

# Biotech Demystified

The Science Behind the Business

Program Topics: September 14 - 16, 2015

## Science Fundamentals & Cell Biology

### Genetics

- Disease Inheritance
- Mutations
- Sex-linked traits
- Genetic Disorders
- Cancer

### Stem Cells and Research

- Differentiation potential of stem cells
- Embryonic vs. adult stem cells
- Reproductive cloning of mammals
- Patient-Specific Regenerative Medicine
- Somatic Cell Nuclear Transfer
- Induced pluripotent stem cells

### Bioinformatics

- Types of informatics
- Digital Data Processing
- Politics and Policies
- Drug Discovery

### Molecular Biology

- The Central Dogma
- Macromolecules
- The genetic code
- Amino Acids

### Cancer and Oncology

- Cancer Cell Intrinsic Defects
- Tumor Microenvironment
- Cancer Therapy – Present & Future

### Lab Lecture

- Single Nucleotide Polymorphism (SNP)
- Effect of SNPs on a phenotype
- Genotyping a SNP
- Polymerase chain reaction

### Lab Experience

- You will isolate your genomic DNA from cheek (buccal) cells
- You will then use PCR, restriction enzyme digestion, and agarose gel electrophoresis to determine if your genotype matches your perceived phenotype

## Personalized Medicine

- Pharmacogenomics
- Technologies and products
- Case Study
- Players and markets
- Benefits and challenges
- The future

## Pharmacology

- Fundamental concepts
- Important drugs and targets
- Going from the lab to market
- Challenges and frontiers
- New ideas in pharmacology

## Drug Delivery

- What is ADME?
- Where can we administer drugs?
- What types of dosage forms are available?
- What delivery systems have been developed?

## Biosimilar & Biobetters

- Definitions
- Biologic Market Overview
- Generics & Innovators
- Regulatory Affairs
- The Players