Curriculum vitae

Carmine-Emanuele Cella

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In a nutshell

Carmine-Emanuele Cella is an accomplished composer, mathematician and educator known for bridging artistic expression and mathematics through music. His music is not based on melodies, chords or rhythms but is more about writing the sound *itself*. Each note and each musical figure are the components of a global sonic image, unified and physical, that reveals the tragic story of sounds. With advanced degrees in both music and applied mathematics, he has collaborated with institutions such as Ircam and École Normale Supérieure in Paris and HEM in Geneva; he received prestigious awards, including the Petrassi prize for composition.
Cella is currently a professor in music and technology at the University of California, Berkeley (where he also co-directs the Center for New Music and Audio Technologies), and director of artistic research at Ircam. In 2022, he was awarded the Traiettorie music prize for his groundbreaking work in Artificial Intelligence applied to music, augmented reality, and mathematical representations of sound. In 2023, he was appointed Jerry and Evelyn Hemmings Chambers Distinguished Professor in Music for a three-year term.

Education

2011 **Doctorate**, *University of Bologna*, Italy
Ph.D. in Science, cognition and technology (applied logic and mathematics), advisors: Giovanna Corsi and Fabio Bellissima, grading: *excellence*, dissertation title: On symbolic representations of music.

2007 **Doctorate**, *Accademia Nazionale "S. Cecilia", Rome*, Italy
Ph.D. in Music Composition, advisor: Azio Corghi, grading: 10/10.

2004 **Master degree**, *University of Urbino*, Italy
Master in Philosophy (mathematical logic), grading: *cum laude*, dissertation title: Sulla struttura logica della musica.

2003 **Master degree**, *Conservatory of music "G. Rossini", Pesaro*, Italy
Master in Music Composition.

2001 **Master degree**, *Conservatory of music "G. Rossini", Pesaro*, Italy
Master in Computer Music, grading: 10/10.

1998 **Master degree**, *Conservatory of music "G. Rossini", Pesaro*, Italy
Master in Piano performance.

Career

2022 – now **Associate Professor in Music Technology/co-director at CNMAT (from Fall 2024)**, *University of California, Berkeley*, USA
Teaching to undergraduate and graduate students (120h/year); research in mathematical models for music, machine learning, signal processing, music composition.

2025 – 2026 **Director of artistic research**, *Ircam, Paris*, France
Creation and co-ordination of a new interdisciplinary program to foster art/science developments at Ircam.

2019 – 2022 **Assistant Professor in Music Technology/lead researcher at CNMAT**, *University of California, Berkeley*, USA
Teaching to undergraduate and graduate students (120h/year); research in mathematical models for music, machine learning, signal processing, music composition.

2017 – 2018 **Adjoint Researcher**, *Ircam, Paris / HEM, Geneva*, France/Switzerland
Research topics: machine learning models for automatic computer-assisted orchestration.

2015 – 2016 **Post-doctorate**, *École Normale Supérieure, Paris*, France, DATA team
Research topics: mathematical modelling of deep learning; supervisor: Stéphane Mallat.

2015 – 2022 **Teaching Professor in Computer Music**, *Conservatory of music "G. Rossini", Pesaro*, Italy
Teaching to undergraduate students (250h/year).

2013 — 2014 **Head of Technical Research**, *Mogees, London*, UK
Startup company in audio technology; co-author of a patent on algorithms for physical modelling.

2013 **Composer in Research**, *Ircam, Paris*, France
Research topics: machine learning models for signal processing.

2012 – 2014 **Teaching Professor in Computer Music**, *Conservatory of music "A. Pedrollo", Vicenza and Conservatory of music "S. Cecilia", Rome*, Italy
Teaching to undergraduate and graduate students (250h/year).

2011 **Teaching Professor in Harmony**, *Conservatory of music "D. Cimarosa", Avellino*, Italy
Teaching to undergraduate students (250h/year).

