

# EMPAC SUMMER WORKSHOPS



photo © Peter Aaron/ESTO



photo: Natt Phenjati

- **DATES:** June 5–10, 2011
- **DEADLINE FOR APPLICATION:** Applications will be reviewed on a continual basis until all available slots for the workshop are filled.
- Application forms and information on how to upload work samples are available at <http://empac.rpi.edu/workshops/2011/multichannel/>.
- **FEE:** \$500 for active participants, 50% payable upon acceptance; no fee for auditors
- **HOUSING:** Campus housing (single dorm rooms) are available at a cost of \$60 per night.

**CONTACT FOR INQUIRIES AND INFORMATION:**

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[WWW.EMPAC.RPI.EDU](http://WWW.EMPAC.RPI.EDU)



**JUNE 5–10, 2011**

## Composing for Large Scale Multi-Channel Loudspeaker Environments

**Instructor: Hans Tutschku, Harvard University**

This six-day workshop will take place in the EMPAC studios, and will utilize multi-channel loudspeaker configurations set up specifically for the workshop. A powerful 24-channel system with three rings of eight speakers each, creating a “sound dome,” will be installed in the large studio (3,500 sq. ft. / 320 m<sup>2</sup> and 30 ft. / 9 m height). Eight-channel and 16-channel systems also will be set up.

Composing multi-channel electroacoustic pieces requires more than technical infrastructure; it also requires new approaches of compositional thinking and the use of sound material. Hans Tutschku has composed for such environments extensively and has taught the compositional and technical aspects of this work internationally.

This workshop will provide participants access to the multi-channel setups for use in their own practical work. In lectures and demonstrations, working methods will be discussed and existing compositions will be played and analyzed.

There will be two 90-minute lectures and two 90-minute presentations by participants each day. Throughout the workshop, all participants will have the chance to present their music and compositional ideas to the group. Late afternoons and evenings will be reserved for individual practical work. The final piece, or work in progress, will be presented during a concert at the end of the workshop.

This workshop will be limited to 10 active participants. It is also open to auditors, who may sit in on all lectures and presentations.

To apply for active participation, composers are invited to send three examples of electroacoustic compositions (they do not need to be multi-channel pieces), as well as a CV and a short statement about their interest in multi-channel composition. They should also describe what project they would like to work on during the workshop and their technical needs. (Every participant is required to bring a laptop for his/her practical work; interfacing the laptop to the multi-channel systems may be supported by EMPAC.)

Hans Tutschku is the Fanny P. Mason Professor of Music in the Harvard Department of Music and director of the Harvard University Studio for Electroacoustic Composition (HUSEAC).

**CURTIS R. PRIEM EXPERIMENTAL MEDIA AND PERFORMING ARTS CENTER  
RENSSELAER POLYTECHNIC INSTITUTE | TROY, NY 12180**

# EMPAC

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photo: Victoria Kereszi

- **DATES:** July 18–22, 2011
- **DEADLINE FOR APPLICATION:** Applications will be reviewed on a continual basis until all available slots for the workshop are filled.
- Application forms and information on how to upload work samples are available at <http://empac.rpi.edu/workshops/2011/modeling/>.
- **FEE:** \$500 (stipends for Rensselaer students are available) 50% payable upon acceptance
- **HOUSING:** Campus housing (single dorm rooms) are available at a cost of \$60 per night.

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**JULY 18–22, 2011**

## Physical Modeling for Digital Audio Workstation Plug-ins

**Instructor: Dave Amels, New York**

This five-day workshop provides a hands-on introduction on the physical modeling of analog audio circuits.

The workshop will provide participants with a broader understanding of the techniques used to produce viable and marketable modeling plug-ins through daily lectures, demonstrations, and workgroups. Participants will reverse engineer and digitally model the Shure Level-Loc limiter/compressor with a Shure SM57 microphone attached.

The workshop will start with an overview and examples of how to model physical audio systems. The modeling process will involve separating the system into functional pieces and determining which pieces are already well modeled, and which are still a black box.

Preexisting equations written for the well-modeled pieces will be investigated and selected. Black box systems will be further reduced into smaller pieces if permitted. Equations—either available or developed through further testing—will be generated for these smaller black box subsystems, which will then be coupled to form a larger model supposition. All subsystems will then be reassembled as an equation that represents the overall Level-Loc model.

Testing of the model against the real physical systems (hardware) will be conducted to determine errors and incorrect assumptions. Finally, the class will implement the model in an SDK (software development kit) for the target platform, which for the purposes of the workshop will be VST (virtual studio technology).

The workshop will be daily and last eight hours per day. Lunch will be provided.

The workshop will be limited to eight active participants.

To apply for participation, applicants are invited to submit a CV and a short statement about their interest in modeling plug-ins. All applicants will be expected to exhibit an ability to code in C++, read electronic schematics, and possess college level mathematics both calculus and algebra. Participants are required to bring their own laptop.