You say you want a revolution?

Elmer Gaden did.

His pioneering work on the mass production of penicillin revolutionized the drug industry. It brought engineers and biologists together, and gave the world greater access to more than 100 medicines. For that achievement, he has been awarded the 2009 Russ Prize, the world's top honor in bioengineering.

Ohio University thanks late alumnus Fritz Russ and his wife, Dolores, for creating the $500,000 Russ Prize with an endowment to the University. We are proud to steward their vision in collaboration with the National Academy of Engineering.

Promoting engineering, Encouraging engineering education, Recognizing achievements that improve our lives. The Fritz J. and Dolores H. Russ Prize

Ohio University is an affirmative action institution. ©2009 Ohio University Communications and Marketing 0642
• **Higher Specificity:** No more non-specific amplification from primer dimers, even when starting from minute amounts of template.

• **Wide Range of Detection:** Accurate quantification over 8 logs of magnitude.

• **Fast Reaction Times:** Shorter reaction times due to optimized buffer formulation. Suitable for use with Fast PCR instruments.

• **Versatility:** Use on any qPCR instrument.

Takara Bio announces the introduction of **SYBR® Premix Ex Taq™ 2**, the newest addition to the Perfect Real Time Series. This real time PCR premix features a superior buffer formulation which limits non-specific amplification and primer dimer formation. This provides extremely high specificity, sensitivity, and accurate quantification over a wide range of template concentrations. In addition, **SYBR® Premix Ex Taq™ 2** is compatible with a variety of real time PCR instruments and high speed qPCR applications.

Amplification of cDNA from the Mouse gene YWHAZ using Takara’s SYBR® Premix Ex Taq™ 2. 6.4 pg-100 ng of total RNA from mouse liver was reverse transcribed and real time PCR performed.
WAVE Bioreactor is ReadyToProcess

Accelerate your seed train

Speed, efficiency, and ease of use are key to reducing time to clinic. The WAVE Bioreactor™, with its novel rocking motion, is a fast and efficient system for inoculum propagation and cell culture. Scale-up is simple as no passaging is needed—just add fresh media to the Cellbag™.

The WAVE Bioreactor is part of the ReadyToProcess™ platform: ready-for-use bioreactors, filters, prepacked columns and connectivity solutions that help eliminate wasteful practices and put time on your side.

GE Healthcare can connect you to the power of operational excellence.

Learn more about operational excellence at: www.gelifesciences.com/opex
Pure excellence, pure efficiency

QIAxcel and QIAcube

- Automate your spin column preps on the QIAcube
- Eliminate tedious DNA fragment and RNA analysis with the QIAxcel
- Free up your time with automated purification and analysis

Visit www.qiagen.com/goto/PureExcellence for more information!
Too Fast!

Rapid plasmid preps free valuable lab time

New System Answers Need for Speed, Purity and Yield

Who switched my preps?
I used to finish my plasmid preps after dark, but with PureYield™ I finished early and walked out right into the sun. Not a good idea!

PureYield™ plasmid preps... Good for you. Bad for Vlad.

Find out why Vlad is upset and qualify for a FREE PureYield™ plasmid prep system at: vladinthelab.com

TODAY COULD BE THE DAY.
Learn Molecular Biology in 1 or 2 Weeks!

We are pleased to announce the twenty-fourth annual Molecular Biology Summer Workshops, sponsored by New England Biolabs in conjunction with Smith College. Workshops are held at the Clark Science Center, Smith College, Northampton, MA, USA. Well over 3,000 people have graduated from this intensive training program in the past twenty-three years. These intensive courses emphasize hands-on molecular biology laboratory work and cover a wide variety of topics and techniques. No prior experience in molecular biology is required.

**when:**
- **two-week sessions:**
  - Session 1: June 7 - June 20, 2009
  - Session 3: July 12 - July 25, 2009
- **one week sessions:**
  - Session 2: June 25 - July 1, 2009
  - Session 4: August 2 - August 7, 2009
  (lecture course only)

**where:**
- Clark Science Center
- Smith College
- Northampton, MA USA 01063
- Dr. Steven A. Williams

**to apply:**
- **website:**
  - http://www.science.smith.edu/neb
- **email:**
  - biolabs@email.smith.edu
- **phone:**
  - (413) 247-3004

**topics / techniques:**
- gene cloning (and library construction)
- gene expression analysis
- PCR and quantitative RT-PCR
- genomics and bioinformatics
- DNA sequencing & DNA fingerprinting
- RNAi, siRNA and microarrays
- and much more — visit our website for a complete list!