2009 – 2011 **Ph.D. Student**, *University of Bologna*, Italy
Research topics: symbolic representations of music and audio signals.

2009 **Co-founder and CTO**, *31tone, Amsterdam*, Netherlands
Startup company focused on software for musical creation on the iOS platform.

2007 — 2008 **Research and Development**, *Ircam, Paris*, France
Research topics: audio indexing and classification.

2005 – 2007 **Ph.D. Student**, *Accademia Nazionale "S. Cecilia", Rome*, Italy
Research topics: composition for orchestra and large ensemble.

2001 – 2006 **Research and Development**, *Viscount International Spa*, Italy
Research topics: low-level DSP programming; voice synthesis and transformation; control systems for physical modelling synthesis.

1999 — 2005 ***Répétiteur* (pianist for opera productions)**, *Theaters and festivals*, Europe
For several years I have been a professional pianist working as *répétiteur* in major theaters and festivals in Europe, including Rossini Opera Festival, Wexford Festival Opera, Teatro Comunale di Bologna, etc. I played in recitals with renowned opera singers and I worked as répétiteur for Luciano Pavarotti in his atelier in Pesaro, accompanying his students during lessons.

Grants and Awards

2025 Recipient of a $120,000 grant from the Philomathia Foundation in support of the BEAR festival at CNMAT.

2023 Appointed to the Jerry and Evelyn Hemmings Chambers Distinguished Professorship in Music (three-year term, 2023–2026).

2022 Recipient of the Traiettorie Music Prize, from Fondazione Prometeo in Parma, Italy.

2021 Recipient of the France-Berkeley Fund with the project: *Statistical relational artificial intelligence for assisted orchestration*.

2021 Nominated fellow of the Hellman Fund with the project *Understanding and modelling music timbre*.

2019 Successful grant application from the TENOR network, meant to be used to create a connection within the UC system.

2019 Nomination to the *Franco Abbiati Prize*, an annual award presented by the National Association of Music Critics in Italy.

2019 Finalist in the *Basel composition competition*, head of jury Helmuth Lachemann.

2018 Nomination for the prestigious prize Pierre de Monaco for composition.

2016 Italian Fellow in composition at the American Academy in Rome.

2014 Recipient of the A. Rubinstein prize from Teatro La Fenice in Venice.

2013 Member of Academie de France á Madrid at Casa de Velazquez (2013-2014).

2011 Finalist at the international Isang Yun music prize in South Korea.

2010 2nd prize at the ICOMS composition competition.

2010 1st prize at the Egidio Carella competition.

2008 Recipient of the prestigious Petrassi prize for composition, from the President of the Italian Republic Giorgio Napolitano.

2007 Recipient of the Giovanni Guarino grant from Accademia di S. Cecilia in Rome.

2007 Recipient of the Emma Contestabile grant from Accademia Chigiana.

1998 1st prize at the G. Rossini composition competition.

Selected compositions

2026 **When the moon of mourning is set**, for augmented vibraphone and large orchestra; first performance: Rai NuovaMusica, Turin, then Teatro alla Scala, Milan (35th Milano Musica Festival), May 2026; Orchestra Sinfonica Nazionale della RAI; conductor: Michele Gamba; vibraphone: Minh-Tam Nguyen; published by: Casa Ricordi – Milan.

2026 **I am in blood**, monographic CD (70 minutes), Kairos; produced and under contract, to be released in September 2026.

2025 **Piccoli preludi lirici**, for piano solo ; première : Berkeley, May 2025 ; Hélène Papadopoulos, piano ; Casa Ricordi – Milan.

2024 **From scratch**, for viola sola ; première : Madrid, May 2024 ; Lucia Peralta, viola ; Casa Ricordi – Milan.

