



Harnessing the **power of genomics**,  
solving **global challenges**

## ***Digital Press Packet***

### **Table of Contents**

#### **PRESS RELEASES**

Synthetic Genomics Inc and ExxonMobil Research and Engineering Company Sign Exclusive, Multi-Year Agreement to Develop Next Generation Biofuels Using Photosynthetic Algae.....[Read Release](#)

First Jatropha Genome Completed by Synthetic Genomics Inc. and Asiatic Centre for Genome Technology.....[Read Release](#)

First Draft of Oil Palm Genome Completed by Synthetic Genomics Inc and Asiatic Centre for Genome Technology.....[Read Release](#)

Synthetic Genomics Inc. and BP to Explore Bioconversion of Hydrocarbons into Cleaner Fuels.....[Read Release](#)

#### **MEDIA COVERAGE**

Synthetic Genomics Inc Select Media Coverage.....[Read Articles](#)

#### **TESTIMONY**

Synthetic Genomics Inc President, Aristides Patrinos, Ph.D., Testifies at a Hearing of the U.S. House of Representatives.....[Read Testimony](#)

#### **SCIENTIFIC PUBLICATIONS**

J. Craig Venter Institute Research Funded by Synthetic Genomics Inc.....[Read Papers](#)



Press Release

## ***Synthetic Genomics Inc and ExxonMobil Research and Engineering Company Sign Exclusive, Multi-Year Agreement to Develop Next Generation Biofuels Using Photosynthetic Algae***

**LA JOLLA, CALIFORNIA—July 14, 2009—** Synthetic Genomics Inc. (SGI), a privately held company applying genomic-driven commercial solutions to address a variety of global challenges including energy and the environment, announced today a multi-year research and development agreement with ExxonMobil Research and Engineering Company (EMRE) to develop next generation biofuels using photosynthetic algae.

As part of the multi-faceted agreement, SGI will receive milestone payments for achievements in developing biofuel products. Total funding for SGI in research and development activities and milestone payments could amount to more than \$300 million with the potential for additional income from licensing to third parties.

“This agreement between SGI and EMRE represents a comprehensive, long-term research and development exploration into the most efficient and cost effective organisms and methods to produce next generation algal biofuel,” said J. Craig Venter, Founder and CEO of SGI. “We are confident that the combination of our respective expertise in science, research, engineering and scale-up should unlock the power of algae as biological energy producers in methods and scale not previously explored.”

Photosynthetic algae, which include microalgae (single celled algae) and cyanobacteria (most commonly known as blue-green algae) are organisms that are very efficient at utilizing the energy from sunlight to convert carbon dioxide into cellular oils (lipids) and even some types of long-chain hydrocarbons that can be further processed into fuels and chemicals. However, naturally-occurring algae do not carry out this process at the efficiencies or rates necessary for commercial-scale production of biofuels.

Using SGI’s scientific expertise and proprietary tools and technologies in genomics, metagenomics, synthetic genomics, and genome engineering as a platform, SGI and EMRE believe that biology can now be harnessed to produce sufficient quantities of biofuels.

Under the terms of the agreement, SGI will work in a systematic approach to find, optimize, and/or engineer superior strains of algae, and to define and develop the best systems for large-scale cultivation of algae and conversion of their products into useful biofuels. ExxonMobil’s engineering and scientific expertise will be utilized throughout the program, from the development of systems to increase the scale of algae production through to the manufacturing of finished fuels.

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Scientists at SGI have been working internally for several years to develop more efficient means to harvest the oils that photosynthetic algae produce. Traditionally, algae have been treated like a crop to be grown and harvested in a process that can be expensive and time consuming. One of SGI's achievements has been in engineering algal strains that produce lipids in a continuous process that is currently more efficient and cost-effective.

"This investment is an important addition to ExxonMobil's ongoing efforts to advance breakthrough technologies to help meet the world's energy challenges," said Dr. Emil Jacobs, Vice President of Research and Development at ExxonMobil Research and Engineering Company. "Meeting the world's growing energy demands will require a multitude of technologies and energy sources. We believe that biofuel produced by algae could be a meaningful part of the solution in the future because of its potential to be an economically viable, low net carbon emission transportation fuel."

