

**GIOVANNI COSPITO.** Docente di Composizione musicale elettroacustica e coordinatore del Dipartimento di Musica con Nuove Tecnologie e linguaggi musicali e della Scuola di Musica Elettronica del Conservatorio di Milano. La sua produzione compositiva comprende Musica Elettroacustica e Musica Mista, Computer Music e Musica Acusmatica. Ha collaborato con: CSC-Padova, LIMB-Venezia, DIST-Genova, GMVL-Lione, AGON e LASDIM di Milano, EMS-Stoccolma, IRCAM-Parigi, TEMPO REALE-Firenze; curato produzioni per festival, radio, concerti e rassegne, con elaborazioni teoriche e didattiche: Università degli Studi-Trento e Potenza, SSPM svizzera, SIEM-Forum Musica e nuove tecnologie; prodotto opere multimediali con uso di tecnologia interattiva: Accademia di Belle Arti Brera-Milano, Opera Totale-Venezia, Teatro Carlo Felice-Genova, I Teatri della Nuova Musica-Terra delle Gravine, Centro Candiani-Venezia; video-poesia, video-arte e video-danza; creato applicazioni per il design e l'interazione sonora. Direttore dell'Associazione METAS per la musica elettroacustica e le arti performative, realizzato progetti di Sonic Interaction Design con il gruppo Volumi. Membro del CEDIM della Fondazione Culturale San Fedele-Milano.

### **Struttura, contenuti e aspettative del Progetto INTERMUSIC**

*Structure, contents and expectations of the INTERMUSIC Project*

Le motivazioni fondamentali del Progetto INTERMUSIC (*INTERactive environment for MUSIC learning and practising*) sono l'analisi delle problematiche, la sperimentazione di metodologie e lo sviluppo di contenuti e soluzioni tecnologiche per il *Distance Learning* specificatamente dedicato all'insegnamento ed alla pratica musicale in un contesto basato su Partnership Strategiche fra Istituzioni Europee dell'Alta Formazione Musicale. Oltre alla valutazione dell'appropriatezza delle attuali metodologie dell'insegnamento a distanza rispetto alle metodologie educative *face-to-face* dell'insegnamento musicale teorico e pratico, occorrono appropriate metodologie di indagine e ricerca che riguardano l'individuazione delle forme e delle modalità dell'interazione di natura non verbale fra musicisti, sia performativa che didattica, e l'analisi di quali sono gli effetti delle diverse qualità audio-visive ed ambientali, sia nell'interazione in presenza che online.

Gli aspetti evidenti e diretti del progetto sono: l'integrazione di metodologie diverse (*Blended Learning, Virtual and Digital Interactive Learning Environments*), la necessaria comprensione delle modalità dell'interazione musicale in condizioni diverse e le tecnologie del *Web Conferencing* e dell'*Audio-Video Streaming* per lezioni di canto, strumenti solisti, performance di gruppi da camera. La struttura è una Partnership Europea con forti competenze diversificate ed integrate, gli obiettivi sono: una piattaforma dedicata a percorsi d'apprendimento musicale specialistici, alla gestione transnazionale di corsi, una ricerca sistematica e interdisciplinare sui modelli adottati del *Distance Learning* e lo sviluppo di tecnologie che favoriscano i rapporti fra musicisti nella creazione di attività didattiche ed artistiche in rete.

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**PAOLO FERRI.** Dal 2014 è Professore Straordinario di Didattica e Pedagogia Speciale, presso il Dipartimento di Scienze umane per la formazione Riccardo Massa. Già professore Associato dal 2005 e ricercatore dal 1-10-2001 nello stesso Ateneo. Dall'anno accademico 2013/2014 è Docente presso il Master online in tecnologie per la didattica <http://www.dol.polimi.it/> di "Tecnologie e didattica".

Coordinatore del progetto Bicocca Digitale, che prevede il coinvolgimento di tutti i Dipartimenti dell'Ateneo e il coordinamento della progettazione e dell'erogazione di 66 corsi in Blended Learning e 6 in formato Mooc. E' delegato del Rettore nei Gruppi di lavoro CRUI del progetto MOOCs Italia e delegato del Rettore nel Consorzio Eduopen ([www.eduopen.it](http://www.eduopen.it)), una rete di 11 Atenei (Politecnico di Bari, Università di Venezia, Università di Modena e Reggio Emilia, Università di Parma, Università di Ferrara, Università di Genova, Università di Perugia, Università di Bari, Università di Foggia, Università del Salento) italiane consorziate per dar vita al primo provider italiano di MOOCs e corsi on-line e Blended. E' vice presidente della SI-eL, Società Italiana di E-learning.

