

From August 29th to September 2nd 2022

Music, Humanities, and Science: Instrument Making (MuHAS)

International Summer School
in partnership with Collegium Musicae of Sorbonne Université and
Institut Technologique Européen des Métiers de la Musique (ITEMM)





Collegium Musicæ – 1st International Summer School “Music, Humanities and Sciences : Instrument Making”

Collegium Musicæ of Sorbonne University is very excited to present its first international thematic summer school, whose ambition is to promote multi-disciplinarity between humanities and sciences in the field of music. This program intends to bring together young researchers from the 4EU+ Alliance and beyond, for a week of training through theoretical courses and practical workshops, while considering tools and skills upon a common base of multi-disciplinary knowledge.

This first thematic summer school on Music, Humanities and Science (MuHaS) is organized in partnership with the Institut Technologique Européen des Métiers de la Musique at Le Mans, and focuses on instrument making. Through a series of workshops and conferences, it will spotlight two major instrumental categories, plucked strings and wind instruments. These instrumental categories are explored from several vantage points, including humanities, sciences and hands-on practice, thus articulating music, musicology, acoustics and instrument making. These convergent perspectives raise several questions and learning objectives, also in terms of multidisciplinary. We will offer to question and evaluate collectively these multiple approaches which can be structured around a specific object and which will be

declined on several major themes, which bring out pluridisciplinary questions.

Rooted in different disciplinary fields — musicology, acoustics, instrument making, and performance practice—, the sessions will converge by the end of the week towards a global approach of musical instruments and instrument making.

The acoustical approach will develop different aspects of each one of our two families of instruments, through conferences and workshop sessions.

During the workshops on string instruments, the participants will be able to work on a simplified plucked string instrument, inspired by the guitar, the shamisen or the colacion. They will be able to modify and adjust different aspects of the instrument and evaluate their influence on the sounding and playing possibilities. We will thus try to evaluate the influence of the choice of the strings, alternatively proposed by the maker and the performer.



In the wind instruments' workshop sessions, the participants will work on a cylindrical resonator allowing different excitation possibilities, producing alternatively simplified flageolets, clarinets, chalumeaux or even testing the possibility of a digeridoo. Lateral holes and undercutting will be experimented.

Through material experience, the approach developed on the acoustics of musical instruments will address the interpretation of the main mobilized acoustic concepts.

A global view of the position of musicological studies in such an interdisciplinary approach will also be addressed, including historical perspective of music making, the status and functions of instruments in the repertoire and their evolution, through scores, iconography, historical organology, and close source readings. We will also discuss music challenges linked to restoration and conservation matters, museography and catalography of music instruments. Early music and historically informed performance issues, and repertoire and traditional music from the Mediterranean region are highly interested by our topic as well as the musical language in relation to the sound of the instruments, also focusing on the last hundred years, on the decompartmentalization of the orchestra sound and the enlargement of the soundscape.

Expert performers will experiment along with the participants and present their point of view on several aspects, such as the relation between instruments, musical style and repertoire, instrument making, the interaction they develop with makers, acousticians and musicologists, and their interaction with the instrument, engaging a body relation in which the playing gesture takes place.

SPEAKERS BIOGRAPHIES



PHILIPPE BOLTON

Philippe Bolton has been a recorder maker since 1974, when he was awarded a gold medal at the Lille Conservatory. His production today includes more than thirty recorder models, some of which are copies of historical instruments from the 15th to the 19th centuries, others being his own creations. He has developed and patented an electroacoustic recorder for contemporary music. He is also interested in the flageolet, an instrument that was played continuously between the 16th and early 20th centuries and which is rather forgotten in France today. Philippe Bolton is a Master Craftsman.



