

PROGRAMM

COMPUTING MUSIC IV
FÜNFZIG JAHRE COMPUTERMUSIK

KÖLN, 3. – 5. NOVEMBER 2006

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3. – 5. NOVEMBER 2006

Ein Projekt der Initiative Musik und Informatik Köln - GIMIK e.V.

www.computing-music.de

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COMPUTING MUSIC IV

Die Rolle des allgegenwärtigen Computers in der heutigen Musikwelt lässt sich bis zu den Anfängen vor 50 Jahren zurückverfolgen, als Lejaren Hiller zusammen mit Leonard Isaacson an der Universität von Illinois erstmals einen Computer für die Komposition eines Musikstücks programmierte, der *Illi a c - S u i t e* für Streichquartett. Ebenfalls vor 50 Jahren realisierte Max Mathews in den Laboratorien der Bell Company die ersten synthetischen Klänge mit digitaler Technik. Die zeitgenössische Musik, in der diese ersten Arbeiten eingebettet waren, wurde während des darauf folgenden halben Jahrhunderts im kompositorischen Denken vom Computer stark beeinflusst. Aus diesem Anlass veranstaltet GIMIK dieses Jahr eine erweiterte Ausgabe der jährlichen Reihe COMPUTING MUSIC. Eigens für diese Veranstaltung geschriebene Werke von Komponisten der gegenwärtigen Computermusik werden frühen, bereits historisch anerkannten Werken gegenübergestellt. Neben Konzerten mit Streichquartetten, Kompositionen für Musikmaschinen und elektroakustischer Musik umfasst das Programm auch Klanginstallationen und Gesprächsrunden. COMPUTING MUSIC IV ist dem kürzlich verstorbenen Komponisten und Pionier der Computermusik James Tenney gewidmet, der tragischerweise nicht, wie geplant, unter den anwesenden Gästen sein kann.

*The role of the omnipresent computer in the world of music today can be traced back to its beginnings of 50 years ago, when Lejaren Hiller in collaboration with Leonard Isaacson at the University of Illinois programmed a computer for the first time in order to compose a piece of music, the *Illi a c S u i t e* for string quartet. It was also 50 years ago when in the Bell Company's laboratories Max Mathews generated the first synthetic sounds using digital techniques. Contemporary Music, the environment fostering these first attempts, has been strongly influenced in compositional thinking by the computer in the course of the subsequent half-century. To mark the occasion, GIMIK is organising this year an extended event within its annual COMPUTING MUSIC series.*

Commissioned works composed especially for this event by present-day composers of Computer Music will be performed in perspective alongside historically recognised early works of the genre. Apart from concerts of string quartet music, compositions for music machines and electroacoustic works, the programme will also present sound installations and round table discussions. COMPUTING MUSIC IV is dedicated to the memory of James Tenney, celebrated composer and pioneer of Computer Music, who died very recently and tragically cannot be as planned among the guests present.

FREITAG 3. NOVEMBER

14.00 - 19.15 Uhr, Installation

Alte Feuerwache Köln, CM-IV-Büro

PETER GENA

Immunoglobulin (2005, revised 2006)

14.00 - 19.15 Uhr, Installation

Musikhochschule Köln, Foyer

KLARENZ BARLOW

Amaludus

19.30 Uhr, Konzert

Musikhochschule Köln, Konzertsaal

JAMES TENNEY

Stochastic String Quartett (1962-63)

RAINER BOESCH

Veränderungen für Streichquartett (2006, UA)

LEJAREN HILLER

Illiac Suite (1957)

for string quartet

IV. Experiment No. 4 - tanto presto che possibile

FRANÇOISE BARRIÈRE

Oriental (2006, UA)

pour trio à cordes et électroacoustique

1er et 2ème mouvement

IANNIS XENAKIS

ST/4 - 1, 0 8 0 2 6 2 (1962)

for string quartet

– Pause –

STEPHEN TRAVIS POPE

Ora penso invece che il mondo... (2006, UA)

for string quartet and two computer-controlled pianos

MICHAEL OBST

Arcus (2006, UA)

für Streichquartett und elektronische Klänge

GOTTFRIED MICHAEL KOENIG

Streichquartett 1987

Minguet Quartett

Ulrich Isfort: 1. Violine, Annette Reisinger: 2. Violine, Irene Schwalb: Viola,
Matthias Diener: Violoncello

Tontechnik: Marcel Schmidt, Christoph Seibert

SAMSTAG 4. NOVEMBER

12.00 - 18.15 Uhr, Installation

Alte Feuerwache Köln, CM-IV-Büro

PETER GENA

Immunoglobulin (2005, revised 2006)

12.00 - 18.15 Uhr, Installation

Musikhochschule Köln, Foyer

KLARENZ BARLOW

Amaludus

16.00 - 17.30 Uhr, CM-Diskurs

Alte Feuerwache Köln, Kinosaal

GIMIK UND GÄSTE

Algorithmic Composition

Podium: Gerald Bennett, Gottfried Michael Koenig, Stephen Travis Pope,

Horacio Vaggione, Trevor Wishart

Moderation: Klarenz Barlow

18.30 Uhr, Konzert

Musikhochschule Köln, Konzertsaal

CURTIS ROADS

Pictor Alpha (2003)

GERALD BENNETT

Rainstick (1993)

DIRK REITH

verSTIMMUNG (1995)
für vierkanaliges Tonband

CHRISTIAN CLOZIER

Sous l'hêtre de l'étang,
grenouilles rien (2006)

BARRY TRUAX

Riverrun (1986)
for four computer-synthesized soundtracks

JOEL CHADABE

One World 1 (2006, UA)

20.00 Uhr, Konzert

Musikhochschule Köln, Konzertsaal

SIMON EMMERSON

Digswell Tapes I (1973)
Simon Emmerson: Computer

ROLF GEHLHAAR

MULTIVERSE (2006, UA)
Rolf Gehlhaar: Computer

TREVOR WISHART

memories of madrid (2005)

ROBERT ROWE

freesound mix (2006, UA)
Robert Rowe: Computer

HORACIO VAGGIONE

Presque Bleu
(multimedia version 2006, UA)

MASAHIRO MIWA

Jaiken-beats (2003)
Thomas Glässer, Bernd Härpfer,
Simon Rummel, Maciej Sledziecki,
Florian Zwissler: Percussion

JAMES TENNEY

Dialogue (1963)

Klangregie: Gerald Bennett, Christian Clozier, Alan Fabian, Bernd Härpfer, Siegfried Koepf,
Dirk Reith, Horacio Vaggione, Trevor Wishart, Florian Zwissler

Tontechnik: Marcel Schmidt, Christoph Seibert

SONNTAG 5. NOVEMBER

12.00 - 18.15 Uhr, Installation

Alte Feuerwache Köln, CM-IV-Büro

PETER GENA

Immunoglobulin (2005, revised 2006)

15.00 - 18.00 Uhr, Installation

Alte Feuerwache Köln, Konzertsaal

SIEGFRIED KOEPF

EXHAUSTED for player piano (1996-2004)

16.00 - 17.30 Uhr, CM-Diskurs

Alte Feuerwache Köln, Kinosaal

GIMIK UND GÄSTE

Aesthetics of Realtime Sound Processing

Podium: Simon Emmerson, Rolf Gehlhaar, Thomas Kessler, Bruno Spoerri,

Godfried Willem Raes, Robert Rowe

Moderation: Klarenz Barlow

18.30 Uhr, Konzert

Alte Feuerwache Köln, Konzertsaal

JAMES TENNEY

Music for Player Piano (1964)

CARLOS GUEDES

Jazz from Heaven (2006, UA)

Carlos Guedes: Computer

PETER CASTINE

PNPLYR VI & VIII

RAINER BOESCH

Erinnerungen an Veränderungen für Logos-Automaten (2006, UA)

BRUNO SPOERRI

RACE, CLEAR 'N' BLOW (2006, UA)

*für Logos Robot Orchestra,
Very Nervous System und Saxophon*
Bruno Spoerri: Saxophon

GODFRIED-WILLEM RAES

Herbst - für Köln geeignet (1995)

20.00 Uhr, Konzert

Alte Feuerwache Köln, Konzertsaal

KLARENZ BARLOW

Septima de facto
(2006, UA der Neufassung)

KONSTANTINOS MOSCHOS

Logomotion (2006, UA)

Aus dem Repertoire
der Stiftung Logos Gent:

KRISTOF LAUWERS

Vib.r.t-H 50 (2002)

CONLON NANCARROW

Toccatà (1935)

MICHAEL MANION

Long Roll (2006, UA)

BERND HÄRPFER

Hustle And Bustle (2006, UA)

JAMES TENNEY

Spectral Canon for
Conlon Nancarrow (1974)
Extended version by
Clarence Barlow (1990)

LOGOS-Musikautomaten: Godfried Willem Raes, Kristof Lauwers

INSTALLATIONEN

KLARENZ BARLOW

A m a l u d u s (1995, neue Version 2006)

A m a l u d u s ist eine Realisierung des Musikalischen Würfelspiels von Wolfgang Amadeus Mozart. Es spielen hierbei zusammen ununterbrochen und selbstständig zwei über ein digitales Netzwerk miteinander verbundene Computerprogramme Würfelgang und Autobusk, jedes wiederum mit einem Stereo-Klavierklangmodul verbunden.

Auf der einen Seite des Raumes spielt Würfelgang nach den Anleitungen Mozarts; für jeden der sechzehn möglichen Takte eines zu erstellenden Walzers stellte der Komponist damals elf Alternativen zur Verfügung, die per Zufall auszuwählen seien. Dieser vorliegenden Realisierung ist jedoch eine statistische Analyse nach Art des Mathematikers Markoff vorausgegangen; die Resynthese reicht - je nach sogenannter "Markoffebene" - von praktisch mozartgetreu (hier bei Ebene 5) über originell-doch-mozartartig bis zu witzig-stümperhaft (bei Ebene 1). Würfelgang "komponiert" etwa 75 Walzer pro Stunde.