Both ONE week and TWO week Molecular Biology Sessions available!
Session 2 is a one week short course that covers DNA cloning, PCR, DNA sequencing, genomics and bioinformatics. Sessions 1 and 3 cover twice as much material and are our most popular courses. These sessions add techniques used in gene expression analysis including microarray analysis, RNAi and quantitative RT-PCR, more bioinformatics and genomics and protein expression. All of the above topics are covered in the two-week sessions. Session 4 will cover all of the topics in the two week laboratory course, but will be a lecture-only course for those not requiring hands-on laboratory experience.

**application information:** No previous experience in molecular biology is required or expected. Forty participants per session will be selected from a variety of disciplines and academic backgrounds, including principal investigators, directors of programs, medical doctors, postdoctoral fellows, graduate students, research assistants, sales associates, equipment engineers, etc.

**fee:** $3995 per participant (2 week sessions), $2295 pp (Session 2) and $1495 pp (Session 4). This fee includes lab manual, use of all equipment and supplies, and room and board (all rooms are singles).

**application deadline:** May 1, 2009. First come, first served (apply now!). Late applications will be accepted on a space available basis.

**payment deadline:** Three weeks following receipt of your email acceptance letter.
xCELLigence RTCA MP Instrument

Never let a cell event go undetected

Find out more about what is really going on with your cells with the new xCELLigence RTCA MP Instrument from Roche Applied Science. Choose this new label-free, non-invasive technology and experience the power of clear results. Scale up your throughput to up to six 96 well E-Plates and obtain the most out of your experiments.

- Analyze cell activity continuously in real-time
- Obtain relevant data from up to six independent 96 well E-Plates simultaneously
- Easily measure both short term (GPCR assays) and long term (compound-mediated cytotoxicity) cellular effects

The xCELLigence RTCA MP Instrument enables more cellular analysis than ever before.

To learn more about our new Real-Time Cell Analyzer, visit:
www.xcelligence.roche.com

Figure 1: Real-time monitoring of Gs-protein-coupled receptor stimulation by calcitonin in CHO-K1 cells. See the whole picture from the initial stimulation to the resulting cellular response. Study all cell activities in real-time and come to know the real potential of your research.
Each of your valuable samples deserves the best treatment. See for yourself how the eppendorf Plate® will save time and reduce costs.

Sample loss in plates can be time consuming and expensive. Therefore, the close environment of each sample should be adapted to its specific quality and purity needs. This can involve a specific purity level or the absence of certain substances, but also stability, reliability, or geometry. The eppendorf Plate® is designed to cover all of the specific needs of your samples!

Bring out the best! Eppendorf Microplates:
● Identify wells 30 % faster with the unique OptiTrack® Matrix
● Maximize sample recovery with RecoverMax® well design
● Minimize sample loss with DNA or Protein LoBind quality
● Black or white plates improve sensitivity to fluorescence and luminescence detection

Learn more about Eppendorf Microplates:
www.eppendorf.com/microplates
The last word on Science Signaling...

Science Signaling* now adds peer-reviewed, original research papers. Under the editorial leadership of Chief Scientific Editor, Michael B. Yaffe, M.D., Ph.D., Associate Professor of Biology at MIT, Science Signaling will provide the research community with top-notch research accompanied by other insightful features and commentary.

New! Peer-reviewed original research

....is now even better.

Subscribe Today!
Don't miss an issue. Sign up for a new institutional subscription, or renew your university's site license so all your students and colleagues can take advantage of Science Signaling.

For a free trial go to: www.sciencemag.org/cgi/recommend_subscription

www.ScienceSignaling.org

* Formerly known as Science's STKE
Gel Protein Recovery System
The GPR-800 is an advanced, microfluidics-based gel protein recovery (GPR) system for the rapid and efficient extraction of proteins from polyacrylamide gels. The system makes use of a proprietary plastic microfluidic chip in a high voltage environment to allow fast, simultaneous recovery in eight parallel microchannels. It is a closed system with minimal dead volume, assuring no introduction of contaminants. The recovered proteins can be easily analyzed by mass spectrometry to determine intact mass or perform top-down proteomics experiments.

