COURSE DESCRIPTION

Real-time PCR (Polymerase Chain Reaction) has broad applications for clinical microbiology testing. This workshop will familiarize the participant with currently available rapid cycle real-time methods including the principles of rapid thermocycling and probe detection formats. Pre-analytic processing of patient specimens including isolation, concentration and preservation of nucleic acid and quality control, and quality assurance issues will be addressed. Applications of this technology for the detection and quantitation of microorganisms and mutation screening for antimicrobial resistance will be presented. Participants will have close-up experience with these applications. In addition, primer-probe design, assay optimization, assay performance verification, validation, and interpretation of results using the LightCycler system will be presented.

COURSE LEARNING OBJECTIVES

By the end of the conference, participants should be able to:

- Describe the commercial systems currently available for rapid cycle real-time PCR including principles of instrumentation, capacity for testing, turnaround time for analyses and vendor-preferred detection (probe) formats.

- Interpret clinical experience with rapid cycle real-time PCR.

- Evaluate issues of sample collection, nucleic acid extraction, concentration and preservation.

- Review applications of rapid cycle real-time PCR including detection and quantitation of microorganisms and mutation or polymorphism analysis.

- Describe target nucleic acid selection and fluorescence resonance energy transfer (FRET) probe design strategies.

- Demonstrate specimen and amplicon contamination prevention procedures.

- Define PCR optimization strategies and perform analyses and interpretation of data for the LightCycler and SmartCycler instrumentation.

- Review quality control procedures and regulatory requirements for rapid real-time PCR assays.

- Examine implementation issues in the clinical laboratory, including process changes, work flow, cost-effectiveness, and reimbursement.

Attendance at this Mayo course does not indicate nor guarantee competence or proficiency in the performance of any procedures which may be discussed or taught in this course.

INTENDED AUDIENCE

This course is designed for Clinical Microbiologists, including Laboratory Directors, Supervisors, Medical Technologists, Public Health Microbiologists, Pathologists, and Infectious Disease Specialists.

CREDIT

Mayo Clinic College of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians.

Mayo Clinic College of Medicine designates this educational activity for a maximum of 9 category 1 credits toward the AMA Physician’s Recognition Award. Each physician should claim only those credits he/she actually spent in the activity.

The American Medical Association has determined that non-US-licensed physicians who participate in this CME activity are eligible for AMA PRA category 1 credit.
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 – 8:30 AM</td>
<td>Registration and Continental Breakfast</td>
</tr>
<tr>
<td></td>
<td>Leighton Auditorium Foyer, Second Floor</td>
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<tr>
<td></td>
<td>Harold W. Siebens Medical Education Building</td>
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<tr>
<td>8:30 – 8:45 AM</td>
<td>Orientation and Introduction</td>
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<tr>
<td></td>
<td>Franklin R. Cockerill III, MD</td>
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<tr>
<td>8:45 – 9:15 AM</td>
<td>Overview of Rapid Cycle Real-Time PCR Technology</td>
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<td>Franklin R. Cockerill III, MD</td>
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<td>9:15 – 9:45 AM</td>
<td>Specimen Processing</td>
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<td>Jon E. Rosenblatt, MD</td>
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<tr>
<td>9:45 – 10:15 AM</td>
<td>Nucleic Acid Extraction</td>
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<td>Mark J. Espy, MS</td>
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<td>10:15 – 10:45 PM</td>
<td>Break</td>
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<tr>
<td>10:45 – Noon</td>
<td>Design of Real-Time Assays: Target Selection and Probe Design</td>
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<td>James R. Uhl, MS</td>
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<tr>
<td>Noon – 1:00 PM</td>
<td>Lunch</td>
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<td></td>
<td>Rochester Marriott Hotel Ballroom, Second Floor</td>
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<tr>
<td>1:00 – 1:45 PM</td>
<td>Quality Control and Regulatory Requirements</td>
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<td>Lynne M. Sloan, BS</td>
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<td>1:45 – 2:15 PM</td>
<td>Applications for Viral Diagnostics</td>
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<td>Thomas F. Smith, PhD</td>
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<td>2:15 – 2:45 PM</td>
<td>Implementation of Viral Assays</td>
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<td>Mary F. Jones, MT</td>
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<td>2:45 – 3:15 PM</td>
<td>Break</td>
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<tr>
<td>3:15 – 3:45 PM</td>
<td>Applications for Bacterial Diagnostics</td>
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<td></td>
<td>Franklin R. Cockerill III, MD</td>
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<td>3:45 – 4:15 PM</td>
<td>Implementation of Bacterial Assays</td>
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<td>Emily A. Vetter, MT</td>
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<tr>
<td>4:15 – 4:30 PM</td>
<td>Wrap-up</td>
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<tr>
<td>5:00 – 6:30 PM</td>
<td>Conference Reception</td>
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<td>Kahler Hotel, Elizabethan Room</td>
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</tbody>
</table>
FRIDAY, NOVEMBER 18, 2005

