

# Press Release

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## **\$2 Million “Shot in the Arm” for Washington State Algae Alliance**

*U.S. Sen. Senator Patty Murray (D-WA) secures funding to accelerate development of sustainable fuels & chemicals*

**SEATTLE (December 7, 2009)** The Washington State Algae Alliance, comprised of bioscience firm [Targeted Growth, Inc.](#) (TGI), [Inventure Chemical](#) (Inventure) and [Washington State University](#) (WSU), will benefit from \$2 million in funding through WSU as part of the 2010 Senate Energy and Water Development appropriations bill. U.S. Sen. Patty Murray (D-WA) was instrumental in securing funding for the Alliance, which will jointly develop a new system for the production of sustainable and renewable fuels, chemicals, and chemical intermediates, creating jobs and furthering the state's growing clean technology base.

“This funding will support cutting-edge research that will create jobs and continue to position Washington state as a leader in the clean energy economy,” said Senator Murray. “It provides a shot in the arm for Washington state biofuels research, and will help our country move toward cleaner and more efficient energy use.”

The Alliance has three objectives: First, to develop an efficient and integrated algae cultivation system for the production of fuel and other products; second, to build first class capabilities; and third, to advance related science and technologies. These objectives align with initiatives identified in the [National Algae Fuel Roadmap](#) developed by the US Department of Energy.

Each partner in the Alliance is responsible for developing a specific link in the value chain. Targeted Growth will focus on the development and optimization of strains of cyanobacteria, a blue-green algae, to yield high levels of lipid and other products, while reducing needed inputs and ultimately driving down costs. WSU will develop advanced phototrophic (light) and heterotrophic (nutrient) bioreactors and harvesting technology to enable cost-efficient, year-round growth of the algal strains developed by TGI. After the algal biomass is harvested, it will be sent to Seattle-based Inventure for conversion into fuel and other valuable products such as renewable chemicals.

“Algae hold tremendous promise as the raw material for a variety of sustainable and renewable products, from chemicals to fuels,” said Margaret McCormick, general manager of Bio-based Materials at Targeted Growth. “Thanks to Senator Murray, the funding for the partnership will accelerate the commercialization and environmental benefit of algae.”

Earlier this year, Targeted Growth announced its [expansion into algae](#) including a breakthrough development increasing lipid content of cyanobacteria by approximately 400 percent. This move was a natural extension of the company's legacy of deep experience and success in agricultural bioscience. Since 1998, the company has leveraged both genetic and traditional agricultural methods to help solve some of the world's most pressing issues related to the use of agriculture for both food and fuel.

Washington State University is a leader in fostering the development of biofuels. The WSU Algae Initiative led by Professor Shulin Chen in the Department of Biological Systems Engineering has developed four patent pending technologies for algae culture systems, harvesting, and nutrient recycling. WSU researchers associated with the Alliance are addressing key technical challenges for the development of the algae biofuel industry, including a novel high-throughput screening process, photosynthetic efficiency, co-product development and extraction, algal biofuel production systems for the northern states, and process modeling for life cycle assessment and decision making.

WSU researchers in the Alliance and other alternative fuels experts from the WSU Center for Bioproducts and Bioenergy and the WSU Extension Energy Program work closely with the biofuels industry and state and local governments to promote the use and production of renewable fuels in Washington State.

"The Alliance is a perfect example of the whole being greater than the sum of its parts," said Dr. Howard Grimes, Vice President for Research at Washington State University. "This puts some of our state's top scientists and researchers on the same team to achieve extremely exciting and important breakthroughs for renewable energy and clean technology."

Inventure unites life science/synthetic biology expertise with material process technologies to revolutionize the production of renewable, cost effective chemicals and fuels. The company can process a variety of algae species including salt water and fresh water species, converting it to a range of biofuels and chemicals. Its process generates near the theoretical maximum conversion yields of >99% of total lipids, >90% of carbohydrates, >90% of protein mass. It also captures the remaining organic material (cellulose, starch and protein) and converts the majority of these fractions to useful amino acid and glucose derivatives, adding value to the entire mass.

"By closely coordinating the algal species selection with the production and refining technologies, we will be able to optimize the entire process, leading to higher quality products at a lower cost," said Mark Tegen, CEO of Inventure Chemical."

**About Targeted Growth, Inc.**

Targeted Growth, Inc. ([www.targetedgrowth.com](http://www.targetedgrowth.com)) was founded in 1999 with a goal of developing technologies that would increase the productivity of existing farmland and create new crops for use on land otherwise unsuitable for agriculture. Today, Targeted Growth is a global leader in bioscience, having developed technologies that both increase seed size and yield in major crops. It has also developed a line of dedicated energy crops, including camelina and sugarcorn, as well as a non-agricultural feedstock – cyanobacteria algae for biomass. The company has strategic partnerships with leading researchers and agribusinesses around the world. Targeted Growth is based in Seattle, Wash., with labs in the Midwestern US and Canada. More information is available at [www.targetedgrowth.com](http://www.targetedgrowth.com).

## **About Washington State University**

Washington State University is a land-grant university that conducts transformational research and provides world-class education to more than 25,000 students statewide. Students are taught in an environment enriched by research activities and graduate study. Founded in Pullman in 1890, WSU's statewide system includes campuses in Spokane, the Tri-Cities, and Vancouver, regional learning centers, extension offices in every county, and distance degree programs accessible around the world.

The Carnegie Foundation classifies WSU as one of 96 U.S. public and private universities with very high research activity. *U.S. News and World Report* consistently ranks the University among the top 60 public universities. More information is available at [www.wsu.edu](http://www.wsu.edu).

## **About Inventure Chemical**

Inventure Chemical ([www.inventurechem.com](http://www.inventurechem.com)) has developed patent and patent pending process technology coupled with a novel reactor design for the production of third generation biodiesel, synthetic diesel, synthetic jet fuel, green gasoline and green chemicals from biomass. Third generation feedstocks such as algae, corn stover, corn cobs, cane bagasse, switch grass, wood fiber, rice husk and rice straw are processed quickly and efficiently, using a chemical catalytic process, to generate fuels, fuel intermediates, chemicals and chemical intermediates.

The company's expertise includes synthetic chemistry, advanced catalyst development, and cutting edge chemical engineering/reactor design. Inventure developed the Pacific North West's first algae biodiesel and ethanol conversion and extraction R&D production site in Seattle, Washington where it was one of the first companies to produce biodiesel and ethanol from algae sourced from various suppliers, including Seambiotic and General Atomics (DARPA synthetic jet fuel program). Using algae feedstock, the company has produced ASTM quality biodiesel and a fuel intermediate from algae that was used to produce algae synthetic jet fuel.

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