Auf der anderen Seite des Raumes begleitet Autobusk seinen Kollegen Würfelgang durch die Übernahme von dessen Duktus. Bei der Markoffebene 5 bleibt dieser Quasi-Kommentar beschaulich; jedoch steigt mit sinkender Markoffebene die Wahrscheinlichkeit von radikal Abweichendem auf der zeitlichen Ebene (z.B. Rhythmus oder Klangdichte).

Bei dieser Realisierung - für Computing Music IV speziell erstellt - schwankt die Markoffebene regelmäßig zwischen 1 und 5 hin und her in langen, nicht ganz glatten sinusartigen Bögen.

PETER GENA

I m m u n o g l o b u l i n (2005, revised 2006)

Upon the major overhaul during a residency in Bellagio of the DNA mixer, an interactive installation for mixing and performing gene sequences, my subsequent goal was to implement a sonic mapping of the human immunoglobulin system. Our immune system is made up of multiple random generators that continually produce billions of unique DNA sequences that are put on call to fight off invading diseases. Each immune gene consists of one of three fixed lead sequences (Gamma, Kappa and Lambda) stitched at the head of a variable region, or randomly generated string. The programming effort requires an algorithm that initiates lead sequences and generates the variable regions until an end codon is encountered.

I am intrigued by the idea of a work that requires perpetual regeneration just like our immune system - a performance of I m m u n o g l o b u l i n could run for an indefinite period as it continuously produces new sequences. I envision setting up a dedicated computer to run it without pause for years! The I m m u n o g l o b u l i n mixer resembles the original DNA mixer, but it operates quite differently. It is called upon to generate random sequences and stitch them after the constant regions in real-time whenever needed, simultaneously with others. In addition, the speed at which the sequences are played is subject to change with each new entry.

An extended observance of the installation takes the listener on a fantastic voyage, where he/she travels through a virtual body picking up blends of endless new and unique DNA sequences.

SIEGFRIED KOEPF

EXHAUSTED for player piano (1996-2004)

EXHAUSTED ist eine meiner kombinatorischen Kompositionen. Bei diesen Arbeiten gilt mein Interesse der Entwicklung algorithmischer Kompositionsmethoden im Hinblick auf die gigantischen Materialmengen die sich aus kombinatorischen Vorüberlegungen ergeben.

“Kombinatorik ist die Kunst oder die Wissenschaft, das Mögliche durch einschließende Disjunktionen auszuschöpfen. Aber nur der Erschöpfte kann das Mögliche erschöpfen, weil er auf alle Bedürfnisse, Vorlieben, Ziele oder Sinngewinnungen verzichtet hat. Nur der Erschöpfte ist so interesselos, so skrupulös. Er muß nämlich wohl oder übel die Projekte durch sinnlose Tabellen und Programme ersetzen. Für ihn zählt allein, in welcher Reihenfolge er tun muß, was er zu tun hat, und mit welchen Kombinationen zwei Dinge auf einmal, wenn auch das sein muß, für nichts.” [Gilles Deleuze: Erschöpft, Frankfurt a.M. 1996]

Seit Anfang der 1990er Jahre habe ich mich zuweilen gefragt, ob es sinnvoll sein könnte, von der Menge aller möglichen Akkorde (Tastenkombinationen) auf einem Klavier (davon gibt es ca. $3,9 \cdot 10^{26}$) als kompositorischem Grundmaterial auszugehen. **EXHAUSTED** ist eine der drei Antworten, die mir bis jetzt eingefallen sind.

KOMPOSITIONEN

FREITAG 3. NOVEMBER

JAMES TENNEY

Stochastic String Quartett (1962-63)

The Stochastic String Quartett was written in 1962-63 while I was working with Max Mathews and others at the Bell Laboratories on the development of the computer sound synthesis program which later became known as "Music V". It represents my first effort to use the computer in the process of composition for acoustic instruments (rather than for computer-synthesized sounds), and was apparently one of the earliest essays in the genre of algorithmic composition, having been preceded perhaps only by Lejaren Hiller's Illiac Suite of 1957 and the "ST" series of pieces (1962) by Iannis Xenakis. The term "stochastic music" (from the Greek stochos, meaning target, aim) was first used by Xenakis to mean a music governed by laws of probability. In my own work I have defined it slightly differently, to mean a music determined by a constrained random process - that is, a process which is unpredictable in its details, yet more or less controlled in its general properties and its temporal evolution.

RAINER BOESCH

Veränderungen für Streichquartett (2006, UA)

Veränderungen für Streichquartett ist Clarence Barlow gewidmet und der großen Veränderung, die eben in seinem Berufsleben stattgefunden hat. Das kurze Fragment ist mittels verschiedener Arten von Veränderungen aufgebaut ("morphings", ein Lieblingsthema Clarences), welche ich in der Computersprache LISP formalisierte. Die dabei gestreiften musikalischen Ereignisse der Vergangenheit und Gegenwart sind mehr oder weniger leicht erkennbar. Clarence hat gerne Musik bei der man sich ein paar Fragen stellt. Herzlichen Dank an das Minguet Quartett und sein Verständnis für kaum erklärbare Probleme der Komponisten. Die Dauer des Stückleins passt sich der Zeit an, die jedem von uns zur Verfügung gestellt wurde.

LEJAREN HILLER

Illiac Suite (1957)

for string quartet

Mit der Illiac Suite begann vor ungefähr 50 Jahren die Geschichte der Computermusik. Lejaren Hiller und Leonard Isaacson, die seit 1955 an der Universität von Illinois (USA) musikalische Experimente mit dem Großrechner ILLIAC I gemacht hatten, programmierten 1957 erstmalig einen Computer zur Berechnung einer Musik-Komposition. Für die Illiac Suite implementierten sie exemplarisch klassische Satz- und Kompositionsregeln (einfache Mehrstimmigkeit, Kontrapunkt, serielle Reihentechniken) und erhielten so als Ergebnis

der Computerprozedur Musiken, die bestimmten Satztechniken aus der Musikgeschichte entsprachen. Im vierten und letzten Satz der Suite wendeten Hiller und Isaacson dann aber außermusikalische Reglementierungen an, die nach stochastischen Prinzipien zur Berechnung der Wahrscheinlichkeit eintretender Ereignisse (Markoff-Ketten) musikalische Strukturen berechneten. Damit war eine Musik erstmals aus einem computerisierten mathematischen Prinzip hervorgegangen.

FRANÇOISE BARRIÈRE

Oriental (2006, UA)

pour trio à cordes et électroacoustique

Cette pièce est née de mon admiration pour les musiques arabes et asiatiques et de mon envie de réaliser une sorte de confluence entre la pensée musicale occidentale et celle de ces autres cultures. Il est frappant de constater à quel point la musique européenne s'est épanouie à travers la polyphonie composée, alors que les autres traditions musicales sont fondées sur l'improvisation autour d'un thème repris et varié de musicien à musicien à travers des générations de pratique.

Après de longues heures passées à approfondir mon écoute de musiques égyptiennes et coréennes, j'ai tenté dans ces deux mouvements, d'unir des fragments mélodiques inspirés par ces musiques avec une texture dense de sonorités de cordes occidentales dans l'espoir de les faire dialoguer dans le respect de leur authenticité et leur expressivité propres.

IANNIS XENAKIS

ST/4 - 1, 0 8 0 2 6 2 (1962)

for string quartet

ST/4 - 1, 0 8 0 2 6 2 ist die Bezeichnung der ersten stochastischen Komposition, die Xenakis mittels eines IBM 7090 Computers berechnete, und codiert die Entstehungsbedingungen dieser Musik: ST steht für stochastische Musik, die 4 für die Anzahl der Instrumente, die 1 dafür, dass es das erste Werk dieser Gruppe von ST-Kompositionen ist, gefolgt vom Datum des Rechenvorgangs (8. Februar 1962). Das Computerprogramm, das diese ST-Komposition rechnerisch erzeugt hat, implementierte mathematisch statistische Wahrscheinlichkeitsberechnungen, die auf die Gestaltung aller musikalischen Parameter angewendet wurden (Tonhöhe, Tondauer, Spielart usw.).

ST/4 gilt in der Musikgeschichte als eine der ersten Computer-Kompositionen überhaupt.

STEPHEN TRAVIS POPE

Ora penso invece che il mondo... (2006, UA)
for string quartet and two computer-controlled pianos

When I was invited to write a piece for string quartet and electronics for a festival in Cologne marking the 50th anniversary of the first computer-composed music (a string quartet), the title of this piece, and its basic form, sprang immediately to mind. This is very rare for me. During the composition, I used the title to steer my decisions, and, as a result, what started out to be a complex and dynamic piece became ever simpler and more directly lovely. As I repeated *Ora penso invece che il mondo...* it came strongly into focus that the world-enigma in which we live is quite beautiful and accessible, even if we can't always understand its underlying mechanisms. This is the basis of the subtitle "Three Quick Snapshots of a Really Beautiful Enigma"; the piece's three movements are separate scenes or venues taking place at the same time all the time.

Ora penso invece che il mondo... is dedicated to my parents Phil and Polly Pope (who taught me to see the world in many different ways), and to my dear wife Barbara.

