



**CENTER FOR NEW MUSIC &  
AUDIO TECHNOLOGIES**

## FALL 2020 NEWSLETTER

Welcome to the first issue of the CNMAT bi-annual newsletter, published once per semester. In these pages we present an overview of our invited guests, ongoing research projects, compositional activities and events past, present and future.



*Left to right: Visiting composer and researcher Daniele Ghisi; Splinter Reeds Ensemble residency; Orchidea software 0.6 release. See inside for more details.*

## Campus restricts access to 1750 Arch Street for Fall 2020

In compliance with evolving campus [policies](#) related to the Covid-19 pandemic, CNMAT's facilities at 1750 Arch St. have been granted highly restricted access for Fall 2020. Our building will only be open to approved faculty and staff for limited research and instruction. Unfortunately, our usual calendar of concerts, lectures and other events is on hold until further notice. We hope to provide some opportunities for engagement and interaction via our [website](#). We may be able to resume our normal operations and events schedule in the Spring, but that depends on the campus, city and state mandates for social distancing. Stand by for more news!

Visit CNMAT online at [cnmat.berkeley.edu](https://cnmat.berkeley.edu)

Support CNMAT with your donation [here](#).

## People, projects, news...

### Students and alumni

PAGES 2-3

Interviews and updates featuring a selection of current and past students from the Music Composition program at UC Berkeley.

### Research

PAGES 4-5

CNMAT researcher Jeremy Wagner introduces some of our recent projects (Magnetic Resonator, Fabric triggers, MUTOR).

### Updates, visitors

PAGE 6

Jeff Lubow reports on recent developments with ODOT; an interview with Daniele Ghisi, CNMAT researcher-in-residence for 2020.

### and more...

PAGES 7-10

Invited researcher Jean Geoffroy, Ensemble-in-Residence Splinter Reeds, Orchidea 0.6 release, Letter from the Director, 2019-2020 Year in Review...

## STUDENTS AND ALUMNI

*Clara Olivares is a current grad student in Music. In this interview by Andrew Harlan, she discusses her influences and current projects.*

*AH: What projects are you currently working on?*

CO: I'm currently working on several projects with the Paris Chamber Orchestra, as I'll be composer-in-residency for the season 2020/2021: a 20-min piece to be played before Mozart's Requiem (followed by a short choir interlude), a transcription of a large orchestra piece I wrote in 2018 (« Blue Spine »), and two transcriptions of Schubert's Lieder. On the longer term, I also have an opera in preparation with librettist/stage director Chloé Lechat and dramaturgist Raphaëlle Blin. For the next months, I will primarily focus on the IRCAM Cursus Program in Paris, where I will work on a new piece for soloist and electronics after several months of preparation and classes on new electronic music softwares and tools.

*How long have you been working with/at CNMAT? How has CNMAT influenced your practice?*

I started working at CNMAT in Fall 2017, when I started my PhD in music composition. I had an immersive experience from the very beginning, with a summer workshop on Odot that was taught at CNMAT. Aside from seminars, classes, masterclasses and workshops I had the privilege to experience

there, I also worked as a Graduate Student Researcher for a semester to update and organize pedagogical patches and other tasks, and also took part in organizing concerts there, which always involved electronics.

CNMAT has influenced my practice by welcoming me in a space where experimentation is encouraged, many resources are accessible, and has taught me to conceive first the ideal version of a project idea before considering what specific material it will need to make it reality - in another words, design your vision and don't restrain yourself to the material that you know.

*How did you begin integrating technology into your practice and how has that relationship between your work and technology changed throughout the years?*

I began integrating technology in my compositions during my studies in the Haute Ecole des Arts du Rhin (Strasbourg, France), where I was introduced in particular to electronic music in real time by my professors Philippe Manoury and Tom Mays. I started considering electronics as potential for extending the limits of acoustic instruments, and to shape the virtual sound space in different ways. Throughout the years, and especially after becoming more handy with electronics thanks



to my time at CNMAT, I've been trying to focus both on systems that are both flexible and adapted to my creative ideas, and also more controllable at a very precise level.

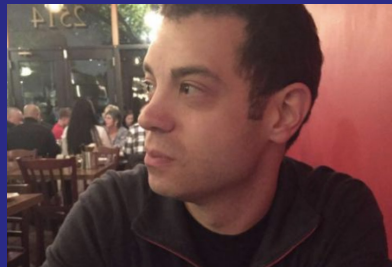
*Clara, I know the voice has been central to your work in many ways (thinking of Mary, as well as Epilogue). What is your approach to integrating technology into your vocal writing? How do you view this relationship?*

The relationship between voice and electronics is very interesting to me especially in the context of opera and musical theater. The function of electronic music goes further than sound, and can be considered through the focus of dramaturgy. I always ask myself: how do these electronics serve the action? What does it « say » that voice alone doesn't say? Voice is language, meaning, communication, breath: the medium of electronics and all the ways they can reveal the human voice fascinates me and never ceases to raise more questions.