MURRAY CAMPBELL

Murray Campbell joined the academic staff at Edinburgh in 1972, and in 1985 founded the University's Musical Acoustics Research Group. In 2000 he was appointed Professor of Musical Acoustics at the University of Edinburgh. He retired from full-time teaching in 2008, and continues part-time teaching and research at Edinburgh as Senior Professorial Fellow and Professor Emeritus. He is co-author of three textbooks and numerous papers on the acoustics of musical instruments, and former co-chair of the EAA Technical Committee on Musical Acoustics.



PATRICIO DE LA CUADRA

Patricio de la Cuadra is an accomplished musician with a Diplôme d'Interprétation Supérieure in flute from the Ecole Normale de Musique in Paris, who has played flute and various Chilean folk instruments in Europe, South America, Japan, Taiwan, and the US (including Carnegie Hall '94). He is currently Full Professor at the Pontificia Universidad Católica both at the Electrical engineering department and the Music department, where he teaches digital signal processing, musical acoustics, among other courses and co-directs the Center for Research in Audio Technologies.



JEAN-MARIE FOUILLEUL

A luthier since 1979, he was awarded the title of «Meilleur ouvrier de France» in 1989. He creates high-end guitars for an international audience. He currently has over 600 instruments to his credit. In parallel with his work in the workshop, he has been interested in the development of his art by participating in the creation of a training course within ITEM, and by seeking closer ties with scientific circles within the UNFI association (Union Nationale de la Façture Instrumentale).



CLAUDIA FRITZ

Claudia Fritz is a CNRS researcher at the Institut Jean Le Rond d'Alembert (Sorbonne University). She is interested (in close collaboration with violin makers and performers) in the qualities of musical instruments, and how to correlate these qualities with violin making properties, vibro-acoustic properties and musicians' gestural control parameters. She was awarded the CNRS Bronze Medal in 2016 and an Acoustics and Science Award from the Violin Society of America in 2020.



FRANÇOIS GAUTIER

François Gautier is a professor at the Laboratoire d'Acoustique de l'Université du Mans, UMR CNRS 6613 and an aeronautical engineer. His research in musical acoustics concerns vibroacoustics and radiation of instruments (organ, trombone, guitar, harp, Stroh violin, Cristal Baschet) in connection with the practice of the instrument makers (Plateforme d'Aide à la Façture Instrumentale). He also coordinates projects related to the reduction of industrial noise, using the Black Hole Acoustic effect, an innovative technique adapted to light structures.



FLORENCE GÉTREAU

Musicologist and art historian Florence Gétreau is Director of Research Emeritus at the Centre national de la recherche scientifique (CNRS), Institut de recherche en musicologie (Paris). She was elected to the Academia Europaea in 2010 and is a Commandeur des Arts et des Lettres. She is the recipient of the Anthony Baines Memorial Prize, the Curt Sachs Award and the Claire Brook Award for Voir la Musique (2017). Former president of the French Musicological Society (2011-2015), she has been a member of the IMS Directorium since 2012.



MIGUEL HENRY

Lutenist, composer

Miguel Henry has a solid background in scholarship, musical acoustics, analysis and music history. Miguel Henry is a concert performer in numerous early music ensembles. As a composer, he works both on the reconstruction of incomplete works and on original compositions. Miguel Henry teaches at the Pôle Supérieur Paris Boulogne Billancourt, and at the Conservatoire à rayonnement régional de Boulogne-Billancourt and Tours. He co-directs with Akiko Veaux the Compagnie de l'Aune – www.compagniedelaune.com



DIMITRIS KOUNTOURAS

Born in Greece he specializes on recorder, historical flutes and Early Music. He is active as a performer, scholar and teacher and is the founder and director of Ex Silentio ensemble focusing on early music and Mediterranean traditions. He is teaching at the Athens Conservatoire and the Ionian University. He is researching topics of music history such as the relations between renaissance humanism and music, the Troubadours and the crusades, etc.



