The Department of Music
presents

The Princeton Laptop Orchestra (PLOrk)
with
Zakir Hussain
Pauline Oliveros
and So Percussion

Dan Trueman
and Perry Cook, directors

Richardson Auditorium
in Alexander Hall
Princeton University

Tuesday, April 4, 2006
8:00 p.m.
THE PROGRAM

In/Still               Curtis Bahn and Tomie Hahn
                      Tomie Hahn, conductor and sonic performer

Idle Swamp           Brad Carton
                      Seth Cluett, Scott Smallwood
                      and Pauline Oliveros

Sound Scatter        Pauline Oliveros, accordion and expanded instrument system
                      More Specific Gamelan Djembe Fusion
                      Perry Cook and Ge Wang
                      ChucK / Audicle Software Composition for 15 Percussive PLOrkists
                      and one Printer Controlled Conductor

                      — intermission —

A Guy Walked into a Modal Bar
                      Paul Lansky
                      featuring Chris Douthitt, Mason Williams
                      Mark Daly, and Ben Smolen

On the Floor         Scott Smallwood
                      PLahara
                      Dan Trueman with Zakir Hussain
                      and So Persussion
                      Zakir Hussain, tabla
                      So Persussion (Jason Treuting, Douglas Perkins, Adam Sliwinski, Lawson White), laptops
                      Dan Trueman, Hardanger fiddle
                      Scott Smallwood, conductor
PROGRAM NOTES

m/Still Curtis Bahn and Tomie Hahn
Connected, how do we continue?
Playful encounters of movement, sound, and
gaze instill a flow between us.
Still.

Ildo Swarn Brad Garon
When Dan Trueman approached me to write
a piece for the iStop Orchestra, I saw an
opportunity to accomplish two things at once
(oh, the productivity increase!). The first was
to have fun imagining what could be done with
this kind of ensemble. I chose as a model one
of my favorite listening experiences: sitting
on the back porch enjoying the symphony of
summer frogs and insects that inhabit central
New Jersey.

The second was to honor one of those
‘important people’ in my life. Paul Lansky
was my teacher during graduate studies at
Princeton in the 1980s, and he has been a
treasure mentor ever since. Two years ago Paul
celebrated his 60th birthday. Being the
astounding procrastinator that I am, it has
taken until now for me to produce something
to contribute to the festivities. To generate
the sounds in the piece, I am using a digital
synthesis technique called “LPC.” Paul
pioneered the musical use of this technique.
In dedicating Ildo Swarn to Paul, I also figured
it gave me free license to ramshackle his music
and steal ideas, especially from his landmark
piece Ildo Chatter – hence the name of my
piece. I hope you enjoy listening as much as
I did creating the music, and Happy [belated]
Birthday, Paul!

Sound Scatter Seth Chua
Scott Smallwood and Pauline Oliveira
In Sound Scatter, Pauline Oliveira performs
with her accordion through her system of
multiple echoes. These signals are sent
throughout the laptop orchestra, where
performers capture her sound and further
process the signals, grabbing pitches, pieces,
rhythms, and sculpting it into a mixture of icy
drones and sparkles.

More Specific Perry Cook and Ge Wang
Gamelon Djembe Fusion
This piece is an experiment in human
controlled, but machine synchronized
percussion ensemble performance. Various
percussive sounds are temporally positioned by
PLOrk members, and the piece gradually
transitions from tuned bell timbers to drums as
the texture and density grows. Actual
drums and bells complement the machine
controlled percussion sounds.

A Guy Walks into a Modal Bar Paul Lansky
A Guy Walks into a Modal Bar is a set of short
textural and procedural studies. (The Modal
Bar bit refers to the use of Perry Cook’s Modal
Bar physical model for some of the sounds).
As the time of this writing we are working on
four movements: Farben Fantasie is based on
a famous chord progression; Chris’ Chords
is based on a chord progression by Chris
Douthitt; and Slick Space Odyssey is sci-fi-
city. (We may or may not play all of these
movements on the concert). We are only
using five machines for this piece, because
we wouldn’t know what to do with ten more...