2023 **I am in blood**, for large ensemble, augmented instruments, live electronics and 3D spatialisation; first performance: Paris, Espace de projection - Ircam, February 2023; L'Itinéraire, conductor Léo Margue, RIM: Etienne Démoulin; published by: Edizioni Suvini Zerboni - Milan.

2022 **Improvviso statico III**, for saxophone quartett and live electronics; first performance: Sansepolcro, ilSuono Music Week, July 2022; Sidera sax quartett; published by: Edizioni Suvini Zerboni - Milan.

2022 **Kobi**, for augmented Mbira and smart percussions; first performance: Santeria Toscana, Milano Musica, May 2022; Les percussions de Strasbourg; published by: Edizioni Suvini Zerboni - Milan.

2021 **Dendrum**, for augmented percussions; first performance: CIRMMT, Montreal, October 2021; Sixtrum ensemble; published by: Edizioni Suvini Zerboni - Milan.

2019 **Atlas** for video and live electronics in three cities simultaneously; first performance: Centre Pompidou - Paris, Onassis foundation - Athens and ZKM - Karlsruhe; published by Edizioni Suvini-Zerboni - Milan.

2019 **Kore**, for smart percussions; first performance: Hangar Bicocca, Milano Musica, October 2019; Les percussions de Strasbourg; published by: Edizioni Suvini Zerboni - Milan.

2019 **Verso la fine del giorno**, for large orchestra; first performance: February, 2019, Oekolampad Basel; Basel Symphony orchestra; conductor: Francesc Prat; published by: Edizioni Suvini Zerboni - Milan.

2018 **Stades d'ombre, stade de lumiére** for large ensemble; First performance: Milan, Teatro Elfo Puccini, October 2018; Ensemble Orchestral de Lyon (EOC), conductor: Daniel Kawka; published by: Edizioni Suvini Zerboni - Milan.

2017 **Inside-out**, for smart percussions; first performance: Paris, LeCentQuatre, June 2017; Les percussions de Strasbourg; published by: Edizioni Suvini Zerboni - Milan.

2017 **Pane, sale, sabbia**, opera for 4 voices, actors and chamber orchestra; first performance: Kyiv - National opera theater, June 2017; Uhko ensemble; conductor: Luigi Gaggero; published by Edizioni Suvini Zerboni - Milan.

2015 **All of a sudden**, for orchestra; first performance: Florence - Teatro Verdi, September; Orchestra regionale della Toscana; conductor: Marco Angius; published by: Edizioni Suvini Zerboni - Milan.

2014 **Improvviso statico II**, for tenor saxophone and live electronics; first performance: Milan, May 2014, sax: Mario Marzi; published by: Edizioni Suvini Zerboni - Milan.

2014 **La memoire de l'eau**, for nine musicians; first performance: Reina Sofia - Madrid, May 2014; Ensemble Orchestral Contemporain (EOC); conductor: Daniel Kawka; published by: Edizioni Suvini Zerboni - Milan.

2014 **When the light thickens**, for violin, clarinet, cello, piano and live electronics; First performance: Padova, November 2014; Ex-novo ensemble; published by: Edizioni Suvini Zerboni - Milan.

2013 **Ali oscillano in fioco cielo**, madrigal for five voices; First performance: Strasbourg, July 2013; La dolce maniera; conductor: Luigi Gaggero; Published by: Edizioni Suvini Zerboni - Milan.

2013 **Reflets de l'ombre**, for large orchestra and live electronics; first performance: Paris - Salle Pleyel, June 2013; Orchestre Philharmonique de Radio France; conductor: Jukka-Pekka Saraste; published by: Edizioni Suvini Zerboni - Milan.

2012 **Gia' s'ottenebra il giorno**, for orchestra; first performance: Paris - Centre Pompidou (Grande Salle), June 2012; Orchestre Philharmonique de Radio France; conductor: Leo Hussain; published by: Edizioni Suvini Zerboni - Milan.

