



Chemists, like people in all professions, have many talents. Some chemists have made important contributions to the world of music as well as to the science of chemistry.

Every spring, when thousands of students march down the aisle at graduation to the sound of *Pomp and Circumstance*, they have an amateur chemist to thank for the music. Sir Edward William Elgar was born in England in 1857. He wrote the *Pomp and Circumstance* march along with several other compositions while enjoying chemistry as a hobby. He seems to have been more of a composer than a chemist, however, since he broke an important rule of working in the laboratory. One day while he was carrying out an activity in his lab, he had an idea about a composition. He promptly forgot about the experiment and, as the story goes, just as he was writing the horn and trumpet sections, a sudden and unexpected crash shook the room. Sir Edward Elgar learned the important lesson that leaving an experiment unattended can result in a potential disaster.

During the 19th century, a very famous composer earned a degree in chemistry as well. The composer was Alexander Borodin, who was born in Russia in 1833 and died in 1887. Like many composers at the time, he did not make his primary living composing. He was a professor of chemistry at the St. Petersburg Military Academy in Russia where he taught and did research. Borodin wrote many compositions including three symphonies and the music for the opera *Prince Igor*. Some of this music was used in the Broadway show *Kismet*. The best example of his orchestral music is *In the Steppes of Central Asia*. Borodin also composed music for the piano and strings.

In the 20th century, a chemist was the first person to compose music with a computer. Lejaren Hiller studied chemistry at Princeton University, NJ, where he received his Ph.D. in 1947. He worked first at DuPont, a chemical research company, and later moved to the University of Illinois where his work with computers led him to experiment with music. He created *ILLIAC Suite* for string quartet in 1957. Hiller was the founding director of the Experimental Music Studio at the University of Illinois in 1958. Not all of his musical works make use of computers. He wrote many pieces for piano and strings and was an expert in the form of music known as sonata. Hiller died in 1994 at the age of 70.

