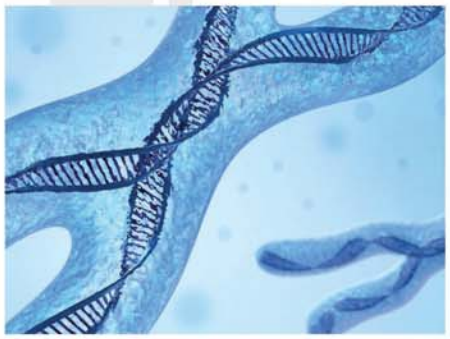
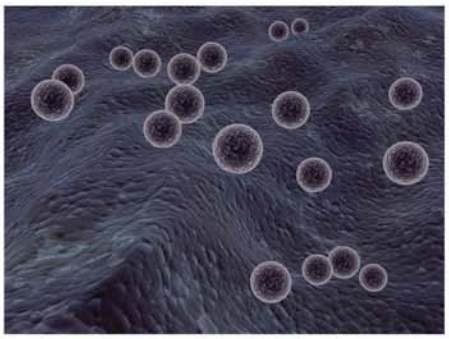
Diagnomics

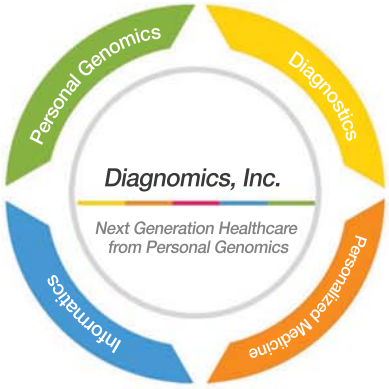
DIAGNOMICS

# Next Generation Healthcare from **Personal Genomics**





# DIAGNOMICS, INC. - INTRODUCTION



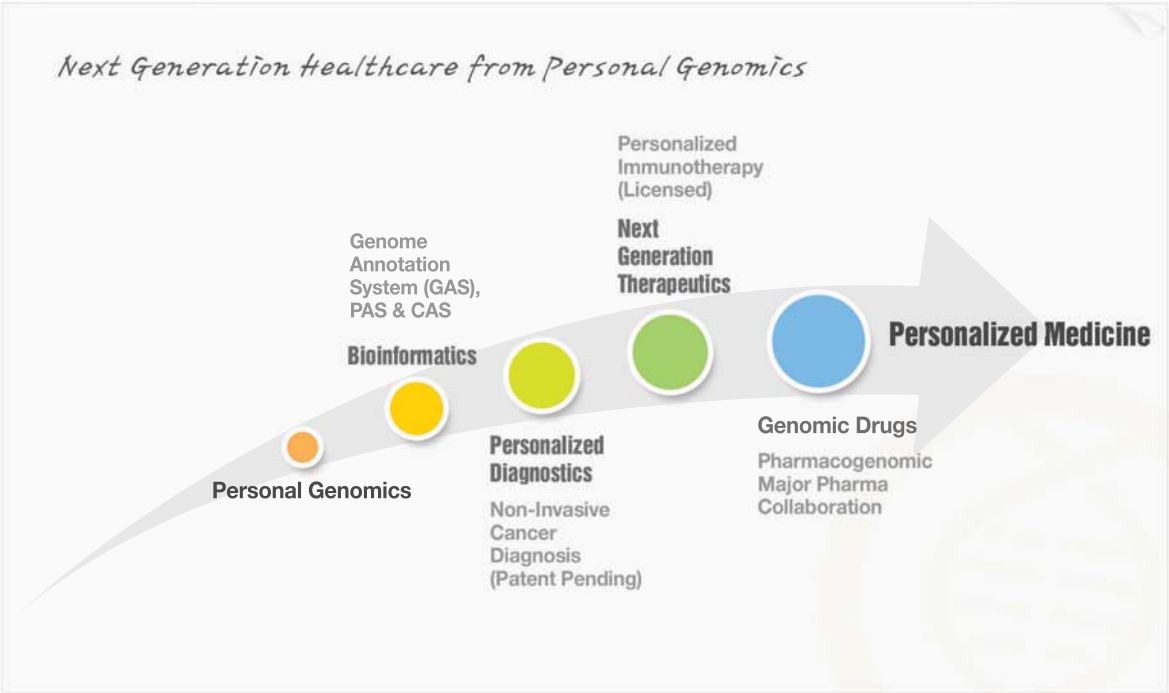

## Diagnomics, Inc.

Strategically located within the biotech region of San Diego, Diagnomics has the distinction of being a next generation personal genomics company. The company has already differentiated itself by having a cutting edge bioinformatics infrastructure and years of human genome analysis experience for personalized medicine. We aim to provide complete solutions for genome science research and personalized medicine product.

