

Industry Division Newsletter

Spring 2011



2011 Division Officers

Chair: Bernard Cook, Ph.D.
Chair-Elect: Douglas Clark
Secretary: Agim Beshiri, M.D.
Treasurer: Suzette Chance, Ph.D.
Past Chair: Chandra Jain
Nominating Committee:
Karl De Vore
John Ellison
Mihaela Necula, Ph.D.
Jim Pierson-Perry

Division Goals

- To provide a forum for AACC members to meet, identify common interests and concerns, and develop programs that assist them in the workplace. Although the focus of the Division is on issues relevant to industry, or issues from the industry perspective, membership in the Division is open to any member of the association.
- To identify and develop synergies between industry and clinical laboratory members which contribute to the health care system and enhance patient care.

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Message from Past Division Chairs

Jack Levine and Chandra Jain

We welcome our new Chair of the Industry Division Dr. Bernard Cook, and Chair-Elect Mr. Douglas Clark, along with all members of the Industry Division. Please encourage your colleagues to join the Industry Division, if they have not, or to actively participate if they already are members.

Our Division's annual business meeting will be held during this year's AACC National Meeting in Atlanta, GA, on Tuesday, July 26th from 4-6 pm (location to be announced later). We hope to see all of you there for what is sure to be another informative, educational, and fun session. More details on the meeting agenda will come later.

In preparation for this year's national meeting, our Division identified three "hot topics"

- HbA1c as a diagnostic test
- Standardization and harmonization of results from clinical laboratory testing procedures
- Laboratory accreditation: the international perspective

This newsletter issue highlights workshops and symposia around these topics which our Division is sponsoring for the AACC National Meeting. We also summarize some previous efforts over the past few years which were done in support of our Division's goals.

AACC 2012 National Meeting Events

The Industry Division will sponsor several symposia and workshops at the upcoming AACC 2012 national meeting. A list of these program activities, with a summary of the presenters and topics, follows below. Locations and times for the presentations will be announced at a later date.

Symposium: Is That Normal? Reference Interval Studies Around the World

Moderator: Jack Zakowski, Ph.D., FACB
Director, Scientific Affairs and Professional Relations, Beckman Coulter, Inc.

Description: Reference intervals are essential to guide proper interpretation of laboratory testing. This session will present updates from recent worldwide studies on reference intervals. In-progress and planned studies will also be reviewed. For the U.S. population, NHANES, the National Health and Nutrition Examination Survey, is the data source for nationally representative reference information for numerous nutritional biomarkers and the CDC prepares regular data reports that contain comprehensive reference range tables for assessment of nutritional status.

Presentations in this symposium will include:

Update from NHANES on US Reference Ranges for Nutritional Biomarkers

Christine M. Pfeiffer, Ph.D., Branch Chief,
Nutritional Biomarkers Branch (NBB), Division of Laboratory Sciences (DLS), National Center for Environmental Health (NCEH), Centers for Disease Control and Prevention (CDC)

The Pan-Asian Reference Interval Study and the IFCC Global Study

Kiyoshi Ichihara, M.D., Ph.D., Professor
Department of Clinical Laboratory Sciences, Yamaguchi University Graduate School of Medical Sciences

Pediatric Reference Intervals

Nathalie Lepage, Ph.D., Head,
Division of Biochemistry, Children's Hospital of East Ontario

Symposium: Laboratory Accreditation: The International Perspective

Moderator: David Armbruster, Ph.D., DABCC, FACB
Scientific Affairs Manager, Abbott Diagnostics

Description: This symposium will describe major global laboratory accreditation programs, their organization, structure, and operations, with an emphasis on accreditation in accordance with the ISO 15189 Standard, "Medical laboratories—Particular requirements for quality and competence." The similarities and differences in laboratory accreditation programs around the world will be highlighted.

Presentations to be announced

Symposium: Hemoglobin A1c—Clinical Applications and Regulatory Status

Moderator: Kastoori Ramakrishnan, (Ramki), Ph.D.
ProdConcepts Consulting LLC

Description: This symposium will highlight the critical role HbA1c has played in the past several years in managing diabetes. As a unique marker which is directly proportional to long term blood sugar levels in diabetics, its use in screening, diagnosis and monitoring will be presented. In light of the recent endorsement of its use for diagnosis of diabetes by several professional organizations

and the absence of regulatory clearance for the same, a unique situation of non-compliance of intended use has surfaced. The critical discussion will center on the objective of arriving at a recommendation which does not engender any risks.

Presentations in this symposium will include:

FDA Perspectives on the Use of HA1C Tests for the Diagnosis of Diabetes

*Carol Benson, MT (ASCP), M.A., Associate Director for Chemistry,
FDA/CDRH/OIVD*

HbA1c Tests—Their Evolution in Accuracy and Precision for Broader Clinical Applications

Randie R. Little, Ph.D.