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#### **About Synthetic Genomics Inc**

SGI, a privately held company founded in 2005, is dedicated to developing and commercializing genomic-driven solutions to address global energy and environment challenges. Advances in synthetic genomics present limitless applications in a variety of product areas, including: energy, chemicals and pharmaceuticals. The company's main research and business programs are currently focused on the following major bioenergy areas: designing advanced biofuels with superior properties compared to ethanol and biodiesel; harnessing photosynthetic organisms to produce value added products directly from sunlight and carbon dioxide; developing new biological solutions to increase production and/or recovery rates of subsurface hydrocarbons and developing high-yielding, more disease resistant and economic feedstocks. For more information go to [www.syntheticgenomics.com](http://www.syntheticgenomics.com)

#### **About ExxonMobil**

ExxonMobil, the largest publicly traded international oil and gas company, uses technology and innovation to help meet the world's growing energy needs. ExxonMobil holds an industry-leading inventory of resources, is the largest refiner and marketer of petroleum products, and its chemical company is one of the largest in the world. For more information, visit [www.exxonmobil.com](http://www.exxonmobil.com)

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Press Release

## ***First Jatropha Genome Completed by Synthetic Genomics Inc. and Asiatic Centre for Genome Technology***

***Partners Analyze Jatropha Genome and Associated Microbial Genomes to Understand and Improve Plant Yield and Health to Develop Renewable Fuels, Biofertilizers, and Disease Control Solutions***

***Jatropha Genome Represents Second Milestone Accomplishment for Partners who Announced Complete Oil Palm Genome Sequence in 2008***

**LA JOLLA, CALIFORNIA, USA AND KUALA LUMPUR, MALAYSIA, May 20, 2009** — Synthetic Genomics Inc. (SGI), a privately held company applying genomic-driven commercial solutions to address global issues, and Asiatic Centre for Genome Technology (ACGT), a company focused on the commercial application of genome technology to improve oil palm and other crops, today announced completion of a first draft, 10X assembly of the jatropha genome. The completed jatropha genome represents another significant milestone in the ongoing joint venture between ACGT and SGI announced in 2007. The partners previously announced completion of the oil palm genome in 2008. ACGT is a wholly owned subsidiary of Asiatic Development Berhad, an oil palm plantation company and a member of the Genting Group.

ACGT and SGI have focused on Jatropha for several reasons: it is a tropical tree that is one of the highest yielding oilseed plants in the world; it can be grown on marginal, non-food producing lands; has a very short generation time; can be productive for 30 to 40 years; and its seed oil and biomass are ideal for biofuel production. Jatropha is a non-domesticated plant which makes it an ideal subject for genetically engineered improvements.

The sequencing of the genome, using both traditional Sanger sequencing and next generation sequencing, has revealed that the jatropha genome is approximately 400 million base pairs in size, similar to the size of the rice genome. The teams are now working on annotating the genome to identify particular genes of interest and to discover genetic variations for use in marker assisted breeding. The teams are also applying traditional breeding tools, as well as modern plant molecular biology tools, to improve plant yield, oil quality, fertilizer requirements and to enhance stress and disease tolerance.

ACGT and SGI have also been exploring the microbial life around the jatropha tree using environmental genomic techniques to sequence and analyze jatropha's root, soil and leaf bacterial and fungal communities. By understanding these environments SGI and ACGT will be able to develop diagnostic tests for plant diseases and agents for disease control, leading to healthier and more productive crops. These genomic solutions also allow for more efficient land usage with improved stewardship of the plantation environment.

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"Having the sequenced genome of jatropha will enable us to develop new, sustainable energy feedstocks that grow on marginal land or in more arid climates and that do not compete with agriculture for food production," said J. Craig Venter, Ph.D., founder and CEO of SGI. "SGI and ACGT will be hard at work on the next steps to use our methods to improve these oilseed crops so that we have higher yielding plants for biofuels, microbial fertilizers, and biologically-based disease control methods."

"The completion of the jatropha genome is yet another significant milestone for ACGT and SGI. It will accelerate our goal of commercially cultivating high-yielding jatropha for biodiesel production," said Tan Sri Lim Kok Thay, Chief Executive of Asiatic Development Berhad.

