Listening to a single cell?

that's GOOD science!

Find out at www.clontech.com/rnaseq-single

or call 1.800.662.2566

Clontech

Clontech Laboratories, Inc.
A Takara Bio Company

United States/Canada: +1.800.662.2566 • Asia Pacific: +1.650.919.7300 • Europe: +33.(0)1.3904.6880 • Japan: +81.(0)77.543.724
Illumina and HiSeq are registered trademarks or trademarks of Illumina, Inc. Clontech, the Clontech logo, and SMARTer are trademarks of Clontech Laboratories, Inc. ©2013 Clontech Laboratories, Inc.

What — You *Don't* Dip and Read™?!

Do less and get more from your kinetic assays

- Screen up to 1000 kinetic interactions in 6 hours
- Analyze crude samples microfluidics-free in 96- and 384-well plates
- Get k_a, k_d, K_D data in minutes, not hours or days
- Acquire real-time, SPR-quality kinetic data without the cost
- Monitor protein, small molecule, DNA, membrane protein and virus-like particle interactions

Octet Systems with Dip and Read assays.
Easy, worry-free kinetics.

fortéBIO®
A Division of ***Pall Life Sciences***

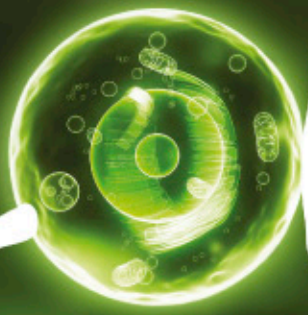
PALL Life Sciences

www.fortebio.com 1.888.OCTET-75

Fast. Accurate. EASY.

I MAY BE SMALL, BUT I HOPE TO PLAY A BIG ROLE IN HELPING RESEARCHERS

DEVELOP



TARGETED THERAPIES TO FIGHT DISEASE.

I WANT TO BE PART OF SOMETHING THAT ADVANCES HUMAN HEALTH.

THAT'S WHY I'M BEGINNING MY JOURNEY WITH

EXPRESSION ANALYSIS.

EVERY SPECIMEN HAS A STORY. LET YOURS BE HEARD AT **GENOMICKNOWHOW.COM**

ea

A Quintiles Company

Copyright © 2013 Quintiles

Build.
Measure.
Learn.
De Novo Assembly
RNA-Seq
SNP
We are a client-focused CRO that leverages our expertise in experimental design, multiple sequencing platforms and in-house bioinformaticians to provide candidates, not just data.
COFACTOR
genomics
Find out how you can put Cofactor D&A to work for you:
cofactorgenomics.com
1.888.8COFACTOR

TwistDx

A Revolution in DNA and RNA Detection

RECOMBINASE POLYMERASE AMPLIFICATION (RPA)

A breakthrough alternative to PCR

THE RPA PROCESS

RPA replaces PCR with a rapid isothermal enzymatic process. RPA uses a recombinase to pair oligonucleotide primers to a DNA template and a polymerase to synthesize daughter strands, resulting in exponential product accumulation. RPA products can be detected in real-time using fluorescent probes or by end-point methods such as lateral flow strips or gel electrophoresis in 10 to 15 minutes.

Want more info? CLICK HERE
www.twistdx.co.uk

TwistAmp™
1) Basic
2) exo
3) fpg
4) nfo
5) exo RT

TwistFlow™
1) Salmonella
2) Red Snapper

TwistGlow™
1) Salmonella

Sequence Deeper into the Transcriptome

Discover what's been missed in other disease studies.

Epicentre's new Ribo-Zero™ Gold Kit (Epidemiology) gives you one-step removal of both mammalian and microbial ribosomal RNA from intact and degraded microbe-infected mammalian RNA samples.

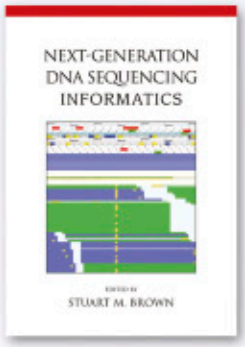
Enrich your disease and metatranscriptome samples for target genes and discover more human and microbial genes that were previously masked by high ribosomal RNA (rRNA) reads.