IWONA LINDSTEDT

Iwona Lindstedt is an Associate Professor and the current Director of the Institute of Musicology at the University of Warsaw. Her research interests focus on the history and theory of 20th- and 21st-century music as well as music analysis. She is a member of the Advisory Board of the book series Musical Cultures of the Twentieth Century. She has published books on serialism and sonoristics in the works of 20th-century Polish composers (2001, 2010), and a monograph on Kazimierz Serocki (2020).



INGA MAI GROOTE

Inga Mai Groote is Professor of Musicology at the University of Zurich. Her research focuses on the history of early modern music theory and its book culture, the circulation and understanding of music, and the impacts of confessional differentiation. Currently, she is a fellow at Historisches Kolleg München with a book project on the history of musical knowledge. She is the editor (with Iain Fenlon) of *Heinrich Glarean's Books: The Intellectual World of a 16th-Century Musical Humanist* (2013).



THIERRY MANIGUET

After studying science, musicology and musical acoustics, Thierry Maniguet specialised organology. Curator at the Musée de la musique (Cité de la musique – Philharmonie de Paris) since 2000, he has notably designed the presentation of the 19th and 20th century spaces and has curated in 2019 a new room dedicated to electronic music. He is Professor at the Conservatoire National Supérieur de Musique de Paris and is a lecturer in several French academic institutions.



BENOÎT NAVARRET

Benoît Navarret is a Associate professor at the Music and Musicology Department of Sorbonne University. He teaches musical acoustics, critical listening in phonography, audio recording techniques, and organology in relation to practices and research in the field of phonographic popular music. A specialist in the electric guitar, he has worked as a guide and researcher at the Musée de la musique de Paris, and as an author of educational content for the Cité de la musique.

Monday, August 29th	
8H39	Journey from Paris to Le Mans: Tramway to Itemm (45 min approx.)
10H00	Welcome to ITEM Hall
10H30	Welcoming word Benoit Fabre, Carole Le Rendu Cultural space of ITEM
10H45	Presentation of the course Théodora Psychoyou, Jean-Loïc Le Carrou, Romain Viala Cultural space of ITEM
11H15	Wind instruments Murray Campbell, Philippe Bolton, Dimitris Kountouras Wind instruments, input impedances, lateral holes Cultural space of ITEM
12H05	Historiography, reconstruction Florence Gétreau Classroom Verdi
12H50	Lunch Cafeteria of the Crédit Agricole
14H00	Plucked string instruments Stringed instrument - Acoustics, mechanics and material François Gautier, Jean-Marie Fouilleul, Miguel Henry Cultural space of ITEM
14H50	Writings on instruments: texts and source types Inga Mai Groote Classroom Verdi
15H40	The instrumentarium of Dimitris Kountouras : repertoires, styles and playing techniques Dimitris Kountouras Classroom Verdi
16H25	Break
16H45	Presentation of the participants Cultural space of ITEM
17H30	Installation at the hotel Hotel Ibis Le Mans Centre
18H30	Free time
19H30	Dinner Hotel Ibis Le Mans Centre
20H30	Free time

Tuesday, August 30th	
9h00	Plucked string instruments Sound and vibration analysis François Gautier Classroom Verdi
9H50	Questions and discussion Classroom Verdi
10H35	Break
10H55	The instrumentarium of Miguel Henry: repertoires, styles and playing techniques Miguel Henry Classroom Verdi
11H45	Pre-workshops instructions Group 1: plucked string instruments Jean-Marie Fouilleul Workshop Torres Group 2: wind instruments Philippe Bolton Workshop Debussy
12H30	Lunch Cafeteria of the Crédit Agricole
13H30	Workshops Group 1: plucked string instruments Jean-Marie Fouilleul Workshop Torres Group 2: wind instruments Philippe Bolton Workshop Debussy
17H30	The player, the maker and the workshop Group 1: plucked string instruments Miguel Henry, Jean-Marie Fouilleul Workshop Torres Group 2: wind instruments Dimitris Kountouras, Philippe Bolton Workshop Debussy
18H30	Return to the hotel Hotel Ibis Le Mans Centre
19H30	Dinner Hotel Ibis Le Mans Centre
20H30	Free time

