



ENGINEER, MUSICIAN, EDUCATOR

Assistant Professor of Bioengineering **George D. Stetten** has built deep-ocean computers, designed radio telemetric eggs, and invented an ultrasound system called the "sonic flashlight." What's next? *Awake at the Wheel*, a CD of 10 original songs recently released by Stetten (available at www.stetten.com). He performs all the instrumental parts and sings with backup from his wife and daughters on recordings produced in his home studio. He even did the artwork for the CD cover. With a musical background in piano and guitar, he began writing his own songs as an engineering student at Harvard. He spent a year in a master's program at New England Conservatory and worked at the Massachusetts Institute of Technology (MIT) Computer Music Studio, now part of the MIT Media Lab. Stetten feels music is a wonderful means to learn electronics, thereby giving birth to a new course in bioengineering. Bioengineering 2410, or as Stetten refers to it "bio-gizmology and gadgeteering," allows students to design and build their own electronic musical instrument. "If you think about it, electronic music is one of the oldest forms of bioengineering," says Stetten. "It involves people, the muscles to produce the sound, and the ears to hear it." He is very proud that the course earned 4.75 out of a possible 5.00 in student evaluations last semester. Students use a laboratory housed in the basement of Benedum Hall that has workstations to accommodate 10, including oscilloscopes, wave-form generators, power supplies, etc. Each student is given prototype boards and parts. A few of Stetten's favorite projects to evolve from this course include the Grimace Guitar, by student **Galen Watchman**, which links an electromyogram of the face muscles to the tone of an electric guitar, and the Balloon Bassoon, by student **Andrew Rench**, which produces acoustic feedback in a long balloon partially filled with water.