



EMSL Spotlight

From high school through Ph.D., Shawley enjoys decade at EMSL

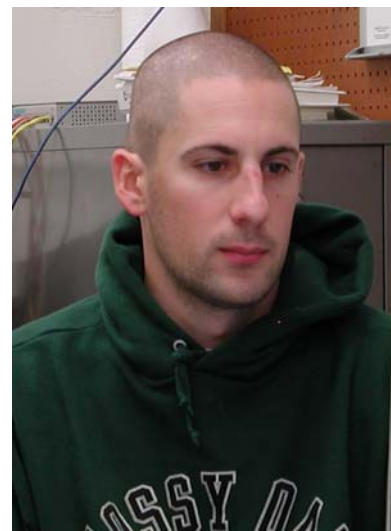
Every Friday during his senior year of high school, Charles Shawley drove two hours through the rolling wheat fields outside Pomeroy, Washington, to the high-tech clean room in the Department of Energy's EMSL to study physics. This journey began when he completed every science class Pomeroy High School offered by the end of his junior year. He was bored. So, his science teacher, Diane Prince, contacted Glen Dunham, an EMSL researcher known for his work in microfabrication, who had mentored her during a summer internship for high school teachers at EMSL.

Dunham was intrigued and, after interviewing the 17-year-old Shawley, brought him on to work in EMSL's clean room, where research that is highly sensitive to light and airborne contamination is performed. Shawley's first project entailed measuring the thickness of cured military-grade optical adhesives with an optical profilometer. Other projects with PNNL followed as Shawley graduated from high school and received bachelor's degrees in chemistry and physics from Whitworth College, now Whitworth University, in Spokane, Washington.

Today, he is near completion of his doctorate in materials science at Washington State University. As part of his doctoral research, Shawley is conducting work at EMSL on the low-temperature photoluminescence of laser and scintillator crystals. His ultimate goal is to identify the primary defects that limit the performance of these materials, particularly in Nd:YAG, Nd:YVO₄, and Ce:YAG. With the assistance of Zheming Wang, Shawley is exciting these defects with a frequency-quadrupled Nd:YAG pulsed laser and measuring the resultant photoluminescence with a spectrometer.

As he approaches the end of his doctoral degree and a decade of research in the scientific field, Shawley appreciates the opportunities he has been afforded by the unique collaborative environment of EMSL. "The researchers and staff at EMSL have been tremendously helpful and were instrumental in my decision to pursue science as a career," he said. "I cannot thank EMSL enough for the opportunity."

For more information, contact EMSL Communications Manager Mary Ann Showalter (509-371-6017).



Charles Shawley