988 and earned his Post Graduate degree in Artificial Intelligence of the University of Paris VI.

Rodolphe Gelin is the author of books, *Robot, Friend or Enemy?* and *How can Reality be Virtual?*

Since December, 2008, Gelin has been responsible for various collaborative projects at Aldebaran. He has piloted various teams at Aldebaran in several National and European collaborative projects. Currently he is heading the project Romeo2, which includes 18 French Industrial and Academic partners, involved in the creation and implementation of a tall robot for assistance to the elderly and those in need.

Human Interactive

Speaker Biographies

PLAYFUL HUMAN:
Exploring the frontiers of computer games and interaction

Chair: Professor William Latham

Department of Computing
Goldsmiths, University of London

William is a pioneer of digital art, and is well known for his evolutionary computer art at IBM Research from 1987—93. His work was widely shown in internal touring exhibitions to Japan, Australia and Germany sponsored by the British Council. He was then Creative Director of leading UK computer games development studio Computer Artworks Ltd for 10 years, creating games published by Universal Studios, Warner Interactive and Microsoft. William was then MD of consultancy company Games Audit Ltd whose clients included IFG (part of Allianz Insurance) and Malta Enterprise. At Goldsmiths since 2007, his research projects include an Innovate UK award into procedural architecture. He is a co-lead with Prof Fol Leymarie on an exciting serious games research project into protein docking with Imperial College Bioinformatics Department funded by the BBSRC. His recent Mutator 1 + 2 Exhibition sponsored by Arts Council England was shown in Brighton and Brussels and is on show in Dundee. He is industrial liaison lead for the IGGI PhD Research Program and is co-Director of SoftV Ltd working on games for neuroscience and health with UCL.

Dr. Steven Collins

CTO, Swrve

Steve Collins is CTO and co-founder of Swrve, a company developing services for mobile marketing automation for app developers and publishers. Swrve currently employs 70 people and is based in San Francisco and Dublin. Prior to Swrve he was CTO and co-founder of Kore Virtual Machines, a company which developed a commercial Lua implementation for console games. In 1998, Steve cofounded Havok and worked as CTO leading the technical development and strategy of the company. Steve also works with Trinity College Dublin (TCD) as an Adjunct Associate Professor of Computer Graphics, and is a Visiting Professor at Goldsmiths, University of London. In 2007 he founded TCD's new MSc program in computer game technology. Previously he founded the TCD Computer Graphics Research Group, and led many funded research programs in computer graphics and simulation. Earlier still he worked on scientific visualization software for Hitachi Research Labs in Tokyo and has developed a number of Commodore 64 games.

Guy Davidson

Coding Manager, CTO Creative Assembly, SEGA

Guy Davidson has been making games for most of his life. He varied the rules for board games as a child (some called this "cheating") and, after developing a healthy interest in video game arcades, was amongst the first generation of home computer users, writing games and puzzles for popular machines of the 80s. After a Maths and Computer Science degree he explored the world of digital multimedia for clients such as Intel, Olivetti, Hewlett Packard, Compaq, Toshiba and many more before turning to the games industry in 1999, where he joined Codemasters and then Creative Assembly in 1999. He specialises in C++ development and is involved with the recruitment and development of programming talent, as well as university outreach. He has been part of the Total War franchise since Rome, with a guest appearance in Shogun. He plays the piano and teaches Tai Chi.

Dr. Henrietta Bowden-Jones

MRCPsych, BA (Hons), DOccMed, MD (Imperial)
Founder and Director of the National Problem Gambling Clinic

Dr Henrietta Bowden-Jones is the Founder and Director of the National Problem Gambling Clinic in the UK. She is a medical doctor specialised in Addiction Psychiatry and an Honorary Senior Lecturer in the Division of Brain Science at Imperial College where she teaches medical students and neuroscience students about pathological gambling and impulsivity. Before starting up the National Problem Gambling Clinic, for many years she ran a central London NHS inpatient drugs and alcohol detoxification unit as well as running the Homeless drugs and alcohol NHS services in Soho, London. The National Problem Gambling Clinic, based in London, is the first NHS multidisciplinary treatment centre for problem gamblers. It receives 800 referrals a year and is a centre for excellence in the treatment of pathological gamblers.

