

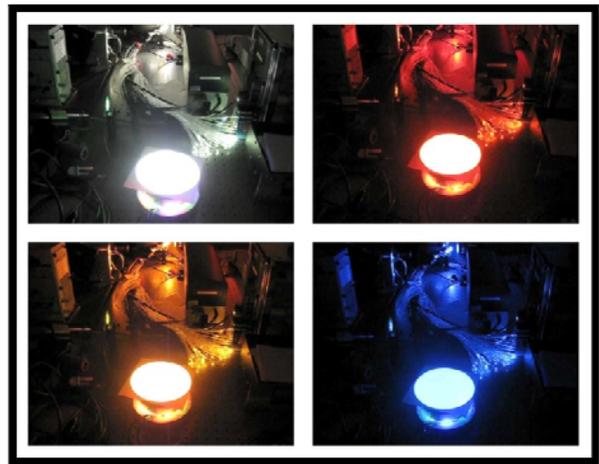


PRODUCT INNOVATION GRANTS

DREXEL UNIVERSITY: Health through Light: Daylight-Matching LED Luminaires

Impact: Natural daylight is a known influence on the body's biological rhythms, affecting overall wellbeing. Specifically, research shows daylight can reduce symptoms of dementia associated with Alzheimer's disease. Indoor environments, such as those in hospitals and other commercial buildings, can harness the benefits of light therapy by using light-emitting diode (LED) technology to mimic daylight. LED lighting has the dual benefit of providing interiors with a range of dimmable light spectrums as well as utilizing less energy than traditional incandescent options.

Project Overview: This project will pursue the production of an automatic diurnal/seasonal daylight-matching LED luminaire prototype for installation and evaluation in an actual clinical setting. The proposed final product will be easily retrofitted and will use locally produced sustainable materials. Collaboration with leading industry officials at Appalachian Lighting Systems and BAU Architecture will provide consulting and fabricated prototypes using LEDs that span the visible spectrum. The team at Drexel University will address the energy efficiency and life cycle assessment of the product with the use of tools such as SimaPro. The team will evaluate the efficacy of the luminaires in a clinical application through a strong partnership with St. Francis Country House.



GBA Product Innovation Grant Amount: \$20,000

Leadership Team: Drexel University is a distinguished academic institution in Philadelphia, Pennsylvania. The research team is led by Eugenia Victoria Ellis, an *Associate Professor and Co-Director of DECI, Department of Civil, Environmental, and Architectural Engineering, Drexel University*. Other Drexel team members include Michael Glaser, Donald McEachron, and Elizabeth Gonzalez. Drexel's industry partners include James Wassel, CEO, *Appalachian Lighting Systems*; Daniel Mollicone, CEO, *Pulsar Informatics, Inc*; David Kratzer, *Principal, BAU Architecture*; and John Chapman, *Administrator, St. Francis Country House*.

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