

CARNEGIE HALL

Thursday, January 30, 2025 at 7:30 PM
Judy and Arthur Zankel Hall Center Stage

International Contemporary Ensemble

George Lewis, Artistic Director

Will Liverman, Baritone

Levy Lorenzo, Electronics

Boulez Rebooted

KAIJA SAARIAHO
(1952–2023)

Sombre (2012)
Canto CXVIII
Canto CXX
Fragment (1966)

PHILIPPE MANOURY
(b. 1952)

Hypothèse du sextuor (2011)

TYSHAWN SOREY
(b. 1980)

Sentimental Shards (2014)

INTERMISSION

PIERRE BOULEZ
(1925–2016)

Anthèmes 2 (1997)

INTERNATIONAL
CONTEMPORARY
ENSEMBLE / SOMAX2

Pliages, hommage à Pierre Boulez (2025)
(Concept by Gérard Assayag, Levy Lorenzo, and
International Contemporary Ensemble; computer music
design by Levy Lorenzo and Marco Fiorini)

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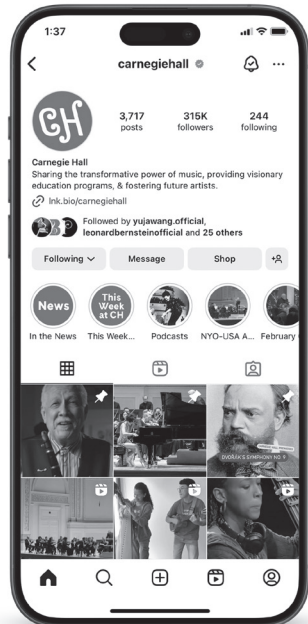
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Boulez Rebooted

French composer, conductor, and writer Pierre Boulez was one of the signal figures in postwar contemporary music. He first came to prominence in the 1950s, a decade described by musicologist Joseph Auner as “the era of all-encompassing theories that sought to explain human actions in terms of systems.”

Despite not being a technologist himself, Boulez exercised extraordinary worldwide impact on the development of computer music composition and technology. In 1977, he founded the Institut de Recherche et Coordination Acoustique/Musique (IRCAM), now the world’s best-known center for computer music. Boulez’s vision for IRCAM promulgated a model of collaboration between composers, scientists, performers, and engineers that exemplified his view, as stated in his essay *Technology and the Composer* (1978): “In the end, musical invention will have somehow to learn the language of technology, and even to appropriate it.”

IRCAM’s research into psychoacoustics and the computer analysis of instrumental timbre provided a key ground for the continued development of spectralism, a widely influential aesthetic of instrumental and electronic music whose pioneers—including composers Tristan Murail, Hugues Dufourt, and Gérard Grisey—based pitch and orchestration structures not on chord progressions or serial pitch collections, but on the overtone features of sounds themselves.

IRCAM strongly supported the development of computer-based tools for sound analysis, and Kaija Saariaho—who declared in 1987 that the computer already occupied “a key position in the evolution of contemporary musical thought”—realized her works from this era using the compositional assistance language FORMES, together with the CHANT program for sound synthesis and processing, both developed at IRCAM by the team of Xavier Rodet, Yves Potard, and her husband, intermedia composer Jean-Baptiste Barrière.

Saariaho described this early period in her work as manifesting a notion of musical form based on the principle of oppositions—of dynamism and stasis, of sound and noise. In the later chamber work *Sombre*, Saariaho systematizes spectral materials as a way to create dialogues with the last paintings of Mark Rothko, which she experienced as “superimposed fields of living color” during a 2012 visit to the Rothko Chapel in Houston. According to Saariaho, the overall structure of the work was determined by the forms embedded in fragments of Ezra Pound’s last *Cantos*.

Another crucial figure who emerged from IRCAM’s 1980s experimentation was Philippe Manoury, who began working at the institute in 1981. His research from this period gave rise to *Zeitlauf* (1982) for mixed choir,

chamber ensemble, synthesizers, and tape. This was followed by his series of interactive works created in close collaboration with Miller Puckette, the inventor of the visual programming language Max, now used by composers, performers, and interactive artists around the world. Manoury's *Sonus ex machina* set of concertos for live instruments and computer (1987–1991) began with the classic “Jupiter” for flute and interactive electronics (1987), a work that functions along with the others in the cycle as a kind of rhizome in which materials from different works transform each other, evoking what Gilles Deleuze and Félix Guattari called “striated space-time,” a concept that the two French philosophers drew from Boulez.

Hypothèse du sextuor takes a repetitive motif from Debussy's *Des pas sur la neige* as a starting point for experimentation with the notion of hypothesis—“not as a quotation, but as a possibility of convergence” that never quite achieves its goal. According to Manoury, “The sextet never really unites around a common idea—like six people who can't get on the same wavelength.”