## Diagnomics, Inc. - Mission

Diagnomics aims to revolutionize next generation healthcare and personalized medicine by introducing bioinformatic tools for innovative research and the development of personalized genomics.

### Diagnomics Business Roadmap

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# DIAGNOMICS, INC. TEAM

Diagnomics has an eminently qualified team of scientists and information technology professionals with a proven track record of successfully developing and commercializing products for innovative health care applications.

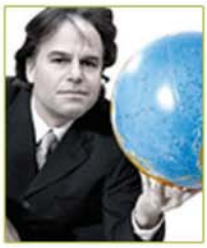
## Our Team

### Dr. Min Seob Lee, CEO (Founder and President)

Dr. Min Seob Lee is a world leader in Genomics and Diagnostics and associated applications for personalized medicine. He has a wide range of experiences in the life sciences industry and research including biotech, pharmaceuticals, and diagnostics companies, with specific expertise in personal genomics, pharmacogenomics, bioinformatics and molecular diagnostics. He held various positions of increasing responsibility in companies like Theragen Bio Institute, GenomeCare, Sequenom, Genaissance Pharmaceuticals and Double Twist Bioinformatics. He conducted his post-doctoral training at Harvard Medical School, after receiving a Ph.D. from City of Hope National Medical Center. Dr. Lee published numerous articles and has been granted several US and International patents in the area of genomicsand molecular diagnostics.

### Dr. Stefan Gruenwald, CTO

Dr. Gruenwald's career in life sciences spans more than two decades. Dr. Gruenwald led PharMingen, which became one of the most successful San Diego-based biotechnology companies. As Vice President of Research & Development, Dr. Gruenwald established and maintained a research team of 155 scientists and developed numerous products and services. He was instrumental in the sale of PharMingen to Fortune 100 company, Becton Dickinson (BD). Recently, Dr. Gruenwald has specialized himself in mergers and acquisitions within the life sciences arena. He played a leading role in negotiating the triple merger between Orbigen, Biocarta and Jingmei.



### Mr. Michael O'Reilly, VP of Business Development

Michael's responsibilities within Diagnomics is business development including engaging strategic biopartners to generate revenue and strategic IT partners to create important competitive advantages for the company, as well as the initial marketing related activity. Michael has extensive experience in executive management, business development and sales with early stage technology companies.

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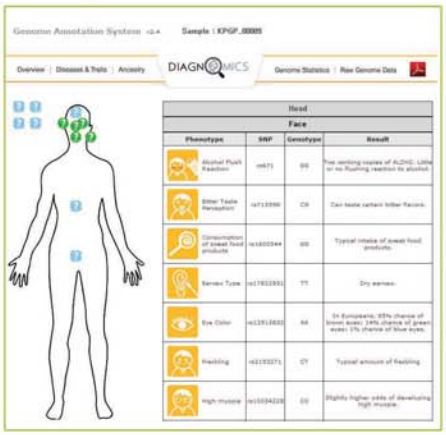
# PRODUCTS AND SERVICES