On the Floor Scott Smallwood
On the Floor is a piece whose sound is a side-
effect of the process of turning the ensemble
into a group of individual gamers. The first
in a series of pieces to explore gaming and
individual representations of similar sounds,
this piece recreates the soundscape of a casino.
Written entirely in ChucK, each instrument is
a virtual slot machine. Each player begins with
a certain number of credits, and simply plays
the game until he or she is out of money. The
program emulates the sound of a slot machine,
but after a threshold is reached, the sound
world changes, becoming more abstract. So, as
players begin to lose money, the soundscape
changes from being a specific place to being
a sonic abstraction of that space. Strategies
exist for staying in the game longer by betting
more or less credits. If most credits are bet
each round, the odds are slightly less, but the
payoff can be much more. The conductor has
the ability to monitor the group, and to affect
the odds of any specific player. In this way,
the conductor may extend or shorten the length
of the piece by keeping tabs on players who
are winning or losing too much.

Pilahara Dan Trueman
with Zakir Hussain and So Percussion
In North-Indian classical music, the lahara
is a tune that is repeated over and over again,
providing a time framework for percussionists
to perform within. The lahara is typically
played by a single melody instrument. In
Pilahara, the tune is introduced by such an
instrument (the Norwegian Hardanger fiddle)
and then taken over by the Laptop Orchestra.
PLOrk also at times assumes the traditional
role of the drone, a role that itself gets swept
up into the lahara. The percussion soloists,
rather than all playing “real” percussion
instruments, take the virtuosic playing of
Ustad Zakir Hussain into their laptops,
delaying, filtering and transposing his playing
in their own percussive manner. Pilahara is
an improvisational, open-form piece.

THE PRINCETON LAPTOP ORCHESTRA

co-founded and directed by Dan Trueman
and Perry Cook with Scott Smallwood and Ge Wang

Adam Hollander ’06
Alan Torney ’07
Alexander Fiorentino ’07
Ben Smolen ’07
Betsy Biggs ’07
Bryan Schwengel ’07
Cameron Brien ’07
Chas Ballew ’07
Perry Cook
Chris Douthitt ’06
Chris Tignor ’07
Claudia Carrera ’06
Dan Trueman
Dominique Van de Sompel ’06
Ge Wang ’08
John Fontes ’08
John Supko ’08
Mark Daly ’06
Mason Williams ’06
Michael Early ’06
Nathan Michel ’06
Oscar Bettison ’06
Perry Cook
Qinyu Xu ’06
Scott Elmgreen ’07
Scott Smallwood ’07
Seth Chua ’07
Spencer Salazar ’06
Yuhwon Lee ’08

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for Engineering and Applied Science, the
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About PLOrk:

MUSICAL INSTRUMENTS have long been on the cutting edge of technology, often spurring new research and development. At Princeton, we have been exploring ways in which the computer can be integrated into conventional music-making contexts (chamber ensembles, jam sessions, etc...) while also radically transforming those contexts. This has involved developing new speaker systems that have a more instrument-like presence, human-computer interfacing designs that involve performers physically as musical instruments do, and software to link the performer’s bodies to sound. In the past, we have explored these ideas with small groups of people (2-3), and in the Fall of 2005 we initiated the Princeton Laptop Orchestra to extend these ideas to larger groups (15), using the “orchestra” (in a very general sense) as a model.

The Princeton Laptop Orchestra (PLOrk) is a newly established ensemble of fifteen computer-based musical instruments. Each “instrument” consists of a laptop, a multi-channel hemispherical speaker, and a variety of “control” devices (keyboards, graphics tablets, sensors, etc...). The students who make up the ensemble act as performers, researchers, composers, and software developers. The challenges are many: what kinds of sounds can we create? how can we physically “control” these sounds? how do we compose with these sounds? There are also social questions with musical and technical ramifications: how do we organize a dozen players in this context? with a conductor? via a wireless network?

In this first year of PLOrk’s existence, composers and performers from Princeton and elsewhere have been addressing these questions through new pieces composed for this unprecedented ensemble. We have made extensive use of a new music programming language created by Princeton graduate student Ge Wang called ChucK, which allows the performers to develop new code in performance, as well as more established languages like Max/MSP and rtcmix (which itself has a Princeton heritage). PLOrk draws on some historical strengths of the university, including its renowned music composition program and engineering school. PLOrk also presents a new destination for the many incredibly talented musical students on campus, some of whom may be traditionally trained musicians, others for whom the laptop offers new opportunities to explore previously non-existent musical possibilities.