Henrietta has been a member of the UK Government's Responsible Gambling Strategy Board since 2009 advising on prevention, research, treatment and education and is a member of the Board's Research Panel. She has lectured extensively nationally and internationally for many years, and regularly appears in national and international media, ranging from television to radio and newspapers, being interviewed on issues pertaining to pathological gambling, addiction, impulsivity and decision-making.

Human Interactive

Speaker Biographies

ANALYSED HUMAN:
Capitalising on human capabilities and understanding constraints

Chair: Professor Elisabeth Hill

Department of Psychology
Goldsmiths, University of London

Professor Hill studies and researches developmental co-ordination disorder, autism spectrum disorder, the relationship between social and motor development in typical and atypical populations, the role of alexithymia in neurodevelopmental disorders, mental health in adults with neurodevelopmental disorders, employment experiences of adults with neurodevelopmental disorders and those caring for a child with a neurodevelopmental disorder. She will be the next Pro-Warden for Teaching, Learning and Enhancement, taking this post at Goldsmiths in January 2015.

Jed Ashforth

Senior Game Designer, WWS Immersive Technology Group, Sony Computer Entertainment

Jed is a veteran game designer, having previously worked on all sorts of games, including the MotorStorm series for Playstation 3. These days, Jed officially has the best job in the whole world: playing and documenting every VR game he can, charting the new frontiers of consumer VR, establishing best practices for Game Design in this new medium, and advising PlayStation developers on how to build the greatest, most innovative gameplay experiences for Sony's Project Morpheus.

Professor Nilli Lavie

Professor of Psychology and Brain Sciences
Institute of Cognitive Neuroscience, UCL

Professor Lavie is the director of Attention and Cognitive Control laboratory, UCL Institute of Cognitive Neuroscience. She is an expert in the use of the cognitive neuroscience methods of behavioural experiments, visual psychophysics, neuroimaging and Transcranial Magnetic Stimulation to study attention. Her main research areas involve the Load Theory of attention (creator); psychological and neural mechanisms of attention, visual awareness, working memory and cognitive control and the effects of emotion on attention and awareness. Lavie's lab has partnerships with Toyota Motor Europe R&D HQ, the Ministry of Defence (Defence Science and Technology Laboratory) and more recently also the Russian federal space agency.

Professor Michael Sternberg

Director, Centre for integrative Systems Biology and Bioinformatics, Imperial College London

Professor Michael Sternberg is the Director of the Centre for Integrative Systems Biology and Bioinformatics at Imperial College London. His research interest is the development and application of computer algorithms to model biological molecules. He has developed many widely-used programs to model protein structure, function and interactions and a logic-based approach for drug design. Michael Sternberg was one of the early workers in the emerging area of protein bioinformatics. He entered this field as his D.Phil research topic in Oxford having obtained a first degree in Physics at Cambridge and a Masters in Computing at Imperial. Subsequently, he was a lecturer at Birkbeck College and a Head of Laboratory at Cancer Research UK until he joined Imperial in 2001.

Human Interactive

Speaker Biographies

ANALYSED HUMAN: Capitalising on human capabilities and understanding constraints

Professor Jonathan Freeman

Department of Psychology

Goldsmiths, University of London

Jonathan is a leading expert in media psychology and human factors of digital media. He is Managing Director of i2 media research and Professor of Psychology at Goldsmiths University of London. Taking as his starting point fundamental psychology research and methods, Jonathan has developed and applied a body of knowledge to the optimization of digital media products and services, focusing on user experience and from the provider perspective on monetization.