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#### **About Synthetic Genomics Inc**

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#### **About Asiatic Development Berhad**

Asiatic Development Berhad ("Asiatic"), a 55%-owned subsidiary of Genting Berhad, commenced its operations in 1980 as the plantation arm of the Genting Group. Over the years, the Asiatic Group had embarked on several significant acquisitions in Malaysia, thus increasing its land bank from a mere 13,700 hectares in 1980 to nearly 66,000 hectares currently. In line with its long term strategy, the Asiatic Group had, in June 2005, further expanded its operations to Indonesia, on a joint venture basis, to develop some 98,300 hectares. The Asiatic Group also owns 5 oil mills with a total milling capacity of 235 tonnes per hour and is reputed to be one of the lowest cost palm oil producers with fresh fruits bunches production of over one million tonnes. Asiatic is one of the early members of the Roundtable on Sustainable Palm Oil (RSPO).

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Press Release

## ***First Draft of Oil Palm Genome Completed by Synthetic Genomics Inc and Asiatic Centre for Genome Technology***

***Partners Announce Progress on Sequence and Analysis of Jatropha Genome***

***Knowledge of the plant and environment genomes will foster the development of improved plant feedstocks, biofertilizers, plant disease diagnostic and control solutions and renewable fuels***

**KUALA LUMPUR, MALAYSIA AND LA JOLLA, CALIFORNIA, U.S., May 21, 2008** — Asiatic Centre for Genome Technology Sdn Bhd (ACGT), which is focused on the commercial application of genome technology to improve oil palm and other crops and Synthetic Genomics Inc. (SGI), a privately held company dedicated to commercializing genomic-driven solutions to address global energy and environmental challenges, today announced the completion of a first draft assembly and annotation of the oil palm genome. The organizations also announced that they have made progress in sequencing and analyzing the jatropha genome. The oil palm and jatropha genome projects represent the first stages of research undertaken through a joint venture between SGI and ACGT which was announced in 2007 and is aimed at developing more high-yielding and disease-resistant plant feedstocks. ACGT is a wholly owned subsidiary of Asiatic Development Berhad, an oil palm plantation company listed on Bursa Malaysia (Malaysian Stock Exchange) and a member of the Genting Group.

The oil palm genome is approximately 1.8 billion base pairs in size, about four times the size of the rice genome and two thirds the size of the maize genome. The groups sequenced a combination of two oil palm races- tenera and dura, to produce seven-fold coverage of the plant's genome, which represents the most comprehensive sequence and analysis of this genome. SGI and ACGT will continue to do additional sequencing and analysis of the oil palm genome and when completed, this will become the reference genome.

The Companies are also conducting an in-depth genomic, physiological and biochemical analysis of jatropha, a robust oil seed crop whose oil is suitable for conversion into cleaner, renewable fuels. Jatropha readily grows on marginal lands not used for food production. Since jatropha is a non-domesticated crop with few published studies, it has significant potential for improvements in yield and agronomic properties. The jatropha genome is 500 million base pairs in size, similar to the size of the rice genome. The organizations will continue to sequence and analyze the jatropha genome to achieve ten-fold coverage.

"The genome sequences of these highly productive oilseed crops will enable the in-depth understanding of genes encoding for plant yield and health and foster the development of improved plant varieties. We are also characterizing the important microbes living in the environments around these plants," said J. Craig Venter, Ph.D., founder and CEO of Synthetic Genomics. "Our goal is to harness this knowledge to

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produce improved feedstocks, renewable fuels, biofertilizers, and disease-control solutions."

The draft oil palm genome is already yielding important information including unique genetic variations linked to traits that differ in the two races. One example of this pertains to kernel shell thickness which differs between the two. Since fruits with thinner kernel shells yield more oil, the groups are seeking to understand the genetic basis for shell thickness. These molecular markers and others can be used in breeding and tissue-culture based approaches to address plant yield, oil quality, growth and height and other important properties, including fertilizer requirements and stress and disease tolerance.