Per ciò che riguarda l'attività scientifica si occupa di tecnologie didattiche e teoria e tecniche dei nuovi media digitali. Ha approfondito in particolare i temi della didattica digitale e della formazione, scolastica e non, attraverso strumenti digitali off-line e on-line, e le problematiche del rapporto tra nuove tecnologie digitali, scienze della formazione e scienze sociali. Ha approfondito, inoltre, le nuove modalità ipermediali di trasmissione dei saperi sia da un punto di vista epistemologico che da un punto di vista tecnologico.

### **Oltre i MOOC - Evoluzioni del Distance learning nel panorama attuale**

*Beyond MOOC - Evolution of Distance learning in the present landscape*

L'innovazione metodologica nella didattica universitaria: il caso di Eduopen. Il primo consorzio italiano di Mooc. Il contributo intende approfondire l'esperienza di progettazione e sviluppo dei MOOCs sviluppati dall'Università degli Studi Milano Bicocca per il Consorzio Eduopen ([www.eduopen.org](http://www.eduopen.org)). In particolare verrà delineato il processo di transizione dalla precedente esperienza di Blended Learning, interna all'Ateneo, ai nuovi standard e formati metodologici e tecnologici, richiesti da questo nuovo scenario formativo. Si intende perciò presentare le opportunità e le criticità, che ha comportato questa transizione, in termini di:

- revisione delle metodologie di progettazione, implementazione ed erogazione dei corsi

- adeguamento dei format e degli standard di qualità in rapporto alla normativa ANVUR e CRUI
- ampliamento e formazione del team di lavoro Unimib dedicato al progetto EduOpen
- adattamento delle strutture tecnologiche di Ateneo alle nuove esigenze di produzione
- coinvolgimento e formazione dei docenti
- constraints istituzionali
- primi analytics e risultati di erogazione.

Le prime due evidenze emergenti da un'analisi critica dell'esperienza condotta sono le seguenti:

- le ricadute positive sull'expertise d'Ateneo, in termini di metodologie ed utilizzo di risorse digitali nella didattica
- la forte viscosità e resistenza dell'apparato istituzionale.

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**ROBERTO ANTONELLO.** Docente di Organo nei corsi accademici al Conservatorio di Vicenza dove è Direttore dal novembre 2016. Incluso nell'Elenco degli Esperti per i CdA degli Istituti AFAM, nell'Elenco degli Esperti di Valutazione dell'ANVUR per i settori AFAM musicale e coreutico, è stato membro di comitati scientifici. È stato docente e relatore presso Conservatori e Accademie in Europa e negli USA. Oltre alla registrazione di numerosi cd, è autore di articoli musicologici, di composizioni e trascrizioni per organo ed è spesso invitato come membro di giuria in concorsi internazionali.  
<https://siavi.conservatoriodimusica.it/docenti/view/16>

### **Prospettive e problematiche della introduzione del Distance learning nelle Istituzioni di formazione superiore musicale italiane**

*Perspectives and issues related to the introduction of Distance learning in Italian Higher Education Institutions*

Le opportunità offerte dalle nuove tecnologie possono trovare applicazione anche nell'Alta formazione musicale contribuendo all'evoluzione della formazione nel settore. Si pongono, tuttavia, dei problemi legati alle modalità di fruizione della formazione on line (tempi, modi, contenuti...) e alle modalità di erogazione delle lezioni (streaming, podcast, classi virtuali, ...) con problematiche connesse al contratto di lavoro, ad oggi risalente al 2002, che si rivela inadeguato al riconoscimento del servizio svolto dai professori. A ciò si aggiungono le problematiche connesse alla formazione specificamente vocale e strumentale, con insegnamento individuale, per le quali la tecnologia presenta ancora delle limitazioni. Adeguamento normativo e rimodulazione didattica dovranno quindi procedere di pari passo.

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**STEFAN GIES** is heading the AEC office in Brussels as its CEO. He looks back on a wide range of professional experience as a performing musician, music teacher, humanities scholar, and researcher. Since 25 years he has been teaching as a professor for music education at the University of Music in Dresden (Germany), which he chaired as rector from 2003 to 2010.