For more information contact RNASeq@epicentre.com

www.epibio.com/ribozero-epidemiology

epicentre®
an Illumina® company

NEXT-GENERATION DNA SEQUENCING INFORMATICS



Edited by Stuart M. Brown, *New York University School of Medicine*

Next-generation DNA sequencing (NGS) technology has revolutionized biomedical research, making complete genome sequencing an affordable and frequently used tool for a wide variety of research applications. Bioinformatics methods to support DNA sequencing have become a critical bottleneck for many researchers and organizations wishing to make use of NGS technology. This book provides a thorough introduction to the necessary informatics methods and tools for operating NGS instruments and analyzing NGS data. The book also provides extensive reference to best-practice bioinformatic methods for the most commonly used NGS technologies and applications. The book also includes reference to, and guidance on, the setup and use of essential software for NGS data analysis. This is the first book of its kind to address the informatics needs of scientists who wish to take advantage of the explosion of research opportunities offered by new DNA sequencing technologies.

Due December 2012, 241 pp., illus. (48 4C and 15 B&W), index
Hardcover $59
ISBN 978-1-936113-87-3

CONTENTS

Preface

Acknowledgments

About the Authors

1. Introduction to DNA Sequencing
   Stuart M. Brown
2. History of Sequencing Informatics
   Stuart M. Brown
3. Visualization of Next-Generation Sequencing Data
   Phillip Ross Smith, Kranti Konganti, and Stuart M. Brown
4. DNA Sequence Alignment
   Efstratios Efstathiadis
5. Genome Assembly Using Generalized de Bruijn Digraphs
   D. Frank Hsu
6. De Novo Assembly of Bacterial Genomes from Short Sequence Reads
   Silvia Argimón and Stuart M. Brown
7. Genome Annotation
   Steven Shen
8. Using NGS to Detect Sequence Variants
   Jinhua Wang, Zuojian Tang, and Stuart M. Brown
9. ChIP-seq
   Zuojian Tang, Christina Schweikert, D. Frank Hsu, and Stuart M. Brown
10. RNA Sequencing with NGS
    Stuart M. Brown, Jeremy Goecks, and James Taylor
11. Metagenomics
    Alexander Alekseyenko and Stuart M. Brown
12. High-Performance Computing in DNA Sequencing Informatics
    Efstratios Efstathiadis and Eric R. Peskin

Glossary

Index

www.cshlpress.org

multiply your research power with instant collaboration

Meet the new DNAnexus

An instant cloud-based DNA data management and analysis platform

Leverage an ever-expanding configurable cloud-based platform!

- Accelerated results
- Unlimited compute and storage
- Easy and powerful collaboration
- Instant security and compliance

Request a test drive today!

Learn more at DNAnexus.com/results

DNAnexus
Powering the Genomics Revolution™

Copyright ©2012 DNAnexus, Inc. All rights reserved worldwide. The DNAnexus logo and favicon are trademarks of DNAnexus.

I am a physician and scientist studying complex traits and ASHG is my Society.

"I joined the ASHG during my medical genetics fellowship and have felt that it is central to my identity as a scientist working on genetic disorders ever since.

ASHG membership cements you in a community of like-minded scientists who share your interests and challenges and many of whom, through regular interactions, become lifelong friends."

- Jeff Murray, MD
ASHG President, 2013

Join or renew your membership with ASHG today!

Stand with your colleagues in human genetics.