2012 **Improvviso statico** for alto sax and live electronics; First performance: Rome - Conservatorio S. Cecilia, EmuFest, October 2012; sax: Enzo Filippetti; Published by: Edizioni Suvini Zerboni - Milan.

2010 **The Manhattan distance** for orchestra (2010, suite from Li Madou); first performance: Seoul Art Center, September 2011; Ensemble TIMF, conductor: Soo-Yeoul Choi; published by: Edizioni Suvini Zerboni - Milan.

2010 **Li Madou**, for orchestra, voice and electronics; first performance: Teatro Pergolesi (Jesi), April 2010; Orchestra Filarmonica delle Marche; voice: Lucia Ferrati; conductor: Manlio Benzi; published by: Edizioni Suvini Zerboni - Milan.

2005-2017 **Random forests** for orchestra; first performance: Venice - Teatro Malibran, March 2017; Orchestra della Fenice; conductor: Marco Angius; published by: Edizioni Suvini Zerboni - Milan.

2004-2016 **Upside-down**, for piano and orchestra; first performance: Kvyv, October 2016; Ukho ensemble; piano: Mark Knopp; conductor: Luigi Gaggero; published by: Edizioni Suvini Zerboni - Milan.

Dissemination and outreach

Peer Reviewed publications

2026 **Conference paper** Song-Ze Yu, Milan Liessens Dujardin, Yuxuan Cai, Wantong Zhang, Brian Cruz, Jeremy Wagner, and Carmine-Emanuele Cella, *InstructFX2FX: A Multi-turn Text-to-Preset Demo for Iterative Audio Effects*, in Proceedings of the 29th International Conference on Digital Audio Effects (DAFx26), Boston (MIT), 2026.

2026 **Conference paper** Qingyang Lyu, Brian Cruz, Jeremy Wagner, and Carmine-Emanuele Cella, *Evaluating Tokenization Strategies for Expressive Classical Piano Performance Generation*, in Proceedings of the 29th International Conference on Digital Audio Effects (DAFx26), Boston (MIT), 2026.

2026 **Book chapter** Carmine-Emanuele Cella and Yan Maresz, *Computer-assisted orchestration: on the genesis of ideas*, Handbook of orchestration studies, Oxford University Press, 2026.

2026 **Conference** Pasquale Mainolfi and Carmine-Emanuele Cella, *Segmentation-Free Sound Hybridization for Creative Outcomes*, Proceedings of the 15th International Conference EvoMUSART, Toulouse, France, April 8–10, 2026.

2025 **Book chapter** Carmine-Emanuele Cella, *Mimésis, catharsis, et l'avenir de l'IA dans la création musicale*, in L'Art au temps de l'IA, edited by Jean-Louis Giavitto and Pierre Saint-Germier, Éditions du Centre Pompidou, 2025 (in French).

2025 **Journal** Luke Dzwonczyk, Carmine-Emanuele Cella and David Ban, *Generating Music Reactive Videos by Applying Network Bending to Stable Diffusion*, Journal of the Audio Engineering Society, Vol. 73, No. 6, 2025.

2025 **Conference** Carmine-Emanuele Cella, Edmund Campion, Jeremy Wagner, Luke Dzwonczyk and Jon Kulpa, *An Overview on CNMAT Technologies and Future Directions*, Proceedings of the 50th International Computer Music Conference (ICMC), Boston, 2025.

2025 **Conference** Nicola Casetta and Carmine-Emanuele Cella, *A dynamically controlled feedback system: Waking cloud*, Proceedings of the 50th International Computer Music Conference (ICMC), Boston, 2025.

2025 **Conference** Luke Dzwonczyk and Carmine-Emanuele Cella, *Unsupervised Text-to-Sound Mapping via Embedding Space Alignment*, Proceedings of the 28th International Conference on Digital Audio Effects (DAFx25), Ancona, Italy, 2–5 September 2025.