### ANDREW BLANTON

*Andrew Blanton is a current grad student in Music. His work focuses on the emergent potential between cross-disciplinary arts and technology, building sound and visual environments through software development.*



### JON KULPA

*Jon Kulpa (Ph.D. in Music Composition, 2020) explores sound mass, algorithmically generated sound texture, spatial sound, and interactivity. His most recently completed project, QuBits, is a virtual reality (VR) sound-space.*



### LUKE DZWONCZYK

*Luke Dzwonczyk is an undergraduate researcher at CNMAT. He is a senior double majoring in Computer Science and Music. His past projects at CNMAT include a granular synthesis engine that focuses on manipulating vocals.*





*David Coll (PhD. in Music composition, 2010) is a composer and sound artist. In this interview by Andrew Harlan, he discusses his career and recent work.*

*AH: How long have you been working with/at CNMAT? How has CNMAT influenced your practice?*

DC: I moved out here in 2003 for grad school. I was 22. CNMAT was the main draw, not UC-Berkeley. I was interested in working with Edmund and going to IRCAM. It was the connections I made at CNMAT that got me there.

Upon my return from Paris I had something unique to contribute, with my burgeoning practice with transducers, resonant materials, and interactive lighting. I began to better understand CNMAT technologies, and got involved with pedagogy. But perhaps the most important influence was the community that CNMAT engendered. Evelyn Ficara, Heather Frasch, Matthew Goodheart, John Maccallum, Rama Gottfried, Daniel Cullen, Matthew Schumaker, Jeff Lubow, Mike Zbyszynski—not to mention all the visiting researchers who were part of a larger community I was only becoming aware of— all of these people were making fascinating music or writing articles for prestigious research journals— or coding some brilliant tools to help each other out. CNMAT's unique sense of community has influenced how I collaborate and develop projects of all kinds— with musicians, ensembles, artists, and researchers.

Years later I moved back to the Bay Area and now I balance teaching at CNMAT and SFCM with freelance work and composing. Even when I'm not there on a regular basis, I try to keep abreast of activities and contribute when I can.

*I see a lot of your work in a broader dialogue with multimedia art rather than concert music. Can you speak to that dialogue? How has that developed throughout your career?*

Thanks for that observation. But I have been trained as a composer, and I embrace that as

a 'sensitivity' that I carry with me in what I hope is a broader dialogue. The more that I can control the production of my work, the more I get to enter into that dialogue. Otherwise, an ensemble picks one work of mine or the other, then my work sticks out if it uses lots of technology, or fits right in if it's chamber music.

At this moment (especially now, having not been performed since SFCMP performed a duo of mine in February), I guess I'm generally suspicious of the field of 'computer music' or electronic music. Maybe it's just something that happens once or twice during a concert season— just like their children's concert or the fundraising gala. I really miss going to concerts at the CNMAT main room, since they'd often help me think these things through. I tried turning that space into one for 'multimedia [performance-based] art' and it is possible. I'm happy to have a studio space of my own now though, because setting up and tearing it all down was a pain in the ass.

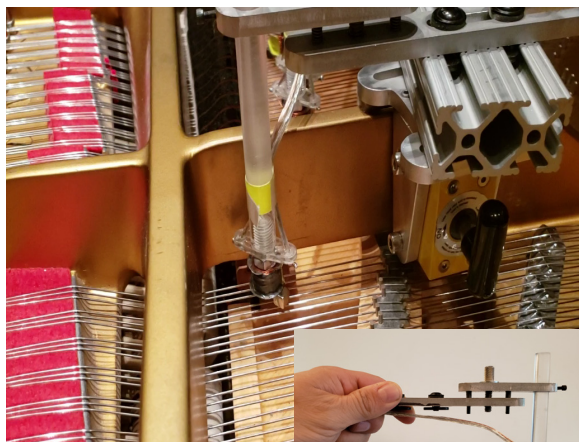
*What projects are you currently working on?*

The short answer is I'm splitting time between setting a poem by Carolyn Forché (for mezzo Leslie Leytham) with a second movement to my piano work, Symbols (for Jared Redmond). So let's see, that's two projects at complete odds with pandemic life, since they require musicians and have nothing to do with electricity! But I have been doing a lot of fiddling on the side with technology/CNMAT-related things. There's a self-motivated broad project called 'spectacle dump' that attempts to place camera feeds, interactive lights, projection mapping, etc. on equal footing with what I have come to consider 'musical material'. So far it's resulted in a series of studies that focus on technical aspects as I await being able to work closely with musicians.

The longer answer really cuts to the heart of my sense of purpose in making art during this moment of upheaval. I dealt with these introspections ten years ago in my work 68, but such a historically-oriented project (centered around the artist's role in a society that values commodity over culture) fails to give me any current direction, despite overlapping concerns.

