

## **Cort Lippe Program Notes**

*Duo for Tamtam and Computer* (2019) was commissioned by and written for Douglas Nottingham, and funded by the Maricopa Center for Learning and Instruction for the final performance of the *Drums Along the Pacific for the New Millennium Project*.

The computer part was created at the Hiller Computer Music Studios of the University at Buffalo, New York, using the software Max/MSP. The digital synthesis algorithms focus on a variety of FFT-based techniques, including analysis/resynthesis, filtering, reordering, delay, feedback, and spatialization all controlled by LFOs, along with various types of synthesis, sample playback, and other time-domain techniques. Technically, the computer tracks parameters of the performance using Miller Puckette's *sigmund~* and *bonk~* objects, which analyze the incoming tamtam signal and give information as to when the tamtam is struck, how loud it is struck, and the timbre of each strike. All this information, from larger scale rhythmic and phrase tracking of sounds and attacks, down to micro-level frequency band information, is used to continuously influence and manipulate the computer sound output by directly affecting digital synthesis and compositional algorithms in real-time, giving the performer an active role in shaping the computer part. The intent is to create a certain degree of intimacy and interactivity between the performer and the computer, in which the performer has the potential to influence the computer output based on aspects of the musical expressivity of his/her interpretation of the score. The instrument/computer relationship moves on a continuum between the poles of an extended solo and a duo. Musically, the computer part is at times not separate from the tamtam part, and serves to amplify the tamtam in multiple dimensions and directions; while at the other extreme of the continuum, the computer part has its own independent musical voice. These solo/duo relationships exist simultaneously; yet have a certain level of musical and technical ambiguity. Much like chamber music playing, in which individual expressivity is sometimes meant to contribute to the whole while at other times has a fundamental individual influence on the entire ensemble, these musical relationships between the performer and computer are integral to the musical results. This piece is dedicated to Larry Austin, who passed away on December 30, 2018.