"The completion of the first draft sequence of the oil palm genome and progress on the jatropha genome are significant milestones towards the genetic improvement of these inherently high yielding oil crops. Unlocking the knowledge encoded in the genomes could further increase our understanding of these important crops which could lead to substantially improved oil yield. With such enhanced productivity, growing oil palm and jatropha could be the sustainable solution to fulfilling the world's need for a wide variety of products," said Tan Sri Lim Kok Thay, Chief Executive of Asiatic Development Berhad.

SGI and ACGT are also using environmental genomic techniques to sequence and analyze the root, soil and leaf microbial communities surrounding the oil palm and jatropha plants. Understanding the oil palm and jatropha genomes and their environments will enable the groups to develop diagnostic tests for plant diseases as well as agents for their control, leading to healthier and more productive crops.

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#### **About Asiatic Development Berhad**

Asiatic Development Berhad ("Asiatic"), a 55%-owned subsidiary of Genting Berhad, commenced its operations in 1980 as the plantation arm of the Genting Group. Over the years, the Asiatic Group had embarked on several significant acquisitions in Malaysia, thus increasing its land bank from a mere 13,700 hectares in 1980 to nearly 66,000 hectares currently. In line with its long term strategy, the Asiatic Group had, in June 2005, further expanded its operations to Indonesia, on a joint venture basis, to develop some 98,300 hectares. The Asiatic Group also owns 5 oil mills with a total milling capacity of 235 tonnes per hour and is reputed to be one of the lowest cost palm oil producers with fresh fruits bunches production of over one million tonnes. Asiatic is one of the early members of the Roundtable on Sustainable Palm Oil (RSPO).

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-- Back to Top --



Press Release

## ***Synthetic Genomics Inc. and BP to Explore Bioconversion of Hydrocarbons into Cleaner Fuels***

**ROCKVILLE, MD—June 13, 2007** — Synthetic Genomics Inc., a privately-held company dedicated to commercializing synthetic genomic processes and naturally occurring processes for alternative energy solutions, today announced a significant, long-term research and development deal with BP.

The deal between BP and Synthetic Genomics is centered on developing biological conversion processes for subsurface hydrocarbons that could lead to cleaner energy production and improved recovery rates. As part of the agreement, BP has also made an equity investment in Synthetic Genomics.

Microbes are key components in sustaining and maintaining life on Earth, and genomics is leading to an enhanced understanding of these organisms. In the first phase of the BP/Synthetic Genomics program, the research will focus on gaining a better understanding of microbial communities in various hydrocarbon formations such as oil, natural gas, coal and shale. Synthetic Genomics, which was founded by genome pioneer J Craig Venter, Ph.D., will use its expertise in environmental DNA sequencing and microbial cell culturing to produce the first comprehensive genomic study of microbial populations living in these environments. Once the basic science research phases are complete, BP and Synthetic Genomics will seek to jointly commercialize the technologies developed.

“We believe that one of the most promising solutions to producing cleaner fuels will be found through genomic-driven advances,” said Dr. Venter. “Through our research collaboration with BP, we will achieve a new and better understanding of the subsurface hydrocarbon bioconversion process which we are confident will yield substantial cleaner energy sources.”

The overall goal of Synthetic Genomics is to discover and/or design new genomes that will code for new types of cells with desired properties for bioenergy or specific chemical production. In this project, Synthetic Genomics scientists hope to better understand hydrocarbon metabolism by sequencing the genomes and culturing the cells of the naturally occurring microbes that thrive in subsurface hydrocarbons.

Tony Meggs, Group Vice President of Technology at BP, adds: “This collaboration is an exciting development that could lead to an unprecedented understanding of the microbial activity in the subsurface; and eventually to the development of more environmentally-friendly and efficient energy production and recovery techniques.”

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## **About BP**

BP is one of the world's largest energy companies, providing its customers with fuel for transportation, energy for heat and light, retail services and petrochemicals products for everyday items. BP is one of the world's largest purveyors of biofuels, blending more than 700 million gallons of biofuels globally in 2006. In June 2006 BP announced it would establish the Energy Biosciences Institute and in November 2006 announced the formation of its biofuels business. BP's decision to devote significant resources to widening the availability of biofuels is part of its strategy of identifying low carbon or renewable energy sources for the future. BP spends significant amounts every year on university technology programs around the world, spanning every aspect of its current business, and is now seeking to foster further innovation in the industry through selected collaborations with innovative technology companies. For more information, visit [www.bp.com](http://www.bp.com).