Throughout his long life, Boulez frequently returned to previous works and not only recomposed them to reflect new thinking, but also reused elements from them in new pieces. We see similar recombinative impulses in Tyshawn Sorey's *Sentimental Shards*, in which Duke Ellington's “Sophisticated Lady” (1932) and the “Sentimentals” movement from John Adams's *American Standard* (1973) function as a kind of corpus, recalling current developments in machine learning at IRCAM and elsewhere. The piece received its world premiere by members of the International Contemporary Ensemble and wildUp, and its French premiere in 2019 by the Boulez-founded Ensemble intercontemporain. Here, Sorey's signature double consciousness of stasis-like affect and slowly developing modulations presages his 2024 Pulitzer Prize-winning saxophone concerto, *Adagio (For Wadada Leo Smith)*, which in turn recalls an aspect of Boulez's work as a composer that Arnold Schoenberg termed “developing variation,” a technique in which initial themes recur in ever more novel combinations to express a telos.

Boulez's own *Anthèmes 2* (1997) presents another aspect of this recombinatorial mode of composing. Based on the 1991 solo violin work *Anthèmes*, Boulez conceived and composed the later work at IRCAM, with a realization by long-time Boulez collaborator Andrew Gerzso. With *Anthèmes 2*'s emphasis on live performance—an outgrowth of IRCAM's mid-1980s shift away from fixed media—all electronic material is generated in real time during the performance, with the assistance of an automatic “score-following” program that listens to the violinist and compares his or her playing with the score, allowing precise synchronization between score and performer. The electronics modify and extend the sound structure of the violin, while allowing performer expressivity with regard to time and dynamics to affect the projection of sounds in musical space.

During the time that I was a resident composer at IRCAM, Boulez's *Répons* (1981–1984/1985) was premiered. This key early work deployed six percussion soloists, a chamber ensemble, and one of the most advanced digital signal-processing machines of the era, the IRCAM-designed 4X, which was capable of assembling sounds in real time and sending them literally flying in complex spatial trajectories around the performance space. But even as he was creating *Répons*, Boulez already foresaw the ever-increasing power of microprocessors. Today's smartphones are far more powerful than yesterday's room-sized mainframe computers, and now the latest breakthroughs in machine learning, cognitive modeling, corpus-based generation, responsive music-performance technology, and creative AI come together in this evening's world premiere, *Pliages*, featuring IRCAM's Somax2 environment.

Somax2 deploys real-time machine improvisation agents that can autonomously interact in a rich and creative way with musicians or with each other. Appearing both as an autonomous, self-guided system and—as with ICE member Levy Lorenzo this evening—an instrument steered by a human musician, Somax2 blends in real time the music produced by the ensemble on stage and the layers generated by the machine, where humans and artificial agents react to each other. Here, as Boulez foresaw in *Technology and the Composer*, “creative thought is in a position to examine its own way of working, its own mechanisms.” Trained on a musical corpus of Boulez's works, *Pliages* is an homage to the creator of the institute where this research was born.

—George E. Lewis

Somax2 is a major outcome of the REACH (Raising Cocreativity in Cyber-Human Musicianship, reach.ircam.fr) research project, supported by the European Research Council within the Horizon 2020 program (Convention No. 883313) and by the French Agence Nationale de la Recherche under grant MERCI ANR-19-CE33-0010. This research was conducted at IRCAM by Gérard Assayag and his team, including Marco Fiorini, to explore what the REACH team calls “co-creativity.”

The Composers

Kaija Saariaho (1952–2023) was a leading voice of her generation of composers in her native Finland and worldwide. Her music combines the scientific, technological, and rational approaches grounded in poetic inspiration. Her chamber pieces and choral music have become staples, but her broadest recognition came from such now-canonical operatic works as *L'Amour de loin* (2000) and *Innocence* (2020). Her music combines live performance and electronics, an outgrowth of her studies and research at IRCAM. Saariaho received the Grawemeyer Award, Nemmers Prize, Sonning Prize, and Polar Music Prize, and two of her recordings have received Grammy Awards. She was named “Greatest Living Composer” in a survey of her peers conducted by *BBC Music Magazine* in 2019.

Philippe Manoury (b. 1952) is regarded as one of the most important French composers as well as a forerunner in the field of live electronics. In 1981, he came to IRCAM, working with mathematician Miller Puckette on Max/MSP, a programming language for interactive live electronics. Between 1987 and 1991, he composed *Sonus ex machina*, a cycle focusing on the real-time interaction between acoustic instruments and computer-generated sounds. Manoury is the author of several books, and was named Officier des Arts et des Lettres by the French Ministry of Culture; he is also a member of the Akademie der Künste in Berlin.

