

RUTGERS

New Jersey Agricultural Experiment Station

■ EcoComplex



Rutgers EcoComplex
Clean Energy Center
2016 – Summer Newsletter



Dr. Serpil Guran
Director

Innovative Start-Ups Will Shape Tomorrow

The EcoComplex serves as a business incubator for start-up companies that work in clean energy, environmental, life science and controlled environment agriculture. One of our most important goals is to support the start-ups to get through the “valley of death” safely, where funding and technical support may not be available elsewhere. Most start-ups need technical, financial and business development support. Effective business incubators, like the EcoComplex, can provide much needed life lines to help them overcome these obstacles while advancing their research and ideas into innovations. Also, student initiated research can be converted into successful start-up companies, especially at University based business incubators. We believe that by creating a nurturing environment for the student led start-ups, we will help many ideas become successful solutions.

In this issue we highlight food waste to energy, the growing success of one of our start-up companies, and also how our summer 2016 student interns are learning to utilize an incubator facility, and its resources, to make start-ups successful.

Happy Reading.

Waste Not, Want Not: How Today’s Food Waste Could Be Tomorrow’s Clean Energy



On April 27th and 28th, The Rutgers EcoComplex hosted a Food Waste-to-Low Carbon Energy Conference which discussed the latest research and commercialization of food waste conversion technologies. Approximately 32% of the food in the United States goes to waste, for a loss of nearly \$165 billion dollars annually (WRI 2013). However, it isn't just food alone that is going to waste. The Food-Energy-Water “FEW” Nexus concept describes the relationships between food, energy, and water. Huge amounts of energy and water are used every day in the U.S. to produce food that will never be eaten. When food waste is dumped into landfills it produces large amounts of methane, which is harmful to the environment. To combat this, prominent technologies such as in vessel anaerobic digestion, are currently being developed and in use. This technology enables food waste to be transformed into clean energy that would in turn be solving two problems at once. The EcoComplex is devoted to bolstering development of such food waste-to-energy technologies as well as other clean energy initiatives, and is a part of the Waste-to-Energy Research and Technology Council as a result of these goals.

WRI (2013) “Creating a Sustainable Food Future, Installment Two” Brian Lipinski, et al. World Resources Institute, Washington DC

Rutgers EcoComplex Receives Low Carbon Hero Award

On April 14th, 2016 the EcoComplex received a Low Carbon Hero Award at the III. Istanbul Carbon Summit. The Low Carbon Hero Award aims to support achievements in perfection in carbon management, production, consumption and those struggling to obtain a low carbon economy. Such a designation, will in turn increase awareness of the subject in our society. The EcoComplex is honored to have been selected for this prestigious award. For more information visit:

www.istanbulcarbonsummit.org



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EcoComplex Interns Kick Off Summer Research



Pictured from left to right: Dr Serpil Guran Eco-Complex Director, interns Nicole Zougheig, Andrew Diorio, Emil Attardo, Adrian Savovici, Langley Oudemans and David Specca EcoComplex Assistant Director. Not pictured: Intern Emily McCue.

This summer, a total of six interns have started research projects at the Rutgers EcoComplex. Nicole Zougheig and Langley Oudemans, work is being funded by The Jerome Goldstein Scholarship Fund. Nicole is pursuing a B.S. in chemical engineering, and Langley is pursuing a B.S. in environmental policy, institutions, and behavior. Both will graduate in May of 2017. Adrian Savovici's work is being funded by the Rutgers Energy Institute, and he will graduate with a B.S. in mechanical engineering in May 2018. Andrew Diorio is an agricultural entrepreneurship intern, and plant biology major. Emil Attardo is a special project intern who will graduate in 2017 with a B.S. in chemical engineering. Emily McCue is a volunteer intern majoring in environmental science and will graduate in May of 2019. The EcoComplex is happy to have them on board for the summer and looking forward to the results of their valuable research.



Rutgers University EcoComplex
"Clean Energy Center"

Illumination Machines Designs a Bright Future

Founded in 2008 by Edward Bailey, Illumination Machines designs vibrant, energy efficient LED lights. In January 2016 Bailey moved his company into the EcoComplex, and occupies the technology scale-up lab in the EcoComplex Main Building. The LED lights are designed and manufactured in a way that they are more energy efficient without sacrificing brightness, or quality of color. Illumination Machines produces vivid white LED lights that have a full color spectrum, while reducing energy consumption by 80%, and lasting up to five times longer (up to 100,000 hours) as compared to fluorescent bulbs. Proudly made in the USA, their product contains no mercury, and also consists of all recyclable materials. The company's product line of beautiful and dependable LED lights is used in a variety of settings including retail, restaurants, entertainment, and airplanes.

In addition, Illumination Machines has had several contracts with the Center for Disease Control to design reliable, safe, glare free lights to be used in mines to create a safer environment for workers. The company also won the Department of Energy's "Lighting for Tomorrow" award for a bulb that uses 15 Watts, but produces light equivalent to a 100 Watt incandescent bulb. It is also dimmable, and has a color rendition index of 95. In the future, Illumination Machines expects a move towards more intelligent lighting, and is leading the way with highly customizable, visually striking lighting options. The core values of Illumination Machines align with those of the EcoComplex-- to create new clean energy technologies that move society forward in a sustainable way and to be good stewards of the Earth without having to sacrifice our quality of life.



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