Amyris and Autodesk Offer Powerful Open Source Tools for Genetic Design to Enable Rapid DNA Engineering

EMERYVILLE, Calif. and SAN FRANCISCO, Oct. 04, 2016 (GLOBE NEWSWIRE) -- Amyris, Inc. (Nasdaq:AMRS), the industrial bioscience company, in collaboration with the Autodesk BioNano Research Group, today announced the immediate availability of powerful open source tools for genetic design that leverage Autodesk's Genetic Constructor, an extensible, open source, cloud CAD tool, and Amyris's open source Genotype Specification Language ("GSL"), to more rapidly drive biological design and complex DNA construction. Autodesk BioNano Research and Amyris will be showcasing this solution today at [SynBioBeta SF 2016](#) in San Francisco.

Best of Both Worlds

Those working in the genetic design community traditionally use a collection of disparate industrial and academic software tools that can be inefficient, difficult to acquire, set up, learn, and use. Genetic Constructor with GSL inside provides a seamless environment combining the power of a written genetic programming language along with an intuitive graphical environment. In the same way that early compilers in the software industry dramatically increased productivity and standardized the field, we expect that enabling everyone to access industrial grade tooling will greatly advance the synthetic biology sector. Industry wide adoption of an efficient common tool set and genetic programming language will benefit everyone.

"Amyris is clearly a leader in high-throughput DNA manufacturing. We are thrilled to enable any biologist to use GSL to 'code' their biological designs and we hope Genetic Constructor plus GSL dramatically speeds up the pace of genetic design," stated Eli Groban, Head of BioNano Research at Autodesk.

"We are extremely pleased that Autodesk BioNano Research has adopted GSL as the first integration of a language for genomic design," said Joel Cherry, President of Research & Development at Amyris. "Amyris used its deep experience designing DNA to develop a common-sense language for describing genetic designs. Building on notation that is familiar to any geneticist, the GSL compiler translates a request quickly into the information needed to create the DNA."

Continued Cherry, "Much as standardized computer languages like C revolutionized the early computer industry, we hope to establish GSL as a common industry standard platform. Genetic Constructor is the perfect visual complement to GSL."

Genetic Constructor Plus GSL — Free Powerful Open Source Tool Set for Genetic Design

[Genetic Constructor](#) started from a collaboration between the Autodesk BioNano Research group and the University of Edinburgh. Autodesk's [BioNano Research Group](#) aims to place the full power of Autodesk software in the hands of scientists, thereby enabling the ability to design on the BioNano scale. This web based, fully extensible, design software, available under an open source license, now incorporates an extension featuring an integrated development environment that is easier for scientists to use in the real-world process of assembling and testing actual, physical DNA coupled with Amyris's GSL.

[Genotype Specification Language](#) (GSL), is a programming language that facilitates the rapid design of large and complex DNA constructs used to engineer genomes. The GSL compiler implements a high-level language based on traditional genetic notation, as well as a set of low-level DNA manipulation primitives. The language allows facile incorporation of parts from a library of cloned DNA constructs and from the "natural" library of parts in fully sequenced and annotated genomes. GSL was designed to engage genetic engineers in their native language while providing a framework for higher level abstract tooling. GSL was developed and [open sourced](#) by Amyris.

About Amyris

Amyris is the integrated renewable products company that is enabling the world's leading brands to achieve sustainable growth. Amyris applies its innovative bioscience solutions to convert plant sugars into hydrocarbon molecules, specialty ingredients and consumer products. The company is delivering its No Compromise® products in focused markets, including specialty and performance chemicals, fragrance ingredients, and cosmetic emollients. More information about the company is available at www.amyris.com.

About Autodesk

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