THE AMERICAN SOCIETY OF HUMAN GENETICS

$190 Regular Members
$25-$70 Trainee Members

Key benefits include:

- Significantly reduced Annual Meeting registration rates
- Subscription to the *American Journal of Human Genetics*
- No publication fees for accepted submissions to *AJHG*
- Access to educational materials
- Trainee support and activities at the Annual Meeting
- Access to recorded sessions online from the Annual Meeting
- The field's interests represented by ASHG through advocacy, including representation in the Federation of American Societies for Experimental Biology

ashg.org/join

If you have questions regarding membership status, please contact us:
The American Society of Human Genetics • 9650 Rockville Pike • Bethesda, Maryland 20814-3998
1.866.HUMGENE • Fax: 301.634.7079 • Membership: mshih@ashg.org

GENOME RESEARCH

Assistant Editor Position Available

Cold Spring Harbor Laboratory Press is searching for a scientist interested in the communication of science to fill the position of Assistant Editor at *Genome Research*, a journal that publishes advances in genome biology and genomic medicine. *Genome Research* is among the ten most highly cited research journals in biochemistry and molecular biology.

The applicant must have a Ph.D. in the biological sciences, preferably with experience in genetics and genomic science. The successful candidate will assist the journal's Executive Editor in manuscript selection, negotiation with authors, commissioning reviews, writing and coordinating press releases, managing social media, representing the journal at conferences, and identifying emerging trends in science and in online publishing. Strong communication, problem solving and organizational skills, creativity, ability to meet deadlines, and the capacity to handle multiple projects at once are significant requirements. Broad interests in science and experience in the communication of science would be helpful. We seek a team player with energy, enthusiasm, and excellent interpersonal skills.

CSHL Press is affiliated with Cold Spring Harbor Laboratory, located on the North Shore of Long Island, 35 miles from New York City. We offer a competitive salary and benefits package.

Please submit a curriculum vitae and a cover letter explaining your interest in the position to:

Human Resources Department
Cold Spring Harbor Laboratory
1 Bungtown Road, Cold Spring Harbor, NY 11724
jobline@cshl.org
Fax (516) 367-6850

REGISTER EARLY AND SAVE!

ABRF2013

TOOLS FOR THE ADVANCEMENT OF CONVERGENCE SCIENCE

MARCH 2-5, 2013 • PALM SPRINGS, CALIFORNIA

ABRF 2013 will explore and embrace a new trend that combines expertise from a number of disciplines focused on solving problems in biomedical research. At the meeting, Core Facility Directors, Staff Scientists, Researchers, Administrators and Industry Partners will convene to present their latest research technologies and products that form the base of Convergence Science.

World Class Plenary Speakers Include:

- **Larry Nagahara**
  National Cancer Institute/
  National Institutes of Health
- **Benjamin Cravatt**
  The Scripps Research Institute
- **Jay Shendure**
  University of Washington

4 CONCURRENT TRACKS

allow presenters and attendees to explore and discuss, in depth, critical scientific, technical and administrative issues faced in the areas of:

- Core Facility Administration
- Light Microscopy
- Genomics
- Proteomics

The Association of Biomolecular Resource Facilities
is an international society dedicated to advancing core and research biotechnology laboratories through research, communication, and education.

Research • Technology
Communication • Education

For more information:
ABRF2013.abrf.org

MENTION KEYCODE S54 WHEN REGISTERING.

NINTH ANNUAL

microRNA

Targets & Tools for Therapeutic Development

Boston Marriott Cambridge
Cambridge, MA

March 4-5 2013

20+ SCIENTIFIC PRESENTATIONS COVERING

- **Therapeutic Potential in Inflammation, Cancer and Pain**
- **New Technological Strategies**
- **microRNAs as Biomarkers and in Diagnostics**
- **Tissue-Based Analysis**
- **Circulating miRNAs**

SHORT COURSE:

Sunday, March 3
Computational Aspects of microRNA

AGENDA HIGHLIGHTS

microRNAs in Diagnostics and Targeting Rheumatic Disease
Steffen Gay, M.D., Professor, Experimental Rheumatology, University of Zurich

Causes and Consequences of microRNA Dysregulation in Cancer
Carlo M. Croce, M.D., Professor and Chair, Department of Molecular Virology, Immunology and Medical Genetics; Director, Institute of Genetics,Ohio State University

Pre-Clinical Development of a Tumor Suppressor miRNA
David Brown, Ph.D., Director, Research, Mirna Therapeutics

microRNAs: Novel Target Class for Small Molecule Drug Discovery?
Pramod Pandey, Ph.D., Senior Research Investigator, Center for Proteomic Chemistry, Integrated Lead Discovery, Novartis Institute for Biomedical Research, Inc.