## **About Synthetic Genomics Inc**

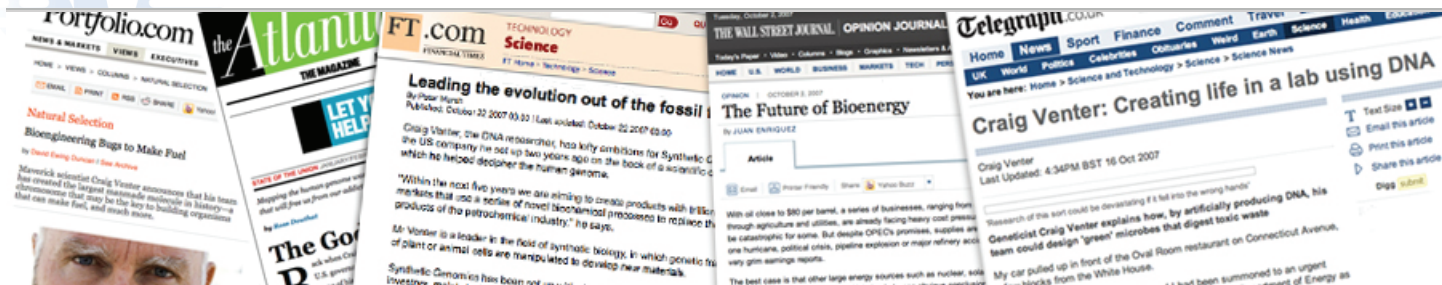
SGI, a privately held company founded in 2005, is dedicated to developing and commercializing genomic-driven solutions to address global energy and environment challenges. Advances in synthetic genomics present limitless applications in a variety of product areas, including: energy, chemicals and pharmaceuticals. The company's main research and business programs are currently focused on the following major bioenergy areas: designing advanced biofuels with superior properties compared to ethanol and biodiesel; harnessing photosynthetic organisms to produce value added products directly from sunlight and carbon dioxide; developing new biological solutions to increase production and/or recovery rates of subsurface hydrocarbons and developing high-yielding, more disease resistant and economic feedstocks. For more information go to [www.syntheticgenomics.com](http://www.syntheticgenomics.com)

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-- Back to Top --



## Synthetic Genomics Inc Select Media Coverage

### THE WALL STREET JOURNAL

July 15, 2009

**In Strategy Shift, Exxon Plans \$600 Million Biofuel Venture**

By Russell Gold.....[Go to Article](#)

### FINANCIAL TIMES

July 15, 2009

**Exxon's algae to join biofuel push**

By Ed Crooks.....[Go to Article](#)

### Bloomberg.com

February 2008

**The Quest for Supergenes**

By Bob Drummond.....[Go to Article](#)

### POLITICO

December 16, 2008

**There's no silver bullet to solve energy crisis**

By J. Craig Venter.....[Go to Article](#)

### SEED

November 20, 2008

**Bigger Faster Better**

By J. Craig Venter.....[Go to Article](#)

Testimony of Aristides Patrinos, Ph.D.  
President, Synthetic Genomics Inc.  
Select Committee on Energy Independence and Global Warming  
"Renewing America's Future: Energy Visions of Tomorrow, Today"  
July 31, 2008

Mr. Chairman and Members of the Select Committee:  
Thank you for the opportunity to testify before your Committee about  
"Solutions to the Energy and Climate Crisis."

I am Ari Patrinos, the president of Synthetic Genomics Inc. a company dedicated to developing new genomic-driven bioenergy, environmental, and biochemical solutions. I joined Synthetic Genomics Inc. in February 2006 after serving for many years in the Department of Energy (DOE) as the director for biological and environmental research in the Office of Science.

Our nation and the world stand at an important crossroads. Decisions we make during the next few years will affect the trajectory of human civilization well into the next century.

We face daunting energy and environmental challenges:

- energy supply
- energy security
- climate change
- environmental degradation

There are many reasons for these challenges. For example:

The U.S. imported over 600 million tons of crude oil last year, most of it from politically unstable parts of the world.