Over these many months there have been moments where making incremental progress on 'projects' has felt downright criminal while our black brothers and sisters are being lynched by vigilantes and murdered by cops; when another thousand fellow (or should-be fellow) citizens die on a daily or weekly basis from a pandemic that preys upon those with pre-existing conditions; as essential workers are exploited and the curtain is pulled back on the realities of settler-colonialism from the top of our klepto-oligarchy on down. These occurrences, colliding with economic and political turmoil and exacerbated with social distancing, have highlighted personal boundaries I place between community and creativity— many of which I wasn't even consciously aware of.





*Aluminum framework  
and magnetic coils*



*Transconductance  
amplifier*

## CNMAT PROJECTS

### Magnetic Resonator Piano

In 2019 Jeremy Wagner designed and built an updated version of the magnetic piano resonator originally designed by Per Bloland (University of Miami, OH) and Andrew McPherson (Queen Mary University, London). The device uses a specially designed transconductance amplifier and a series of magnetic coils to resonate strings of the piano without physical contact.

The CNMAT version of the Magnetic Resonator incorporates many design updates and new features to make the apparatus more robust and pragmatic in performance contexts. We devised a new potted coil design that uses a Halbach array of neodymium magnets to maximize magnetic flux into the piano string while minimizing heat buildup. These DIY coils are easily wound using readily available, inexpensive materials. We also designed and fabricated a rigid aluminum framework for quickly and precisely locating coils over individual piano strings with micro-adjustable thumbscrews. This custom waterjet-cut framework is mounted with quick-release switchable magnets to the piano frame allowing the device to be installed or removed in a matter of seconds. Lastly, our version of the McPherson MRP amplifier was constructed with a larger heat sink and greater safety margins to address problems with heat dissipation and reliability encountered in the original design.

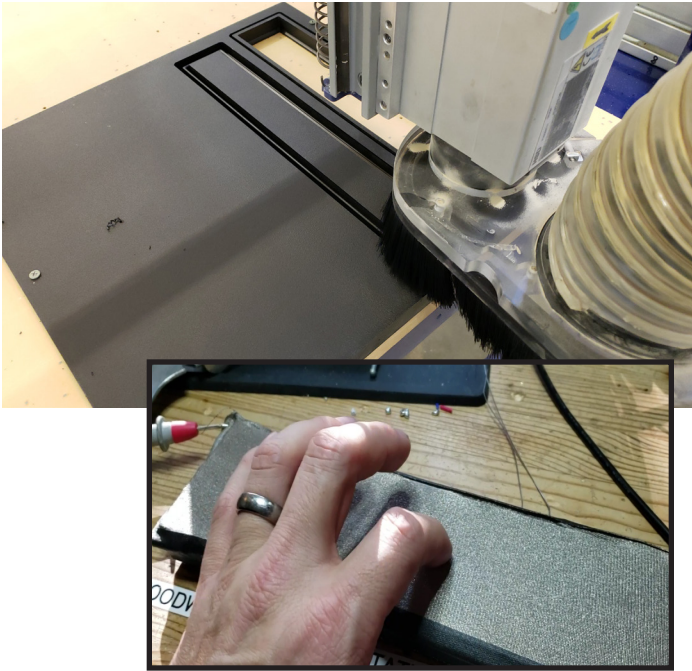
The CNMAT Magnetic Resonator Piano debuted in May 2019 with a performance of Edmund Campion's Late Bloomer at Roulette in Brooklyn, NY. That piece was given its West Coast premiere as part of the Cal Performances/Eco Ensemble concert at Hertz Hall on February 29, 2020.

## REPAIRS AND IMPROVEMENTS

*After a portion of the garden wall at 1750 Arch St. was accidentally toppled by a maintenance contractor in 2019, the wall was recently rebuilt and a new, wider set of gates have been fitted to the garden drive. This should serve to harden the CNMAT perimeter and help us to be a better neighbor in the Arch Street community.*







*Flexible, conductive textiles with precisely-machined metal and plastic frameworks*

## Fabric Triggers

In the Spring of 2020 Jeremy Wagner and Edmund Campion, in collaboration with percussionist Jean Geoffroy, began work on a novel approach for silently triggering events in real-time, interactive works for percussion. The solution they devised combines flexible, conductive textiles with precisely-machined metal and plastic frameworks to create a sensitive pressure switch that can be activated precisely and reliably with light pressure. The current prototypes are designed for use in works for marimba and are sized to fit between adjacent keys (say, between D# and F#) on a standard marimba. The major upshot of this design is that, unlike commercially available drum triggers and pressure-sensitive controllers, the fabric triggers can be activated completely silently, making them suitable for use in very subtle and/or highly amplified contexts. The fabric trigger framework is also designed to support a number of other flexible materials of differing electrical properties to enable future work on a range of flexible expressive controllers. The fabric triggers will play a central role in a new solo marimba work for Jean Geoffroy, composed by Edmund Campion to be premiered in Lyon in 2021.