### **Distance learning in instrumental teaching and e-learning in general as part of the Music Education sector**

While the use of digital technology was considered the domain of composers or rock and jazz musicians only ten years ago, learning and teaching music is increasingly permeated by digitization at all levels, from primary school music lessons to high-end classical music performance training. Through a few selected examples this presentation illustrates what competencies future generations of musicians and music teachers need in order to meet the changing needs of the profession in future.

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**NAOMI JOY BARKER** is a lecturer in music at the Open University. She completed a B. Mus (hons) and M.Mus degrees at the University of the Witwatersrand, Johannesburg and worked as a professional flautist and teacher for several years both in South Africa and in the UK. Although her research interest is 17<sup>th</sup> century Italian music and culture, since joining the OU, Naomi has used her experience in a wide variety of educational fields to champion open access and online music education, authoring a MOOC and working on open access level 1 courses.

### **MOOCs and MOODLE: Delivery models for elearning music theory modules**

This presentation will demonstrate the current model used for a course on music techniques called 'Inside music' and the model for an open access MOOC that introduces concepts of notation and score reading without the requiring the student to be musically literate. The models are not ideal as teaching creative uses of theoretical concepts presents difficulties that are different from teaching music theory interactively. An additional layer of challenge in our institution is open access. The type of student being addressed and the likely environments in which they are learning are very different from a studio-based approach.

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**DR. CAROL JOHNSON (PhD)** is a Senior Lecturer (Online Learning and Educational Technology) in Music (Online Learning and Educational Technology) at the University of Melbourne. Her research focuses on online music pedagogy, teaching and learning online, and the development of teaching capacity for online faculty. Carol mentors online music faculty using research-informed practices and apprenticeship. She has taught music in the online environment since 2004 and was a founding director of The Virtual School of Music.

### **From planning to delivery: Research-informed practices for successful online instrumental teaching**

Successfully teaching music in the online environment is not limited to the technology used – it also involves the practical integration of foundational elements of learning design and learning engagement. This presentation will highlight the research surrounding the current landscape of teaching instrumental music lessons online through an iterative framework for teaching music online (Johnson, 2016). Focused on three central pedagogical themes of communication, design and assessment, the framework provides faculty both new, and not-so-new to teaching music in the online environment.

As we look to develop strong online learning opportunities, bridging the distance with learners across the Internet can seem impersonal. However, through careful consideration to elements of design, communication and assessment, the distance can be mitigated and learning can be well supported. Johnson's (2016) pedagogical framework for teaching music online combines these three elements into an iterative process that can help guide faculty as they develop their current online teaching practices and build goals for future. From the planning of an online instrumental lesson, to its delivery and learner assessments, equipping faculty with online teaching strategies and supports are key for effective learning outcomes.

Teaching methods, whether used in a face-to-face or online environment are founded on the research of how people learn. Brain research can assist teachers in the digital age to recognize the instructional value of understanding that learners have differences in their brain networks and therefore differences in how they learn. The recognition, strategic and affective networks of the brain described by Rose and Meyer (2002) deliver the respective “what,” “how,” and “why” components of learning to the learner. Connecting in physiological research of Vygotsky's (1981) social constructivism, and research in learning modality (Tomlinson, 1999; Gardner, 1983; Fleming & Mills, 1992), we can better understand the necessary components for effective online music learning.

As a consequence of adding the online element into our teaching, there is a need to re-think our design and instructional strategies to better integrate into the online teaching paradigm. Cox (2006) stated, “We need more research that will illuminate our understanding of music education's function in fostering a sense of identities that have to be constantly invented, transformed, and recovered” (p. 79). Such self-reflection can serve to identify aspects of tradition teaching methods that may need adjustments for 21<sup>st</sup> century learning. As faculty become stronger in their online teaching, their learners benefit. With purposeful planning by faculty, learners have opportunities to embrace the social, cognitive and teaching presences (Garrison, 2011) associated with online learning.

Online studies in instrumental music teaching revealed significant findings in learning outcomes, student engagement and effective teaching practices. For example, Dye (2007) concluded that aspects of online music teaching (i.e. course design, technology and student fulfillment) were of value for successful course outcomes. A sequential pattern study by Orman and Whitakker (2010) compared face-to-face and online lessons of one tuba and two saxophone students. They reported that the synchronous video demonstrated an increase of teacher modelling by 28 percent and an increase of student performance by 22 percent ( $p = .0117$ ). Furthermore, technological limitations (i.e., lack of viewing space due to camera position) prompted students and instructors to develop clearer verbal instruction and communication skills (Brändström et al., 2012). Together, these studies identify changes in teaching practices that had positive outcomes in learning – both for faculty and learners.