We are honored to have a number of guests working with PLOrk this evening, including Princeton graduates (GS) Brad Garten and Curtis Bahn and the wonderful performers Tomie Hahn, Pauline Oliveros and Zakir Hussain (who was a visiting fellow through the Council on the Humanities this past fall semester).

PLOrk is especially indebted to the members of its first freshman seminar, who suffered through many bugs and helped it take flight: Brian Zhao, Jason Yang, Ken Schwartz, Anna Wittstruck, Theo Beers, Janet Kim, Zach Marr, Michael Hammond, R.W. Enoch, Jason Pomerantz, Charlie Sneath, Brandon Lowden, Matt Rich, and William Round. Hopefully they will rejoin PLOrk in the future.

Upcoming Concerts:
May 2, 8pm: Chancellor Green Rotunda
May 6, 8pm: Dartmouth College
http://plo rk.cs.princeton.edu

THE ARTISTS

Zakir Hussain

A prodigy, Zakir Hussain was touring by the age of twelve, the gifted son of his great father, tabla legend Ustad Allakha. Zakir came to the United States in 1970, embarking on an international career which includes no fewer than 150 concert dates a year. He has composed and recorded many albums and soundtracks, and has received widespread recognition as a composer for his many ensembles and historic collaborations. Most recently, he has composed soundtracks for film and television, including his recent directorial debut, Little Buddha by Bernardo Bertolucci, for which Zakir composed, performed and acted as Indian music advisor and Vanaprastham, chosen to be screened at the Cannes Film Festival in May, 1999.

Zakir received the distinct honor of co-composing the opening music for the Summer Olympics in Atlanta, 1996, and was commissioned to compose music for San Francisco's premiere contemporary ballet company, Lines, and to compose an original work for the San Francisco Jazz Festival, both in 1998. He has received many grants and awards, including participation in the Meet the Composer programs funded by the Pew Memorial Trust.

In 1987, his first solo release, Making Music, was acclaimed as "one of the most inspired East-West fusion albums ever recorded." In 1998, he became the youngest percussionist ever to ever be awarded the title of "Padma Shri" by the Indian government, a title given to civilians of merit. In 1999, he was awarded the Indo-American Award for his outstanding cultural contribution to relations between the United States and India. In April, 1991, he was presented with the Sangeet Natak Akademi Award by the President of India, making him one of the youngest musicians to receive this recognition from India's governing cultural institute. Zakir is the recipient of the 1999 National Heritage Fellowship, the United States' most prestigious honor for a master in the traditional arts.

In 1992, Planet Drum, an album co-created and produced by Zakir and Mickey Hart, was awarded a Grammy for Best World Music Album, the Downbeat Critics Poll for Best World Music Artist, a 1993 Independent Music Best Seller Award for World Music Recording, Planet Drum, with Zakir as music director, toured nationally in 1996 and 1997. Zakir continues also to tour with the musicians from Shakti — John McLaughlin, Shankar and T.H. Vinayakram — in different collaborations and ensembles as well as lead various percussion ensembles of his own design. In Summer 1999, Shakti re-grouped for an international tour.

On January 26, 2002 Zakir Hussain was awarded the title of "Padma Bhushan" by the President of India, in recognition of his artistic excellence and the great contribution he has made in the field of music in India and abroad. 2002 saw the release of Merchant-Ivory's Mystic Masseur, and Rahul Bose's Everybody Says I'm Fine, both with music direction by Zakir. Also in 2002 Zakir's composition for the Silk Road Project was performed by Zakir with cellist YoYo Ma and other musicians as they accompanied the Mark Morris Dance Company in the piece Kolam.

In 1992, Zakir founded Moment! Records which features original collaborations in the field of contemporary world music, as
well as live concert performances by great masters of the classical music of India. The label presents Zakir's own world percussion ensemble, The Rhythm Experience, both North and South Indian classical recordings, Best of Shakti, and a Masters of Percussion series.

Pauline Oliveros

“Through Pauline Oliveros and Deep Listening I finally know what harmony is...it’s about the pleasure of making music.”