Jonathan Coordinates the EC FP7 CEEDs project (ceeds-project.eu) – a 16 partner pan-European multidisciplinary project exploring the potential of the human subconscious as a sensor to support human understanding and discovery in big data. He also leads his team's input to the EC FET MindSee project (www.mindsee.eu). Jonathan and his team have worked in more than 10 large scale collaborative European projects focused on user experience of connected media – spanning computer games, social media, location based media, responsive media, smart cities and connected retail.

EXTENDED HUMAN: Beyond traditional capacities: humans extend their reach to new realms

Chair: Professor Frederic Leymarie

Department of Computing, Goldsmiths

Frederic joined the Computing Department at Goldsmiths in mid-2004. He first initiated and directed the MSc Computational Arts, and then got William (Latham) to join him at Goldsmiths and initiate the MSc Computer Games and Entertainment (launched in 2008), the first (and leading) industry-facing MSc for games programming in the Greater London area.

Frederic is currently co-PI of the BBSRC funded DockIt gamification research project focused on the fundamental problem of protein docking (how to bring complex 3D protein molecules together in ways that make biological sense). This work is in collaboration with William and Prof. Mike Sternberg at Imperial College. Frederic is also working on modeling the human visual perception of shapes (2D, 3D in movement).

Frederic is a graduate of Brown University, Engineering Division (PhD, 2003), McGill University, Centre for Intelligent Machines (M.Engin. 1990), and Ecole Polytechnique of Montreal, Electrical and Aeronautics Engineering (1986). In the 1990's he spent time between Canada (CIM at McGill) and France (at the School of Mines of Paris and in industry working in the area of 3D Geographical Information Systems).

Limor Schweitzer

CEO Robosavvy

Limor heads RoboSavvy, a company that distributes & develops robots, parts & tools for makers. RoboSavvy is currently developing 3D printable robots, large size humanoid robots and large size FDM 3D printers. Limor started companies in diverse areas such as Telecom Billing and Internet Security. Born in the UK, lived in Italy, USA, Israel and currently in Portugal.

Human Interactive

Speaker Biographies

EXTENDED HUMAN: Beyond traditional capacities: humans extend their reach to new realms

Professor Ajay Kapur

Associate Dean for Research and Development in Digital Arts & Director of Music Technology: Interaction, Intelligence & Design (MTIID), California Institute of the Arts

Ajay Kapur is currently the Director of the Music Technology program (MTIID) at the California Institute of the Arts, as well as the Associate Dean for Research and Development in Digital Arts. He received an Interdisciplinary Ph.D. in 2007 from University of Victoria combining computer science, electrical engineering, mechanical engineering, music and psychology with a focus on intelligent music systems and media technology. Ajay graduated with a Bachelor of Science in Engineering and Computer Science from Princeton University in 2002.

Kapur has published over 100 technical papers and presented lectures across the world on music technology, human computer interface for artists, robotics for making sound, and modern digital orchestras. His book *Digitizing North Indian Music* discusses how sensors, machine learning and robotics are used to extend and preserve traditional techniques of Indian Classical music.

Dr. Parashkev Nachev

Senior Clinical Research Associate at UCL, and Honorary Consultant Neurologist at the National Hospital, Queen Square

Parashkev Nachev is a Senior Clinical Research Associate at the Institute of Neurology and an Honorary Consultant Neurologist at the National Hospital for Neurology and Neurosurgery, Queen Square. His research deals primarily with translational aspects of cognitive and behavioural neurology, in particular with the development of novel methodology for distributed investigational and therapeutic devices.

CREATIVE HUMAN: Blending human and machine creativity

Chair: Professor Robert Zimmer

Department of Computing

Goldsmiths, University of London

Robert Zimmer is Professor and Head of Computing at Goldsmiths. After studying mathematics at Cambridge, MIT, and Columbia, he spent several years applying theoretical mathematics to the design and verification of software and hardware systems. This work led to the creation of a company which employed over 100 people internationally before its sad demise. In 2001, Zimmer moved to Goldsmiths, took over the Computer Science Department and went about turning it into a nexus of research and teaching centred on interactions of computing thinking and technology on the one hand and cultural theory and arts practice on the other. Working across Goldsmiths, he was a founder and director of two inter-disciplinary centres: Goldsmiths Digital Studios and the Centre for Creative and Social Technologies. He has published over fifty technical articles and worked on a number of computational arts projects.