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**GUALTIERO VOLPE** is an Associate Professor at DIBRIS, University of Genoa, where he teaches Multimodal Systems and Sound and Music Computing. He received the PhD in electronic and computer engineering in 2003 from the University of Genoa. His research interests include intelligent and affective human-machine interaction, social signal processing, sound and music computing, modelling and real-time analysis and synthesis of expressive content, and multimodal interactive systems. He is author or co-author of more than 100 scientific publications. He is the scientific responsible for DIBRIS of three EU-ICT projects on multimodal technologies for education (FP7 MIROR, H2020 TELMI, and H2020 weDRAW).

### **How we learn to play musical instruments: scientific perspectives for new interactive systems capturing and assessing the motor performance of a violin player**

The quality of the motor performance is of great importance in music training, especially in learning how to play a music instrument. This indeed requires accurate movements of the limbs and of the body, fine-grained control of posture, and a high biomechanical efficiency. Moreover, it is well-known that movement and gesture play a fundamental role as major conveyors of expressive content in music performance. This talk will presents our ongoing work on technologies that can capture the motor performance of a music student, assess it, and provide the student with feedback on how to improve postural and motor qualities. The focus will be on violin playing. The work is carried out in the framework of the EU-H2020-ICT Project TELMI (Technology Enhanced Learning of Musical Instrument Performance).

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**DR. RAFAEL RAMIREZ** is a Tenured Associate Professor and Leader of the Music and Machine Learning Lab at the Department of Information and Communication Technologies, Universitat Pompeu Fabra, Barcelona. He obtained his BSc

in Mathematics from the National Autonomous University of Mexico, and his MSc in Artificial Intelligence and PhD in Computer Science from the University of Bristol, UK. For five years, Rafael was a Lecturer in the Department of Computer Science at the School of Computing of the National University of Singapore. He is currently principal investigator in the H2020 Research and Innovation TELMI (Technology-Enhanced Learning of Music Instruments) project. His research interests include music technology, machine learning, data mining, and their application to cognition, creative processes, accessible and brain-computer Interfaces, and health and well-being. He has published more than 100 research articles in peer-reviewed international Journals and Conferences, and acted as guest-editor of several special issues focused on machine learning and music. He currently acts as chair and program committee member for several machine learning and music technology conferences.

### **Technology Enhanced Learning of Musical Instrument Performance – TELMI project**

Learning to play a musical instrument has been showed to provide several benefits for acquiring non-musical skills. However, there is a lack of generalised access to music education, and musical instrument learning is mostly based on the master-apprentice model in which the student's interaction and socialization is often restricted to short and punctual contact with the teacher followed by long periods of self-study resulting in high abandonment rates. In such scenario, modern technologies are rarely employed and almost never go beyond audio and video recording. Our research aims to study how we learn musical instruments from a pedagogical and scientific perspective in order to create new interactive, assistive, self-learning, augmented-feedback, and social-aware systems complementary to traditional teaching. The aim is to allow more people to have access to music education, including people with motor disabilities, and reduce abandonment rates among music students. In this seminar, I will take the opportunity to present some of the research carried out in our research lab on areas such as technology-enhanced music learning, expressive performance modelling, and accessible music interfaces.

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**CLAUDIO ALLOCCHIO** studied astrophysics and particle physics, but also music (piano). In 1985 he started his computer networking activities at CERN and then returned to Trieste (1988). Among the founders of GARR NREN, he managed the COSINE mail gateway services (early 90s) and the Italian Naming Authority (".it" regulator). Since 1991, he is a member of the application area directorate at IETF, which he directed between 2012 and 2016. He is the GARR senior technical director for advanced applications and security areas, and since 2005 is one of the chief engineers developing LoLa, the low latency advanced interactive collaboration system.