MICHAEL OBST

Arcus (2006, UA)
für Streichquartett und elektronische Klänge

Die Konzeption von *Arcus* basiert im Grunde auf dem klanglichen Phänomen der mit einem Bogen gestrichenen Saite eines Saiteninstrumentes. Dem Blick durch ein Mikroskop vergleichbar werden die akustischen Aspekte dieser Klangerzeugung herausgestellt und musikalisch thematisiert. Die elektroakustische Zuspelung basierend auf Klängen einer Bratsche macht durch die Nähe der Mikrophonierung und verschiedene vor allem filtertechnische Verfahren und Transpositionen diesen Aspekt der Tonerzeugung zum Mittelpunkt der Komposition. Das Streichquartett - ebenfalls durch Mikrophone über Lautsprecher wiedergegeben - tritt in einen musikalischen Dialog mit den elektronischen Klängen. Es spielt eine gegenläufige Fassung des musikalischen Geschehens der Zuspelung, wobei eine weitgehend klangliche Annäherung erreicht werden soll. Der Gesamteindruck eines "Metainstrumentes" im Sinne einer Art virtuellem Streichinstrument vergleichbar ist dabei das musikalische Ziel.

GOTTFRIED MICHAEL KOENIG

Streichquartett 1987

Das *Streichquartett 1987* wurde mithilfe meines Computerprogramms PR1 komponiert. Eingabedaten zu diesem Programm betrafen die Dauer des Werks und die Anzahl seiner (ineinander übergehenden) Teile, die Zeitstruktur (Tempi und Einsatzabstände), die Harmonik (Wahl der Intervallstruktur) sowie syntaktische Angaben, durch die vor allem Gruppenbildungen beeinflusst wurden. Das vom Computer produzierte Resultat lag in Form einer Tabelle vor, die nach eingehender Analyse in die von Musikern spielbare, traditionelle Notation unter strikter Beachtung der Einzeldaten transkribiert wurde. Das *Streichquartett 1987* beschreibt einen allmählichen Prozess von akkordischer Setzweise zu einer aufgelösten, die Einzelinstrumente isolierenden Struktur. Dieser Prozess vollzieht sich in meist kurzen, inselartigen Ausbrüchen, die durch Pausen voneinander getrennt werden.

SAMSTAG 4. NOVEMBER, 18.30 UHR

CURTIS ROADS

Pictor Alpha (2003)

Pictor Alpha unfolds in a process of theme and variations, as a repeating melodic and rhythmic motive that passes through transpositions, permutations, interjections, and timbral transformations. I generated the original source material in 2000 using *PulsarGenerator*, a sound synthesis program developed by Alberto de Campo and me. Using the original source material, I then edited each particle individually by hand. This involved rescaling the amplitude of each particle, adjusting it in time, possibly filtering it, positioning it in space, modulating it, modifying its phase, and so on. The pitched tones were performed by replicating individual particles at audio wavelengths. In this manner of working, the screen of the sound editor becomes like a pointer's easel, holding the sound material in place.

GERALD BENNETT

Rainstick (1993)

Der *Rainstick* ist ein Ritualinstrument der zentralamerikanischen Indianer mit dessen Hilfe der Regen heraufbeschworen wird. In diesem Stück werden viele andere reale und imaginäre Wesen angerufen und heraufbeschworen. Das wichtigste kompositionelle Motiv ist die Bewegung vom Kontinuierlichen zum Diskontinuierlichen, vom Intakten zum Fragmentierten, Gebrochenen. Diese Bewegung kann selbstverständlich sowohl eine strukturelle als auch eine emotionale Entwicklung widerspiegeln.

Rainstick ist ein Auftragswerk der Groupe de Musique Expérimentale de Bourges und wurde in ihren Studios im Jahre 1993 realisiert.

DIRK REITH

verSTIMMUNG (1995)

für vierkanaliges Tonband

verSTIMMUNG ist eine vierkanalige Komposition für Tonband, in der bis auf eine kurze Sequenz ausschließlich die Klänge aus Sprachmaterial abgeleitet werden. Dem Stück liegt ein Gedicht von Angelika Janz zugrunde. Der Text - gesprochen von Patrick Hagen - ist dabei nicht nur Klangrepertoire, sondern auch "Strukturgenerator" für die gesamte Form des Stückes. Das Gedicht lautet:

Die Barrieren wachsen dichter,
Gefundenes bleibt der Verkümmern anheim gegeben und ohne Rückhalt,
Rücksicht ein TABU,

- wie müßig,
ein harmloses Märchen erzählen zu wollen ...

Der Titel des Stückes beschreibt neben Konkretem auch ein diffuses semantisches Feld, das in Wechselbeziehung zu dem ambivalenten Inhalt des Gedichtes gerät. Im Verlauf des Stückes wird das Material "verstimmlicht", es "entledigt" sich sozusagen seines vorher im

Computer erfahrenen klanglichen Transformationsprozesses und wird wieder zur Sprache, es kommt zu einer *Verstimmung*. Dies kann dann auch eine neue *Stimmung* sein, in die der Zuhörer durch das *Verstimmlichen* geraten ist.

Das Stück wurde mit Csound (Barry Vercoe, M.I.T Media Lab) und SoundHack (Tom Erbe, CalArts) produziert.

CHRISTIAN CLOZIER

Sous l'hêtre de l'étang, grenouilles rien (2006)

Grenouilles et crapauds un soir d'été chantant
L'incertitude d'être en fait tout en étant
C'est fable et fatrasie pour les petits enfants,
Sans sortilège devenant prince charmant
Mais qui raconte aussi aux grands très simplement
Entre le vrai le faux aux abords de l'étang
L'être électroacoustique au temps résonnant
Qui jamais ne rend sourd ou bouche les tympans.
A vous de l'être autant.

Pour Juliette

(Œuvre réalisée dans les studios de l'IMEB en 2006)

BARRY TRUAX

Riverrun (1986)

for four computer-synthesized soundtracks

Riverrun creates a sound environment in which stasis and flux, solidity and movement co-exist in a dynamic balance. The corresponding metaphor is that of a river, always moving yet seemingly permanent. From the smallest rivulet to the fullest force of its mass, a river is formed from a collection of countless droplets and sources. So too with the sound in this composition which bases itself on the smallest possible unit of sound in order to create larger textures and masses. The title is the first word in James Joyce's *Finnegan's Wake*. *Riverrun* is entirely realized with the method of sound production known as granular synthesis. All sounds in this piece were generated with real-time synthesis by the DMX-1000 Digital Signal Processor, up to a maximum density of 2375 grains per second. The fundamental paradox of granular synthesis - that the enormously rich and powerful textures it produces result from its being based on the most "trivial" grains of sound - suggested a metaphoric relation to the river whose power is based on the accumulation of countless "powerless" droplets of water. The opening section of the work portrays that accumulation, as individual droplets of sound gradually multiply into a powerful broad-band texture.

Riverrun was commissioned by the Music Section of the Biennale di Venezia with the financial assistance of the Canada Council. It was awarded the Magisterium at the International Competition of Electroacoustic Music in Bourges, France, in 1991.

JOEL CHADABE

One World 1 (2006, UA)

One World is an ongoing and exploratory project-in-progress that combines the sounds from different cities in the world in different types of presentations and performances. The idea behind One World is that we all, whatever the specifics of our different cultures and beliefs, share the same world through a common human bond, even if, at this moment in history, that idea seems a utopian goal rather than a current reality. It is one of the major problems of our age that inundated with information, much of it disturbing, we view the world today as a complex, turbulent system of different nationalities, religions, cultures, and politics, as if the world were one large crowded city overwhelmed by urban noise. In this instance of One World, the sounds are based on field recordings by Benjamin Chadabe in New York and Shankar Barua in New Delhi.

SAMSTAG 4. NOVEMBER, 20.00 UHR

SIMON EMMERSON

Digswell Tapes I (1973)

Between 1973-79 I composed a series of works known as Digswell Tapes for various performance resources, tape delays and live electronics (EMS Synthi AKS). There were versions for short-wave radio, viola, soprano saxophone, percussion. The live electronics delayed, filtered, ring modulated and spatialised the live sound, controlled from a keyboard. I have recently recreated these now impossible to perform analogue works for computer resources using MAX/MSP.

Digswell Tapes I (originally 1973) is for short-wave radio and electronics. Fragments of short-wave transmissions are captured, looped and treated in real time. While the material is completely unpredictable (but not random - the performer listens and chooses) the processes and time scale are relatively fixed through a graphic score which defines their shapes and directions.

I intend in resurrecting such a work to make a statement about the relationship of such "first wave" live electronics to today's laptop culture. But also the soundworld of Digswell Tapes I relates strongly to recent interests in internet art, noise art and radio art.

ROLF GEHLHAAR

MULTIVERSE (2006, UA)

MULTIVERSE is a partly autonomous, partly controlled process of sound modulation and synthesis. A performer stands in the intersection of the view of two webcams placed at an angle of 90 degrees with respect to each other. The output of the webcams is converted into a 3D matrix of 2197 cells. The performer is located within this matrix by the system and also made visible within it. Any cell within the matrix can be programmed to function as a trigger for any one of a large number of processes of the autonomous sound modulation algorithms (granular synthesis, comb filtering, digital reverberation, 3D distribution) and several FM synthesis engines. Whenever the performer (or a part of him) appears within a

given cell of this matrix, its function is activated, be it as a trigger to start, to regulate or to stop a process of one of the modulation/synthesis systems. The system is the performer, the performer functions as a guide.

If anything goes wrong in this first performance it will undoubtedly be due to the highly dedicated and imaginative programming support in both Jitter and Processing that I have received from my good friend and esteemed colleague, Luis Miguel Girao.

TREVOR WISHART

memories of madrid (2005)

In 2004 I was invited to Madrid to participate in the project “Itinerarios del Sonido”, a project organised by the Centro Cultural del Conde Duque. The project involved 20 international artists devising audio pieces to be installed in 20 bus stops around the centre of Madrid during the Summer of 2005, in some way reinterpreting or commenting on the urban environment. I chose to make recordings in some old buses, and in shops, cafes and the Christmas market in central Madrid. Not being a Spanish speaker, I found myself concentrating on the sonority and melody of the speech around me, and the sounds of urban bustle, recording these on a discreet minidisk recorder with ear-mounted microphones. I have used processes of sonic metamorphosis to extend and develop particular fragments of these recordings, combining these with direct sound-images to make the complete piece.