2024 **Conference** Luke Dzwonczyk, Carmine-Emanuele Cella and David Ban, *Network Bending Of Diffusion Models For Audio-Visual Generation*, Proceedings of the 27th International Conference on Digital Audio Effects (DAFx24), Guildford, United Kingdom, 3 - 7 September 2024.

2024 **Conference** Alois Cerbu and Carmine-Emanuele Cella, *Audio Visualization Via Delay Embedding and Subspace Learning*, Proceedings of the 27th International Conference on Digital Audio Effects (DAFx24), Guildford, United Kingdom, 3 - 7 September 2024.

2024 **Conference** Alois Cerbu and Carmine-Emanuele Cella, *Reprogrammable Effects Pedals on the Daisy Seed Platform*, Proceedings of the 2024 International Computer Music Conference (ICMC), Seoul, South Korea.

2022 **Journal** Carmine-Emanuele Cella, Luke Dzwonczyk, Alejandro Saldarriaga-Fuertes, Hongfu Liu and Hélène-Camille Crayencour, *Neural Models for Target-Based Computer-Assisted Musical Orchestration: A Preliminary Study*, Journal of Creative Music Systems, 2022.

2022 **Journal** Carmine-Emanuele Cella, *Orchidea: a comprehensive framework for target-based computer-assisted dynamic orchestration*, Journal of New Music Research (JNMR), Fall 2022

2022 **Journal** Daniele Ghisi and Carmine-Emanuele Cella, *A three-dimensional timbre model via Peano curves*, Journal of Mathematics and Music, Spring 2022.

2022 **Journal** Maria Mannone, Giovanni Santini, Esther Adedoyin and Carmine-Emanuele Cella, *Color and Timbre Gestures: An Approach with Bicategories and Bigroupoids*, MDPI Mathematics, February 2022.

2022 **Conference** Elliott Waissbluth, Jon Gillick and Carmine Cella, *Synthesis by Layering: Learning a Variational Space of Drum Sounds* , 3rd Conference on AI Music Creativity, 2022.

2022 **Conference** Jeremy J. Lee, Carmine Cella and Hélène-Camille Crayencour, *Vivace: Web Application for Real-Time feedback on Piano Performance* , 3rd Conference on AI Music Creativity, 2022.

2022 **Conference** Luke Dzwonczyk, Léo Chédin, Alejandro Saldarriaga-Fuertes, Max Sherr, Hélène-Camille Crayencour and Carmine-Emanuele Cella, *Source Separation Methods for Computer-assisted Orchestration*, 3rd Conference on AI Music Creativity, 2022.

2021 **Journal** Carmine-Emanuele Cella, Daniele Ghisi, Yan Maresz, Alessandro Petrolati, Alexandre Teiller and Philippe Esling, *Dynamic Computer-Aided Orchestration in Practice with Orchidea*, Computer Music Journal (CMJ), Fall 2021.

2021 **Journal** Daniele Ghisi and Carmine-Emanuele Cella, *A Framework for Modifying Orchestral Qualities in Computer-Aided Orchestration*, Computer Music Journal (CMJ), Fall 2021.

2021 **Journal** Jon Gillick, Joshua Yang, Carmine-Emanuele Cella and David Bamman, *Drumroll Please: Modeling Music Performances without Quantizing*, Transactions of ISMIR, Spring 2021.

2021 **Book chapter** Marcelo Caetano and Carmine-Emanuele Cella, *Imitative Computer-Aided Musical Orchestration with Biologically Inspired Algorithms*, in Handbook of Artificial Intelligence in Music, Springer, Spring 2021.

2021 **Book preface** Carmine-Emanuele Cella, preface for *Musica elettronica e sound design, Vol. 3*, by A. Cipriani and M. Giri, ConTempoNet, Roma, Spring 2021.

2020 **Journal** Carmine-Emanuele Cella, *Music Information Retrieval and Contemporary Classical Music: A Successful Failure*, Transactions of ISMIR, Volume 3 - issue 1, 2020.