Dr. Rebecca Fiebrink

Department of Computing

Goldsmiths, University of London

Rebecca Fiebrink is a Lecturer in Computing at Goldsmiths, University of London. A computer scientist and a musician, she creates technologies to support new forms of human expression. Fiebrink is the developer of the Wekinator system for real-time interactive machine learning, and she frequently collaborates with composers and artists on digital media projects. She has worked extensively as a co-director, performer and composer with the Princeton Laptop Orchestra. She has worked with companies including Microsoft Research, Sun Microsystems Research Labs, Imagine Research, and Smule where she helped to build the #1 iTunes app *I am T-Pain*. She holds a PhD in Computer Science from Princeton University, a Master's in Music Technology from McGill University, and undergraduate degrees in Computer Science & Engineering and Music from The Ohio State University.

Human
Interactive

Speaker Biographies

CREATIVE HUMAN: Blending human and machine creativity

Dr. Jean-Christophe Baillie
CTO, Novaquark

Jean-Christophe Baillie started his career in Science at the Sony Computer Science Lab in Paris, and then founded and directed the Cognitive Robotics Lab in ENSTA/ParisTech, where he worked on the emergence of language between robots and on a new operating system for robotics. These technologies became the starting point of Gostai, a startup company that he founded in 2006 and which has been acquired by the Aldebaran Group in 2012. He has recently launched an ambitious project in the field of advanced virtual reality by founding Novaquark, to develop a next generation MMO game. He received in 2007 the Pierre Faurre award from the Polytechnique Foundation, the ACES Microsoft ICT award in 2009 and the Glavieux Award from SEE/IEEE in 2013. Jean-Christophe is a graduate from the Ecole Polytechnique in Paris and received a PhD in Artificial Intelligence from Paris 6 university.

Rich Holleworth
CTO, The Imaginarium

Rich Holleworth narrowly avoided a law degree to become CTO of the Imaginarium. He holds awards in Computer Science and Electronic Imaging and has been involved in the field of Motion Capture for over ten years. Rich has encountered such diverse challenges as; the commercialisation and marketing of MoCap services; undertaking high-volume and complex location capture for video games; operating in an academic support role and devising and implementing the advanced performance capture facilities of the Imaginarium at Ealing Studios in London. Rich is leading the Imaginarium's Research and Development group, which has been the recipient of Trade Strategy Board (now InnovateUK) 'SMART' and 'Creative Collaboration' grant funds.

The Imaginarium is a creative digital studio founded by Andy Serkis and Jonathan Cavendish in 2011 and dedicated to the invention of believable, emotionally engaging digital characters using Performance Capture technology. From their central London base, they both work on their own film, television and videogame projects, as well as providing consultancy and production services to studios worldwide.

ENGAGED HUMAN A spectrum of academic research and innovation

Chair: Professor Atau Tanaka
Department of Computing
Goldsmiths, University of London

Atau Tanaka read Physical Sciences at Harvard and obtained a doctorate in Computer Music Composition from Stanford University's CCRMA. His first inspirations came upon meeting John Cage during his Norton Lectures. He was awarded Stanford's Prix de Paris to conduct research at IRCAM, Centre Pompidou. He has been artistic ambassador for Apple Computer, and was the first artist to be engaged as researcher at Sony Computer Science Laboratory (CSL). His work, creating music for interactive systems, mobile infrastructures, and democratized digital forms has been presented at NTT/ICC Tokyo, Ars Electronica, Transmediale, Eyebeam, Wood Street Gallery, SFMOMA, and Queen Elizabeth Hall Southbank. He has been supported by the Daniel Langlois Foundation, UK and French research funding bodies, and the European Research Council (ERC). He has been mentor at NESTA, Artistic Co-Director of STEIM in Amsterdam, Director of Culture Lab Newcastle, and is currently Professor of Media Computing at Goldsmiths.