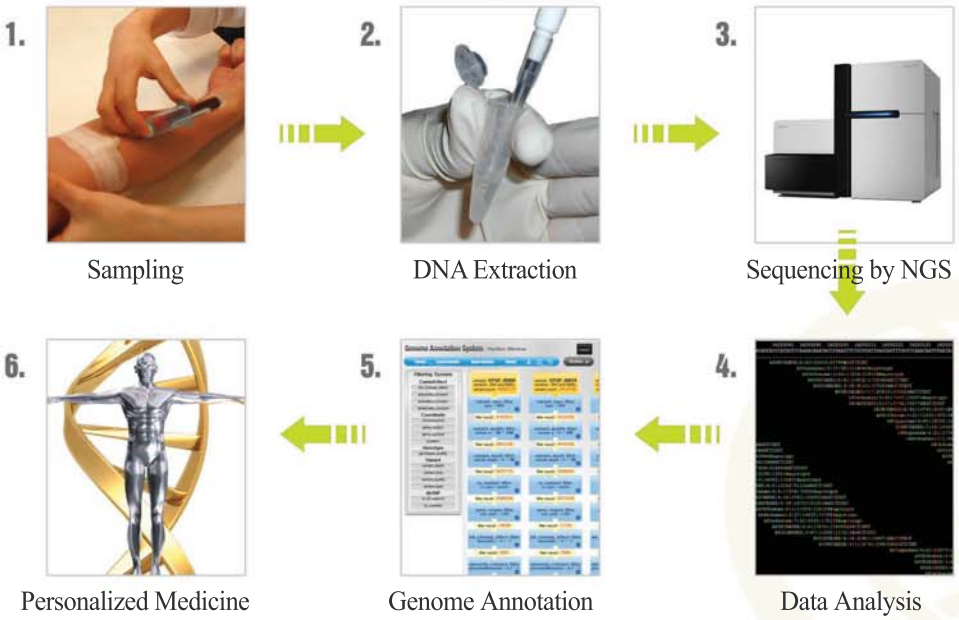
## Genome Annotation System (GAS)



Recent advances in genome sequencing technologies and genomic information related to personal genomes have accelerated the convergence of discovery in science and clinical medicine. Successful examples of translating personal genomics into therapeutics and diagnostics reinforce its potential to enable personalized medicine. Diagnomics offers a comprehensive Genome Annotation System (GAS) that can decode and annotate individual genomes and facilitate the next generation healthcare revolution


We employ a proprietary annotation system that incorporates information from pertinent public and private databases and peer-reviewed literature. Our annotation system is the foundation of many of our products and services and enables individuals to perform cutting edge genome analysis for personalized medicine.

### GAS PROCESS

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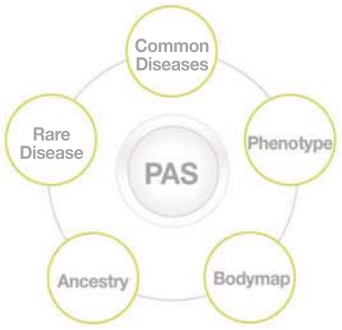
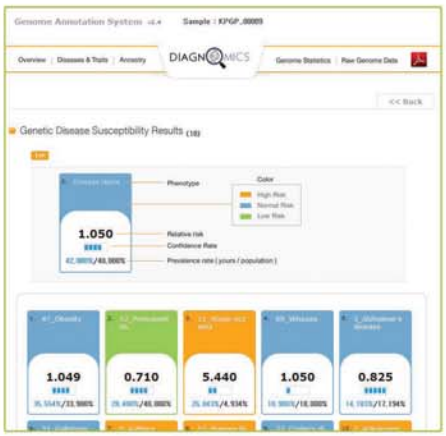
# PRODUCTS AND SERVICES

## Personal genome Annotation System (PAS)

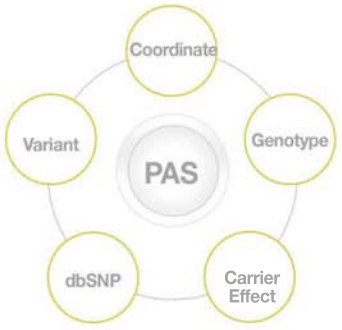
The Personal Genome Annotation System (PAS) is the most comprehensive fully automated pipeline system for personal genome annotation from any genome sequencing data. Unlike other genotyping-based annotation systems, PAS provides a complete package of analysis and annotation tools that can be constantly updated and adapted to the needs of genomic resesarch.




Personal Genome report




The PAS system provides one of the most powerful web-based solutions and fully customizable genome annotation and data mining tools available today. it comes as a complete package to researchers, individuals and physicians who want to decode personal genomics data for personalized medicine.




