Career Overview
Personalized Medicine

Molecular Biologists are currently in high demand at:

- Biotechnology Companies
- Pharmaceutical Companies
- Medical Device Companies
- Reference Clinical Laboratories
- Large Hospital Laboratories
- Their role is expanding to smaller hospitals and clinics as new kits are approved by the FDA and available for wider use.

Charting a new course …

prevention, diagnosis, and treatment

Personalized Medicine

"5P" Health Care

Predictive: Uses state-of-the-art molecular diagnostic tools to help predict individual health risks and outcomes.

Personalized: Is informed by each person's unique clinical, social, genetic, genomic, and environmental profile.

Preventive: Emphasizes wellness and prevention to stop disease before it starts.

Preemptive: Incorporates action-oriented, individualized health planning.

Participatory: Empowers each patient to participate in their own care, with coordinated support from their health care team.

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Personalized Medicine

Great Future...Great Career!

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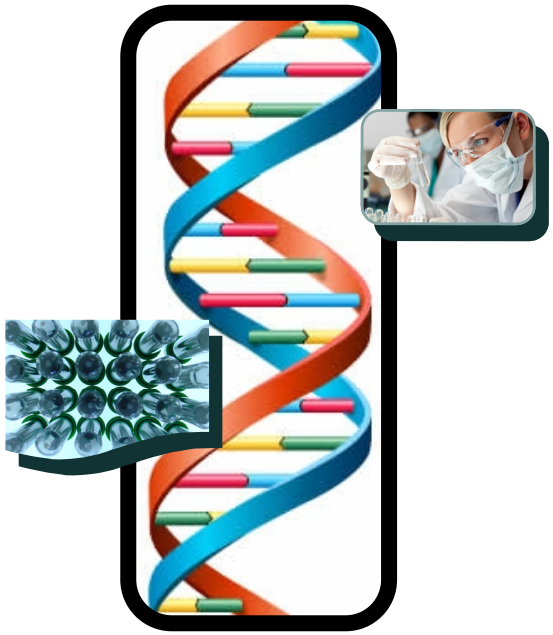

Work on the Frontline of an Exciting New Industry

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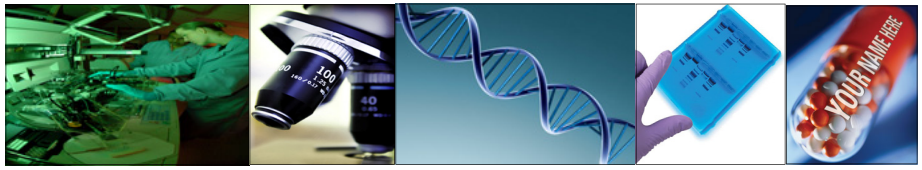
What Is Personalized Medicine?



P*ersonalized medicine* involves the use of a patient's personal genetic and environmental information to predict individual risks of disease and responsiveness to drugs. The use of genetics testing promises to revolutionize the medical management of many illnesses.

Potential Impact...

- **34% reduction** in chemotherapy use would occur if women with breast cancer receive a genetic test prior to treatment.
- **17,000 strokes** could be prevented annually if a genetic test is used to properly dose blood thinner warfarin.
- **$604,000,000** annual cost savings for health care system if patients with metastatic colorectal cancer receive a genetic test for the *KRAS* gene prior to treatment

A Brief History

The dream of personalized medicine was one of the driving forces behind the 13-year, $3 billion **Human Genome Project**. Researchers hoped that once the genetic blueprint was revealed, they could create DNA tests to gauge individuals' risk for conditions like diabetes and cancer, allowing for targeted screening or preemptive intervention. Such advances are starting to dramatically improve medicine and simultaneously lower costs by eliminating pointless treatments and reducing adverse drug reactions. Ever cheaper genetic sequencing means that researchers are getting more and more genomic information, from which they can tease out subtle genetic variations that explain why two otherwise similar people can have very different medical destinies. Within the next few years, it will become cheaper to have your genome sequenced than to get an MRI *(see "A Moore's Law for Genetics")*. Figuring out how to use that information to improve medical care is per-

The Future of Medicine

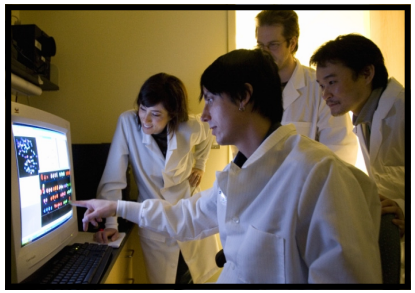
Requirements and Training

Clinical Genetic Molecular Biologist Scientists (known as a CGMBS) use their knowledge of molecular techniques to perform diagnostic testing in a clinical setting.

How to become a CGMBS

In order to be eligible for licensure as a clinical genetic molecular biologist scientist you must:

- Hold a baccalaureate or have a higher degree in a biological science or related science, and
- Complete at least one year training in molecular diagnostics in a clinical laboratory which has been approved by the State of California.



For More Information Go To:

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