### **Technological and Network Support in the International Sector dedicated to Artistic and Music Education Community of the GARR Network, the European and Worldwide Research Network (GEANT). The Network Music Interaction of the LOLA Project.**

Using computers and network to support Art and Music education, production and creativity is a long time challenge: since the first appearance of audio and video transport over distance, attempts were made to permit remote interaction in the most possible natural way for artist. Providing adequate technology and networking support is one of the top and most difficult tasks for us, but also a strong driver who produced great innovation and progress, also in the more technical areas and with results useful for all other disciplines. Computer h/w and s/w optimization, making network fast, reliable and "where it needs to be" is now one of the major topic for network design, so A&H can be adequately supported. The talk will present current status of available services, challenges, solutions and the set of technical solutions existing, from Ultragrid, 4Ggateway, legacy and LoLa, with a special attention to the services and growing community around the latter.

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**JERÔME JOY.** Composer, improviser, instrumentalist, in experimental, electronic, electroacoustic and instrumental music. Tenured professor, National School of Arts (presently in Bourges, France). Ex-Ph.D. student, specialized Ph.D in audio art & experimental music at Laval University Québec (CAN) (2011-2016) (title: 'Internet Auditoria — Expanded Music / Music for Sonic Expanses : Music and Environmental Aesthetics — Earth-Mars Auditorium'). Ex-Research director with Peter Sinclair, of Locus Sonus - audio in art, research lab (2004-2016).  
<http://jeromejoy.org/>

### **Internet auditoriums**

The series of Internet based technological developments in recent decades affects and transforms so deeply our practices and perceptions that the very notion of auditorium cannot remain untouched and unscathed. What we discern as a listening space for production and reception of music and for sound propagation in space and in time is now overlapping the specific physical structures and architecture (concert halls, venues, esplanades, etc.) towards enlarged and invisible sensory enveloping forms: internet auditoriums. We have to examine those 'spaces': their architectural filiation with places and rooms, their plasticity and acoustic properties for being built, planned, settled and landscaped for listening, their ability to locate and seize listeners and to be explored by sound productions designed to be listened to. This research involves what the author considers as an extended 'music' for expanded and expanding auditoriums (Internet auditoriums, Earth-Mars auditorium), i.e. an idiomatic music for correlated and 'tuned' spaces and for members of audiences attuned to a homogeneous and co-constituted

setting or field, as virtual and intangible as it is, in which they consider they are co-present and participating 'in space' and 'in time' (synchronisation, de-synchronisation, re-synchronisation, resulting from delays, and so on).

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**AUGUSTO SARTI** is a Full Professor at the Politecnico di Milano, Italy, and holds a professorship at University of California, Davis. His research interests are in the area of multimedia signal processing, with a focus on sound and music processing as well as computational acoustics. He is the coordinator of the Sound and Music Computing Lab and the Musical Acoustics Lab, as well as of the Master Program in Music and Acoustics Engineering of the Politecnico di Milano. He is a Senior Member of IEEE, Senior Area Editor of IEEE Signal Processing Letters, Associate Editor of IEEE Tr. on Audio Speech and Language Processing and elected member of the IEEE Audio and Acoustic Signal Processing TC. He is also the chairman of the EURASIP Special Area Team of Acoustic, Sound and Music Signal Processing.

### **Recent advancements in musical signal processing and their impact on music research and practices**

So much has happened in the past few decades in the area of musical signal processing thanks to the injection of fresh ideas from other disciplines of study. For example, computational geometry acoustic processing has enabled the acoustic modelling and rendering of virtual environments in real time and in an interactive fashion. Artificial intelligence and machine learning algorithms are now able to extract meaningful and high-level musical information from audio streams. Advanced applications are in view, which can fruitfully support the work of composers, producers, and all the music professionals that are involved in the teaching of music. In this talk, I will offer a brief overview of what I consider the most promising emerging technologies, and I will give my perspective on how they will be reshaping music research, practices and business in the near future.

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**DR ALEKSANDER SZRAM**, FHEA, is Programme Leader for ISP Foundation in Music and the Certificate in the Practice of Music Making at Trinity Laban Conservatoire of Music and Dance, where he is also a Principal Lecturer and a member of the Piano Professorial Staff. His research activities are focused on two areas; the performance and recording of contemporary piano repertoire, and the application of Freirean pedagogical approaches in conservatoire settings.

**DR DARIO VAN GAMMEREN**, FHEA, works as Technology Enhanced Learning Projects Developer at Trinity Laban Conservatoire of Music and Dance, where he leads on the development and implementation of digital technologies that support a blended approach to curriculum delivery. In this capacity, he supports academic staff via the design and delivery of a suite of training materials, as well as the development of a pedagogically focused Digital Literacy Framework. Dario is also Lecturer in Academic Studies at the Royal Northern College of Music and Associate Lecturer for the Open University.