Energy demand in the developing world, and especially China and India, is growing at a rate approaching 10% per year.

The 2007 report of the Intergovernmental Panel on Climate Change (IPCC) tells us that:

World carbon dioxide emissions from the burning of fossil fuels now exceed 28 billion tons per year. Carbon dioxide emissions from land-use changes are adding as much as 9 billion tons per year.

The global atmospheric concentration of carbon dioxide has increased from a pre-industrial value of about 280 parts per million to above 380 parts per million today.

Warming of our climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.

### Recent events and developments

This month the leaders of the Group of Eight industrial nations (G-8) gathered in Japan and agreed to halve greenhouse gas emissions by 2050. This was a "first" for the Bush Administration.

Also this month, the Environment Protection Agency (EPA) issued a report stating that climate change will pose "substantial" threats to human health in the coming decades.

The National Academy of Sciences is completing a study on America's Energy Future (AEF) to provide the incoming Administration with data and analyses that will help shape energy policies. Energy security and climate change are the two most important drivers of this study.

### The Path Forward

It is imperative that we significantly change the ways we produce and use energy. We need to stabilize the concentrations of greenhouse gases in the atmosphere, and for that we will have to accomplish zero "net" carbon emission into the atmosphere in the not-too-distant future.

Zero "net" carbon emission does not mean the end of fossil fuel burning. However, it will require the capture and permanent storage

of emitted carbon away from the atmosphere, or the conversion of the emitted carbon into renewable products (biofuels and biochemicals).

For the U.S., we also need to develop homegrown and renewable sources of energy, to eliminate or significantly reduce our dependence on foreign oil.

This Committee understands there is no “silver bullet” solution to our energy and environmental problems. Instead, we need a “silver buckshot” approach, one that includes the full spectrum of energy and environmental technologies, including enhanced energy efficiency and conservation.

### Synthetic Genomics, the Disruptive Technology

Even if we make significant improvements in the traditional energy technologies (fossil fuels, nuclear, hydro, solar, geothermal, and wind), and even if we achieve advances in carbon capture and geological storage, it is difficult to see how we will be able to remove approximately 100 billion tons of carbon (367 billion tons of carbon dioxide) from the world’s economy over this century.

Advances in genomics and specifically synthetic genomics are the real “game-changers” that can help us reach the goal. The company I represent, Synthetic Genomics Inc., (SGI) was founded by Dr. J. Craig Venter nearly three years ago to translate genomics advances into viable solutions to some of our most pressing energy and environmental problems. Our first goal is to put our vast knowledge and experience in the field of synthetic genomics to work in helping to solve the energy crisis.

The genome sequencing breakthroughs that Dr. Venter and his teams accomplished over the last two decades have propelled advances in biology from concepts to implementation by giving science the tools to effect change. These breakthroughs have instilled rigor into a discipline that previously was merely descriptive.

Dr. Venter and his team are pioneering the new field of synthetic genomics. This new technology will lead to the design and synthesis of microbial cells with far more superior capabilities in converting feedstock into fuels than even the most successful among the genetically modified natural cells. Vast new opportunities will emerge for optimizing cellular pathways in these “special purpose” organisms.

Recent research by Dr. Venter and others has uncovered an incredibly diverse microbial world that was heretofore unknown. We have discovered organisms – extremophiles, we call them -- that thrive in extremes of temperature and pressure and can survive levels of radiation that are instantaneously lethal to us.

The study of these organisms has given us significant new insights into the molecular machinery of life, which in turn provide ways to quickly and efficiently convert various feedstocks into fuels. These include the conversion of coal into methane that when burned has a smaller global warming impact than coal. Our company SGI has partnered with petroleum giant BP to employ the tools of synthetic genomics to increase the production of methane from coal bed mines.

SGI is also aggressively pursuing the conversion of plant feedstocks (sugar and cellulose) into a wide range of next generation fuels that are superior to traditional biofuels (ethanol and biodiesel), more adapted to the existing infra-structure and compete successfully with gasoline and other fossil fuels.

Genomics-driven technology will not only help us produce fuels from renewable feedstocks (biofuels) but also will accomplish more effective carbon capture and carbon storage. In both cases specially modified micro-organisms enable the conversion of feedstocks into renewable products (biofuels and biochemicals) and the sequestration of carbon away from the atmosphere.