Protea Biosciences
For information 877-776-8321
www.proteabio.com

Illuminator
The Midac Illuminator is a compact Fourier transform infrared module that integrates well with a variety of sample interfaces in virtually any configuration. Inside each Illuminator is an infrared source and interferometer that provide a collimated output beam. The rugged module can be coupled with any sampling accessory equipped with its own infrared detector to create a compact dedicated analyzer. Alternatively, the Illuminator's internal infrared source can be replaced with a detector module for emissions work or for use with an external infrared source. The unit can be powered by a 12-volt battery for use in remote or field applications.

Midac Corp.
For information 714-546-6322
www.midac.com

Gel Permeation Chromatography
Solvent-enhanced light scattering (SELS) is a new light-scattering technique that can be used in gel permeation chromatography (GPC) applications in which the demands of sample solvent and mobile phase are different. The technique allows users with two different solvents to separately optimize the sample preparation step and the chromatographic conditions to increase the refractive index increment to get better light-scattering responses. Viscotek has published an application note about a fluoropolymer analysis by SELS-GPC in which the fluoropolymer is dissolved in tetrahydrofuran and then this solution is injected into a mobile phase of acetone for analysis.

Viscotek Europe
For information +44-1344-467180
www.viscotek.com

Platinum Electrodes
Platinum Tweezertrode electrodes are designed to enhance in utero and in vivo transfection applications. These electrodes provide uniform electrical fields and efficient drug and gene delivery. They are available in a variety of sizes (1 mm, 3 mm, 5 mm, 7 mm, and 10 mm) diameters to accommodate a variety of tissue sizes and allow for easier targeting of tissues.

BTX
For information 800-272-5732
www.btxonline.com

Perfusion System
The Perfusion System for Cell Isolation is designed for harvesting individual cells from the isolated organs of mice, rats, and guinea pigs. It features dual perfusion pathways, in which one circuit delivers perfusate to flush out blood cells while a second circuit delivers an enzyme solution to disintegrate tissue and release individual cells. The system is simple to operate using a single manual switch to change between the perfusion pathways. The dead/mixing volume in the perfusion pathway is less than 100 microliters. A dedicated extension for cardiomyocyte isolation ensures a positive pressure within the heart chamber to prevent bacterial contamination. Adaptations for in situ and in vivo perfusions are available.

Hugo Sachs Elektronik—Harvard Apparatus
For information 800-272-2775
www.harvardapparatus.com

Thermocycler
Evaporation of water from the master mix changes the specificity and efficiency of any polymerase chain reaction, so the Mastercycler pro thermocycler offers a new technology to reduce evaporation. The new technology found in the lid features a fluid-filled Teflon-coated membrane. In contrast to traditional solid plates, this innovative lid envelops the samples to guarantee a snug fit to reduce evaporation to a minimum.
“How do we know this lead molecule is novel?”

“SciFinder—of course.”

Need to assess the novelty of substances?
SciFinder is the answer.

It includes CAS REGISTRY®, the most comprehensive substance information available, integrated with relevant journal articles and patents.

Give your research team the highest quality and most timely scientific information resource.

Make SciFinder an essential part of your research process.

For more information about SciFinder, visit www.cas.org or e-mail help@cas.org.

SciFinder®—Part of the process.™

CAS is a division of the American Chemical Society
Go ahead, ask the big questions.
Our miRNA and noncoding RNA profiling portfolio makes it possible.

The NCode™ miRNA and ncRNA systems deliver faster, more complete answers. In one powerful portfolio, you can find answers to address your entire workflow, from sample preparation to data validation—or optimize any step along the way. From the first high-density array with both noncoding and mRNA content to data-rich miRNA microarrays to the highly sensitive miRNA labeling system that enables hybridization in as little as 8 hours, you’ll have everything you need to advance your research. So ask your big questions and get answers at www.invitrogen.com/ncode.