### **Widening participation through distance learning**

The Certificate in the Practice of Music Making (CPMM) is a new blended-learning course offered by Trinity Laban Conservatoire of Music and Dance (TL) in conjunction with the Open University (OU). A deliberately inclusive course, it is open to adults working in any genre of music, and at any instrumental or vocal standard. The CPMM can be taken as a stand-alone certificate, or it can count towards a distance-learning BMus offered by the OU. Through reaching out to new types of learner, the CPMM furthers key aspects of TL's strategic plan, which aims to provide 'wide access to [...] learning and participatory programmes for [...] local, regional, national and international communities', and extends Trinity Laban's commitment to engaging with a diverse range of learners. Currently in its second cohort of study, the age range of the students is from 18 to 74, while cultures of music making have included punk, folk, jazz, choral, classical and busking. Students have hailed from the UK, Ireland, Italy, Germany, Switzerland and China. This eclectic mix of age, background and experience has provided a rich educational milieu in which students have been able to interrogate differences in approach to music making and develop their understanding of other musics and of themselves.

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**ANTONIO GRANDE** teaches analytical subjects at the Conservatory of Music "G. Verdi" in Como (Italy) and is actually teaching in the Master in *Music Theory and Analysis* at the University of Calabria (Italy). He has published: "Il moto e la quiete. Dinamica delle strutture musicali in età tonale", (Aracne, Rome, 2011), "Lezioni sulla Forma Sonata" (Universitalia, Roma 2015), as well as papers on analytical subjects on several journals. He took part at the 9th European Music Analysis Conference (EuroMAC 9, 2017) with two talks. He also visited several Conservatoires and Universities as Erasmus Programme (Spain, Germany, Turkey, Estonia, Latvia).

**Master in *Analysis and Music Theory* at the University of Calabria.**  
**An experimental teaching model between traditional study and distance learning**

The University of Calabria has been promoting, since 2014, a Master's Level in *Analysis and Music Theory* under the direction of Prof. Egidio Pozzi. The initiative involves collaboration between GATM (*Analysis Group and Music Theory*), two Universities, three Conservatories, as well as some cultural Associations.

A special feature of the proposal is a blended formula with face-to-face lessons and distance learning. In the second case, the main platform used is Adobe Connect for video-lectures and meetings of teachers. Other documentation is lodged on a second platform, in Moodle environment. A third platform – Claroline - is used for additional support and on-line tests.

Given the success of the initiative, the Scientific Committee is now working on two objectives: a) to allow the on-line testing of acquired skills; b) to develop packages of teaching materials according to standard protocols to be shared by other musical institutions.

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**BENJAMIN REDMAN.** Benjamin trained as a percussionist and performs in a wide variety of musical styles and genres in the UK and internationally. He also teaches percussion in nine high schools in the Scottish Borders. Benjamin is a PhD candidate at the Royal Conservatoire of Scotland where he is researching the use of videoconferencing in instrumental music lessons. He is co-editor of the Scottish Journal of Performance.

#### **'Listen with your eyes' - the use of videoconferencing in instrumental music lessons**

This presentation draws on my current doctoral research at the Royal Conservatoire of Scotland into how videoconferencing can be used to facilitate distance learning in instrumental music lessons. My research also examines how low-latency videoconferencing can also be used to facilitate rehearsal, performance and recording opportunities for musicians in remote locations.

I will discuss what changes in the experience of both the teacher and the student from the face-to-face instrumental music lesson to the videoconferencing lesson, and whether some elements can only be taught in face-to-face lessons. I will also discuss the next steps in my research, an investigation into what changes in the user experience from using standard videoconferencing systems to low-latency videoconferencing. Finally, I will discuss applications of low-latency videoconferencing.

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**DR. LUC NIJS** is postdoctoral researcher at IPEM and guest lecturer in Music Educational Technology at the Royal Conservatory The Hague (NL) and Luca School of Arts Leuven (BE). He holds a PhD in Arts Sciences (Systematic Musicology), MA degrees in Music Performance (clarinet) and Philosophy, and a Teacher Certificate (clarinet, sax, ensemble playing). His research integrates theory development, empirical studies and practice, focusing on the musician - instrument relationship, on the role of body movement in the instrumental learning processes and on the role of technology in provoking an embodied approach to instrumental music education. His work with the Music Paint Machine (see: [www.musicpaintmachine.be](http://www.musicpaintmachine.be)) was awarded the EAPRIL Best Research and Practice Project Award 2012. He is a regular invited speaker on music educational seminars and member of the advisory board of the Flemish Ministry of Education.

