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Dudley Essay

What really struck me during the interview was Dudley's ability to inspire multi-disciplinary ventures into science. This institution helped William Radigan, our interviewee, to innovate in a plethora of unrelated scientific fields. Science is intrinsically interconnected, you can not separate where one field begins and another ends. At most institutions science is categorized and organized into definite sub-units. Biology could not evolve into astronomy, astronomy could not evolve into nanotechnology, and nanotechnology could not evolve into computer programming. This interdisciplinary study that inspired at Dudley really is what makes this institution great.

Our interviewee, William Radigan, transcended his original field of study to get into a completely different field. When he first started out he was a biology major, studying cellular chemistry. If it was not for Dudley he would have continued to study in this field for the rest of his life. But when he got access to Dudley's electron microscope, he started looking into different areas of study. His professor just wanted to use his well-connected student to get some electron microscope time. Mr. Radigan started doing experiments in astronomy instead. Instead of looking for microbes on slides, Mr. Radigan started looking for imperfections on highly polished metal surfaces. His research was instrumental in the discovery and analysis of micrometeorites at high altitudes in the earth's atmosphere. After his work at Dudley he went into the flow of films. Mr. Radigan helped implement the microchip during the microchip revolution of the later part of the 20th Century. His work with microchips helped him discover programmings which lead

him to programming. Mr. Radigan's interest in computer programming and he ended up creating Oracle databases.

The interdisciplinary work and the basic research are the truly amazing things that go on at the Dudley Observatory. Modern Science is completely based off of basic research of the past. Computers, Cell Phones, and MRI machines all use ideas that were discovered through basic research. Theoretical Basic Research by Fermi, Einstein, Newton, and Dalton all helped the inventors come to the understanding they need to make the technology that they invented. Where would we be without the laser, plastic components, and light bulb? The inventions of these inventors then served to serve as the basic research of other inventors who used the knowledge of their predecessors. These inventions that were originally meant for technological applications were applied to different fields. The laser could be used in architecture, the plastics could be adapted for biological research, and the light bulb could be used inside a computer. These new inventions would serve as the basis for subsequent generations of new technology. All of this innovation started with one piece of basic research. Mr. Radigan's work helped bring a new age of micro-processors and computer programs. Starting in the biological field, he went from biology into the field of Computer Science. Ironically enough now with the Roche-454 and Applied Biosystems SOLiD sequencer, microchips can now be used to advance the study of biology. As an aspiring researcher in the field of Biology, I can appreciate the results of the work done by William Radigan and the Dudley Observatory. The Basic Research done at this observatory inspired countless thinkers to come with technology and ideas. This technology will be used by my generation to advance humankind one step ahead.