Wednesday, August 31th		Thursday, September 1st	Friday, September 2nd
Cataloguing Florence Gétreau 📍 Classroom Verdi	9h00	Historically informed performance challenged by instrumental realities Thierry Maniguet 📍 Classroom Verdi	
Questions and discussion 📍 Classroom Verdi	9H50	New compositional challenges on music instruments in the 20th century Iwona Lindstedt 📍 Classroom Verdi	Instruments, sound masses and form in the 20th-century music (case studies) Iwona Lindstedt 📍 Classroom Verdi
	10H35		
Break		Break	Break
Wind instruments Excitation mechanisms of wind instruments Murray Campbell 📍 Classroom Verdi	10H55	Plucked string instruments Sound Synthesis - Tools for instrument makers François Gautier 📍 Classroom Verdi	Close readings (II): instruments and ideas Inga Mai Groote 📍 Classroom Verdi
Pre-workshops instructions Group 2: plucked string instruments Jean-Marie Fouilleul 📍 Workshop Torres Group 1: wind instruments Philippe Bolton 📍 Workshop Debussy	11H45	Close readings (I): prescriptions and practices Inga Mai Groote 📍 Classroom Verdi	Acoustic measurements on instruments Murray Campbell, Claudia Fritz, François Gautier, Jean-Loïc Le Carrou 📍 Classroom Bach and Innovation Pole
	12H30		
Lunch 📍 Cafeteria of the Crédit Agricole		Lunch 📍 Cafeteria of the Crédit Agricole	Lunch 📍 Cafeteria of the Crédit Agricole
	13H30	Wind instruments Murray Campbell Bores of wind instruments 📍 Classroom Verdi	The quality of the instruments ?: Objective and subjective evaluation (Round table) Miguel Henry, Claudia Fritz, Dimitris Kountouras, Jean-Loïc Le Carrou et Théodora Psychoyou Moderator: Patricio de la Cuadra 📍 Cultural space of ITEM
Workshops	14H20	Looking back on the results (historicity, development, etc.) Florence Gétreau 📍 Classroom Verdi	Review of the week Patricio de la Cuadra et Benoît Navarret 📍 Cultural space of ITEM
Group 2: plucked string instruments Jean-Marie Fouilleul 📍 Workshop torres Group 1: wind instruments Philippe Bolton 📍 Workshop Debussy	15H05	Break	
	15H25	Method for perceptual evaluation Claudia Fritz 📍 Classroom Verdi	
	16H10	Questions and discussion 📍 Classroom Verdi	
	17H00	📍 Departure from ITEM for the École Nationale Supérieure d'Ingénieurs du Mans (ENSIM)(10 min walk from ITEM)	
The player, the maker and the workshop Group 2: plucked string instruments Miguel Henry, Jean-Marie Fouilleul 📍 Workshop Torres Group 1: wind instruments Dimitris Kountouras, Philippe Bolton 📍 Workshop Debussy	17H30	Acoustic imaging and velocimetry demonstration 📍 ENSIM	
	18H30		
Return to the hotel 📍 Hotel Ibis Le Mans Centre		Return to the hotel 📍 Hotel Ibis Le Mans Centre	
	19H30		
Dinner		Buffet and evening 📍 Gardens of the ITEM	
Free time			