#### **Participatory Musical Sense-making: proposing an augmented blended learning approach to music learning**

Students use various digital tools to retrieve, process and absorb information, drawing on a variety of digital tools and sources. Blended learning appeals to this modus operandi by merging face-to-face education with online learning tools. Music education has only scarcely embraced such blended modes of learning. Existing applications most often involve classical ways of online learning. However, due to the embodied and social nature of musical learning, we propose an innovative approach to blended music learning. Inspired by new technologies, but driven by pedagogy, we develop a web-based interactive application, named Singewing Space, based on an 'embodied' approach to music learning and on participatory sense-making through cooperative learning. This educational technology can be used in and beyond the classroom, connecting face to face learning to distance learning (*blended*) and introducing the use of various sensors in online learning (*augmented*). Using motion capturing and sound recording, the system will integrate the possibility to play, sing and move to music, alone or jointly with peers. It will enable to (1) collaboratively create a visualization of music or movement in a virtual learning environment, (2) respond to each other's creations through musical and physical actions, (3) adapt what is being or has been created, and (4) reflect on the musical experience. We briefly present the theoretical underpinnings and elaborate on the design of Singewing Space. In addition, we invite attendees to try out the demonstrator.

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**KARST DE JONG** is a professor at the Royal Conservatoire of Den Haag and the Escola Superior de Música de Catalunya in Barcelona. After his studies of classical piano and music theory he has specialized in improvisation, and worked intensively to promote the integration of improvisation in the classical musician's curriculum. He is closely involved in two important European Erasmus+ strategic partnerships: METRIC, which deals with improvisation in the curricula of higher music education in Europe and NAIP, the European Master of New Audiences and Innovative Practices. He has taught many masterclasses of improvisation at internationally renowned festivals and institutions, and released two CDs with piano solo improvisations entitled "Improdisiac I & II".

## Connected improvisation

This presentation will be a report on the first Blended Mobility project in the European Master of New Audiences and Innovative Practices (NAIP), entitled *Blended Mobility – Connected Improvisation*, which took place in the spring semester of 2016. During this unique project, students from 5 higher music institutions all over the world were brought online, breaking new ground by playing simultaneously at a series of guided improvisation sessions while exploring and developing new possibilities of online learning. While it is always a challenge to make music together simultaneously over a long-distance connection, usually this is done with music that has been carefully prepared and rehearsed. With improvised music however, the challenges are even greater to ensure that real connections are being made both on the artistic and the technical level.

During my presentation, I shall use the additional information and documentation of the project as published on: <http://www.musicmaster.eu/online-learning>

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**MATTI RUIPPONEN** has led Degree Programme in Music, Music Technology since 2004. Besides technological topics he teaches music education technology, mobile music learning, inclusive music technology and web-based music teaching.

## DigiArts – eLearning in Higher Education Music, Dance and Performing Arts

The project focuses on upgrading digital education, learning concepts and pedagogy via design based learning.

The main goals for this project are:

- To create flexible study paths
- To develop the accessibility of higher education in music
- To enable year-round studying
- To improve the digital skills of the higher education personnel

Other goals are:

- To create digitally implemented learning modules for all the music, dance and performing arts schools (UAS) in Finland
- To develop digital pedagogy of the arts
- To support the personal competence profiles of students
- To develop deeper co-operation between higher education institutes

The concrete results for this project are as follows:

- Joint e-learning materials
  - PLE, personal learning environment for students
  - Tool for self-assessment that supports the personal competence profiles
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**CHRIS CHAFE** is a composer, improviser, and cellist, developing much of his music alongside computer-based research. He is Director of Stanford University's Center for Computer Research in Music and Acoustics (CCRMA). At IRCAM (Paris) and The Banff Centre (Alberta), he pursued methods for digital synthesis, music performance and real-time internet collaboration. CCRMA's SoundWIRE project involves live concertizing with musicians the world over. Online collaboration software including jacktrip and research into latency factors continue to evolve. An active performer either on the net or physically present, his music reaches audiences in dozens of countries and sometimes at novel venues (United Nations, carillons, galleries, shipping ports).