Technically, the piece uses the CDP software, including a number of new programs I have written recently, to extend sounds with distinct grains (like vocal grit or rattling buses) in a plausible way. I have tried to evoke the sounds of Madrid as I heard them directly, but also as half-remembered sonic memories, coloured by the passage of time.

ROBERT ROWE

freesound mix (2006, UA)

freesound mix is composed from live processing of sampled sounds submitted from designers around the world to the freesound site in Barcelona, Spain. Contributors have been tagging samples for this performance over the preceding six months, and may well be doing so during the performance itself. Tagged samples are automatically downloaded from the site and blended into this mix, using effects processing, mixing, and synthesis techniques programmed by the composer. As such the work represents the communal effort of all those contributors, who are submitting sounds that represent their sonic environment.

HORACIO VAGGIONE

Presque Bleu (multimedia version 2006, UA)

For the composition of *Presque Bleu* (multimedia version, 2006) I used some algorithms written in the SuperCollider language to generate both the sounds and the digital animated images. The background of this work goes back to 2004, when I developed an application for visualizing sounds in a non-sequential way, as a surface rendering of spectral analysis data showing the morpho-dynamical, dissipative aspects of musical textures. Between 2004 and 2006, I experimented with pure visual computer-generated images by means of

further “arbitrary” manipulations of these data. I produced then a series of “silent visual compositions” in order to articulate purely visual forms, movements and colors, employing basically the same kind of operations and techniques used to compose my electroacoustic music, mainly granulation and digital micro-montage procedures, working simultaneously on several time scales, including those belonging to the micro-time domain (below the 100 milliseconds threshold of individual duration). So at least one part of my operative “palette” was passed from the sonic to the visual. Finally, in June 2006, I decided to start to compose both at once, that is, to articulate sounds and images, merging them in a single musical thing, showing diverse degrees of correspondence and synchronization. This audio-visual piece was composed especially for the GIMIK meeting, celebrating the 50 years of Computer Music as well as the 20th anniversary of the Initiative für Musik und Informatik Köln.

MASAHIRO MIWA

Jaiken-beats (2003)

Jaiken-beats is a piece for clapping from a series of pieces using the so-called “Jaiken-Operation”. This logical operation determines a new state from a pair of three old possible states (e.g. 0, 1 or 2). You can see all possible combinations and their results as follows:

	0	1	2
0	0	2	1
1	2	1	0
2	1	0	2

Or you can calculate results using a numerical formula as follows:

$$\text{new_state} = (6 - (\text{old_state_A} + \text{old_state_B})) \bmod 3$$

During the performance players calculate and clap hands corresponding to the results of this “Jaiken-Operation” at all times. The music is a human-driven algorithmic composition.

JAMES TENNEY

Dialogue (1963)

Dialogue grew out of programs Tenney wrote for a set of pieces called Five Stochastic Studies, which, along with some studies in timbre, occupied his time at Bell Labs from 1961-1963. Dialogue uses stochastic control over timbral, durational and pitch parameters. It was the first piece by Tenney which made use of the computer in determining hierarchical features, and in making stochastic decisions regarding the given statistics of musical parameters for various sections. In other words, the software is responsible for larger-level formal decisions as well as small-level event values, specifying the mean and range of musical parameters over long sections. The piece is a dialogue between noise and tones. By stochastically specifying the statistical trajectories of these two types of sounds, Tenney creates a constant shifting of emphasis between them.

SONNTAG 5. NOVEMBER, 18.30 UHR

JAMES TENNEY

Music for Player Piano (1964)

It was a colleague at Bell Laboratories, whose hobby was player pianos, who prompted Tenney to write a piece for the instrument. "I can get blank rolls and punch them. If you generate the parameters for the piece and mark a roll, I'll punch it for you", he said. So Tenney wrote a computer program using stochastic decision-making operations, the same types as for pieces like *Dialogue*, *Phases* etc., but here only specifying pitch, duration and event density values. Tenney marked the result on a roll to be played in four ways: forward, backward, inverted as well as inverted and backward. This roll he handed to his colleague. After not hearing anything for a while, Tenney learned that his colleague was moving out of town. Two or three years passed. Tenney gave up the piece for lost. Three or four years later Tenney received a letter from his colleague saying he'd found the roll hidden away in a box. What should he do? Tenney said send it. Which he did. Now with his punched roll but no player piano, Tenney found under "player pianos" in the New York telephone book the Aeolian Company on 57th Street. He went there and asked a salesman if he could hear his roll. "Sure" said the man, put the roll on a piano and started it. After about one second into the piece he said "there's something wrong", stopped the piano and told Tenney to go to a man on the sixth floor who might be able to help. Tenney found him, an old black man named J. Lawrence Cook, who played the roll right through and said "Well that's interesting!". It seems he'd worked with Percy Grainger; it was his machine that Nancarrow had copied to punch his rolls in Mexico.

CARLOS GUEDES

Jazz from Heaven (2006, UA)

Jazz from Heaven is a work-in-progress consisting of a Max patch trying to make musical sense of streams of random numbers.

PETER CASTINE

PNPLYR VI & VIII

2,000 days after playing in a performance of HPSCHD as part of my duties as Conference Chair of the International Computer Music Conference in Berlin, I decided to take revenge on one of the more difficult scores for harpsichord in the repertoire, the 'Solo VI' of this composition. This part requires to the performer to play extracts of works composed in approximately quarter-century intervals, starting with the "Dice Game" attributed to Wolfgang Amadeus Mozart and continuing with Beethoven (Op. 57), Chopin (Op. 28/24), Schumann (Op. 9), Gottschalk (Op. 15), Busoni (Sonatina No. 2), and so on. In the course of the piece the player becomes increasingly evangelical/prophetic in that the right hand knoweth not what the left hand doeth--either hand may be playing extracts from different sources. To the materials and processes selected by Cage and Hiller and further processed in PNPLYR VI, PNPLYR VIII adds materials suggested by a list of composers found at <http://www.bek.no/~pcastine/Letters/s.html>, taking one name from approximately every 100 lines of text in

something approximating alphabetical order. The processing and ordering of the musical materials follows an entirely independent logic in the two components VI and VIII.
Disclaimer: No I Ching oracles were consulted in the composition of this music.

RAINER BOESCH

Erinnerungen an Veränderungen für Logos-Automaten (2006, UA)

Ursprünglich war mein Fragment für eine Aufführung gedacht, bei welcher sich Streichquartett und Logos-Automaten treffen würden. Da dies nun nicht möglich war, habe ich meinen Gedanken aufgeteilt in ein Fragment und eine automatisierte Erinnerung daran.

BRUNO SPOERRI

RACE, CLEAR 'N' BLOW (2006, UA)

für Logos Robot Orchestra, Very Nervous System und Saxophon

Ein Improvisationsstück mit ungewissem Ausgang.

GODFRIED-WILLEM RAES

Herbst - für Köln geeignet (1995)

Dieses Stück geht auf eine Urversion zurück, komponiert und programmiert im Herbst des Jahres 1995. Ursprünglich war es orchestriert für Klavier - gedacht für meinen Klaviervorsitzer, wegen der konsequent achtstimmigen Partitur und der extremen Dynamik - und 6 Musiker unter der Leitung eines Roboterdirigenten, den ich damals auch wirklich gebaut habe. Später habe ich dieses Stück wieder zu Händen genommen und es dann in eine Version für großes oder kleines Roboterorchester ausgearbeitet. Letztere Version habe ich als "für Köln geeignet" bezeichnet.

Die verwendete Programmiersprache ist <GMT> und das Stück basiert auf "gesture-control".

SONNTAG 5. NOVEMBER, 20.00 UHR

KLARENZ BARLOW

Septima de facto (2006)

Septima de facto, meaning "the seventh in fact", is a piano piece (also arranged for ensemble and for the music machines of the Logos Foundation Ghent) made in the summer of 2005 and significantly revised in the spring of 2006. Based on a song by the artist Prince, the piece derives on the one hand from the song's harmony (here extended to include natural 7ths as already planned in 1990 - see below) and metre (here condensed to 7/8) and on the other from the phonetics of parts of the text (a spectral analysis was converted into instrumental sounds by my so-called "synthrummentation" method, first used in 1984 in my composition "Im Januar am Nil"). This piece forms after a 15-year delay the second part of

a diptych (with “otodeblu” of 1990) performable by computer or by musicians, and which though primarily intended for a tone-system of 17 equal steps per octave can be rendered in other tunings such as those with 12 or 24. It ends at the end of the seventh minute with the interval after which it is named.

KONSTANTINOS MOSCHOS

Logomotion (2006, UA)

e-motion is a device that captures the movement of a performer and transfers it to digital information. It functions with a series of infrared sensors that the performer can use as a controller. The analogue information of the sensors is transformed through a custom-developed interface to MIDI information that is entered into a computer, and with the aid of software (MAX/MSP), one can drive any MIDI-able device. The aim of e-motion is to extend the performing capabilities offering the possibility of musical performance even to non-professional music performers. e-motion was developed by the Institute for Research on Music & Acoustics (IEMA) in the frame of the “Polymnia” project that includes the development of several similar music utilities and financed by the General Secretariat of Research and Technology.

In the Cologne concert e-motion will drive, through live performance by Kostas Moschos, the Logos musical robots (under the name let's say Logomotion) in the strange way of transforming captured analog movement to digital information and then to analog movement again.