LIST OF PARTICIPANTS

- Nine AGNERAY-FOFANA, music and science PhD student at Collegium Musicæ, Sorbonne Université in Paris, France
- Mathilde AIGOUY, musicology student at Conservatorium van Amsterdam, Netherlands
- David ANDRES MUNIVE BENITES, musicology PhD student at Sorbonne Université in Paris, France
- Elisa BARBESSI, music and science post-doctoral student at Collegium Musicæ, Sorbonne Université in Paris, France
- Mathilde CALLAC, music and science PhD student at Collegium Musicæ, Sorbonne Université in Paris, France
- Baptiste CHOPIN, musicology PhD student in Research and Practice at Université Lyon 2 and at Conservatoire National Supérieur Musique et Danse in Lyon, France
- Louise CONDI, music and science PhD student at Collegium Musicæ, Sorbonne Université in Paris, France
- François FABRE, science PhD student at Sorbonne Université in Paris, France
- Amedeo FERA, musicology PhD student at Katholieke Universiteit Leuven, Belgium
- Adam FILABERT, musicology student at Sorbonne Université in Paris, France
- Yvan GIRO, music and science PhD student at Collegium Musicæ, Sorbonne Université in Paris, France
- Sebastien GONZALEZ, science post-doctoral student at Musical Acoustic Lab, Politecnico in Milano, Italy
- Jean-Théo JIOLAT, assistant lecturer and researcher at Sorbonne Université in Paris, France
- Maryse LEGAULT, musicology PhD student at McGill University and at Centre for Interdisciplinary Research in Music Media and Technology in Montreal, Quebec
- Leo MC FADDEN, musicology PhD student at Sorbonne Université in Paris, France
- Nadav OVADIA, musicology student in at Conservatoire National Supérieur Musique et Danse in Lyon, France
- Angelica PINNA, musicology PhD student at University of Music and Performing Arts in Vienna, Austria
- Zexuan QIAO, philosophy and music PhD student at Queen's University Belfast, Belfast, United Kingdom
- Victor SALVADOR CASTRILLO, music and science PhD student at Collegium Musicæ, Sorbonne Université in Paris, France
- Antonio SOMMA, music and science PhD student at Collegium Musicæ, Sorbonne Université in Paris, France
- Barbora ŠTEVANKA KADLÍČKOVÁ, musicology student at Masaryk University in Brno, Czech Republic
- Marc WIJNAND, music and science post-doctoral student at Collegium Musicæ, Sorbonne Université in Paris, France

WHAT TO DO IN LE MANS



Tourism information website of Le Mans:

www.lemans-tourisme.com



VISIT

The Plantagenet City:

- Twenty hectares of cobbled streets, inhabited by half-timbered houses and Renaissance hotels, sheltered by a Roman wall and overlooked by a cathedral.
- The Saint-Julien cathedral, half Romanesque, half Gothic, is also one of the largest in France (134m long for a surface of 5000m²).



Tram line: T1 (red line)

Tram stop: Éperon - Cité Plantagenêt



HAVE A DRINK

- Chicago bar - 5 rue de la Vieille Porte - 72 000 Le Mans (Old city)
- Le Lapin Blanc - 5-7 Rue Dorée, 72000 Le Mans (Old city)
- Le Barouf - 8 Rue Victor Bonhommet, 72000 Le Mans



TO SEE

“La Nuit des chimères” take place since the 2nd of July to the 11th of September. During 2 hours, at the nightfall, have a walk to admire Nicolas Boutruche visual projections on the cathedral St Julien, the gallo-roman wall and in all the Plantagenêt City.

www.lemans.fr



PRACTICAL INFORMATION

SESSIONS AND WORKSHOPS

Institut technologique européen des métiers de la musique (ITEMM)

- 71, avenue Olivier Messiaen, 72000 Le Mans - FRANCE
- Tram line: T1 (red line)
- Tram stop : Université (Le Mans)

ACCOMMODATION

Ibis Hotel

- Quai Ledru-Rollin, 72000 Le Mans - FRANCE
- Tram line: T1 (red line)
- Tram stop: Lafayette

JOURNEY BY PUBLIC TRANSPORT

You can buy a book of 10 tickets for the week at the station and at any tram station.