— John Cage 1989

Pauline Oliveros, composer, performer and humanitarian is an important pioneer in American Music. Acclaimed internationally, for four decades she has explored sound — forging new ground for herself and others. Through improvisation, electronic music, ritual, teaching and meditation she has created a body of work with such breadth of vision that it profoundly effects those who experience it and eludes many who try to write about it.

“On some level, music, sound consciousness and religion are all one, and she would seem to be very close to that level.”

— John Rockwell

Oliveros has been honored with awards, grants and concerts internationally. Whether performing at the John F. Kennedy Center in Washington D.C., in an underground cavern, or in the studios of West German Radio, Oliveros' commitment to interaction with the moment is unchanged. She can make the sound of a sweeping siren into another instrument of the ensemble. Through Deep Listening Pieces and earlier Sonic Meditations Oliveros introduced the concept of incorporating all environmental sounds into musical performance. To make a pleasurable experience of this requires focused concentration, skilled musicianship and strong improvisational skills, which are the hallmarks of Oliveros' form. In performance Oliveros uses an accordion which has been re-tuned in two different systems of her just intonation in addition to electronics to alter the sound of the accordion and to explore the individual characteristics of each room.

Pauline Oliveros has built a loyal following through her concerts, recordings, publications and musical compositions that she has written for soloists and ensembles in music, dance, theater and interarts companies. She has also provided leadership within the music community from her early years as the first Director of the Center for Contemporary Music (formerly the Tape Music Center at Mills), director of the Center for Music Experiment during her 14 year tenure as professor of music at the University of California at San Diego to acting in an advisory capacity for organizations such as The National Endowment for the Arts, The New York State Council for the Arts, and many private foundations. She now serves as Distinguished Research Professor of Music at Rensselaer Polytechnic Institute and is co-founder (with Perry Cook) and director of the Princeton Laptop Orchestra.

Perry Cook

Perry R. Cook attended the University of Missouri at Kansas City Conservatory of Music from 1973 to 1977, studying voice and electronic music. He worked as a sound engineer and designer from 1976-81, then returned to UMKC to study Electrical Engineering and complete a B.A. in music in 1985, and a B.S. in Electrical Engineering in 1986. He received a Masters and Ph.D. in Electrical Engineering from Stanford in 1990. He continued as Technical Director of the Stanford Center for Computer Research in Music and Acoustics, until joining the faculty of Princeton University in 1996, where he is now Associate Professor of Computer Science, with a joint appointment in Music. He has published over 120 technical/music papers, books, and book chapters, and presented lectures throughout the world on the acoustics of the voice and musical instrument simulation, human perception of sound, and interactive devices for expressive musical performance. Mr. Cook has performed as a vocal soloist and computer musician throughout the world, and has recorded Compact Discs on the Lyricon Early Music Series. He also can be heard on an interactive improvisation computer music compact disk on the Cycling 74 label with the group "Interface." He was the recipient of a 2003 Guggenheim Fellowship, to write a new book on the subject of technology and the voice.

Brad Garton

Brad Garton (b. 1957) is currently on the Music Faculty of Columbia University, where he serves as Director of the Computer Music Center (formerly the Columbia-Princeton Electronic Music Center). He originally studied engineering/biology at Purdue University, ultimately receiving a B.S. in Pharmacology. At the same time, he co-founded (with Richard K. Thomas) Zounds Productions, a multi-track recording facility specializing in sound design work for live theater. He entered the graduate program in Speech and Hearing Science at Purdue, doing psychoacoustic research under the supervision of Edward Burns and Larry Feth.

Soon his professional sound activities became time-consuming (and lucrative!) enough that he left graduate school, picking up...
up a grant from the Indiana Association of Cities and Towns to work with local governments in developing noise control programs. After several years, Carton decided to "get serious" about his music again, and entered the graduate program in music composition at Princeton University. He received his Ph.D. from Princeton in 1989, studying primarily with Paul Lansky and Jim Randall. His dissertation was the development of a natural language/learning system for doing loosely-described signal processing tasks, along with a series of compositions realized using the system.

His current work includes focused research on the modeling and enhancement of human musical performance on various music studios throughout the world, and is an active contributor to the greater community of computer musicians/researchers, formerly serving on the Board of Directors of the International Computer Music Association as editor (with Robert Rowe) of the ICMA newsletter and artistic director/co-organizer of several high-profile festivals and conferences of new computer music.