KRISTOF LAUWERS

Vibrato (2002)

This composition was written for the occasion of the 50th birthday of Godfried-Willem Raes. It is scored for two instruments of the Logos automaton orchestra: <Vibi>, an automated vibraphone and <Harma>, a harmonium. The piece uses the renaissance cantus firmus technique, where one melody, borrowed from a song or constructed from arbitrary rules is used as a base around which a polyphonic piece is built up. Here we used two melodies. The first is the song Happy Birthday, the second is based on the letters of the name Godfried-Willem Raes. Both melodies are stretched in time and played simultaneously, so that they can't be recognized anymore. The other voices are built up of the sum - and difference tones between these two voices.

CONLON NANCARROW

Toccata (1935)

This piece was originally composed before the composer had access to player pianos. However, in the 80s of the 20th century, he encoded this toccata for his player pianos, with a solo part for violin. In this version it was premiered by Romuald Tecco in 1982. At Logos we took this roll and score as a point of departure for an orchestration using some of our robots.

MICHAEL MANION

Long Roll (2006, UA)

Once known as the Gamut for the Drum, the long roll is one of the 40 standard drum rudiments. This piece, Long Roll, consists of multiple layers of rolls of varying speeds and dynamics.

BERND HÄRPFER

Hustle And Bustle (2006, UA)

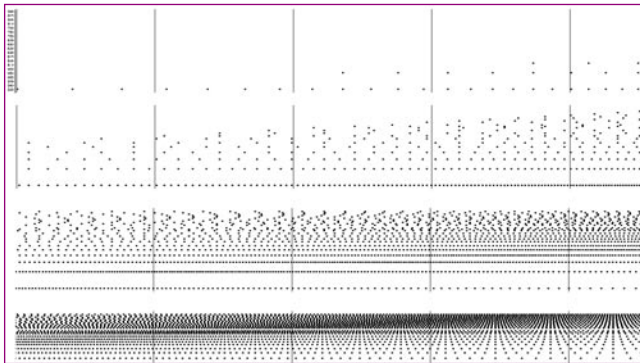
Das Stück wurde für die Logos-Musikmaschinen Ake, Harma, Piperola, Player Piano und Vibi geschrieben. Ich greife hier Elemente auf, die ich schon im Rahmen anderer Projekte erforscht habe, wie z.B. fließende Tempoänderungen und metrische Modulation. Harmonik und Melodik entwickeln sich aus der FFT-Analyse eines Audio-Files, die die Auswahl und den Verlauf vorgegebener tonaler Strukturen beeinflusst. Hustle And Bustle ist GIMIK und unserer gemeinsamen Arbeit gewidmet, denn es entstand während der letzten Wochen inmitten der Vorbereitungen für COMPUTING MUSIC IV.

JAMES TENNEY

Spectral Canon for Conlon Nancarrow (1974)

Extended version by Clarence Barlow (1990)

James Tenney's Spectral Canon for Conlon Nancarrow was conceived in 1972 and realized a couple of years later - Nancarrow himself punched the notes on piano roll. In this work, 24 repeated harmonics of and including the second lowest A on the piano



first accelerate, each from once every four seconds to six times a second, and then decelerate back to once every four seconds. The partials enter one by one every eight iterations of the fundamental. In 1974 Tenney interrupted the process after under four minutes at a point where all partials are played simultaneously for the first

time. The present version was realized by Clarence Barlow in Darmstadt on July 29, 1990 - the acceleration formulas from which the piece derives were programmed in Pascal into an Atari computer, the MIDI output being sent to a Seiler Autogrand Piano. Barlow allowed the process to complete itself of its own accord; the piece now lasts almost two minutes longer. Tenney was very fond of this extended version.

BIOGRAPHIEN

KLARENZ BARLOW ist auf dem Gebiet der Computermusik seit 1970 tätig. Der ehemalige künstlerische Leiter des Instituts für Sonologie in Den Haag unterrichtete von 1994 bis 2006 als Professor für Komposition am Königlichen Konservatorium in Den Haag sowie von 1984 bis 2006 an der Musikhochschule Köln. Seit 2006 ist er Professor und Leiter des Bereichs Komposition an der Universität Kalifornien in Santa Barbara. Er ist der Initiator und langjährige Vorstand der GIMIK und nach seinem Austritt aus dem Vorstand seit 2002 Ehrenmitglied.

FRANÇOISE BARRIÈRE, née le 12 juin 1944 à Paris. Suit une formation musicale classique, classe de piano au Conservatoire de Versailles, classes d'écritures au Conservatoire National Supérieur de Musique de Paris et moins classique (Service de la Recherche ORTF et ethnomusicologie à l'Ecole Pratique des Hautes Etudes et à l'Institut de Musicologie). Françoise Barrière a fondé avec Christian Clozier en 1970, le Groupe de Musique Expérimentale de Bourges (GMEB, devenu en 1994 l'Institut International de Musique Electroacoustique de Bourges/IMEB), dont ils assurent la direction. Ils organisent les Festivals Internationaux des Musiques et Créations Electroniques de Bourges, "Synthèse" et les Concours Internationaux de Musique et d'Art Sonore Electroacoustiques de Bourges (musique et logiciels). Membre fondateur de la Confédération Internationale de Musique Electroacoustique/CIME (Organisation International Membre du CIM/UNESCO), elle en est devenue Présidente en septembre 2005. Ses œuvres ont été jouées et radiodiffusées par de nombreux organismes de concerts, festivals et radios dans le monde.

GERALD BENNETT wurde am 14 Juni 1942 in Englewood, New Jersey (USA) geboren. Nach Abschluss seiner Studien in Musikwissenschaft und Komposition an der Harvard-Universität kam er 1964 nach Basel, wo er bei Klaus Huber Komposition studierte. Von 1967 bis 1976 war er Dozent für Komposition und Musiktheorie am Konservatorium Basel, ab 1969 auch Direktor dieses Instituts. 1976 ging er nach Paris an das Institut de Recherche et Coordination Acoustique/Musique (IRCAM), wo er bis 1980 eine Forschungsabteilung leitete. Seine eigene Forschungsarbeit betraf die Analyse und Synthese der Singstimme und er entwickelte in dieser Zeit zusammen mit Xavier Rodet die Computersynthese-Sprache CHANT. 1981 kehrte er in die Schweiz zurück und wurde Dozent für Komposition und Musiktheorie an der Musikhochschule Zürich. 1983 war er Mitbegründer der Confédération Internationale de Musique Electroacoustique, 1985 Mitbegründer des Schweizerischen Zentrums für Computermusik, 1993 Mitbegründer der Académie Internationale de Musique Electroacoustique. Seit Januar 2005 leitet er das Institute for Computer Music and Sound Technology der Hochschule Musik und Theater Zürich.

RAINER BOESCH, geboren am 11. August 1938 am Zürisee, studierte Klavier (Konzertdiplom 1965 bei Harry Datyner) und Komposition (1. Preis mit Auszeichnung am Conservatoire National Supérieur in Paris in der Klasse von Olivier Messiaen mit dem ersten Stück in der Geschichte des CNSM, welches akustische Instrumente und Elektroakustik zusam-

men brachte). Komponist, Pianist und Improvisator, Gründer (1976) und Leiter des Studio Espaces in Genf, Forschung am IRCAM, MIT (Medialab), CCRMA (Stanford) und STEIM. Kompositionen für Instrumente, Orchester, Tänzer, Elektroakustik, Computer in allen möglichen Kombinationen. Etliche pädagogische Tätigkeiten (unter anderem von 1994 bis 2003 die mit Alain Savouret gegründete Klasse für Improvisation am CNSM in Paris, 2001 bis 2005 Professur für Komposition und Musik-Informatik an der Musikhochschule in Genf)

PETER CASTINE was born in the Year of the Snake in the 11th state to ratify the US Constitution. He composes instrumental and electroacoustic music. He is on the Web at www.castine.de.

JOEL CHADABE, composer, author, is an internationally recognized pioneer in the development of interactive music systems. His music has been performed all over the world. His music is recorded on different CD labels. He is the author of 'Electric Sound', a comprehensive history of electronic music, and his articles have been published in leading journals and anthologized in books by MIT Press, Routledge, and other publishers. As co-founder and president of Intelligent Music, a research and development company, he was responsible for the first publications of interactive music software. He has received awards, fellowships, and grants from the National Endowment for the Arts, New York State Council on the Arts, Ford Foundation, Rockefeller Foundation, Fulbright Commission, SUNY Research Foundation, New York Foundation for the Arts, and other organizations. He has been keynote speaker at the NIME Conference at the MIT Media Lab in Dublin and at the International Computer Music Conference, Berlin, September 2000. Mr. Chadabe is currently Professor Emeritus at State University of New York; Director of the Computer Music Studio at Manhattan School of Music; Visiting Faculty at New York University; and founder and president of Electronic Music Foundation (EMF).

CHRISTIAN CLOZIER

a entendu et produit ses premiers bruits dans une ville d'armistice à la fin de la guerre.
a fondé plus tard mais il y a très longtemps le GMEB et diverses dérivés avec F. Barrière.
a mis à jour quelques systèmes et pratiques.
a évolué du discours à la simple parole.
a fondé, co-fondé, participé, dirigé nombre de groupements collégiaux.
a développé en province son goût prononcé pour l'internationalisme.
a l'incapacité à ce jour de décliner les dates et lieu de l'extinction sans da-capo.

SIMON EMMERSON has been Professor of Music, Technology and Innovation at De Montfort University, Leicester, since November 2004. For twenty-eight years he was Director of the Electroacoustic Music studios at City University, London. As a composer he works mostly with live electronics; recent commissions include such works for Jane Chapman (harpichord), the Smith Quartet, Inok Paek (kayagum), Philip Sheppard (electric cello), Philip Mead (piano) with the Royal Northern College of Music Brass Quintet. He has also completed purely electroacoustic commissions from the IMEB (Bourges) and the GRM (Paris). He was a first prize winner at the Bourges Electroacoustic Awards in 1985 for his

work Time Past IV (soprano and tape). He contributed to and edited *The Language of Electroacoustic Music* (Macmillan, 1986), *Music, Electronic Media and Culture* (Ashgate, 2000) and has written for *Contemporary Music Review*, *Computer Music Journal* and the *Journal of New Music Research*. He was founder Secretary of EMAS (The Electroacoustic Music Association of Great Britain) in 1979, and served on the Board of Sonic Arts Network from its inception until 2004. He is currently at work on a new Bourges IMEB commission and has completed a new book for Ashgate (*Living Electronic Music* (2007)).