2020 **Journal** Mathieu Andreux, Tomás Angles, Georgios Exarchakis, Roberto Leonarduzzi, Gaspar Rochette, Louis Thiry, John Zarka, Stéphane Mallat, Joakim Andén, Eugene Belilovsky, Joan Bruna, Vincent Lostanlen, Muawiz Chaudhary, Matthew J. Hirn, Edouard Oyallon, Sixin Zhang, Carmine-Emanuele Cella and Michael Eickenberg, *Kymatio: Scattering Transforms in Python*, Journal of Machine Learning Research, 21(60):1-6, 2020.

2020 **Conference** Carmine-Emanuele Cella, Luke Dzwonczyk, Alejandro Saldarriaga-Fuertes, Hongfu Liu and Hélène-Camille Crayencour, *A Study on Neural Models for Target-Based Computer-Assisted Musical Orchestration*, Joint conference on AI Music Creativity, 2020, Stockholm, Sweden.

2020 **Conference** Carmine-Emanuele Cella, Daniele Ghisi, Vincent Lostanlen, Fabien Levy, Joshua Fineberg and Yan Maresz, *OrchideaSOL: a dataset of extended instrumental techniques for computer-aided orchestration*, ICMC 2020, Santiago, Chile.

2020 **Conference** Jon Kulpa, Carmine-Emanuele Cella and Edmund Campion, *QuBits, a System for Interactive Sonic Virtual Reality*, ICMC 2020, Santiago, Chile.

2019 **Journal** Hélène-Camille Crayencour and Carmine-Emanuele Cella, *Learning, probability and logic: towards a unified approach for content-based Music Information Retrieval*, Frontiers in Digital Humanities, April 2019.

2019 **Conference** Jon Gillick, Carmine-Emanuele Cella and David Bamman, *Estimating unobserved audio features for targed-based orchestration*, ISMIR 2019, Delft, The Netherlands.

2018 **Conference** Leonardo Gabrielli, Carmine-Emanuele Cella, Fabio Vesperini, Dario Droghini, Emanuele Principi and Stefano Squartini, *An Unsupervised Neural Network Architecture for Timbre Transfer in the Frequency Domain*, AES 144th, 2018, Milan, Italy.

2017 **Conference** Carmine-Emanuele Cella, *Machine listening intelligence*, International Workshop on Deep learning for music, 2017, Anchorage, ALASKA.

2016 **Conference** Vincent Lostanlen and Carmine-Emanuele Cella, *Deep convolutional networks on the pitch spiral for musical instrument recognition*, ISMIR 2016, New York, USA.

2014 **Conference** Carmine-Emanuele Cella, *Vuza: a functional language for creative applications*, International Computer Music Conference (ICMC) 2014, Athens, Greece.

2013 **Conference** Carmine-Emanuele Cella and Juan Josè Burred, *Advanced sound hybridizations by means of the theory of sound-types*, International Computer Music Conference (ICMC) 2013, Perth, Australia.

2011 **Conference** Carmine-Emanuele Cella, *Sound-types: a new framework for symbolic sound analysis and synthesis*, International Computer Music Conference (ICMC), Huddersfield, United Kingdom, 2011.

2010 **Conference** Carmine-Emanuele Cella, *Harmonic Components Extraction in Recorded Piano Ton, 128th AES conference London*, United Kingdom, 2010.

2009 **Conference** Carmine-Emanuele Cella, *Towards a Symbolic Approach to Sound Analysis*, Second international conference on Mathematics and Computation for Music (MCM), Yale University, New Haven, CT, 2009, Springer.

2008 **Conference** Juan Josè Burred, Carmine-Emanuele Cella, Geoffroy Peeters, Axel Röbel and Diemo Schwarz, *Using the SDIF Sound Description Interchange Format for Audio Features*, International Symposium on Music Information Retrieval (ISMIR), Philadelphia, USA, September 2008.