Heather Kelley
Designer at Perfect Plum and Assistant Teaching Professor, Entertainment Technology Centre, Carnegie Mellon University, USA

Heather Kelley (aka moboid) is a media artist and video game designer. She is co-founder of the Kokoromi experimental game collective, with whom she produces and curates the annual Gamma game event promoting experimental games as creative expression in a social context. She is a regular jury member for different computer gaming festivals (such as Indiecade) and keynote speaker (at events like FMX Conference on Animation, Effects, Games and Interactive Media 2010 in Stuttgart).

Her career in the games industry has included AAA next-gen console games, interactive smart toys, handheld games and web communities for girls. She has created interactive projections using game engines such as Quake and Unreal.

Heather Kelley was Creative Director on the UNFPA Electronic Game to End Gender Violence, at the Emergent Media Center at Champlain College in Burlington, Vermont. For seven years, Heather served as co-chair of the IGDA's Women in Game Development Special Interest Group. In May 2014 she joined the Entertainment Technology Center at Carnegie Mellon University as an Assistant Teaching Professor.

Human
Interactive

Speaker Biographies

ENGAGED HUMAN
A spectrum of academic research and innovation

Memo Akten
Goldsmiths IGGI Centre for Doctoral Training, Department of Computing, Goldsmiths, University of London

Memo Akten (b. 1975) is an artist and engineer born in Istanbul (TR), currently based in London (UK). He develops systems that abstract behaviour to create unfamiliar familiarities and encourage new perceptions on our relationship to science, nature, technology and culture. In 2013 his work FORMS won the Golden Nica at the Prix Ars Electronica. His work has been exhibited and performed around the world at venues such as the Victoria & Albert Museum (London, UK), Royal Opera House (London, UK), Garage Center for Contemporary Culture (Moscow, RU), La Gaîté lyrique (Paris, FR), Holon Museum (Tel Aviv, IL), EYE Film Institute (Amsterdam, NL), STRP Biennial (Eindhoven, NL), FILE Festival (Sao Paolo, Rio, BR), Lisbon Architecture Triennale (Lisbon, PT), Royal Festival Hall (London, UK), Queen Elizabeth Hall (London, UK).

Dr. Freida Abtan
Programme Convenor Music Computing, Department of Music, Goldsmiths, University of London

Freida Abtan is a Canadian, multi-disciplinary, artist and composer whose work bridges electro-acoustic composition, immersive scenography, sensor system design, and multimedia performance. Her videomusic and audio work have been featured at festivals internationally, and can be found on releases from both United Dairies Jnana Records and Finite State Recordings. Freida leads the Music Computing programme at Goldsmiths, University of London.

Professor Mark d'Inverno
Pro-Warden for Research and Enterprise
Goldsmiths, University of London

Mark d'Inverno is Professor of Computer Science and Pro-Warden for Research and Enterprise at Goldsmiths, University of London, and for four years between 2007 and 2011 was head of the Department of Computing which has become one of Europe's leading centres for interdisciplinary research and teaching especially in the arts, increasingly in the social sciences. He holds an MA in Mathematics and an MSc in Computation from the University of Oxford and a PhD from University College London entitled *Agents, Agency and Autonomy*. He has published over 100 articles including authored and edited books, chapters in books, and journal and conference articles leading interdisciplinary computer science research projects in multi-agent systems, biological systems, music, art, design, education and social media. During 2011/12 he completed a research sabbatical as visiting fellow at the Artificial Intelligence Research Institute in Barcelona and at Sony Computer Science Laboratory in Paris. He is currently the Principal or Co-investigator on a range of EU and UK projects spanning intelligent agents, social systems, shared experiences, creativity, cultural engagement and music education.