For the production of biofuels we should move away from feedstocks like corn that compete with food production. The food-versus-fuel controversy is unfortunately energized by corn-based ethanol

production in the U.S. There are many plants that are not foodstuff (jatropha, for example) and grow on marginal lands that could be used for the production of biofuels. SGI has joined forces with the Malaysian company Genting Asiatic to use synthetic genomic advances to increase the yield of jatropha plantations.

The genetic engineering of plants that are to be used as feedstocks for biofuels and biochemicals will enable significant increases in the yields of sugar and oils that constitute the raw material for the biofuels. Other genomic advances, such as the study of soil microbes in the root zones of plants, can also assist in improvements of plant properties, reduce the use of fertilizers or chemical pesticides, and enhance the disease resistance of plants.

But one of the ultimate and disruptive technological goals of our synthetic genomics research is the use of carbon dioxide as a feedstock for the production of biofuels and biochemicals. Imagine that: carbon dioxide as a feedstock. This would be the "holy grail" of bioenergy production: the transformation of a fossil fuel into a renewable resource. At SGI we are working on such a solution, using multiple processes that employ micro-algae and other microbial cultures.

We recognize the challenges of scaling up the production of biofuels to match the current supply and infrastructure of the fossil fuel industry -- for example the infrastructure that enables the consumption of 20.7 million barrels of petroleum in the U.S. every day and more than 2 trillion cubic feet of natural gas every month.

Nevertheless, we are optimistic we can pilot our liquid biofuels within two years and embark on large-scale production within five years. We are convinced that by using the biofuels we are pursuing we could successfully meet and beat the recently adopted standard of reducing gasoline consumption by 20% in ten years.

We are also confident that the technological approaches using carbon dioxide as a feedstock for our biofuels will go a long way toward accomplishing the zero net emission of carbon into the atmosphere

and enable the stabilization of the concentration of carbon dioxide in the atmosphere much below 550 parts per million.

However, to be successful we will need the support of the Administration and Congress to level the playing field in our competition with the fossil fuel industry by openly communicating the risks of continued reliance on imported fossil fuels and the dangers to our climate system from the burning of fossil fuels. We must quickly reach agreement on placing a value on emitted carbon. We also need to free the market for alternatives to fossil fuels from distortion by eliminating the tariffs on imported sugar and ethanol as well as the subsidies for corn-based ethanol.

We are also advocating sensible regulations for the emerging field of synthetic biology and for the new biofuels it will enable. Dr. Venter and his teams have since the earliest experiments in this field, been leading the public dialogue and education efforts about this new science. We along with those in academia, government and outside institutions have come together to discuss the potential associated risks and concerns and have demonstrated the appropriate measures that can safeguard against potential dangers. Finally, we encourage increases in the public funding of the associated basic research as well as for projects that can demonstrate the scaling-up of biofuels production.

President Kennedy said that "There are risks and costs to a program of action. But they are far less than the long-range risks and costs of comfortable inaction. Mr. Chairman and members of the Committee, the time has come for us to act by embracing and using the advances from biology and genomics to tackle our energy and environmental challenges.

Thank you for your time today. I'm happy to answer your questions.



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## **SGI Scientific Publications**

### **PNAS**

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*December 23, 2008*

One-step assembly in yeast of 25 overlapping DNA fragments to form a complete synthetic *Mycoplasma genitalium* genome.....[Go to Paper](#)

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### **Sciencexpress**

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*20 August 2009*

Creating Bacterial Strains from Genomes That Have Been Cloned and Engineered in Yeast.....[Go to Paper](#)

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### **Science**

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*February 29, 2008*

Complete Chemical Synthesis, Assembly, and Cloning of a *Mycoplasma genitalium* Genome.....[Go to Paper](#)

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### **Science**

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*August 3, 2008*

Genome Transplantation in Bacteria: Changing One Species to Another.....[Go to Paper](#)

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### **PNAS**

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*December 23, 2003*

Generating a synthetic genome by whole genome assembly: PhiX174 bacteriophage.....[Go to Paper](#)

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