## MUTOR 2.0

In the early-mid 2000's CNMAT director David Wessel commissioned a series of online demonstrations, examples and max patches in support of his course Music 108: Music Perception and Cognition. This set of 10 online units came to be known collectively as the MUTOR project. Several CNMAT staff (now alums) were involved in this project including John MacCallum, Psyche Louie and Georg Hajdu, among others and these materials have continued to be used in subsequent offerings of the Music 108 course. In summer 2020 Jeremy Wagner secured a Creative Discovery Grant to support the updating and development of interactive content related to Music 108. By happy coincidence, the original architects of the MUTOR project have recently been convened by Georg Hajdu of the Hamburg Hochschule für Musik to update materials related to the MUTOR project in a year-long collaboration. Wagner and CNMAT have now joined this consortium and we hope to deliver a suite of Max patches and online resources by the end of 2020.

## CNMAT in the time of COVID-19

*Since early April 2020 the CNMAT facility at 1750 Arch Street has been closed to all but a few essential staff and faculty. In large part the facility has been placed into maintenance mode, but we are taking this opportunity to do some much-needed maintenance and upgrades.*

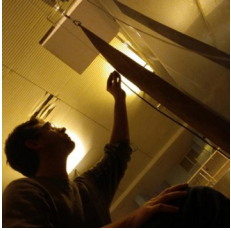
- The CNMAT Main Room has been upgraded with new video streaming capabilities in anticipation of streamed courses and concerts. The streaming infrastructure now features 3 cameras plus a presentation feed, in-room multi-view monitoring and a second stream-able program feed. We hope to deploy this infrastructure in support of instruction and remote concerts in the future.*

- In support of our ongoing spatialization research the main room has been fitted with an additional 8 speakers from the CNMAT mobile array. This brings the total channel count of the main room to 16 independent channels. Long term goals are to expand this infrastructure further to support work in even higher order ambisonics and wavefield synthesis.*

- In anticipation of reopening, CNMAT has been working with campus to install necessary signage and develop approved building plans for a safe, physically-distanced re-opening. We look forward to a phased re-opening, as permitted, in the coming months.*

## JEFF LUBOW: ODOT UPDATE AND OTHER PROJECTS

*Jeffrey Lubow is a Music Systems Designer at CNMAT.*



Since the beginning of this year, Jeff Lubow has worked on a number of projects involving CNMAT's software and associated distribution.

Jeff has made progress on an official ODOT (o.) tutorial & associated package, which we anticipate releasing into Cycling 74's package manager by Halloween 2020. This finalization represents numerous developments, internal testing, and some newer decisions on ODOT pedagogy. This work

has been a collaboration with John MacCallum, now based at HfMT Hamburg.

Jeff was introduced to ODOT back when Adrian Freed gave an introductory talk on "vdot" (visual OSC) involving its forward-looking features in 2008. He writes: "When I think back to the sense of wonder I got from that talk, I feel good about this tutorial. I hope that it makes ODOT more accessible, as it's become an indispensable tool for me."

Earlier in the year Jeff developed software for Edmund Campion's pieces "Outside Music" and "Melt Me So...". This work consisted of programming a translation layer to complement a new sampler he programmed for Campion - an update from previous soft-

ware environments. Rewrites and upgrades like this can teach us about the ways in which we'd update features on newer projects, or think differently about a problem than the original author of the software did.

Jeff maintains most of CNMAT's internal repositories - implementing new tools, fixing bugs, maintaining our build systems, working in our Github issue tracker, and consulting on an upcoming release of the Depot (2.0) which includes new tools that haven't been public. One of the goals in this second version will be to update many of the patchers using ODOT so that they have a unified interface and incorporate our current best practices.

## VISITING COMPOSER/RESEARCHER DANIELE GHISI

*Daniele Ghisi is in residence at CNMAT for 2020.*

*Hallie Smith: How did you first come to be involved with CNMAT?*

DG: I owe it to Carmine [Cella]. I've known CNMAT for ages, I've been involved with IRCAM since 2008. We were already using things that were developed at CNMAT. I knew all the history and all the people (not personally, but I knew the kind of work they did and the kind of people they were). So when Carmine went to take the position he proposed that I join him for one year as a postdoc and researcher.

*What's the present like for you? What are you working on with Carmine right now?*