GETTING TO THE ITEM

From the station

Take the T1 tram for 20 minutes:

- Direction: UNIVERSITÉ (LE MANS)
- Gare > 12 stops > Université > 5 min walk

From the hotel

Take the T1 tram for 12 minutes:

- Direction: UNIVERSITÉ (LE MANS)
- Lafayette > 7 stops > Université > 5 min walk

GETTING TO THE HOTEL

From the ITEM

Take the T1 tram for 12 minutes:

- Direction: ANTARÈS - MMARENA (LE MANS)
- Université > 7 stops > Lafayette

GETTING TO THE STATION

From the ITEM

Take the T1 tram for 20 minutes:

- Direction: ANTARÈS - MMARENA (LE MANS)
- Université (Le Mans) > 12 stops > Gare (Le Mans)

From the hotel

Take the Tramway T1 for 07 min:

- Direction : ANTARÈS - MMARENA (LE MANS)
- Lafayette > 5 stops > Gare

For your travels by public transport in Le Mans, you can refer to the website:

www.setram.fr > “Se déplacer” (get around) > “Itinéraire” (Itinerary)

USEFUL TELEPHONE NUMBERS

In case of need during the summer school week, you can contact:

- Lou SQUELBUT: +33 6 44 45 77 92 (to be contacted in priority)
- Agnès PUISSILLIEUX: +33 6 48 35 34 75
- Romain VIALA: +33 6 43 80 92 38

You can also communicate via the

WhatsApp group: «Summer School MUHaS» to which you have been added.