His current work includes focused research on the modeling and enhancement of acoustic spaces as well as the modeling of human musical performance on various virtual "instruments". He is also the primary developer (with Dave Topper) of RTcmix, a real-time music synthesis/signal-processing language. His most recent work includes writing "Looching" apps: looch (JSyn) and mlooch (Max/MSP). The point of all this work is to continue to make fun new pieces of music, which he does every day.

<http://music.columbia.edu/~brad>

Ge Wang
Ge Wang received his B.S. in computer science from Duke University in 2000 and is currently a Ph.D. candidate studying with Perry Cook at Princeton University, in the Department of Computer Science. Ge's research interests include computer music languages, interactive multimedia systems for sound synthesis/analysis, composition and performance, as well as the analysis and visualization of sound, and methodologies for education in computer science/computer music and new media. Ge and Perry, in collaboration with other researchers and developers, created the ChucK programming language and the Audicle, a real-time graphical programming environment for ChucK. The ChucK/Audicle system supports strongly-timed, concurrent, and on-the-fly programming of sound and music. This open-source project is actively in development and is one of the primary teaching/performance tools in the Princeton Laptop Orchestra.

Scott Smallwood
Scott Smallwood was born in Dallas, Texas, and grew up at 10,000 feet in elevation in the Colorado Rockies. Currently based in New Jersey, Smallwood’s work exists in the world of real and abstracted sound textures based on a practice of listening, improvisation, and phonography. Ranging between sonic photographs, abstracted studio pieces, improvisations, and composed structures, his work attempts to deal with the puzzle of pulling signal out of noise. His work has been released on Autumn Records, Deep Listening, Teleav, Simple Logic, Static Caravan, and Webbed Hand Records, and has been presented nationally and internationally in festivals, conferences, galleries, clubs, coffee shops, swimming pools, rooftops, and dive bars. He is currently a doctoral fellow in the music department of Princeton University.

Curtis Bahn
Curtis Bahn is a composer and improviser who specializes in live interactive electronic performance. Currently, he is Associate Professor of Computer Music Composition/Performance, and Director of the Integrated Electronic Arts (IERA) Studios at Rensselaer Polytechnic Institute in Troy New York. He received his Ph.D. in music composition from Princeton University in 1998. From 1986-1993 he was the Technical Director of the Center for Computer Music of the City University of New York where he worked and studied with composer Charles Dodge. He has taught at Columbia University, Brown, NYU, Princeton, and CUNY. His music has been presented internationally at venues including Lincoln Center, Sadler’s Wells (London), Palais Garnier (Paris), Grand Theatre de la Ville (Luxembourg), as well as numerous festivals and academic conferences.

Tomie Hahn
Tomie Hahn is a performer of shakuhachi (Japanese bamboo flute), and of nihon buyo (Japanese traditional dance) holding the professional stage name Samie Tachibana. She is Associate Professor of performance ethnology at Rensselaer Polytechnic Institute. Tomie’s research spans a wide range of topics including: Japanese traditional performing arts, Monster Truck rallies, issues of identity and creative expression of multiracial individuals, and relationships of technology and culture; interactive dance/movement performance; and gestural control and extended human/computer interface in the performing arts. Her book, Sensational Knowledge: Embodiment through Japanese dance is forthcoming from Wesleyan University Press. Tomie and Curtis have collaborated for over twenty years. <http://www.arts.rpi.edu/tomie>

Paul Lansky
For the past thirty years most of Paul Lansky’s work has involved the use of computers in the areas of music synthesis and analysis. His most recent CD, Alphabet Book, is a kind of meditation on the swirl of letters and numbers that surround us daily. Many of his works involve the use of speech and the reprocessing of the sounds of everyday life. To this end he regards the computer not so much as a powerful synthesis engine but more as a way to peer into the meaning and inner voices of world-sound. In 2000 he was the subject of a documentary film made for European television, My Cinema for the Ears, now available in DVD. A number of dance companies, including Bill T. Jones/Arnie Zane and Eliot Feld have used his works. Although the majority of his works are electronic, he increasingly returns to work for instruments. The piece tonight marks Paul Lansky’s return to silicon after a few years working with carbon. For more information (and audio) see <www.paulansky.org> and <www.bridgerecords.com>.