For the first semester our focus was on computer aided orchestration. [Carmine]'s been involved with the Orchidea project. In 2019 I helped him by bridging some of the tools he made with [Max/MSP] and brought them into the Max package. Now I actually put my hands more into the weeds. The first thing we've been doing is a revision of the corpus. So we based our assumption on the SOL data set, but the SOL data set was kind of flawed for dynamic levels. In January and February we worked on the data set. We published a paper and then we had a couple of explorations in two or three other directions, but the main thing I've been focusing on is a project called Orchidea Orchestral Qualities (OOQ). It's a real branch of the Orchidea project. If you think about it, what Orchidea does, (as does the all the Orchidea family before it) is target based orchestration. You provide a target, you get an answer, which is as close as possible to the target according to some

measures. But to me that's not what orchestration is about. Most of the time, orchestration is about qualities. I want the sound to be sharper, brighter, rougher, or more mellow. Composers usually use these kinds of words without knowing what they really mean because there's no vocabulary about that. What I did is to provide a new framework to account for these things, which also means that you can have some orchestral effects. One can take a score and do something with it. It's not something you can do on a cymbal, it's Orchidea style so it's a revolutionary process that optimizes something. It's not a target, it's a source. For example, the effect can be taking a score and making it brighter because if it was a sound, you would have put a high pass filter. It's now possible to have the machine fine tune the orchestration, according to that high pass filter you just put on. That's what we need, and not just with a high pass filter of course; with a set of tools, which I developed to think of orchestration more as an effect chain in a DAW.

*Moving now to this piece of your work, the trailer for An Experiment with Time: Could you talk a little bit about the sonic landscape? And what technically was involved with creating those sounds?*

It's a video installation as well as a 5.1 electronic installation that goes with it. The starting point is a diary, and it had to be a diary because it had to tell the story of the main character of the book (like an alter ego of [author John] William Dunne). It's supposed to be a one year experience. I decided to have



a very strict rule for which each month corresponded to a chord. It was a huge data set of audio, some scores, but mostly audio segmented by chords because I wanted to have 100,000 major Cs 100,000, Ds and so on. I had some help from some friends. We segmented the huge corpus into chords, and then I used them as bare bones material to write with. So everything else is a concatenation of these samples. You don't hear them. I mean, I don't think you hear any samples at all.

*You mentioned that this is an older project which you still believe in a lot. What's evolved from that project to your present kind of interests?*

[That project] was both an ending point and a starting point to something. It started rational reasoning on corpus based composition. Why do I write with music that exists already? What am I trying to do? What's the aesthetic point? What's the political point? ...This is the beginning of something that has continued. [In more recent projects] I've used larger and larger grains. I have evolved to some extent to consider larger and larger grains, which makes it more and more political, in a sense, because you recognize the sound.



## JEAN GEOFFROY

*Collaborating with CNMAT on a number of projects, [Jean Geoffroy](#) is an accomplished percussionist and conductor. He teaches percussion at the Lyon National Superior Conservatory.*

*Daniel Riberio: Can you start by talking a little about your most recent/current projects?*

JG: It doesn't matter whether it's a concert, research or collaborations—everything is a question of movement and dynamics. A project doesn't happen unexpectedly or vertically, it's often the consequence of research, meetings, and above all, a desire for openness and creation. In creation, there is no spontaneous generation—performer and composer are in a dynamic process and end up crossing each other, thus setting the framework for the moment of creation.

My projects are often the result of meetings which happened several years ago and are now taking shape. As in my work around the Light Wall System (LWS) or smartphones (SHC, both at [www.lisilog.com](http://www.lisilog.com)) or my collaborations with different composers. This year, I will work mainly on two creations: one for solo percussion and string quartet by Henry Fourès, produced by IRCAM, and another for marimba and electronics by Ed Campion/CNMAT.

In these next two adventures, the moment and the setting allow me to be really involved in the process and conception of the work. In the framework of the various residencies that I carry out at IRCAM, there's the collaboration with Henry Fourès, particularly around motion capture and the instrumental environment that we created together. The other project with Ed and CNMAT, is around the notion of augmented marimba. What's interesting in these two adventures is the place of the interpreter, his position in the creative process, and what it suggests to the interpretation and the instrument. Because in the two projects, we speak about augmented instruments, which implies new approaches as musicians behind a new kind of instrument. Working on new instruments actually forces you to reconsider your own "classic" instrumental approach in order to appropriate them.

*How did the project/residency at CNMAT start? What connections did you have with the Center previously?*

I had the chance to meet Ed Campion a long time ago when he was a student at IRCAM.



At the time, I was working regularly with the IRCAM Cursus. We worked on his very famous piece "Losing Touch" for vibraphone and electronics. I always remembered a really good connection together and when Martin Matalon spoke to me about the possibility of imagining a new project with Ed (over 30 years after our first meeting), I immediately said "YES!". As I said, it's above all a question of meetings!

I knew about CNMAT, this center is well-known all over the world, but I had never been there before. I'm really happy to be a part of this project because behind this one, we are working with Ed on a bigger project as a partnership with CNSMD Lyon, where I work as director of the performance department.

*What importance has collaborating with composers and artists of other disciplines taken in your career?*

I've done this job, especially meeting with composers—other artists, also—for 40 years. I've always worked with composers. I've recorded almost 40 CD's, among them 7 dedicated to J. S. Bach. When I say meeting with composers, it also means dead composers—for me, apart from the physical contact, it's the same thing. Meeting with composers from the past through their music or in person, over coffee, it's almost the same thing...

My obsession is to look over the shoulder of the composer just to be able to see how they feel the world, and how I can translate it through my interpretation.