Research Genome report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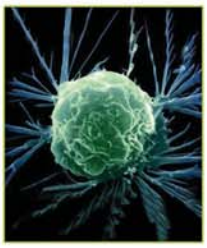
# PRODUCTS AND SERVICES

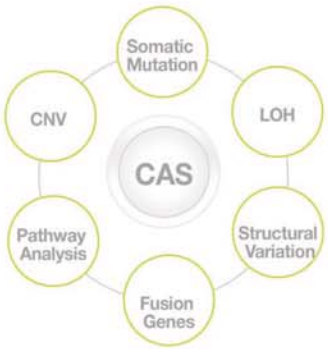
## Cancer genome Annotation System (CAS)



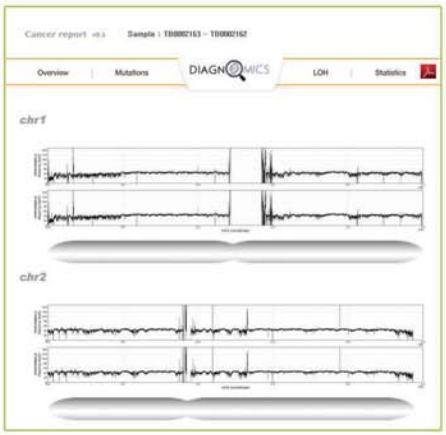
A genomic era of cancer studies is developing rapidly with the introduction of next-generation sequencing technologies accompanied by advanced bioinformatics analysis. The Cancer Genome Annotation System (CAS) is a very versatile suite of web-based bioinformatic tools, that can automatically process sequencing data from both normal and cancer samples of the same patient and provides valuable information for cancer researchers and may also provide guidance to physicians.

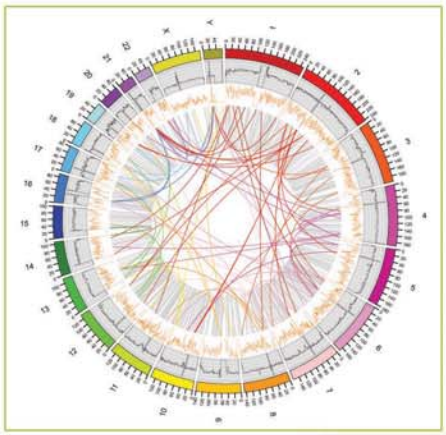
### Canceromics

- Cancer is the most complex disease of the genome
- Acquisition of somatic mutations and genome alterations
- The genome changes record a history of the disease(s)
- The genome information provides prognostic information for the disease
- Enables personalized treatment and diagnosis




**Personal Genome report**



"The Genomics Era of Cancer has Arrived - Like a Tsunami"
ASCO 2011 by A Breindl

"Cancer Genomics; From Discovery Science to Personalized Medicine"
Nature Medicine by L Chin

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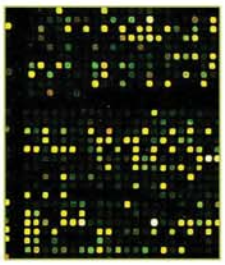
# PRODUCTS AND SERVICES

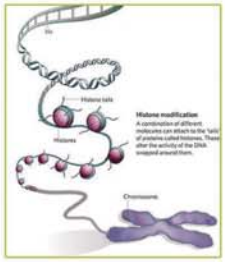


## Transcriptome Annotation System (TAS)

Applications for the transcriptome analysis system include unigene annotations as well as improvements for genome annotation, identification of differentially expressed genes, fusion genes, novel alternative splicing forms, and single nucleotide polymorphisms (SNPs). The Transcriptome Annotation System (TAS) provides a highly versatile bioinformatics solution for users from basic researchers to bio-medical specialists who want to apply the knowledge of genes to applications for next generation healthcare. Our web-based viewer is a powerful tool enabling users to dissect all results derived from a transcriptome pipeline.

## Epigenome Annotation System (EAS)

The epigenomics sequencing involves bisulfite, MeDIP and ChIP sequencing that will support the study of DNA methylation, histone modification, non-coding RNA and small RNA changes, and chromatin association with proteins. Epigenome analysis becomes one of the hottest topics in various cancer research studies due to a major alteration of DNA methylation and histone modification patterns during tumorigenesis. The Diagnomics' Epigenomics Annotation System (EAS) provides main resources and flexible mining utilities to researchers who want to translate basic research discoveries to practical applications.



## Metagenome Annotation System (MAS)

Metagenomics is the study of genetic material recovered directly from environmental samples within a whole microbial community. NGS-based metagenomic sequencing strategies provide a molecular level of understanding for metagenomic interactions using species clustering analysis tools, gene prediction and function analysis algorithms, association studies, and comparative analysis of multi-samples. The application of metagenomics has dramatically increased in many areas of medical and environment studies. The Epigenomics Annotation System (EAS) that is being developed by Diagnomics will provide a very powerful solution to researchers who want to apply new technologies to advance into the future of biology and medicine.