ROLF GEHLHAAR, born in 1943 in Breslau (Silesia, Germany), emigrated with his family in 1953 to the USA, grew up in New Mexico and California, attended Yale University (class of '65) and the University of California, Berkeley. After working closely with Stockhausen during the period 1967-71, he concentrated on composition and performance of over 50 commissioned electronic and instrumental works. In 1974 he also began to carry out research in the area of digital sound synthesis, automation of musical processes and computer-aided composition. As a result of this research during 1976-1983, his ideas led him eventually in 1984 to the development of SOUND=SPACE, the world's first truly creative interactive musical environment. During the period 1989-1998 SOUND=SPACE was the major focus of Gehlhaar's multi-media installations, compositions and performance activities, being employed not only as a creative sound/musical resource for the disabled, dancers, musicians, actors, etc., but also as an evolving technical control system for comprehensive, immersive interactive environments involving sound and projected visuals. At present Gehlhaar lives in London and Coventry, where he is Postgraduate Course Leader in Design & Digital Media at Coventry School of Art & Design, Coventry University.

PETER GENA holds a BFA, MA and PhD in music composition from SUNY at Buffalo; composition study with Morton Feldman and Lejaren Hiller. Since 1983, he has been a Professor at the School of the Art Institute of Chicago, where he teaches electronic and computer music, music history, computer programming, and interdisciplinary courses. Performances and presentation of his work have taken place throughout the world, most recently at: La Notte Bianca 2006, Milan; Alte Schmiede Kunstverein, Vienna; Festival d'Automne, Paris; and Pinacoteca do Estado, São Paulo. Gena's publications include numerous writings on John Cage and a contribution to *The Waltz Project*, choreographed by Peter Martins, in the repertory of the NYC Ballet. A physiological Approach to DNA Music was presented and published at CADE 2001, in Glasgow; and at the Art and Science Global Symposium, Tsinghua University, Beijing. Visiting Artist at numerous venues and institutions throughout the US and Europe. Awards and fellowships from the NEA, Illinois Arts Council, Meet the Composer, and the Rockefeller Study and Conference Center, Bellagio, Italy. Gena is decorated by the French government at the rank of Chevalier dans l'Ordre des Palmes Académiques.

CARLOS GUEDES was born in Porto, Portugal in 1968. He finished his PhD in Composition at NYU in 2005, where he did research in interactive dance. His most influential teachers include Ken Valitsky, Tristan Murail, Paul Berg and Clarence Barlow. His music has been presented a bit everywhere in the Western world under the form of music for dance, theater, film and interactive installations, with occasional fragments of pure instrumental music. While struggling to find some spare time to continue writing music, Carlos was the head

of the Composition program at Escola Superior de Música e das Artes do Espectáculo in Porto from 2003 until last week, and has been involved in the creation of the Electronic Music and Musical Production Program in ESART (Castelo Branco), the first university-level program dedicated to electronic music composition/sonology in Portugal.

BERND HÄRPFER, geboren 1967 in Köln, studierte Musikwissenschaften, Philosophie und Linguistik an der Universität Köln und als Stipendiat des DAAD Elektroakustische Musik am Institut für Sonologie in Den Haag. Er studierte außerdem Komposition und Computerprogrammierung bei Klarenz Barlow. Seine neueren Arbeiten umfassen vornehmlich elektronische Kompositionen und Installationen sowie Musik-Videos. 2003 initiierte er mit GIMIK die Reihe COMPUTING MUSIC.

LEJAREN HILLER was born in 1924 in New York City. He first studied composition with Harvey Officer and oboe with Joseph Marx. Despite his interest in music, he initially decided to enter the field of chemistry. While studying chemistry at Princeton, he studied theory and composition with Milton Babbitt and Roger Sessions. Hiller received his PhD in chemistry from Princeton in 1947 at the age of 23. He became a member of the chemistry faculty at the University of Illinois in 1952. While teaching chemistry, Hiller also worked towards a master's degree in composition, studying with Hubert Kessler. In 1955/56, with Leonard Isaacson, he wrote compositional algorithms that produced his first major computer composition, the *Illiac Suite* for String Quartet. In 1958 he transferred to the music faculty in order to start the Experimental Music Studio and in 1968 Hiller joined the faculty at the University of Buffalo as a professor of composition. He received two Fulbright lectureships, the first of which was in 1973-1974 in Warsaw, Poland. The second of these two lectureships was in Salvador de Bahia, Brazil, in 1980.

THOMAS KESSLER, geboren 1937 in Zürich. Nach germanistischen und romanistischen Studien an den Universitäten in Zürich und Paris folgte ein Musikstudium in Berlin (u.a. bei Heinz Friedrich Hartig, Boris Blacher und Ernst Pepping). Schon 1965 gründete er dort ein eigenes Studio für elektronische Musik und leitete in den folgenden Jahren das Berliner "Electronic Beat Studio". Später wurde er musikalischer Leiter des "Centre Universitaire International de Formation et de Recherche Dramatiques" in Nancy. Von 1973 bis 2000 wirkte er als Lehrer für Komposition und Theorie an der Musik-Akademie Basel, wo er das Studio für elektronische Musik leitete. Er gründete zusammen mit Gérard Zinsstag die Tage für Neue Musik in Zürich und mit Wolfgang Heiniger das Festival für live-elektronische Musik ECHTZEIT in Basel. Thomas Kessler komponierte Instrumentalmusik verschiedener kammermusikalischer Besetzung bis hin zu Orchesterwerken. Die vielfach eingesetzten elektronischen Mittel wie Tonband, Synthesizer und Computer sind seit 1973 immer mehr als Erweiterung der instrumentalen Möglichkeiten in Form von Live- oder Instrumentalelektronik komponiert, die vom Interpreten selbst gleichzeitig gesteuert und gespielt wird.

GOTTFRIED MICHAEL KOENIG, geboren 1926 in Magdeburg, studierte Kirchenmusik in Braunschweig, Komposition, Klavier, Analyse und Akustik in Detmold, musisch-technische Gestaltung in Köln und Computertechnik in Bonn. Von 1954 bis 1964 war Koenig ständiger

Mitarbeiter am elektronischen Studio des WDR in Köln, wo er anderen Komponisten assistierte (Stockhausen, Kagel, Evangelisti, Ligeti, Brün u.a.) und eigene elektronische Kompositionen realisierte (Klangfiguren, Essay, Terminus 1). Von 1964 bis 1986 war Koenig Mitarbeiter am Institut für Sonologie der Universität Utrecht, meist als dessen Direktor oder Vorsitzender. Koenig hielt viele Vorträge im In- und Ausland. Zugleich entwickelte er seine Computerprogramme "Projekt 1", "Projekt 2" und "SSP", mit denen versucht wird, die Komposition musikalischer Strukturvarianten zu formalisieren. Seit 1986 widmet er sich der Komposition, der Computergrafik sowie der Entwicklung weiterer musikalischer Expertensysteme. 1961 erhielt Koenig eine Förderungsprämie des Landes Nordrhein-Westfalen, 1987 den Matthijs Vermeulen-Preis der Stadt Amsterdam, 1999 den Christoph und Stephan Kaske-Preis. 2002 wurde ihm die Ehrendoktorwürde der philosophischen Fakultät der Universität des Saarlandes, Saarbrücken, verliehen. Im Wintersemester 2002/2003 war er Gastprofessor für Computermusik an der Technischen Universität Berlin.

SIEGFRIED KOEPF studierte Klavier, Komposition und Elektronische Komposition an der Musikhochschule Köln. Studien, Vorträge, Publikationen u.a. zu Musikästhetik, Harmonik, Symmetrie und der Geschichte der griechischen Mathematik und Tonsystemtheorie. Seit Anfang der 1990er Jahre arbeitet er mit algorithmischen und kombinatorischen Kompositionsmethoden. Sein Werk umfaßt neben Kompositionen auch Videos, Musikmaschinen, Computerprogramme und Produktionen verschiedener Genres mit internationalen Künstlergruppen. Er erhielt zahlreiche Preise und Auszeichnungen als Komponist und Videokünstler und lehrt seit 2000 Komposition und Musiktheorie an der Musikhochschule Köln. Mitinitiator der Reihe COMPUTING MUSIC.

KRISTOF LAUWERS first studied classical guitar with Ida Polck and then experimental composition with Godfried-Willem Raes at the Ghent Royal Conservatory. He specialized in electroacoustic music, music with live electronics and algorithmic composition. Currently he is working at the Logos Foundation in Ghent, where he collaborates towards the development of <GMT>, a programming language designed for real-time algorithmic and interactive musical applications.

He is also a member of the Logos <M&M> (man and machine) ensemble, where he has the possibility to work with cutting edge technology like a complete robot orchestra, radar and sonar movement sensors and a polyphonic pitch detection device. This allows a completely new composition paradigm, abandoning the traditional linear score concept. Most compositions he writes for the <M&M> ensemble are real-time interactive pieces, computer programs that make musical decisions dependent on the actions of musicians or dancers that play or dance live together with the orchestra. Next to his work with <M&M> he also creates electroacoustic, ambient and chamber music with live electronics.