*Can you comment in what way has the use of technology influenced your performance practice and participation in recent projects?*

When we work with new technologies, we have to change our usual approach, the sound projection, the movement, our position, the sound itself, everything is different compared to an acoustic piece. We have to work in another dimension. It makes these kinds of projects incredibly powerful for the future, because after each piece we can bounce back and move forward to imagine other sound spaces, including our place on the stage.

*Can you select a few samples of your work which you would like to share and provide a brief commentary about them?*

"Attacca" by Ivo Malec. Incredible piece for percussion and tape (30'). It's a kind of symphony and if he hadn't passed away, we'd have probably worked together on a version with orchestra... You can hear it on Spotify or you can see a video on my [website](#). A video of a live concert in Seoul is [here](#).

"[Endless Eleven](#)" by Bertrand Dubedout.

An hour-long solo stage performance. In this particular piece, the most challenging thing has been finding my place in this incredible frame!

## ENSEMBLE-IN-RESIDENCE



### Splinter Reeds

[Splinter Reeds](#) is the West Coast's first reed quintet, comprising five innovative musicians with a shared passion for new music. The group features clarinetist Bill Kalinkos, oboist Kyle Bruckmann, saxophonist David Wegehaupt, bass clarinetist Jeff Anderle and bassoonist Dana Jessen.

Splinter Reeds was invited as an Ensemble-in-Residence at CNMAT for 2019-2020. The musicians visited 1750 Arch St. in November, 2019 to meet with graduate student composers and develop new compositions. Unfortunately, their planned return visit in March, 2020 -- including a concert featuring new student works -- has been postponed due to COVID-19. We look forward to welcoming the ensemble back to CNMAT once the campus policies allow.

## ORCHIDEA SOFTWARE

We are pleased to announce the latest release (0.6) of [Orchidea](#) software for computer-assisted orchestration. Orchidea represents the state-of-the-art system for assisted orchestration -- the new release is deployed as a Max package, GUI standalone and command line tool. A live "hands on" session on Orchidea was held at CNMAT by Professor Carmine-Emanuele on May 29, 2020. You can visit the new YouTube (Orchestration idea) channel with video-tutorials [here](#).

Assisted orchestration can be thought of as the process of searching for the best combinations of orchestral sounds to match a target sound under specified metrics and constraints. Although a solution to this problem has been a long-standing request from many composers, it remains relatively unexplored because of its high complexity, requiring knowledge and understanding of both mathematical formalization and musical writing.

New features in this release include:

- Datasets: New versions of TinySQL, OrchideaSQL and FullSQL with new licenses
- GUI standalone software: First release to the public
- Max package: Several improvements

#### Credits:

*Concept, research and development: Carmine-Emanuele Cella*

*From an original idea by Yan Maresz*

*Max package design and development: Daniele Ghisi, Carmine-Emanuele Cella*

*Interface design and development: Alessandro Petrolati, Daniele Ghisi, Carmine-Emanuele Cella*

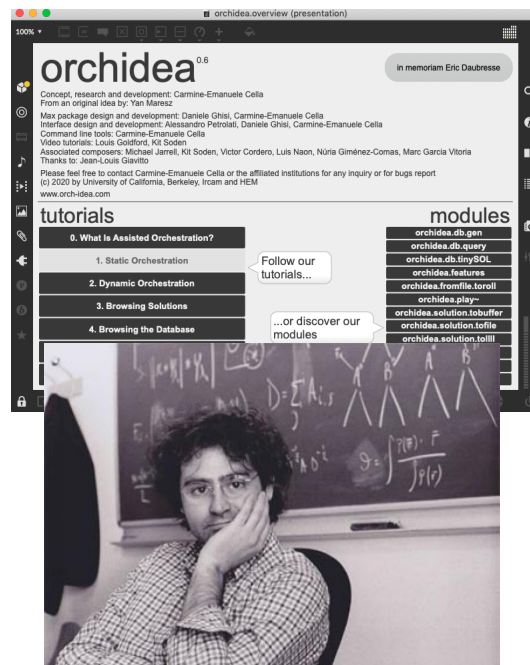
*Command line tools: Carmine-Emanuele Cella*

*Associated composers: Michael Jarrell, Kit Soden, Victor Cordero, Luis Naon, Núria Giménez-Comas, Marc Garcia Vitoria*

*Thanks to Jean-Louis Giavitto*

*Please feel free to contact [Carmine-Emanuele Cella](#) or the affiliated institutions for any inquiry or for bug reports*

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*UC Berkeley Music Assistant Professor  
Carmine Emanuele Cella is a composer  
and a researcher in applied mathematics.*



## LETTER FROM THE DIRECTOR

The CNMAT Users Group (CUG) have teamed with CNMAT's Associate Director, [Richard Andrews](#), to conceive and produce this first edition of the CNMAT Newsletter. CNMAT strives to be an open community of users and dedicated staff who work together. We continue to thrive both on-line and in person -- where allowed. WOW, what a year!!!