7:30 – 8:30 AM  Continental Breakfast
Leighton Auditorium Foyer, Second Floor
Harold W. Siebens Medical Education Building

8:30 – 10:00 AM  Extraction
• Lysis
• Manual Extraction
• Automated
• Extraction Control

10:00 – 10:30 AM  Break

10:30 – Noon  Assays
• General
• Single assays
• Multiplex assays
• Quantitative
• Weak positives/probit

Noon – 1:00 PM  Lunch
Rochester Marriott Hotel Ballroom, Second Floor

Afternoon  Laboratory Tours
FACULTY

Course Directors

Franklin R. Cockerill III, MD
Chair, Division of Clinical Microbiology
Department of Laboratory Medicine and Pathology
Ann and Leo Markin Professor of Microbiology and Medicine
Mayo Clinic College of Medicine
Rochester, Minnesota

James R. Uhl, MS
Research and Development Technologist, Division of Clinical Microbiology
Department of Laboratory Medicine and Pathology
Mayo Clinic
Rochester, Minnesota

Mayo Faculty

Mark J. Espy, MS
Research and Development Technologist, Division of Clinical Microbiology
Instructor in Microbiology
Mayo Clinic College of Medicine*

Mary F. Jones, MT
Laboratory Operations Manager, Division of Clinical Microbiology
Department of Laboratory Medicine and Pathology

Jon E. Rosenblatt, MD
Consultant, Division of Clinical Microbiology
Department of Laboratory Medicine and Pathology
Professor of Microbiology and Medicine
Mayo Clinic College of Medicine*

Lynne M. Sloan, BS
Research and Development Technologist, Division of Clinical Microbiology
Department of Laboratory Medicine and Pathology

Thomas F. Smith, PhD
Consultant, Division of Clinical Microbiology
Department of Laboratory Medicine and Pathology
Professor of Microbiology and Medicine
Mayo Clinic College of Medicine*

Emily A. Vetter, MT
Laboratory Operations Manager, Division of Clinical Microbiology
Department of Laboratory Medicine and Pathology

* Rochester, Minnesota

FACULTY DISCLOSURE

As a provider accredited by ACCME, Mayo Clinic College of Medicine (Mayo School of CME) must ensure balance, independence, objectivity and scientific rigor in its educational activities. Course Director(s), Planning Committee Members, Faculty, and all others who are in a position to control the content of this educational activity are required to disclose all relevant financial relationships with any commercial interest related to the subject matter of the educational activity. Safeguards against commercial bias have been put in place. Faculty will also disclose any off-label and/or investigational use of pharmaceuticals or instruments discussed in their presentation. Disclosure of these relevant financial relationships will be published in course materials so those participants in the activity may formulate their own judgments regarding the presentation.
REAL-TIME PCR FOR THE CLINICAL MICROBIOLOGY LABORATORY

Leighton Auditorium
Siebens Medical Education Building - Rochester, Minnesota
November 17–18, 2005

Mail form and payment to:
Mayo Medical Laboratories
Education Department
3050 Superior Drive NW
Rochester, MN  55901
Telephone:  800-533-1710
Fax:  507-284-8016
Web site:  www.mayoreferenceservices.org
E-mail:  mcnamara.nancy@mayo.edu

To register, complete the attached form and return by mail or fax. The registration fee is $450, and includes tuition, comprehensive course syllabus, continental breakfast each morning, lunch on Thursday and Friday, break refreshments, and the conference reception on Thursday evening. Registration deadline is October 21, 2005.

(Please print or type all information. You may duplicate this form for multiple registrations.)

