Biotech Demystified
The Science Behind the Business
Program Topics

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