Circulating miRNAs as Biomarkers: How Far Have We Made It?
Igor Mikaelian, M.D., D.V.M., MSc, DACVP, Research Leader, Hoffman-La Roche, Inc.

Extracting Contextual microRNA Information for Cancer Diagnostics
Lorenzo F. Sempere, Ph.D., Research Assistant Professor, Department of Medicine, Geisel School of Medicine at Dartmouth

CORPORATE SPONSORS

Firefly BioWorks

INGENUITY® SYSTEMS

Organized by
Cambridge Healthtech Institute

healthtech.com/MRN

GENOME SCIENCE

A Practical and Conceptual Introduction to Molecular Genetic Analysis in Eukaryotes

By David Micklos, *Cold Spring Harbor Laboratory,* Bruce Nash, *Cold Spring Harbor Laboratory,* and Uwe Hilgert, *University of Arizona*

Genome Science is a textbook and laboratory manual for advanced secondary and post-secondary education. It combines approachable narrative with extensively tested lab exercises that illustrate key concepts of genome biology in humans, invertebrates, and plants. Eighteen labs, organized into four chapters, engage students with both bioinformatics exercises and in vitro experiments. Each chapter also includes an extensive introduction that provides an historical and conceptual framework. This modular structure offers many options for enhancing existing courses, starting new courses, or supporting student research projects. The book is complete with advice for instructors, laboratory planning guidelines, recipes for solutions, and answers to student questions.

2012, 704 pp., illus (3 4C, 606 B&W), index
Hardcover $55
ISBN 978-0-879698-59-1

CONTENTS

1. Genome as Information
Introduction
Lab 1.1 Annotating Genomic DNA
Lab 1.2 Detecting a Lost Chromosome
Lab 1.3 Comparing Diversity in Eukaryotes
Lab 1.4 Determining the Transposon Content in Grasses
Lab 1.5 Identifying *GAI* Gene Family Members in Plants
Lab 1.6 Discovering Evidence for Pseudogene Function
Laboratory Planning and Preparation
Answers to Questions

2. The Human Genome
Introduction
Lab 2.1 Using Mitochondrial DNA Polymorphisms in Evolutionary Biology
Lab 2.2 Using an *Alu* Insertion Polymorphism to Study Human Populations
Lab 2.3 Using a Single-Nucleotide Polymorphism to Predict Bitter-Taste Ability
Laboratory Planning and Preparation
Recipes for Reagents and Stock Solutions
Answers to Questions

3. Plant Genomes
Introduction
Lab 3.1 Detecting a Transposon in Corn
Lab 3.2 Detecting a Transposon in *Arabidopsis*
Lab 3.3 Linkage Mapping a Mutation
Lab 3.4 Detecting Genetically Modified Foods by Polymerase Chain Reaction
Lab 3.5 Using DNA Barcodes to Identify and Classify Living Things
Lab 3.6 Detecting Epigenetic DNA Methylation in *Arabidopsis*
Laboratory Planning and Preparation
Recipes for Reagents and Stock Solutions
Answers to Questions

4. Genome Function
Introduction
Lab 4.1 Culturing and Observing *C. elegans*
Lab 4.2 Using *E. coli* Feeding Strains to Induce RNAi and Knock Down Genes
Lab 4.3 Examining the RNAi Mechanism
Lab 4.4 Constructing an RNAi Feeding Vector
Laboratory Planning and Preparation
Recipes for Reagents and Stock Solutions
Answers to Questions

Cautions Appendix
Equipment Appendix
Subject Index

www.cshlpress.org