## An Overview of Projects in Internet Acoustics

Internet Acoustics is the study of sound traveling through the Internet, treating it as an acoustical medium just like air or water. Real-time streaming of sound, something commonplace nowadays, can be exploited for its own "physics" of propagation. Early work at CCRMA was supported by creation of a system for low-latency, uncompressed audio streaming shared today as an open-source application which is widely used for jamming, rehearsing and concerts. Jacktrip is also used in creating objects made in / of Internet Acoustics. The first of these was a guitar-like physical model for "plucking the Internet." Recent projects will be briefly described including an online course "Online Jamming and Concert Technology," "rooms" which enclose remotely collaborating musicians in their own reverberated sound, and online behavioral studies probing "rhythmic synchronization in our ear."

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**CHRISTEN STUBBE TEGLBJÆRG.** Born in Denmark in 1956, Christen Stubbe Teglbjærg studied science & music theory at Copenhagen University. He received his diploma from the Royal Academy of Music in Copenhagen in 1985 and continued his studies in Vienna. He finished his studies with a debut as a concert-pianist in Copenhagen 1987. He attended masterclasses conducted by Irwin Gage, Paul von Schilhawsky, Geoffrey Parsons and Roger Vignoles. Working as accompanist and repetiteur, he has been employed at the Royal Academy of Music in Copenhagen since 1986 where he in 1996 was appointed Associate Professor, and at the Royal Academy of Opera in Copenhagen since 1992. He is the accompanist for a number of leading

Scandinavian singers. He has frequently performed on TV and radio and has made CD-recordings and is frequently giving masterclasses for singers and accompanists.

### Live Network: Examples of Distance Musical Coaching (Milano-Copenhagen)

- Development and implementation of The Moodle Platform from a practical musical and pedagogical point of view, within The Intermusic Project, and locally at The Royal Danish Academy of Music (RDAM)
- Vocal Coaching via Distance Learning.

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### KENNETH FIELDS (Ph.D.)

Professor of Computer and Network Music, Central Conservatory of Music (Beijing, China);

Retired/Tenured, Canada Research Chair in Telemedia Arts (2008-2013);

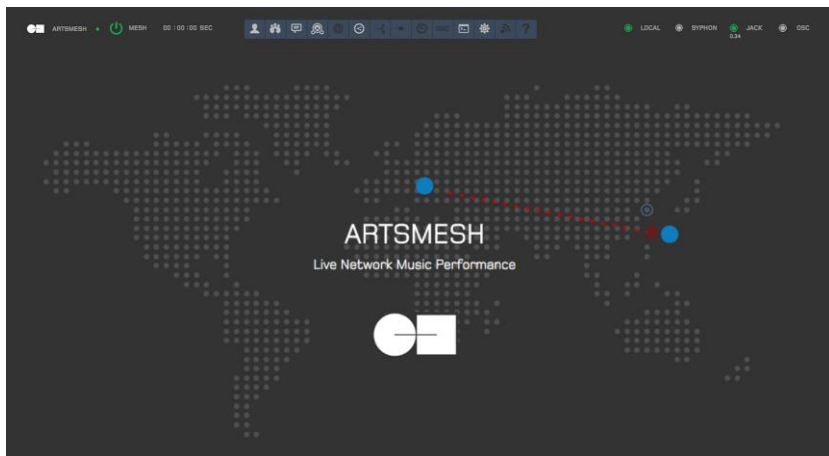
Ph.D. in Media Arts. University of California Santa Barbara in 2000;

Founder/CEO Artsmesh. Network Music Performance Software;

Editorial Board of the Journal of Organised Sound, Cambridge University Press. UK;

### Artsmesh: Presence Workstation (PW)

This talk will be a practical introduction to the Artsmesh software UI for networked music performance. I will demo the connection process with a colleague in Milan and then discuss in more detail the basic functions that are important for a network music performance: the local and global mesh servers, Jack/Jacktrip and Syphon/Ffmpeg routing circle, profiles, groups, chat, microblog/cloud, world map, metronome, osc server/client, score follower, network tools and broadcasting. Finally, I would like to introduce the Global Loop Orchestra Project that was created with the goal of on-boarding more musicians that want to play networked music.



### Global Loop Orchestra