2006 **Book review** Carmine-Emanuele Cella, Review of "Caleidocicli musicali" by Luigi Verdi, Musica theorica Spectrum, Fall 2006, Ed. Curci Milano, Italy.

2006 **Journal** Carmine-Emanuele Cella, *Il compositore cieco*, Rivista umbra di musicologia, n. 50 – 2006/1, pagg. 17 – 27 Perugia (Italy).

2005 **Journal** Carmine-Emanuele Cella, *Il semplice sistema*, Rivista umbra di musicologia, n. 49 – 2005/2, pagg. 43 – 51 Perugia (Italy).

2005 **Journal** Carmine-Emanuele Cella, *Sulla struttura logica della musica*, Rivista umbra di musicologia, n. 48 – 2005/1, pagg. 3 – 57, Perugia (Italy).

2002 **Conference** Carmine-Emanuele Cella and Federico Paolinelli, *Sintesi per stati e visualizzazione del processo compositivo*, La Terra Fertile, Proceedings, 2000, pagg. 87 – 89 L'Aquila (Italy).

Selected software production

2020 **Orchidea** (`http://www.orch-idea.org`): Max/MSP package for computer based assisted orchestration.

2020 **Kymatio** (co-author, `https://www.kymat.io`): wavelet scattering transform in the Python programming language, for large-scale numerical experiments.

2014 Sonic-pad: advanced spectral processing for audio signals.

2013 Sparkle (co-author, `https://itunes.apple.com/ca/app/sparkle-advanced-cross-synthesis/id818477094?mt=8)`: `advancedcross-synthesisforiOSdevices.`

Vuza: functional programming language for creative applications.

2007 Ircamdescriptor (co-author, `http://anasynth.ircam.fr/home/english/software/ircamdescriptor-c-lib-exe)`:`computationoflow-leveldescriptorsonaudiosignals.`

Teaching summary

2019 – now University of California, Berkeley: Seminar in contemporary music, Seminar in composition, Computer programming for music applications, Situated instruments for musical expression, Advanced projects in computer music, Computational creativity for music and the arts.

2014 – 2022 Conservatory "G. Rossini", Pesaro: Live electronics, Mathematics for sound processing, Digital signal processing.

2012 – 2014 Conservatory "A. Pedrollo", Vicenza: Computer music, Digital signal processing, Musical acoustics.

2012 Conservatory "S. Cecilia", Rome: Mathematics for sound processing, Computer music, Computer audio programming.

2011 Conservatory "D. Cimarosa", Avellino: Harmony.

Teaching habilitations

United States: tenured associate professor, PhD supervision.

Italy: musical informatics, legge 128/13 AFAM and legge 205.

France: computer science/informatics MCF 27, qualification number: 17227305231.

Selected talks and lectures

2025 Collège de France: *De la mimesis à la katharsis : formalisation mathématique et apprentissage machine dans la création musicale.*

2025 Ircam, France: *Electroacoustic composition in 3D ambisonics (guest professor).*

2023 University of Bordeaux, France: *Optimisation methods for music generations.*

2022 [online] University of California, Santa Cruz, USA: *On computational creativity.*

2022 [online] University of California, Santa Barbara, USA: *On computational creativity.*

2022 University of Bordeaux, France: *Computation, creativity and the arts.*

2022 [online] Shanghai Jiao Tong University, China: *Mathematical methods for music creation.*

2021 University of Texas, Austin, Texas: *Overview of my compositional work.*

2021 [online], University of South Carolina: *From signal representations to music creation.*

2021 McGill University (CIRMMT distinguished lecture), Montreal, Canada: *On computational creativity.*

2021 [online] Amici della musica di Modena: public conversation on AI and music creation (*Note d'algoritmo. Quando l'AI suona.*

2021 [online] EUSIPCO tutorial: *Statistical Relational AI for Unified Music Understanding and Creation.*

2021 [online] University of South Carolina: composition seminar.