The work of **Tyshawn Sorey** (b. 1980) as composer, percussionist, trombonist, pianist, and conductor defies distinctions among musical genres and practices. A 2017 MacArthur “genius” Fellow and a 2018 United States Artists Fellow, Sorey received the 2024 Pulitzer Prize for Music for his saxophone concerto, *Adagio (For Wadada Leo Smith)*. Sorey has composed works for the International Contemporary Ensemble, soprano Julia Bullock, JACK Quartet, bass-baritone Davóne Tines, Ensemble intercontemporain, Alarm Will Sound, and violinist and fellow MacArthur Fellow Johnny Gandelman. His music has been performed at the Kennedy Center, Park Avenue Armory, Donaueschinger Musiktage, Lucerne Festival, and others. Sorey is a member of the composition faculty at the University of Pennsylvania; his compositions are published by Edition Peters.

French composer, conductor, and author **Pierre Boulez** (1925–2016) was one of the most influential musical minds of his generation. Studying with Olivier Messiaen at the Conservatoire de Paris, in 1951 he began experimenting in the studio of Pierre Schaeffer at Radio France. Between 1954 and 1965, Boulez lectured at the Darmstadt Summer Courses, which culminated in the influential book *Penser la musique aujourd'hui*. In 1966, he was invited to conduct *Parsifal* in Bayreuth, and in 1971, he succeeded Leonard Bernstein as director of the New York Philharmonic. In 1975, Boulez was named founding director of Ensemble intercontemporain.

By invitation from French President Georges Pompidou, Boulez founded and directed the Institut de Recherche et Coordination Acoustique/Musique (IRCAM), which opened its doors in 1977. Among his important works composed at IRCAM are *Répons* (1981–1988) for six soloists, ensemble, and live electronics; *Dialogue de l'ombre double* (1985) for clarinet and tape; ... *explosante-fixe ...* for flute, ensemble, and live electronics (1991–1993); and *Anthèmes 2* (1997) for violin and live electronics. In 1992, Boulez stepped down from his position as director of IRCAM to devote himself full time to conducting and composition. He received numerous awards and honors, including the Ernst von Siemens Music Prize, Polaris Music Prize, Grawemeyer Award, Kyoto Prize, Venice Biennale's Golden Lion for Lifetime Achievement, and BBVA Foundation Frontiers of Knowledge Award.



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Fadi Khair

Selected Texts

KAIJA SAARIAHO (1952–2023)

Sombre

Text: Ezra Pound (1885–1972), from *The Cantos*

Canto CXVIII

M'amour, m'amour
 what do I love and
 where are you?

That I lost my center
 fighting the world.
The dreams clash

 and are shattered –
and that I tried to make a paradiso
 terrestre.

Canto CXX

I have tried to write Paradise

Do not move
 Let the wind speak
 that is paradise.

Let the Gods forgive what I
 have made
Let those I love try to forgive
 what I have made.

Fragment (1966)

That her acts
 Olga's acts
 of beauty
 be remembered.

Her Name was Courage
& is written Olga

These lines are for the
 ultimate CANTO

whatever I may write
 in the interim.



The Artists

International Contemporary Ensemble

Now in its third decade, the International Contemporary Ensemble (ICE) is a multidisciplinary collective of musicians, digital media artists, producers, and educators committed to building and innovating collaborative environments in order to inspire audiences to reimagine how they experience contemporary music and sound. ICE creates a mosaic musical ecosystem as “America’s foremost new-music group” (*The New Yorker*), honoring the diversity of human experience and expression by commissioning, developing, recording, and performing the works of living artists. Co-founded in 2001 by flutist and MacArthur “genius” Fellow Claire Chase, ICE has premiered more than 1,000 works. The ensemble has given performances at Warsaw Autumn, TIME:SPANS, Berliner Festspiele, HEAR NOW Los Angeles, Darmstadt International Summer Courses, Ojai Music Festival, and Big Ears Festival, as well as at Dutch National Opera, Cité de la Musique, The Metropolitan Museum of Art, Japan Society, Merkin Hall at the Kaufman Music Center, Fridman Gallery, Chelsea Factory, and Walt Disney Concert Hall.