**IMPORTANT NOTE :** The Genome Annotation System does not provide any medical advice for the diagnosis or treatment of a patient. Analysis and reports provided by Diagnomics are for informational purposes only and are subject to change. You should consult your physician if you have questions regarding any medical condition you might have. The results and analysis presented here have not been cleared or approved by the FDA or similar government institutions.

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# PRODUCTS AND SERVICES

## Personalized Medicine Development

Personalized medicine is a rapidly advancing field of healthcare that is based upon each person's unique clinical, genomic, and environmental information. Because these factors are different for every person, the nature of diseases - including their onset, their course, and how they might respond to drugs or other interventions - is as individual as the people who carry them. Personalized medicine is about making the treatment as individualized as the disease. It involves identifying genetic, genomic, and clinical information that allows accurate predictions to be made about a person's susceptibility of developing a certain disease, the course of the disease, and its response to treatment. Diagnomics aims to tackle complex diseases and healthcare problems, such as cancer, heart disease, and diabetes, and translate them into precise diagnostic tests and targeted therapies by applying advanced personal genomics and bioinformatics. We believe that our technology and solutions will provide several specific advantages for personalized medicine which will ultimately benefit patients and clinicians, including:



- Ability to make more informed medical decisions.
- Higher probability of desired outcomes by targeted therapies.
- Reduced probability of negative side effects.
- Focus on prevention and prediction of diseases.
- Earlier disease intervention.
- Reduced healthcare costs.

*Personalized Medicine from Personal Genomics*

### Personalized Cancer Medicine (PCM)

Diagnomics is developing next generation sequencing (NGS) and advanced bioinformatics-based non-invasive cancer management systems that may provide the ultimate way to monitor and diagnose cancer recurrence and therapy effectiveness. The technology is based on proprietary quantitative cancer genome profiling and the detection of changes during the course of cancer treatment. We are also exclusively developing with Genautica the use of Next Generation Sequencing (NGS) utilizing a proprietary immune cell stimulatory medium to enable the Adoptive Cell Therapy (ACT) of cancer for personalized cancer immunotherapy.

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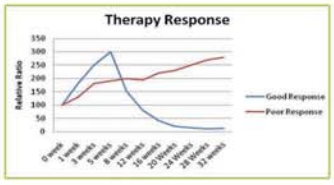
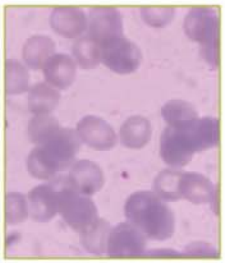
# PRODUCTS AND SERVICES

## Personalized Cancer Diagnosis (PCD)

The advent of NGS technologies has provided a superior approach for the detection, measurement and cataloging of circulating nucleic acids. Diagnomics is developing proprietary a Personalized Cancer Diagnosis (PCD) system which measures genomic mutation profile changes during the course of cancer treatment may provide unprecedented information from genome sequencing and advance bioinformatics analysis*. Our novel cancer diagnosis can be performed non-invasively from various biological samples in clinical setting.

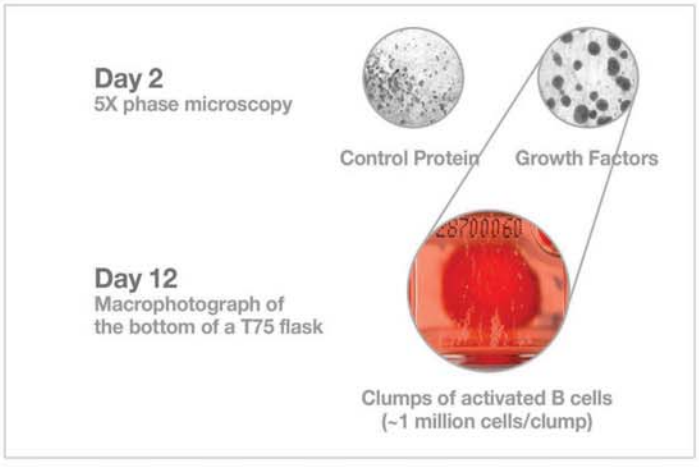



* **US Patent Pending :** Method for quantitating low levels of nucleic acids within high background for non-invasive diagnosis and disease monitoring.