The **LOGOS FOUNDATION** started its activities in 1968. Since then it has organised concerts and performances of experimental music, live electronics, mixed media, sound poetry, contemporary classical music, sound installations and newly invented instruments. At an average of about 50 concerts a year, it has seen a large part of the international experimental music scene on its stage. The list of all concerts and the artists that have performed in Logos can be seen at <www.logosfoundation.org/concerts/concertarchive.html>. Since

the early 70s all concerts have been recorded and together with other (released) records and CDs they form the core of Logos' unique archive of videos, scores, books and magazines of experimental music.

The Logos Foundation, as an arts centre run by artists themselves, has its own ensemble. In the past 30 years, Godfried-Willem Raes and Moniek Darge – as the Logos Duo - have toured extensively and have played their music (often on self-built instruments and installations) all over the world.

The Logos Laboratory concentrates on research, especially into instrument building. In the 70s and 80s Logos built numerous sound installations and instruments (both acoustic and electronic) and since 1990 robots and human interfaces (wireless gesture control, real time sound analysis, microwave radar, acceleration sensors, pyrodetectors, lightsensors, myoelectric devices, brainwaves, EEG and ECG, etc.). This led in 2001 to the foundation of a second Logos ensemble M&M (Man & Machine), an orchestra of more than 30 interactive computer-controlled music automats (percussion, organs, piano etc, which can react to sound, movement, light and so on); in the 5 years of its existence, M&M has performed several times in the most diverse European countries.

MICHAEL MANION, born 1952, composer, holds a Bachelor of Music degree from the Oberlin Conservatory, and a Master of Music degree from the University of Illinois, and has also studied at the Mills College Center for Contemporary Music, the Musikhochschule in Cologne, and the University of Sussex. As a percussionist, he has performed with symphony orchestras, new music ensembles, jazz bands, and rock groups. Publications include "Stockhausen in Den Haag", an introduction to the Superformula of Donnerstag aus Licht, and "From Tape Loops to MIDI: Karlheinz Stockhausen's Forty Years of Electronic Music". Recent performances include festivals such as Trapezium, ex machina, and the Rheinisches Musikfest. Founding member of GIMIK. His music is published by the Feedback Studio Verlag, Cologne.

Das **MINGUETT QUARTETT** wurde 1988 gegründet und spielt seit 1997 in seiner heutigen Besetzung. Neben dem Kammermusikstudium an der Essener Folkwang-Hochschule erhielten die jungen Musiker künstlerische Impulse von Walter Levin (La Salle Quartett), den Mitgliedern des Amadeus, Melos und Alban Berg Quartetts. Stipendien und Förderpreise, u.a. des Landes Nordrhein-Westfalen, und der Mendelssohn-Preis Berlin verhalfen dem Quartett früh zu Konzerten im In- und Ausland. Im Jahre 1997 erhielt das in Köln ansässige Quartett einen Lehrauftrag für Kammermusik an der Robert-Schumann-Hochschule Düsseldorf. Heute gastiert das Minguet Quartett auf internationalen Konzertpodien wie der Wigmore Hall London, der Kölner und der Berliner Philharmonie ebenso wie bei den Salzburger Festspielen, dem Bergen International Festival und dem Schleswig-Holstein Musik Festival. Neben der klassisch-romantischen Literatur konzentriert sich das Ensemble auf die Musik der Moderne und engagiert sich durch häufige Uraufführungen für Kompositionen des 21. Jahrhunderts.

MASASHIRO MIWA, geboren 1958 in Tokyo, kam 1978 nach Deutschland um an der Staatlichen Akademie der Künste in Berlin bei Isang Yun Komposition zu studieren. Seit 1985 studierte er bei Günther Becker an der Robert Schumann Akademie in Düsseldorf. Miwa wurde für seine Arbeit mit zahlreichen internationalen Preisen ausgezeichnet. Darüber

hinaus veröffentlichte er zahlreiche Tonträger und war an der Oper The New Era (2000) und an der Klanginstallation Matarisama Dolls (2003) beteiligt.

1995 wurde er an der Kunsthochschule für Medien Köln zum Dozenten berufen. Seit 2000 ist er Professor am IAMAS (Institute for Advanced Media Arts and Sciences) in Gifu, Japan.

KONSTANTINOS MOSCHOS, born in Athens, studied musical theory and composition in Athens, electronic music (Humpert), computer music (Barlow), music phenomenology and conducting (Celibidache), and musicology in France and Germany. He followed several composition seminars with Xenakis, Boulez, Reich, and Stockhausen. He has composed 60 pieces in several forms including music for theatre, cinema, dance, and music installations. In starting the use of computers in music for algorithmic composition and realtime interactive installation systems in 1978 he is a pioneer of computer music in Greece. He worked at several studios like the Studio für Elektronische Musik der Musikhochschule Köln, ICEM in Essen, and STEIM in Amsterdam, the studio of the Basle Academy and in Athens. He has taught music and technology at several Universities and Music Academies and is at present teaching "Music and Image" at the Athens University of Fine Arts. Since 1989 he has been living in Athens where he is co-founder and director of the Institute for Research on Music & Acoustics (IEMA) and of the Greek Music Documentation and Information Centre. Besides creative and computer music researches, he has been involved in many other different research projects.

CONLON NANCARROW was born in Texarkana, Arkansas, USA in 1912. He pursued both jazz and classical studies in his youth and in 1937 fought in the Spanish Civil War. As a dedicated socialist, he was politically unacceptable in the United States, which was brought plainly home when he applied for a passport and was denied. Angry at such treatment, he moved to Mexico City in the early 1940s, becoming a Mexican citizen in 1956. There he created a series of unique, highly complex works for pianola by working directly on the piano rolls. His compositional techniques as well as his use of automated performance made him in many respects a precursor of contemporary composers using algorithmic methods and computer technology. Nancarrow died in 1997.

MICHAEL OBST, geboren 1955 in Frankfurt am Main; 1973-1978 Schulmusikstudium in Mainz; 1977-1982 Klavierstudium bei Alfons und Aloys Kontarsky in Köln; Konzertexamen 1982. 1981-1986 Mitglied im Ensemble Modern als Pianist; 1986-1989 Zusammenarbeit mit Karlheinz Stockhausen als Interpret. 1979-1986 Kompositionsstudium bei Hans Ulrich Humpert im Studio für elektronische Musik der Musikhochschule Köln. Mehrfacher Preisträger bei internationalen Wettbewerben für elektronische Musik. Ur- und Erstaufführungen bei zahlreichen internationalen Festivals für Neue Musik (Donauessingen, Münchner Biennale u.a.). Kompositionen aufgeführt u.a. durch das Ensemble Intercontemporain und das mdr-Sinfonieorchester. Ein neues Musiktheaterprojekt über einen Roman von Alfred Kubin ist in Vorbereitung. Michael Obst ist seit 1997 Professor für Komposition an der Musikhochschule Franz Liszt in Weimar.

STEPHEN TRAVIS POPE, born in New Jersey in 1955, studied at Cornell University, the Vienna Music Academy, and the Mozarteum in Salzburg, Austria, receiving a variety of degrees and certificates in electrical engineering/computer science, recording engineering, and music theory and composition. He has over 90 publications on music theory and composition, computer music, artificial intelligence, graphics and user interfaces, and object-oriented programming. He has realized his musical works in North America (Toronto, Stanford, Berkeley, Santa Barbara, Havana) and Europe (Paris, Amsterdam, Stockholm, Salzburg, Vienna, Berlin); his music is released on different CD labels.

GODFRIED-WILLEM RAES, born in Ghent (Europe) in 1952, studied musicology and philosophy at the Ghent State University as well as piano, clarinet, percussion and composition at the Royal Conservatory of Music of Ghent. In 1982 he received the Louis Paul Boon Award for the social engagement in his artistic work. In 1988 he became a professor of music composition at the Ghent Royal Conservatory. In 1997 he also became a professor at the Orpheus Higher Institute for Music. In 1990 he designed and constructed a tetrahedron-shaped concert-hall for the Logos Foundation in Ghent, a project for which it received the Tech-Art prize 1990. Next to his reputation as a composer, he is also a well-known expert in computer technology, robotics and electronic art. He holds a doctors degree from Ghent State University on the basis of his dissertation on the technology of virtual instruments of his design and invention. He is the author of an extensive real-time algorithmic music composition programming language: <GMT> running on the Wintel platform. He is currently the president of the Logos Foundation and general director of the Logos M&M ensemble.

DIRK REITH, geboren 1947, studierte Komposition an der Robert Schumann Musikhochschule in Düsseldorf bei Milko Kelemen und absolvierte parallel dazu ein Toningenieurstudium. Von 1974 bis 1976 studierte er Computer-Komposition am Institute of Sonology der Universität Utrecht bei Gottfried Michael Koenig. 1986 war er innerhalb eines Forschungsvorhabens Leiter des Fachbereichs Musik in der Projektgruppe zur Planung des Zentrums für Kunst und Medientechnologie in Karlsruhe (ZKM). Er begründete das internationale Festival für Computer-Musik und Medienkunst ex machina in Essen. Dirk Reith ist künstlerischer Leiter und Professor für Komposition am Institut für Computermusik und Elektronische Medien der Folkwang-Hochschule (ICEM). Als Gastdozent lehrte er an internationalen Universitäten und Instituten. Er veröffentlichte zahlreiche Schriften zur Kompositionstheorie instrumentaler sowie elektronischer Musik und zu Forschungsvorhaben auf dem Gebiet der Computermusik. Seine Kompositionen wurden u.a. bei der International Computer Music Conference (ICMC) 1986 in Den Haag, 1996 in Hong Kong und 2000 in Berlin aufgeführt.