MEALS

Lunch: Crédit Agricole Cafeteria

77, Avenue Olivier Messiaen, 72000 Le Mans – 5 min walk from ITEM

Dinner: Ibis Hôtel

Quai Ledru-Rollin, 72000 Le Mans

WIFI ITEM

ITEMM_INVITE

id: Intervenant

mdp: Inter2022

COMMITTEES

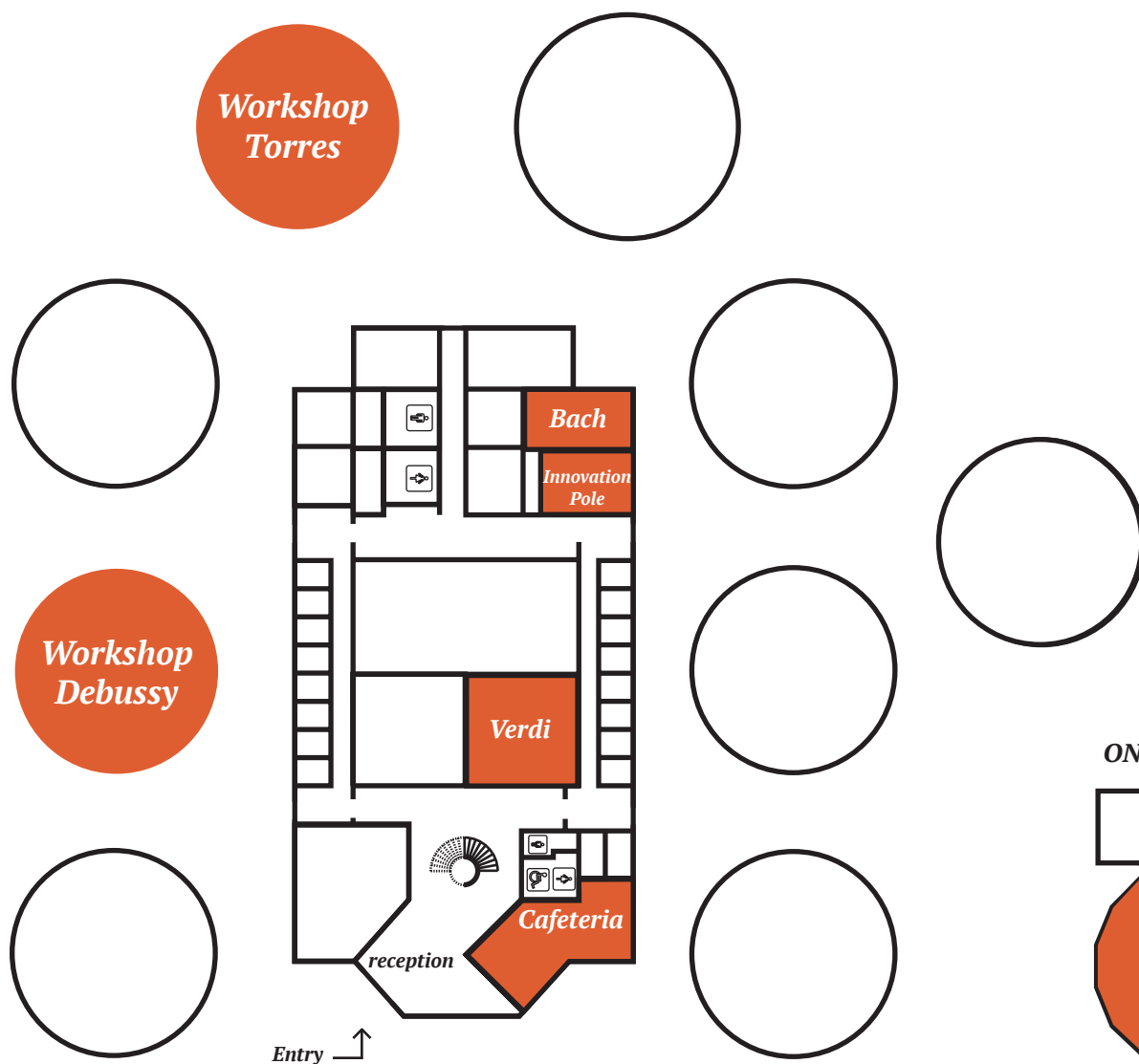
SCIENTIFIC COMMITTEE

- Benoît FABRE (chair), professor of acoustics at Sorbonne University, director of the Collegium Musicæ
- Florence GÉTREAU, Emeritus senior researcher at the CNRS in organology, history of instrument collections, social history of music and musical iconography
- Jean-Loïc LE CARROU (co-chair), associate professor of acoustics at Sorbonne University, LAM/Institut Jean Le Rond d'Alembert, Société Française d'Acoustique
- Thierry MANIGUET, Scientific curator of the Musée de la Musique, Professor of organology at the Conservatoire National Supérieur de Paris, Lecturer at the Ecole Nationale Supérieure des Mines de Paris
- Théodora PSYCHOYOU (co-chair), associate professor of musicology at Sorbonne University, IReMus
- Romain VIALA, Head of the Research and Innovation Department of the Institut Technologique Européen des Métiers de la Musique Le Mans, invited researcher at Laboratoire d'acoustique de l'Université du Mans

ORGANIZING COMMITTEE

- Benoît FABRE, professor of acoustics at Sorbonne University, director of the Collegium Musicæ
- Jean-Loïc LE CARROU, associate professor of acoustics at Sorbonne University, LAM/Institut Jean Le Rond d'Alembert, Société Française d'Acoustique
- Théodora PSYCHOYOU, associate professor of musicology at Sorbonne University, IReMus
- Agnès PUISSILIEUX, general secretary of Collegium Musicæ
- Lou SQUELBUT, project manager at Collegium Musicæ
- Romain VIALA, Head of the Research and Innovation Department of the Institut Technologique Européen des Métiers de la Musique Le Mans, invited researcher at Laboratoire d'acoustique de l'Université du Mans

Event under the aegis of the Société Française d'Acoustique (French Acoustical Society)



Entry ↗



[WWW.COLLEGIUM.MUSICAE.
SORBONNE-UNIVERSITE.FR](http://WWW.COLLEGIUM.MUSICAE.SORBONNE-UNIVERSITE.FR)



WWW.ITEMM.FR

ON THE FLOOR