Leading the initiative for the Newsletter is CUG President (2020-21), graduate composer, [Hallie Smith](#), the point person who conceived and set the project in motion. Behind her is a dedicated number of graduate students who have conducted interviews and helped make this real. Our goal is to be inclusive in all ways but it is just not possible to keep up with it all! A few extra shout-outs go to [Maija Hynninen](#) and her fabulous new CD Dawn Breaks. Then to [Didem Coskunseven](#) for her exhibition at [CODAME/GitHub](#). Didem, [John Yu](#), and [Clara Olivares](#) were all selected for the IRCAM Coursus this year and are doing their best to get to classes in France during these difficult times. [Kayla Cashetta](#) and [Oren Boneh](#) are just now completing their year at the IRCAM Coursus. Alumni stay active with [Amadeus Regucera](#) serving as the guest composer at the Wellesley Composers Conference, where he took part in the Anti-Racism in New Music Symposium, and [Antonio Juan-Marcos](#) is back at CNMAT this year working on a newly commissioned opera with electronics.



CNMAT pays attention to its community as we work to sponsor and support the initiatives of CUG with concerts, artistic residencies, as well as production technologies for the creation of adventurous new music.

Our robust research agenda invites participation from our undergraduate and graduate students. This, in turn, inspires the many courses we offer through the Department of Music who has been our partner since CNMAT's inception in the late 1980s. Yes, we have been around the block, and in 2020 we still have a lot to do and report!

[Professor Carmine Emanuele Cella](#) recently joined the Department of Music as a Professor in Music and Technology. Carmine's energy, his daily reshaping of the CNMAT Research agenda, has already recomposed our music. Carmine is a mathematician and a composer; author of a string of research papers as well as the recipient of major commissions from top ensembles and orchestras throughout Europe. New technical

papers, accepted to peer-reviewed conferences and journals throughout the world, are arriving from Cella and the many students he mentors. Cella's ORCHIDEA software, released at CNMAT, has been well-received by both composers and researchers. Welcome Professor Cella to the CNMAT team!

Our Newsletter is planned for release once a semester. It is personally satisfying for me to catch up with last year's events, even if it represents only a smattering of what has been done at CNMAT, and in the middle of the Covid-19 crisis. The sound of Frederic Rzewski and his iconic [Coming Together](#) continually rings in my ears! Have a listen, join our [CNMAT YouTube Channel](#), [join our mailing list](#), and please stay tuned to [CNMAT!!!](#)

Edmund Campion  
Director  
CNMAT

# CNMAT YEAR IN REVIEW: JULY, 2019 TO JUNE, 2020

## CONCERTS AND PERFORMANCES

Planetarium Dome Audiovisual  
Installation: Andrew Blanton, Chabot  
Space Center  
Friday, August 2, 2019

Audible Numbers in Seoul  
The Contemporary Gugak Orchestra  
presented Edmund Campion's Audible  
Numbers on Friday and Saturday,  
September 27-28, 2019, at the National  
Gugak Center in Seoul, S. Korea.

Fay Victor/Myra Melford/Lisa  
Mezzacappa  
Wed, October 2, 2019, 8:00pm

Mitch Stahlmann/Nayoung Jung/Sarah  
Grace Graves  
Saturday, October 12, 2019, 8:00pm

Pauline Kim Harris: Heroine the Album  
(Concert and CD release)  
Sunday, October 13, 2019, 8:00pm

Maija Hynninen: Dawn Breaks (CD  
release)  
Monday, October 14, 2019, 8:00pm

Jihye Chang  
Saturday, October 19, 2019, 8:00pm

Robert Simonds, Violin  
Saturday, November 2, 2019, 8:00pm

Maggi Payne, Jeffrey Lubow, and Cullen  
Miller  
Saturday, November 9, 2019, 8:00pm

CNMAT Users Group (CUG) presents  
percussionist Oded Geizhals  
Monday, December 2, 2019, 8:00pm

CNMAT Users Group (CUG) presents  
Radical 2  
Saturday, December 7, 2019, 8:00pm

Helena Sorokina  
Friday, January 24, 2020, 8:00pm

CNMAT Users Group (CUG) presents:  
Quince  
Saturday, January 25, 2020, 8:00pm

CNMAT Users Group (CUG) presents:  
DROUGHT SPA & Svist  
Thursday, February 6, 2020, 8:00pm

CNMAT Users Group (CUG) presents:  
Gleb Kanasevich:  
Saturday, February 15, 2020, 8:00pm

2019 Basel Composition Competition:  
Carmine-Emanuele Cella  
UC Berkeley faculty composer Carmine-  
Emanuele Cella was selected as a  
finalist in the 2019 Basel Composition  
Competition. His piece "Verso la fine del  
Giorno" was performed on 22 February  
2019.