2020 [online] panelist for the France-Atlanta forum on machine creativity.

2020 [online] Ars Electronica, Bruxels: Hands on session on Orchidea.

2020 [online] Ircam, Paris: guest lecture for the annual workshop for the Actor project.

2020 Princeton University: electronic music seminar.

2019 Haute École de musique (HEM), Geneve: *Introduction to Orchidea.*

2019 Conservatoire National Supérieur de Musique et de Danse de Paris (CNSM): *On computer-assisted orchestration.*

2019 McGill University, Montreal, Canada: *Overview on recent developments on computer-assisted orchestration.*

2019 Berkeley: guest lecture for the Italian Scientists and Scholars of North America Foundation (Bay Area Chapter).

2019 Columbia University, NYC: composition seminar.

2019 CCRMA, Stanford University: *From signal representations to musical creation: a geometric approach.*

2019 BiD talk, Berkeley institute for design, UC Berkeley: *Can Picasso think in shapes?*

2017 Institute of Mathematics - National Academy of Sciences of Ukraine, Kvyv: *From signal representations to musical creation: a geometric approach.*

2017 Leibniz-Zentrum für Informatik, Daghstul, Germany: *A composer's perspective on Music Information Retrieval.*

2015 École Normale supérieure, Paris: *On symbolic representation of music.*

2015 Mamux, Ircam, Paris: *From signal representations to musical creation.*

2015 Bibliothèque universitaire de Lyon: *Logical representations of music.*

2012 University "Tor Vergata", Rome: *On symbolic representations of sound: the theory of sound-types.*

2012 ATIAM, Ircam, Paris: *On the geometric interpretation of musical signals.*

2011 Queen Mary University, London: *On symbolic representations of sound: the theory of sound-types.*

2011 IRMA (Institut de Recherche Mathématique avancée), Strasbourg: *On symbolic representations and transformations of sound.*

2010 McGill University, Montreal, Canada: *A symbolic approach to sound analysis.*

2010 University of Bologna, department of computer science: *A survey on Geometry of Interactions.*

2009 Ircam, Paris: *Introductory notes on Geometry of Interactions.*

2008 Ircam, Paris: A symbolic approach to sound analysis: *type theories and abstraction levels.*

2008 University of Pisa, department of mathematics: *Logica, suono, musica.*

2006 Mamux, Ircam, Paris: *Logical foundation of music.*

International service

- Organiser of a tutorial for the European Signal Processing Conference (EUSIPCO).
- Guest professor for the Manifest academy at Ircam in Paris.
- Member of the EURASIP SAT for Acoustic, Speech and Music Signal Processing committee.
- Creator and organiser of the international round-tables Re.M.I.X on music research.
- Reviewer and meta-reviewer in international journals and conferences.
  - Computer Music Journal.
  - EURASIP Journal of Audio Signal Processing (JASP).
  - Colloquio di informatica musicale (CIM).
  - Ircam musical research residency program.
  - Mathematics and computation in music (MCM).
  - International society for music information retrieval (ISMIR).
  - IEEE Transactions on Emerging Topics in Computational Intelligence.

Service to UC Berkeley

- Dissertation/QE committees.
- Search committees for hiring faculty positions, lecturers and program officers.
- Organisation of public events such as the *CNMAT OpenLabs*.
- Organisation of guest lectures for visiting/invited professors.
- Supervision of undergraduate and graduate students.

Info

Personal data

Birth 1976, Urbino, Italy.

Citizenship Italian.

Email carmine.emanuele.cella@gmail.com, carmine.cella@berkeley.edu, cella@ircam.fr.

Web `http://www.carminecella.com`.

Languages

Italian Native speaker.

English Fluent.

French Fluent.

Spanish Basic.

Hobbies

Private pilot for single engine aircrafts (EASA and FAA).