Human Interactive

Acknowledgements

SPONSORS
Jon Pratty Arts Council England
Julie Taylor Enterprise Department, Goldsmiths
Professor Robert Zimmer
Department of Computing, Goldsmiths

HUMAN INTERACTIVE CONFERENCE WELCOME SPEECH
Patrick Loughrey Warden, Goldsmiths

HUMAN INTERACTIVE CONFERENCE KEYNOTE SPEAKER
Rodolphe Gelin Research Director, Aldebaran

HUMAN INTERACTIVE CONFERENCE CONFERENCE CO-CHAIRS
Professor William Latham
Department of Computing, Goldsmiths
Professor Frederic Fol Leymarie
Department of Computing, Goldsmiths

HUMAN INTERACTIVE CONFERENCE SESSION CHAIRS
Professor Elisabeth Hill
Department of Psychology, Goldsmiths
Professor Robert Zimmer
Department of Computing, Goldsmiths
Professor Atau Tanaka
Department of Computing, Goldsmiths

HUMAN INTERACTIVE CONFERENCE CONFERENCE SPEAKERS
Dr.Steven Collins CTO Swrve
Guy Davidson
Coding Manager, Creative Assembly, SEGA
Dr. Henrietta Bowden-Jones Founder and Director of the National Problem Gambling Clinic
Jed Ashforth Senior Game Designer, WWS Immersive Technology Group, Sony Computer Entertainment
Professor Nilli Lavie Professor of Psychology and Brain Sciences, Institute of Cognitive Neuroscience, UCL
Professor Michael Sternberg
Director Centre for Interactive Systems Biology and Bioinformatics, Imperial College London
Professor Jonathan Freeman
Managing Director i2 media research, Goldsmiths
Limor Schweitzer CEO Robosavvy
Professor Ajay Kapur
Associate Dean for Research and Development in Digital Arts & Director of Music Technology: Interaction, Intelligence & Design (MTIID), California Institute of the Arts
Dr. Parashkev Nachev
Senior Clinical Research Associate, Institute of Neurology, UCL
Dr. Rebecca Fiebrink
Department of Computing, Goldsmiths, University of London
Dr. Jean-Christophe Baillie CTO Novaquark
Rich Holleworth CTO, The Imaginarium
Heather Kelley Designer at Perfect Plum and Assistant Teaching Professor, Entertainment Technology Centre, Carnegie Mellon University, USA
Memo Akten Goldsmiths IGGI Centre for Doctoral Training, Department of Computing, Goldsmiths
Dr. Freida Abtan Programme Convenor Music Computing, Department of Music, Goldsmiths
Professor Mark d'Inverno
Pro-Warden for Research and Enterprise, Goldsmiths
Prof Mark Bishop
Professor of Computing, Department of Computing, Goldsmiths

CREATIVE MACHINE EXHIBITING ARTISTS
Memo Akten
Cécile Babiole
Daniel Berio
Balint Bolygó
Damien Borowik
Paul Brown
Simon Colton
Brock Craft
Anna Dumitriu & Alex May
Ernest Edmonds
Ian W Gouldstone
Yoichiro Kawaguchi
William Latham
Lillevan
Andy Lomas
Manu Luksch
Jon McCormack
Parashkev Nachev
Adam Parkinson
Vesna Petresin
Félix Luque Sánchez
Peter Todd
Naoko Tosa
Patrick Tresset
Harwood/Wright/Yokokoji

CONFERENCE AND EXHIBITION PLANNING TEAM
Julie Taylor
Enterprise Director, Enterprise Office, Goldsmiths
Professor William Latham
Department of Computing, Goldsmiths
Professor Frederic Fol Leymarie
Department of Computing, Goldsmiths
Professor Atau Tanaka
Department of Computing, Goldsmiths
Professor Robert Zimmer
Department of Computing, Goldsmiths
Professor Jonathan Freeman
Managing Director i2 media research, Goldsmiths
Aidan Sheridan
Enterprise Manager, Enterprise Office, Goldsmiths
Chris Rea
Enterprise Coordinator, Enterprise Office, Goldsmiths
Steph Horak
Dept. of Computing-Embodied Audio/Visual Interaction Group
Karen Rumsey Research Systems & Liaison Officer

