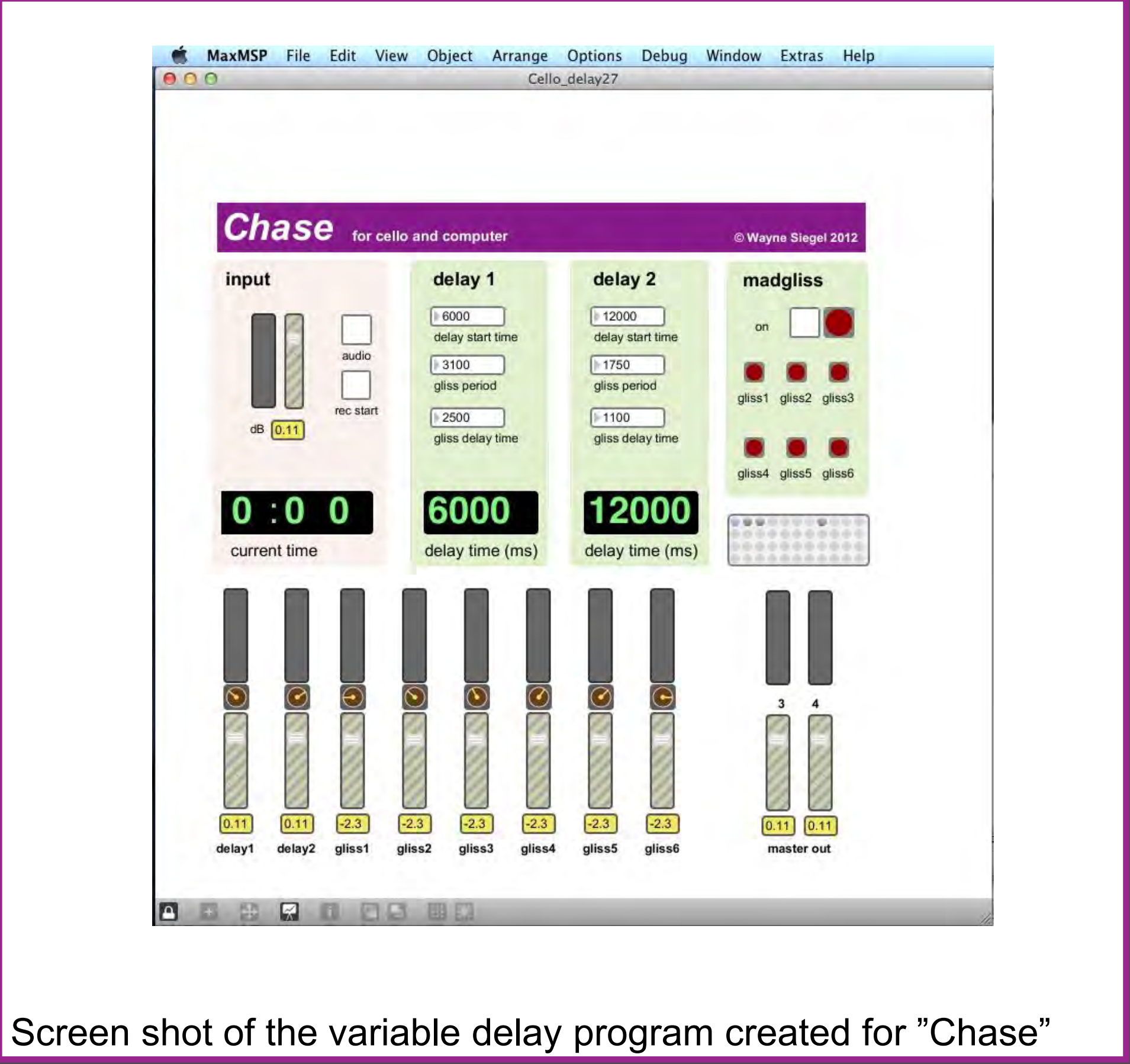


# Studies for Cello and Computer

## Professors Wayne Siegel and Henrik Brendstrup

This project is a collaboration between composer Wayne Siegel and cellist Henrik Brendstrup, both professors at the Royal Academy of Music, Aarhus. The composer and the cellist are collaborating in developing a new composition for cello and computer with elements of interaction between the performer and the computer. The computer offers numerous possibilities for intuitive interaction with a musician in a live performance situation. *Studies for Cello and Computer* is a work in progress consisting of three studies. Custom software was developed by the composer in the Max/MSP programming environment for each of the three studies: *Chase*, *Dive* and *Crash*.



Screen shot of the variable delay program created for "Chase"

In *Crash* various percussive sounds produced by the cello are recorded and transformed to accompany the soloist in a percussive movement with ostinati and quick riffs.

In *Dive* a digital signal processing technique called convolution is used to morph the sound of the cello with recordings of splashing water, ocean waves and bubbles. Each sound the cellist produces is instantly transformed into a kind of stretched water-cello. The movement is a slow, ambient drone with embellished melodies played by the cello.