Isabel Lepanto Gleicher, Flute
 Alice Teyssier, Vocals and Flute
 Emmalie Tello, Clarinet
 Gabriela Diaz, Violin
 Modney, Violin
 Wendy Richman, Viola
 Michael Nicolas, Cello

Erika Dohi, Piano
 Nuiko Wadden, Harp
 Randy Zigler, Bass
 Nathan Davis, Percussion
 Ross Karre, Percussion
 Levy Lorenzo, Somax2-AI,
 Electronics, and Percussion



Will Liverman

Called “a voice for this historic moment” (*The Washington Post*), Grammy Award–winning baritone Will Liverman is the 2022 Beverly Sills Artist Award recipient and co-creator of *The Factotum* at the Lyric Opera of Chicago. This season’s engagements include the Metropolitan Opera (*The Magic Flute*), Lyric Opera of Chicago and San Francisco Opera (*La bohème*), Dutch National Opera (*Peter Grimes*), San Francisco Symphony, Rhode Island Philharmonic, London Symphony Orchestra, Oakland Symphony, National Sawdust, New York Festival of Song, String Theory, Amsterdam’s Concertgebouw, and Oxford International Song Festival. Cedille Records released Liverman’s *Show Me the Way* (March 2024), a celebration of American song. His *Dreams of a New Day: Songs by Black Composers* (Cedille, 2021) was nominated for a Grammy for Best Classical Solo Vocal Album. Liverman is an alum of Lyric Opera of Chicago’s Ryan Opera Center, The Juilliard School, and Wheaton College. Visit willliverman.com for more information.



Levy Lorenzo

Levy Lorenzo is a Filipino American artist born in Bucharest and based in Brooklyn. A member of the International Contemporary Ensemble, his diverse practice includes custom electronics design, sound engineering, instrument building, interactive installation, improvisation, and percussion performance. His work has been featured at MoMA PS1, MIT Media Lab, the BBC, Amazon Studios, and Burning Man. Lorenzo is a core collaborator in Claire Chase’s *Density 2036* project, and has worked with notable artists such as Peter Evans, Alvin Lucier, Leo Villareal, Christine Sun Kim, Ryuichi Sakamoto, and Autumn Knight. Lorenzo is professor of creative technologies at The New School’s College of Performing Arts, where he directs the Nstrument Lab. In 2022, he made his debut as an electronic concerto soloist with the New York Philharmonic, and more recently, was an artistic partner with Carnegie Hall’s Ensemble Connect. For more information, visit levylorenzo.com.

G rard Assayag

G rard Assayag is director and founder of the Music Representation group at IRCAM. He has produced crucially important research and creative work on computer-assisted composition, creative AI, and machine improvisation, documented in many publications. He was head of IRCAM research from 2011 to 2017, and led the Music Representation team to international recognition through the production of flagship computer music software, including OpenMusic, Omax, and Somax2. Assayag is a co-founder of Sorbonne Universit 's Institute for Music Sciences and Institute for Artificial Intelligence, the French Society for Computer Music, the international Society for Mathematics and Computation in Music, and the *Journal of Mathematics and Music*. He was recently awarded the prestigious European Research Council Advanced Grant for his career achievement and vision for the future in his project REACH: Raising Co-creativity in Cyber-Human Musicianship (reach.ircam.fr).

Marco Fiorini

Marco Fiorini is an Italian musician and researcher who specializes in improvisation and new forms of musical expression. He holds degrees in sound and music computing, jazz guitar, electronic music, and computer engineering. As part of IRCAM's Music Representation team, he contributes to the ERC REACH project, focusing on the co-creative improvisation software Somax2, central to his PhD research at Sorbonne Universit , where he explores interactions between musicians and artificial agents in improvisation. He has collaborated as a guitarist, computer music designer, and electronic musician with artists like Jo lle L andre and Steve Lehman, and has performed at major international festivals, including ManiFeste (Paris), Improtech (Tokyo), and Klang (Copenhagen). An invited lecturer at the 2024 Max Summer School (Tokyo University of the Arts) and the 2025 International Computer Music Conference in Boston, Fiorini teaches Max/MSP and leads workshops on Somax2.

The International Contemporary Ensemble's performances and commissioning activities during the 2024–2025 season are made possible by the generous support of its board of directors, and many individuals, as well as the Mellon Foundation, Howard Gilman Foundation, Jerome Foundation, Fan Fox and Leslie R. Samuels Foundation, Robert D. Bielecki Foundation, Aaron Copland Fund for Music, Mid Atlantic Arts Foundation, The Arlene and Larry Dunn Fund for Afrodiasporic Music, Francis Goelet Charitable Lead Trusts, Amphion Foundation, Cheswaty Foundation, The Gladys Krieble Delmas Foundation, Siemens Musikstiftung, New Music USA, Alice M. Ditson Fund of Columbia University, BMI Foundation, and public funds from the National Endowment for the Arts, New York City Department of Cultural Affairs in partnership with the City Council, the New York State Council for the Arts with the support of Governor Kathy Hochul and the New York State Legislature, the Illinois Arts Council Agency, and the Shattered Venue Operators Grant (SVOG) from the US Small Business Administration. Yamaha Artist Services New York is the exclusive piano provider for the International Contemporary Ensemble.

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Explore



Todd Rosenberg

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