EXHIBITION DESIGN & BUILD
Dr Mick Grierson Reader, Dept. of Computing-Embodied Audiovisual Interaction Group (EAVI), Goldsmiths
Nicholas Donald Phd Music and Computing, Goldsmiths
Angus Braithwaite Installation Technician, Freelance
Alastair Frazer Installation Technician, Freelance
Peter Mackenzie Sonics Immersive Media Lab Technician
Tony Stacey Maintenance & Engineering, Goldsmiths
Mark Eaglestone Senior Porter-Estates & Facilities, Goldsmiths
Steve Edwards Porter Estates & Facilities, Goldsmiths
Terry Weller Fire Safety, Goldsmiths

CONFERENCE AND EXHIBITION OPERATIONAL TEAM
Lynda Agili Head of Research Office, Goldsmiths
Jessica Pavlos
Enterprise Officer, Enterprise Office, Goldsmiths
Emmy Gregory
Research and Enterprise Office Secretary, Goldsmiths
David Kuper
Research and Enterprise Office Legal Adviser, Goldsmiths
Justin Davin-Smith
Research Development Manager, Research Office, Goldsmiths
Muriel Swijghuisen Reigersberg
Research Development Officer, Research Office, Goldsmiths
Dr Rose Hepworth Department Business Manager, Department of Computing, Goldsmiths
Karen Hodgson Department Facilities Coordinator, Department of Computing, Goldsmiths
Alison McGregor Work Placements Manager, Goldsmiths
Claire Major PA to Warden, Goldsmiths, Goldsmiths
Helen Keogh PA to the Pro-Wardens, Goldsmiths
Sarah Khan PA to the Pro-Wardens, Goldsmiths
David Amadasun Assistant Coordinator
Nick Holmes Events & Ceremonies Manager, Goldsmiths
Carol Campbell
Events & Ceremonies Coordinator, Goldsmiths
Catriona Boulton Director of Estates & Facilities, Goldsmiths
Ms Pavla Heath
Project Architect, Estates & Facilities, Goldsmiths
Sarah Cloherty Timetabling and Space Management Officer, Estates & Facilities, Goldsmiths
Grace Adeleye Timetabling and Space Management Assist, Estates & Facilities, Goldsmiths
Faith Udeze Timetabling and Space Management Assist, Estates & Facilities, Goldsmiths
Janet Sellar
College Superintendent, Estates & Facilities, Goldsmiths
James Harris
Facilities Officer, Estates & Facilities, Goldsmiths
Ian Selway
Security Manager, Estates & Facilities, Goldsmiths
Mark Eaglestone
Senior Porter, Estates & Facilities, Goldsmiths

INTERNAL EXTERNAL PRESS AND PR
Liz Hutchinson
Head of Communications and PR, Goldsmiths

Peter Austin
Deputy Head of Communications, Goldsmiths
Alice Andrewartha
Communications Officer (Media)/Communications, Goldsmiths

FILMING, PHOTOGRAPHY, WEB DEVELOPMENT AND PRINT
Myah Chun Grierson Programme Design, Studio Cymbal
David Martin Website Developer, UMPH Media
Anna White Web Content Author, Editor, Freelance
Alex Townsend Logos and Branding Design, Freelance
Lorenzo Ciciani Promotions Assistant, Freelance
Pete Corrigan We Film
Spiros Andreou Services and Delivery Manager, Goldsmiths
Jeremiah Spillane Media Equipment Centre, Goldsmiths
Benjamin Pester
Podcasting Coordinator and Research Assistant, Goldsmiths
Kevin Self Print Room Technician, Goldsmiths
Andy Toye Park Communications

CATERING
Stephen Eagle General Catering Manager, Residences, Catering and Conference Services, Goldsmiths
Gary Howells Head Chef, Residences, Catering and Conference Services, Goldsmiths
Kayleigh Edwards Hospitality Manager, Residences, Catering and Conference Services, Goldsmiths

Programme Picture Credits
Romeo range course - Crédit ZEILT PRODUCTION ©