Cal Performances presents: Eco  
Ensemble  
Saturday, February 29, 2020, 8:00pm

Pianist Annie Yim, The Poet Speaks:  
From Debussy to Pärt  
Thursday, March 5, 2020, 7:00pm

Sam Pluta, Sky Macklay, Tomeka Reid,  
Kyle Bruckmann and Myra Melford  
Event postponed until further notice due  
to Covid-19

CNMAT Users Group (CUG) presents:  
Splinter Reeds  
Event postponed until further notice due  
to Covid-19

CNMAT Users Group (CUG) presents:  
Kevin CK Lo, Didem Coskunseven &  
Engin Dağlik  
Event postponed until further notice due  
to Covid-19

CNMAT presents: Earl Howard  
Event postponed until further notice due  
to Covid-19

## LECTURES, WORKSHOPS, SEMINARS

Workshop on Surface Transducers in  
Music and Sound Art  
Saturday, August 17, 2019, 10:00am

ODOT IMMERSION COURSE 2019  
Monday, August 19, 2019, 10:00am

Synthesis: Interdisciplinary Collaboration  
in Computational Music Research  
Saturday, September 28, 2019, 9:00am

Lecture-demo: Music-Related  
Micromotion with Alexander Refsum  
Jensenius  
Wednesday, October 23, 2019, 10:00am

EDUARDO R. MIRANDA: ARTIFICIAL  
INTELLIGENCE MUSIC WITH  
BIOCOMPUTING:  
Monday, November 4, 2019, 12:00pm  
to 1:00pm

Guy Hoffman: Transience, Replication,  
and the Paradox of Social Robotics  
Monday, November 4, 2019, 6:30pm

Tommy Martinez, Director of Creative-  
Tech at Pioneer Works, NYC  
Friday, November 15, 2019, 2:00pm

IMSYS: Spectral Panning via Flocking  
Algorithms in a Multi-Channel Sound  
Environment with Tommy Martinez  
Friday, November 15, 2019, 3:00pm

Online Composition Colloquium: Jenny  
Q Chai  
Friday, April 10, 2020, 3:00pm

Hands on session on Orchidea  
May 29, 2020, 9:30am

MIR-Toolbox Mini-Workshop  
Event postponed until further notice due  
to Covid-19

## GUEST RESEARCHERS, COMPOSERS, MUSICIANS, ENSEMBLES

Daniele Ghisi: Post-Doctoral Visiting  
Composer and Researcher 2020

Hongfu Liu: Undergraduate intern, Fall  
2019

Ali Momeni: Visiting Researcher,  
Scientist, and Artist for Spring 2020

Radical 2  
The CNMAT Users group organized a  
mini-residency with the New York-  
based percussion duo Radical 2 from  
December 5-7, 2019.

Olivier Lartillot: MIRAGE Project Lecture  
Event postponed until further notice due  
to Covid-19

Splinter Reeds residency at CNMAT  
Postponed until further notice due to  
Covid-19

## NEW CNMAT PARTNERSHIPS AND INSTITUTIONAL COLLABORATORS

Cooperation agreement between the  
Lyon Conservatoire National Supérieur  
Musique et Danse (CNSMD) and UC  
Berkeley

CNMAT partners with the Technologies  
of Notation and Representation  
(TENOR) Network and will be hosting  
related events at UC Berkeley.

As of July 2020, CNMAT collaborates  
with Georg Hajdu, John MacCallum,  
et al in Hamburg on update of MUTOR  
project.

## CNMAT PROJECTS

Orchidea 0.6 released (software for  
computer-assisted orchestration)

Jonathan Kulpa: QuBits (virtual reality  
sound-space)

On Zoomology: CNMAT-affiliated artist  
Claudia Hart received an award from the  
Esports Digital Art Prizes for 2019.

Audio Spatialization Research at  
CNMAT (2019)

Stompbox 2.0 (2019)

Orchestrating with Machines (Spring  
2019 Music 202 Seminar)

Magnetic Resonator Piano

the body you dream of is your own: t  
h e b o d y y o u d r e a m o f i s y o  
u r o w n (2019) is a musical theater  
piece designed and composed by UC  
Berkeley Music and Data Science  
Senior, Trevor Van de Velde.

A E R : A E R is a site-specific  
installation, by UC Berkeley Graduate  
Composer Didem Coskunseven and  
Engin Daglik (Stanford), focusing on  
turning a 'transitive space' into a 'space  
of experience' by using lighting design  
and interactive spatial sound design in  
such a way that they manifest both an  
uncanny and inviting ambience. The  
work consists of four light structures  
hung on the surfaces of a shipping  
container and 8-channel interactive  
audio immersed in this transitive space.

Rapid prototyping rigid fixturing systems  
for Polyend robotic percussion.

Fabric Triggers for Campion/ Geoffroy  
percussion project.

Spatialization Scripting using Max  
Dictionaries

SpeakerFinder: source localization using  
microphone arrays.

Main Room upgraded to 16.8 channels  
for ambisonic research.