Name ___________________________________________________________________________________________
First Name                                             Middle Name or Initial                                               Last Name

Degree  [ ] MD  [ ] PhD  [ ] Other

Institution _______________________________________________________________________________________

Medical Speciality  ________________________________________________________________________________

E-mail  (required)  ________________________________________________________________________________

Which do you prefer to be your mailing address:  [ ] Work/Business  [ ] Home

Work Address ___________________________________________________________________________________

City ___________________________ State/PV _________________ ZIP/PC

Country ________________________________________________________________________________________

Home Address ___________________________________________________________________________________

City ___________________________ State/PV _________________ ZIP/PC

Country ________________________________________________________________________________________

Home Telephone ( ______ ) _____________________ Business Telephone ( ______ ) ______________________

Int’l Telephone ( Country Code ) ________ ( City Code ) ________ Telephone ______________________________

Fax ( ______ ) _____________________________________________________________________________________

[ ] Please check if you have special accommodation or dietary needs and indicate specific need(s):
__________________________________________________________________________________________________

Do you plan to attend the conference reception Thursday evening?  [ ] Yes  [ ] No  Guest?  [ ] Yes  [ ] No
(No additional charge)

Registration Fee:  [ ]  [ ]  [ ]  [ ]  [ ]  [ ]  [ ]  [ ]  [ ]

$450

Payment Method

[ ] Check Enclosed (make payable to Mayo Medical Laboratories)

[ ] Credit Card:  [ ] Visa  [ ] Mastercard

Card Number Expires Mo/Yr

Signature Date
DATE AND LOCATION

The Real-Time PCR for the Clinical Microbiology Laboratory conference will be held November 17–18, 2005. Course headquarters will be located in Leighton Auditorium foyer on the second floor of the Siebens Medical Education Building, Mayo Clinic, 100 Second Avenue SW, Rochester, Minnesota. Meeting facilities are easily accessible by skyway and pedestrian subway, which connect Mayo Clinic to shops, restaurants, and hotels.

REGISTRATION

To register, complete the attached registration form and return by mail or fax. The registration fee is $450, and includes tuition, comprehensive course syllabus, continental breakfast each morning, lunch on Thursday and Friday, break refreshments, and the conference reception on Thursday evening. Although it is not Mayo Medical Laboratories Education Department policy to limit the number of registrants for a course, conference room facilities may necessitate closing of enrollment; therefore, early registration is strongly advised. An E-mail confirmation will be sent upon receipt of payment and completed registration form. Please present this information when checking in at the meeting registration desk.

CANCELLATION POLICY

Your registration fee, less a $75 administrative fee, will be refunded when written notification is received by Mayo Medical Laboratories on or before October 21, 2005, (fax: 507-284-8016). No refunds will be made after October 21, 2005.

TRAVEL

The city of Rochester greets thousands of visitors from around the world each year. The city is serviced by an international airport with multiple flights daily from Chicago, Dallas and Minneapolis via American or Northwest Airlines. Access to and from the airport is available by taxicab and shuttle service. The airport is located approximately 10 miles from the Mayo Clinic campus.

For travel arrangements, you may contact Lynn Korte at Corporate Travel at 800-526-4540 or 507-287-7468; Fax: 507-281-2409; or E-mail: lynn@ctsrst.com. Identify yourself as attending the Mayo Medical Laboratories conference.

LODGING ACCOMMODATIONS

Blocks of guest rooms have been reserved with special course rates at the following downtown Rochester hotels. To ensure accommodations and the discounted rate, please make your reservations by October 27, 2005, and identify yourself as a participant of the Mayo Medical Laboratories conference.

Kahler Grand Hotel
20 Second Avenue SW
800-533-1655 or 507-282-2581
$85 single/double

Rochester Marriott Hotel
101 First Avenue SW
877-623-7775 or 507-280-6000
$115 single/double

The hotels listed above are connected by skyway and pedestrian subway to conference facilities, downtown shops, and restaurants. You may also wish to visit the Rochester Convention and Visitors Bureau web site (www.rochestercvb.org) for additional accommodation options.

PARKING

Parking is available in hotel, city, and Mayo patient/visitor ramps. The cost for parking is not included in the registration fee. A map indicating the location of downtown parking facilities will be mailed with the registrant confirmation letter.
Real-Time PCR for the Clinical Microbiology Laboratory

NOVEMBER 17–18, 2005
Leighton Auditorium
Harold W. Siebens
Medical Education Building
Rochester, Minnesota