CURTIS ROADS ist Professor of media Arts + Technology at the University of California, Santa Barbara. He teaches electronic music techniques and composition. He studied at California Institute of Arts, the University of California, San Diego (BA Summa cum Laude) and the University of Paris VIII (PhD). From 1980 to 1986 he worked as a researcher in computer music at MIT. He taught at the University of Naples, Harvard University, Oberlin Conservatory, Les Ateliers UPIC/CCMIX (Paris), and the University of Paris VIII. Many of his compositions feature granular and pulsar synthesis, methods he developed for syn-

thesizing sound from acoustical particles. He served as Editor and Associate Editor of Computer Music Journal (MIT Press) 1978-2000. Recent books include the textbook The Computer Music Tutorial (1996, MIT Press).

ROBERT ROWE received degrees in music history & theory (BM Wisconsin 1976), composition (MA Iowa 1978), and music & cognition (PhD, MIT 1991). From 1978 to 1987 he lived and worked in Europe, associated with the Institute of Sonology in Utrecht, the Royal Conservatory in the Hague, the ASKO Ensemble of Amsterdam, and with IRCAM in Paris, where he developed control level software for the 4X machine. In 1990 his composition Flood Gate won the first prize in the “live electroacoustic” category of the Bourges International Electroacoustic Music Competition. In 1991 he became the first composer to complete the PhD in Music and Cognition at the MIT Media Laboratory and is currently Professor of Music and Associate Director of the Music Technology program at New York University. His music is performed throughout North America, Europe, and Japan and is available on different CD labels. His book/CD-ROM projects Interactive Music Systems (1993) and Machine Musicianship (2001) are available from the MIT Press.

BRUNO SPOERRI, geboren 1935 in Zürich. Seit 1965 aktiv auf dem Gebiet der elektronischen Musik, vor allem als Filmkomponist und improvisierender Jazzmusiker. Ab 1984 Beschäftigung mit interaktiver Computermusik, Konzerte in der ganzen Welt und Museumsinstallationen. Heute vor allem Forschungsarbeiten zur Geschichte des Jazz und der elektronischen Musik in der Schweiz.

JAMES TENNEY was born in 1934 in Silver City and grew up in Arizona and Colorado, where he received his early training as a pianist and composer. He attended the University of Denver, the Juilliard School of Music, Bennington College (BA 1958) and the University of Illinois (MA 1961). His teachers and mentors have included Eduard Steuermann, Chou Wen-Chung, Lionel Nowak, Carl Ruggles, Lejaren Hiller, Kenneth Gaburo, Edgard Varèse, Harry Partch and John Cage. Tenney was a pioneer in the field of electronic and computer music, working with Max Mathews and others at the Bell Telephone Laboratories in the early 1960s to develop programs for computer sound-generation and composition. He has written works for a variety of media, both instrumental and electronic, many of them using alternative tuning systems. He has received grants and awards from the National Science Foundation, the National Endowment for the Arts, the Ontario Arts Council, the Canada Council, the American Academy and Institute of Arts and Letters, the Fromm Foundation, the Deutscher Akademischer Austauschdienst and the Jean A. Chalmers Foundation. Tenney returned to CalArts in the fall of 2000 to take the Roy E. Disney Family Chair in Musical Composition, having taught here at its beginnings in the early 1970s. He has also been on the faculties of the Polytechnic Institute of Brooklyn, the University of California at Santa Cruz and York University in Toronto where he was named Distinguished Research Professor in 1994. He died in August 2006.

BARRY TRUAX is a Professor in both the School of Communication and the School for the Contemporary Arts at Simon Fraser University where he teaches courses in acoustic communication and electroacoustic music. He has worked with the World Soundscape

Project, editing its Handbook for Acoustic Ecology, and has published a book Acoustic Communication dealing with all aspects of sound and technology. As a composer, Truax is best known for his work with the PODX computer music system which he has used for tape solo works and those which combine tape with live performers or computer graphics. In 1991 his work, *R i v e r r u n*, was awarded the Magisterium at the International Competition of Electroacoustic Music in Bourges, France. He is also the recipient of one of the 1999 Awards for Teaching Excellence at Simon Fraser University. Barry Truax is an Associate Composer of the Canadian Music Centre and a founding member of the Canadian Electroacoustic Community.

HORACIO VAGGIONE is a composer of electroacoustic and instrumental music. He co-founded the Experimental Music Center of the University of Cordoba (Argentina), and has been active as a musician, teacher and organizer in South America and Europe. Vaggione's music is regularly played worldwide in major centers and festivals of contemporary music. Awards include two Newcomp Computer Music prizes, four Bourges prizes, International Computer Music Association Commission Award, DAAD Berlin Künstlerprogramm Award. Born in Argentina, Vaggione has lived in France since 1978, working in centers such as IMEB (Bourges), Ina-GRM and IRCAM (Paris). In 1986 he founded the CICM (Centre de Recherche Informatique et Création Musicale/Center for Computer Music Research) of the University of Paris VIII. His articles have appeared in *Contemporary Music Review*, *Computer Music Journal*, *Interface*, *Musica Realta* etc. Vaggione currently lives in Paris. He is Professor of Music at the University of Paris VIII and Director of the Doctoral Program in Computer Music.

TREVOR WISHART, born in 1946, is currently Composer in Residence in the North-East of England. His most well-known works include *Red Bird* (1977), the *Vox* cycle (1980-88) and *Tongues Of Fire*. His work has been commissioned by IRCAM, the Paris Biennale, the Massachusetts Council for the Arts and Humanities, the DAAD in Berlin, Folkmar Hein of the TU studio in Berlin, the French Ministry of Culture and the BBC Proms. Committed to new approaches to music making, he has developed many new instruments (as signal processing software), is a founder member of the Composer's Desktop Project, a composers cooperative disseminating accessible music-composition software, and author of *On Sonic Art* and *Audible Design*. In addition he is well known for taking music out of conventional venues into public open spaces, youth clubs, schools and other community venues, and developing workshop techniques to encourage others to develop their creativity. He was also the sound designer for the Jorvik Viking Centre (York), the first multimedia museum installation in the UK. Further details of past and future activities and publications, can be found on the composer's website, www.trevorwishart.co.uk.

IANNIS XENAKIS, geboren 1922 in Rumänien, war französischer Ingenieur und Komponist griechischer Herkunft. Xenakis absolvierte ein Ingenieursstudium in Athen, arbeitete nach dem zweiten Weltkrieg als Architekt in Paris für Le Corbusier und studierte danach Komposition bei Darius Milhaud und Olivier Messiaen. 1954 erregte er mit dem auf mathematischen Prinzipien beruhenden Stück *Metastasis* beim Donaueschinger Musikfestival Aufsehen und befasste sich im weiteren Oeuvre mit seiner Idee einer stochastischen Musik, deren Strukturen sich als zeitlich-räumliche Bewegungen von Klangmassen beschreiben

lassen. Er war Begründer (1965) und Leiter des Forschungszentrums für mathematische und automatische Musik (CEMAMu) von Paris, des Center for Mathematical and Automated Music (CMAM) an der Universität von Indiana, Bloomington (1967-1972), Associate Music Professor an der Indiana University, Bloomington (1967-1972), Mitglied des französischen Forschungsinstituts Centre National de Recherche Scientifique (CNRS) Paris (1970), Gresham Professor of Music an der City Universität von London (1975), Professor der Universität von Paris I-Sorbonne (1972-1989). Er starb im Februar 2001 in Paris.

GRUSSWORTE

It's always my pleasure to meet distinguished colleagues to share music, exchange ideas, and in general get caught up on their activities. And so it is with great anticipation and warmth that I convey my best greetings to all of my colleagues who will soon be in Cologne and think, What a great festival this will be!

JOEL CHADABE

I am very sorry I was not able to attend the Cologne Computing Music IV conference. Your guest list included many good friends. Cologne with its long history of innovation and of great computer and electronic music was an ideal place to join together. My best wishes to you and all who attended the conference.

MAX MATHEWS

Greetings to all those who will attend COMPUTING MUSIC IV! Clarence and Gimik, congratulations for organizing this gathering. I wish I were with you - distinguished colleagues and friends. Unfortunately it was impossible for me to leave Marseille at the time of the meeting. MAIS JE SERAI AVEC VOUS DE COEUR!

Alas, a major pioneer, Jim Tenney, died this summer: he will be sadly missed, but the meeting will be the occasion of a tribute to him. Jim is the first composer who made a significant use of the computer synthesis of sound - in conjunction with computer-aided stochastic composition. Jim was a fierce individualist, radical but thoughtful, dedicated to exploring new territories and expanding our awareness: an exemplary figure for our community. Warm wishes to all,

JEAN-CLAUDE RISSET

I wish that could be with you at this time, but my traveling schedule does not permit it. I wish everyone a stimulating conference in the great city of Köln. Please allow me to convey a special greeting to Herr Koenig, who has made so many important contributions to our field.

CURTIS ROADS

Everyone at the festival!! I had intended on showing up in person, but that has become impossible... so, I am writing to say hi! and have a wonderful time even without me. Best,

MORTON SUBOTNICK

Greetings from Vancouver, Canada to all those attending Computing Music IV. As you celebrate 50 years of computer applications in music, I am sure you will be impressed by “how far we’ve come”, as well as how little the basic issues involved in those applications have changed. The use of the computer has provoked us to question every aspect of music, from what constitutes a musically interesting sound, to what the compositional process is all about, and what is the role of the performer. The simplest and most profound answer to the question of why we should use a computer was given to me nearly 35 years ago by Knut Wiggen in Stockholm when he said it was to “control complexity”. That prospect of designing and guiding a process that is beyond normal human ability to control is what has kept me addicted to the use of these often troublesome machines for all that time. And, to give just one example, it has opened up the fascinating world of microsound which I explored for the first time in my granular synthesis work *Riverrun* (1986), an excerpt of which you will hear during the festival.

BARRY TRUAX

COMPUTING MUSIC IV - 50 Jahre Computermusik
www.computing-music.de

Ein Projekt der Initiative Musik und Informatik Köln - GIMIK e.V.
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