## Personalized Cancer Immunotherapy (PCI)

Researchers in Diagnomics, Inc. are collaborating exclusively with Genautica to use Next-Generation Sequencing (NGS) and advanced bioinformatics to enable “intelligent” Adoptive Cell Therapy (ACT) for the cancer treatment. We are using specifically developed computer algorithms to analyze the epitope landscape of many different cancer types isolated from primary tumors and metastases.




### NGS Reveals Many Tumor-Specific Antigens for Cancer Immunotherapy

- Completely “designable” treatment
- Short development time
- Very few side effects
- Supplementive therapy
- Every cancer can be treated
- Strong patent

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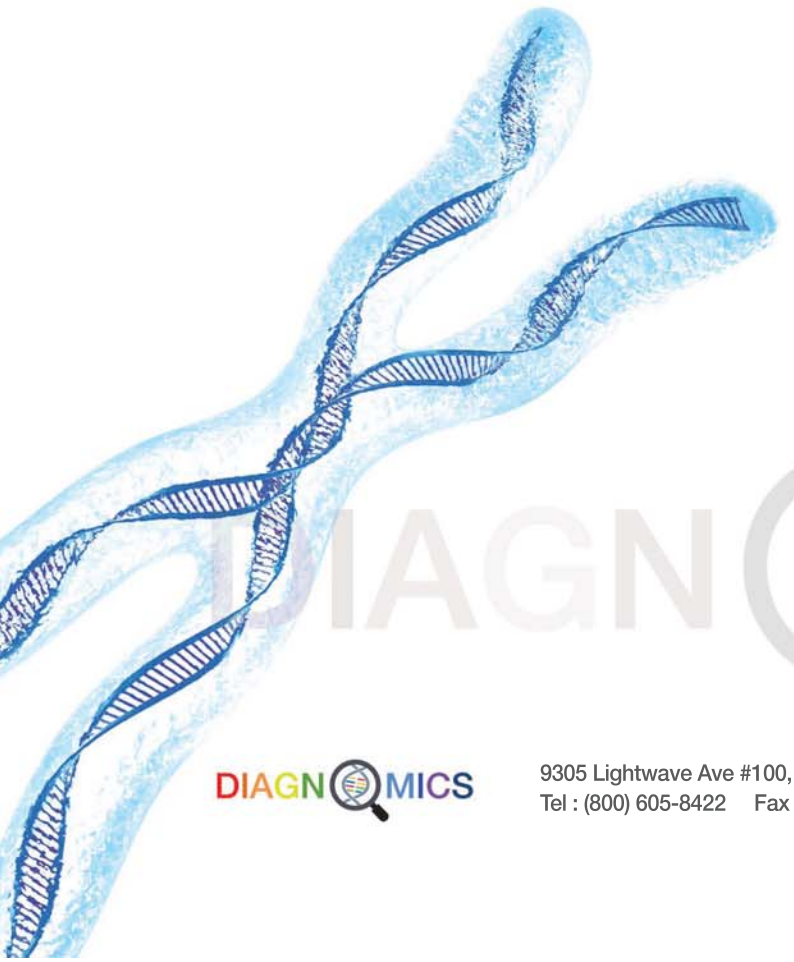
# DIAGNOMICS, INC.

## 01 IT Infrastructure

We are constantly upgrading our server farm to enable cutting edge bioinformatics and to satisfy our customers' computational needs. To that end, we house our bioinformatics infrastructure at a world class data center. Our first server farm is located in San Diego, California at American Internet Services and we have plans to build multiple data centers worldwide.

## 02 Bioinformatics

Diagnomics is committed to provide the most comprehensive bioinformatics suite available around next generation sequencing technology. We believe that bioinformatics solutions will empower genome research and promote revolutionary personalized medicine products and service development.



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## 03 Research & Development

Diagnomics aims to provide a complete solution to biomedical researchers, physicians and individuals who want to convert genomic discovery to personalized medicine. We are developing innovative therapeutics and diagnostics based on each individuals genome that will lead to personalized medicine based on next generation sequencing technology.

## 04 Business Development

Diagnomics can provide strategic support in form of bioinformatics, personalized medicine, research and new product development, IT infrastructure, or genomics support.

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