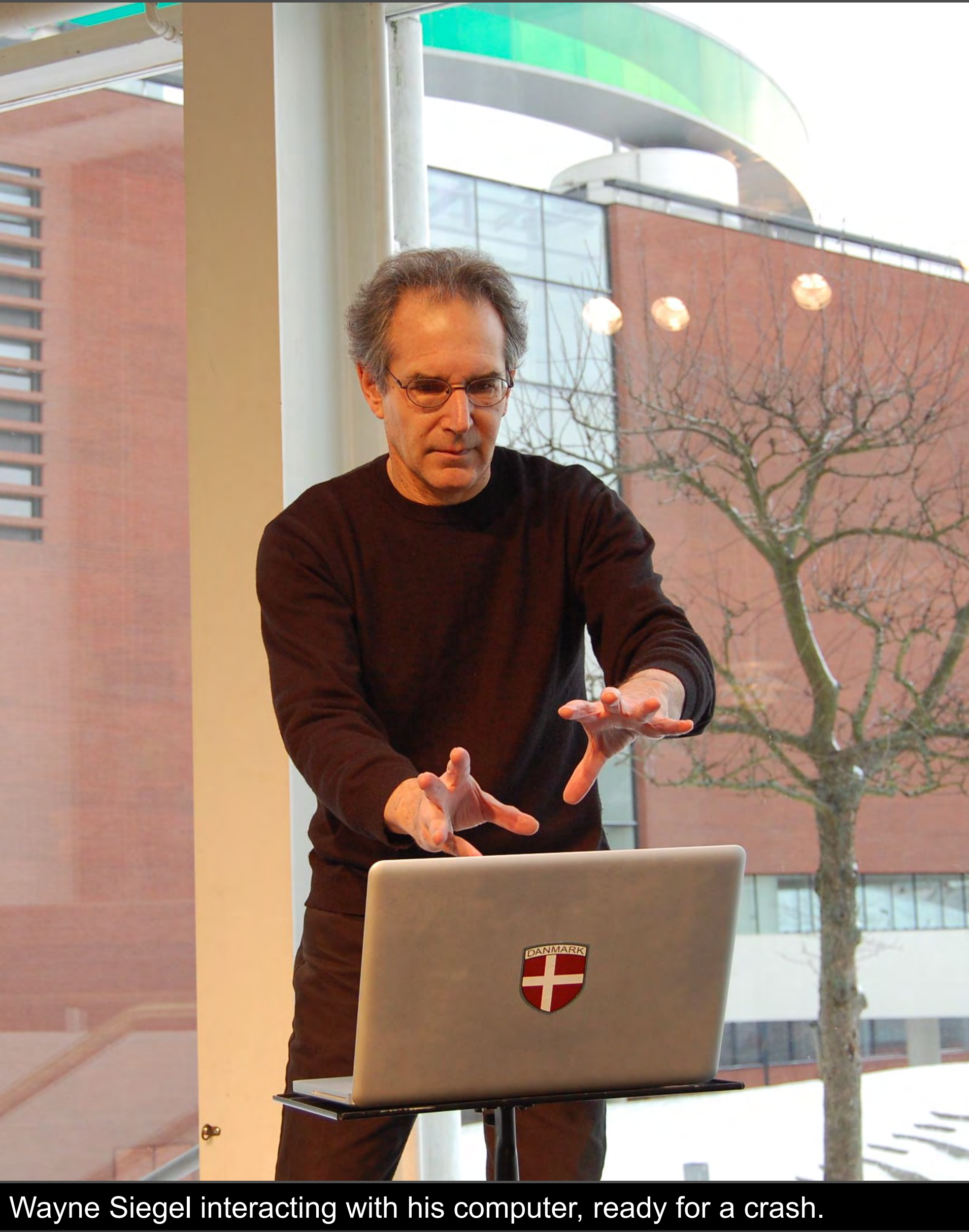
Chase  
for cello and computer  
Wayne Siegel, 2013

The image shows the first page of a musical score for "Chase" by Wayne Siegel. The score is written for cello and computer. It features a series of musical staves with notes and rests, indicating a sequence of sounds and delays. The tempo is marked as 132, 136, 140, 144, 148, and 152. The score is titled "Chase" and "for cello and computer" by Wayne Siegel, 2013.

First page of Wayne Siegel's "Studies for Cello and Computer"

In *Chase*, the cellist plays a melody and the computer follows with one delay starting 6 seconds after the cellist and another delay starting 12 seconds after the cellist, creating a canon with the melody played by the cellist. The computer occasionally speeds up, creating a slight glissando before returning to the normal speed. Gradually, the delays become shorter and shorter as if chasing the cellist. The cellist plays faster and faster in an attempt to escape. But finally the computer catches up with the cellist, unleashing a fury of fast-forwarded copies of what the cellist is playing in a hectic finale.

**Wayne Siegel** has written music in many genres ranging from electronic music to orchestral works, from chamber music to a full-length science fiction opera. Leading international artists, including the Kronos Quartet, Singcircle, Safri Duo and Harry Sparnaay, have commissioned works from him. His music has been performed widely throughout Europe, the Americas and Japan. Many of his works fall between genres, combining diverse cultural elements and compositional techniques, encompassing influences from folk music, rock and minimalism. He often uses computers with live musicians, and he has explored the possibilities of interactive sound installations. In 1986 Siegel became director of Denmark's national electronic music center, DIEM, and in 2003 he was appointed Professor of Electronic Music at the Royal Academy of Music in Aarhus.



Wayne Siegel interacting with his computer, ready for a crash.



Henrik Brendstrup at the sea, ready for a dive.

**Henrik Brendstrup** is one of Denmark's most prominent and versatile musicians. He studied cello in Copenhagen with Erling Bløndal Bengtsson and in London with William Pleeth and Ralph Kirshbaum. Early in his career he won a position in the Royal Danish Orchestra, but left to join the Chamber Orchestra of Europe, with which he has toured extensively worldwide. As a soloist and chamber player he has made appearances throughout Europe and he is a frequent guest at leading international chamber music festivals. An enthusiastic interpreter of new music, Henrik Brendstrup has premiered numerous works by contemporary Danish composers including Anders Nordentoft and Poul Ruders. He is a member of The Danish String Quartet and the Gefion Trio. He has been active as a teacher, first at the Royal Academy of Music in Copenhagen and currently as professor of cello at the Royal Academy of Music in Aarhus/Aalborg.