ABOUT CfPIE

Learn from the Leader

In a life sciences industry that has faced nearly $15 billion in fines and compliance-related settlements over the last several years, The Center for Professional Innovation & Education (CfPIE) is a better alternative for maintaining high standards, protecting industry reputations, and enhancing personal growth. Since 2001, we have embraced a singular goal—to provide the highest quality education to life science professionals. Today, as the global leader in quality life sciences training, we offer the largest range of course options for professional development in pharmaceutical, medical device, biotech, and skin/cosmetics disciplines. We are dedicated to enriching that reputation by conveying content relevant to the needs of individuals and organizations facing intense scrutiny in those highly technical disciplines.

About CfPIE

Go to http://www.cfpie.com

Go to “REGISTER HERE” and select your course.

Create an account and register for your course.

Payment

$2650.00 PER PERSON (INCLUDES BREAKFAST & LUNCH)

Early Bird Discount

If you register at least thirty days in advance you will receive a $200 discount on the course.

Additional Discounts

Contact us at 610-648-7550 or info@cfpie.com for information regarding partnership discounts or how your organization can become a partner with CfPIE.

Cancellation Policy

All cancellations must be in writing and are subject to a $350.00 cancellation fee. If cancellations are made more than 30 days prior to the course, a refund less the cancellation fee will be provided. If cancellations are made less than 30 days prior to the course, a voucher good for attendance at an upcoming course will be provided. The voucher, which can be used by the registrant or anyone else within his/her company, will be valued at the registration fee minus the $350.00 cancellation fee.

If a registered attendee does not cancel and fails to attend, neither a refund nor voucher will be issued. All course cancellations must be in writing and emailed sent to info@cfpie.com. Registrants are responsible for contacting the hotel and canceling their room reservations.

CfPIE reserves the right to alter the venue, if necessary.

Substitution Policy - Classroom Courses

Substitutions are accepted at no penalty with written notification from the original registrant in advance of course. All substitution requests must be in writing and emailed to info@cfpie.com.

CfPIE also offers on-site courses for 10 or more attendees. Contact us at info@cfpie.com.

Introduction to Molecular Biology Techniques – Applications in the Biotechnology and Pharmaceutical Industries

October 28 – 30, 2019 - Malvern, PA

Course Description

Molecular biology pertains to the study of living systems at the DNA, RNA, and protein levels, and how these molecules can be modified and harnessed for practical applications. Knowledge of the natural function of these molecules in the cell provides a context appropriate for further advancement in the rapidly expanding areas of functional genomics, cell biology, biotechnology, microbiology, diagnostics, therapeutics, and personalized medicine. This course, intended for the non-specialist, will focus on selected aspects of biotechnology in both basic- and applied research. In particular, the structural and functional relationships of molecular biology techniques to the biotech and pharmaceutical industries will be explained. Modern day molecular biology innovations and success stories will be presented and examples of molecular applications will be highlighted. At the end of the course, the participant will be conversant with respect to standard terminology in the field and will have an appreciation for the opportunities that exist within this discipline.

Who Should Attend

This is a three-day course for those interested in learning both fundamental and advanced-level molecular biology techniques. Molecular biology methods are used extensively in modern day drug discovery, research and development, and diagnostics. This course is intended for personnel with some scientific background who are seeking basic and advanced-level molecular biology training and who wish to become conversant within the discipline. This informative course is attractive to personnel involved with, or participating in, molecular biology-related and biotechnological research, supervision, scale-up or manufacturing, other technical operations, or basic/applied research.

http://www.CfPIE.com
INSTRUCTOR CREDENTIALS
Dr. Robert Farrell is an Associate Professor of Biology at Penn State University. He has thirty years of hands-on experience with molecular biology and animal tissue culture methods. In addition to his teaching experience and research enterprise focusing on transcriptional and posttranscriptional regulation of gene expression; Dr. Farrell has also consulted extensively within the pharmaceutical and biotech industries.

Previously, he served as President and principal investigator for Exon intron, a biotechnology education and laboratory service firm. His previous clients have included Bayer, Becton Dickinson, Dynal, Millipore, Pfizer, PGC Scientifics, Polaroid, Roche, Sigma Chemical and Syntex Pharmaceuticals.

Dr. Farrell received his Ph.D. and MS in Cell and Molecular Biology from The Catholic University of America and his BS in Biology from Providence College.

LEARNING OBJECTIVES
Upon completion of this course, you will have gained an understanding of techniques that are currently being utilized in the biotechnology and pharmaceutical industries. You will be familiar with concepts pertaining to basic molecular biology principles and techniques for understanding various contemporary areas of research and their applications. You will have acquired the facility for communication with colleagues and associates in various areas of molecular biology.

FIRST DAY
Principles of Molecular Biology Techniques
- Review of basic and advanced information on DNA, RNA, and proteins. Potential applications of molecular biology techniques in drug and biomarker discovery will be introduced and revisited throughout the course

DNA Techniques
- Isolation and purification of DNA samples from different cell types and tissues, quantification procedures, restriction digestion and analysis, ligation of DNA to create recombinant molecules and "designer genes"
- Southern Blotting: agarose gel electrophoresis, DNA transfer techniques, isotopic and nonisotopic probe labeling methods, hybridization, x-film exposure, interpretation of results

RNA Techniques
- Isolation, purification and characterization of RNA from cells and tissues, quantification procedures, and the control of ribonuclease
- Northern Blotting: denaturing gel electrophoresis, RNA transfer techniques, isotopic and nonisotopic probe labeling methods, hybridization, x-film exposure, interpretation of results.
- Nuclease Protection Assays (S1 Assay and RNase Protection Assays)

In Situ Hybridization
- Chromosome in situ hybridization diagnostics
- Whole tissue in situ hybridization

Applications of Biotechnology: A Few Success Stories
- Biosimilars
- Aptamers
- Forensics and DNA fingerprinting
- Disease diagnosis
- Gene Therapy
- Agricultural biotechnology

SECOND DAY
Proteomics Technologies
- Overview of proteomics techniques
- Relationship to genomics and transcriptomics
- Production and purification of recombinant proteins
- Monoclonal antibodies

Polymerase Chain Reaction (PCR)
- Real-Time PCR platforms (TaqMan Assay, SYBR Green Assay, and others)
- End-point PCR
- Digital PCR

THIRD DAY
DNA Sequencing
- Next generation sequencing
- Massively parallel sequencing
- 454 sequencing
- Whole transcriptome sequencing
- Serial Analysis of Gene Expression (SAGE) applications in drug discovery

Single Nucleotide Polymorphisms (SNPs)
- Identification and characterization techniques
- SNPs and drug discovery

Bioinformatics
- Overview of bioinformatics methods, BLAST searches, standard tools and data bases, and essential vocabulary

Development of molecular biomarkers
- DNA, RNA, and protein biomarkers
- Physiological biomarkers
- miRNA as biomarkers
- Strategies for biomarker identification

HOTEL INFORMATION
The Hilton LAX, Los Angeles, CA (CfPIE room rate of $167/night if booked 3 weeks in advance of the course date)
The Desmond Hotel & Conference Center, Malvern, PA (CfPIE room rate of $141/night if booked 3 weeks in advance)
Club Quarters Hotels, Boston, MA (CfPIE room rate of $255/night if booked 4 weeks in advance)
DoubleTree by Hilton London - Victoria (CfPIE room rate of £199.00/night if booked 4 weeks in advance)

First Day
- Primer design, TA cloning, TOPO Cloning, Long-range PCR, limiting PCR carryover contamination
- Alternative amplification platforms

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- Massively parallel sequencing
- 454 sequencing
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