



## IN MEMORIAM

David L. Wessel  
Professor of Music  
UC Berkeley  
1942 — 2014

Scholar, inventor, composer, percussionist, improviser, mentor, leader, and friend, David L. Wessel passed away unexpectedly on Oct. 13, 2014, in Berkeley, ending a creative life of immense influence. Professor Wessel was an innovative researcher, teacher and performer; his work had a major impact on the fields of both music psychology and computer music. His early research and publishing on the musical role of psychoacoustics – a branch of science that studies psychological and physiological responses associated with sound – laid the foundations for much of his career and was part of his path-breaking accomplishments. He applied his training in psychoacoustics to pioneering work on the perception of musical timbre and worked extensively on questions of human-computer interaction for musical improvisation.

David Wessel was born October 6, 1942, in Belleville, Illinois. After graduating in 1964 with a B.S. in mathematical statistics from the University of Illinois, Wessel pursued graduate work at Stanford University, culminating in a PhD in Mathematical and Theoretical Psychology in 1972. Wessel first taught at San Francisco State University before moving to Michigan State University in 1973. While at Michigan State he began working directly on music perception and cognition, focusing on the application of psychoacoustics to the perception of musical timbre(1). He also organized the inaugural International Computer Music Conference at Michigan State in 1974.

Wessel's work in the 1970s on the compositional control of timbre, or musical tone color/ quality, inspired the creation of some of the first computer software for analyzing, understanding and using musical material. In 1976, at the invitation of Pierre Boulez, the French composer and conductor, he moved to Paris to work as a researcher at the then nascent Institut de Recherche et Coordination Acoustic/ Musique (IRCAM). In 1979 he was made head of IRCAM's Pedagogy Unit and linked the science and technology side of the institute to the artistic side. In the mid- eighties he started a new unit in IRCAM dedicated to developing real- time music software for personal computers. At the time Wessel taught the first computer music class at the Paris Conservatory.

While at IRCAM, Wessel continued his research into timbre, with a particular focus on the application of multidimensional scaling to produce low-dimensional representations of timbre that could be used for synthesis control. Wessel was also actively engaged in promoting the use of personal computers for real-time computer music. He described what came to be known as the "Wessel Illusion," a phenomenon in which timbre determines the way a listener groups the musical notes in a melody. In recognition of his work at IRCAM, Wessel was made a Chevalier de l'Ordre des Arts et des Lettres by the French Minister of Culture.

In 1988, Wessel moved to the Department of Music at the University of California, Berkeley, and helped establish the Center for New Music and Audio Technologies (CNMAT), serving as co-director until his

death. Wessel developed and taught courses on music perception/ cognition and musical applications of computers and related technologies.

He was also affiliated with the Cognition, Brain, & Behavior area of the Department of Psychology and collaborated with people in the Department of Statistics and the Department of Electrical Engineering and Computer Science, where he was a member of the Parallel Computing Laboratory (ParLab) and TerraSwarm Research Center.

At UC Berkeley, Wessel continued to merge art and science in both his research and creative output. His published papers from this time primarily address issues related to musical improvisation with computers, with a particular focus on the development of gestural controllers<sup>(2,3)</sup> and the development of Open Sound Control (OSC)<sup>4</sup>, a robust communication protocol for digital instruments. He chaired the biennial meeting of the Society for Music Perception and Cognition, held at Berkeley, in 1995.

Colleagues noted that Wessel also had an extensive career as a performing musician in free-form improvisational works, performing on his custom-designed controller/ computer system alongside accomplished instrumentalists from many musical genres. As an improviser, Wessel performed both nationally and internationally with collaborators such as Roscoe Mitchell, Steve Coleman, Ushio Torikai, Thomas Buckner, Vinko Globokar, Frances-Marie Uitti, Jin Hi Kim, Shafqat Ali Khan, and Laetitia Sonami. Wessel also forged industry connections, such as with Meyer Sound Laboratories and Starkey Hearing Technologies. He sat on numerous advisory boards, including IRCAM, the Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT) and the Beam Foundation and was invited to give numerous talks, including recent keynotes at the 12<sup>th</sup> International Conference on New Interfaces for Musical Expression in 2012 at Ann Arbor, MI, and the Re-New Digital Arts Festival in Copenhagen, in 2013.

While at CNMAT, Wessel continued research on topics such as musical applications of machine learning and neural networks, the design and use of new musical instruments, novel approaches to analysis and synthesis of musical material, and communication protocols for electronic musical devices. He integrated his work with mentoring of UC Berkeley students from departments including music, computer science, engineering, statistics and psychology.

“He was a genius at merging art and science, play and rigor, life and ideas,” recalled Edward A. Lee, Robert S. Pepper Distinguished Professor of Electrical Engineering and Computer Science at UC Berkeley.

“David conducted pioneering research in music perception, audio signal processing, and computer music, and he mentored dozens of students and postdocs. He had a clear head, a tremendous sense of humor, and a big heart,” said Lee.

Edmund Campion, co-director of CNMAT and a UC Berkeley professor of music and composition, said that Wessel “searched at the boundaries of music, insisting that the results inform our understanding of music while helping create music and inspire musical things.”

“His impact at Berkeley was enormous. As the first director of CNMAT, David was responsible for bringing music research with computers and technology to the university for the first time,” said Cindy Cox, chair of UC Berkeley’s Music Department and a professor of music and composition.

“Before he came,” Cox added, “we had no faculty, resources or facilities devoted to computer music or research. Under his leadership, that area has grown enormously to impact an interdisciplinary community of scholars, researchers, composers, performers, and students.”

Wessel, a resident of El Cerrito, Calif., is survived by his brother, Ralph Wessel of Oakland, CA., and sons Robin Wessel of Portland, OR., and Scottie Wessel of East Lansing, Michigan., and his wife, Fee Wessel, also of East Lansing.

Richard Andrews  
Kathleen Maclay  
Johanna Devaney

- 1 Wessel, D. (1973). Psychoacoustics and music: A report from Michigan State University. *PAGE: Bulletin of the Computer Arts Society*, 30, 1–2
- 2 Momeni, A, & Wessel, D. (2003). Characterizing and controlling musical material intuitively with geometric models. In F. Thibault (Ed.), *Proceedings of New Interfaces for Musical Expression*. (pp. 54– 62). Montreal, QC.
- 3 Wessel, D. (1991). Improvisation with highly interactive real-time performance systems. In B. Alphonse & B. Pennycook (Eds.), *Proceedings of International Computer Music Conference*. (pp. 344– 347). Montreal, QC.
- 4 Wessel, D., & Wright, M. (2002). Problems and prospects for intimate musical control of computers. *Computer Music Journal*, 26 (3), 11-22.