National Glycohemoglobin Standardization Program (NGSP) Network Coordinator; Co-Director Diabetes Diagnostic Laboratory, Departments of Pathology & Anatomical Sciences and Child Health, University of Missouri School of Medicine

HbA1c for Diagnosis of Diabetes: Advantages and Disadvantages

*M. Sue Kirkman, M.D., Senior Vice President,
Medical Affairs and Community Information, American Diabetes Association*

Short Course: Testing for Chronic Kidney Disease (CKD): Creatinine, GFR, UAlb, and More. Industry Responses to Clinical Needs

Moderator: Jack Zakowski, Ph.D., FACB
Director, Scientific Affairs and Professional Relations, Beckman Coulter, Inc.

Short Course: Challenges and Clinical Impacts of Standardization of Immunoassays

Moderator: Bernard Cook, Ph.D., DABCC, FACB
Beckman Coulter, Inc.
Developed in cooperation with the Clinical Laboratory Standard Institute, UK National External Quality Assessment Service, Industry Division

New Developments: ADA Recommending to Use HbA1c to Diagnose Diabetes

Mihaela Necula, Ph.D., Staff Development Scientist, Beckman Coulter, Inc.

Clinical Practice Recommendations for diabetes have recently changed. In January 2010, the “Standards of Medical Care in Diabetes” were revised to add the recommendation of The American Diabetes Association (ADA) regarding the use of HbA1c to diagnose diabetes. The recommendation is that HbA1c may be used to diagnose diabetes with a cut off point of $\geq 6.5\%$. The section “Categories of Increased Risk for Diabetes” has been updated to include HbA1c in the 5.7-6.4% range for detecting increased risk for diabetes (Diabetes Care, Volume 33, Supplement 1, January 2010).

In July 2010, The Food and Drug Administration (FDA) released a statement acknowledging the ADA recommendations and indicating that devices previously cleared for monitoring diabetes would require a new FDA clearance for diagnosis of diabetes. The statement encouraged manufacturers to contact the FDA regarding data necessary to obtain the clearance for diagnostic claims.

During a presentation at the 2010 American Association for Clinical Chemistry (AACC) meeting in Anaheim, CA, the FDA expressed agreement with the ADA recommendations on using HbA1c for diagnosis and a

willingness to work with manufacturers on the process for obtaining product clearances. The approach discussed by FDA required typical testing with minor changes. The methods comparison study would require an increased number of samples and the predicate method would need to be certified by The National Glycohemoglobin Standardization Program (NGSP). The requirement for total imprecision would be $CV < 5\%$ at four levels (5, 6.5, 8 and 10 or 12 %HbA1c).

However, the FDA has expressed an intent to require Total Error (TE) of $\leq 6\%$ for 99% of samples as part of the submission package. This requirement appears to be derived from the College of American Pathologists (CAP) previously proposed Proficiency Testing (PT) criteria of 6% bias against the target value. The FDA TE criteria would ensure that the CAP PT requirement is met with 99% confidence.

FDA's proposed TE requirement presents several challenges. First, the testing would be conducted per the CLSI (Clinical and Laboratory Standards Institute) document EP21-A, Estimation of Total Analytic Error. This document does not appear to reflect the state of the art concept on calculating TE and is currently under review. Second, the total imprecision required to meet the TE requirement would need to be significantly under 5%. Third, meeting the TE requirement of 6% with 99% confidence would be very difficult to achieve with existing methodologies. Fourth, the 2011 CAP PT requirement will be 7% and not 6%.

These concerns were expressed to the FDA at the 2010 AACC meeting. In addition, a request for simpler clearance requirements was made, since most cleared methods are traceable to IFCC (The International Federation of Clinical Chemistry) and certified by NGSP. The FDA expressed willingness to work with manufacturers on the clearance requirements but expects the manufacturers to initiate the conversation.

The requirements for the detection of the increased risk of diabetes were not explicit.

Diabetes is one of the major causes of premature illness and death worldwide. Diagnosis of diabetes and detection of the increased risk of diabetes are important for public health. Clarifying FDA clearance requirements for devices intended for this purpose is essential and urgent..

Industry Division Activities of Recent Years

Several major activities were accomplished in the interval 2008-2010 relative to meeting our Division's goals and improving the quality of our annual meetings. These included enhancing the educational content of our annual meetings; presenting a Best Abstract Award for an abstract at the AACC national meeting of interest to industry; sponsoring symposia and workshops at the national meeting; and recognizing individuals for their outstanding service and accomplishments with the Louis J. Dunka award.

Educational Content of Annual Division Meetings

For past three years our business meetings have been well attended; in part because we invited experts to present timely topics of interest to our membership. The topics were chosen to inform the membership on trends within the IVD, as well as current developments in standards that affect us and our customers:

Examples of these presentations include:

Overview of the CLSI Clinical Chemistry & Toxicology Standards by Dr. Dave Armbruster

Overview of the CLSI Evaluation Protocols by Greg Cooper and Jim Pierson-Perry

Overview of StatisPro Companion Software for CLSI Standards by Jim Blackwood

Improving Clinical Laboratory Testing Through Harmonization by Dr. Gary Myers

Understanding the German RiliBÄK Quality Standards by Jim Pierson-Perry

Impact of National Kidney Disease Education Program (NKDEP) on the Standardization of Creatinine by Dr. Neil Greenberg

Role of NGSP in Harmonizing HbA1c Results in the US by Dr. Randie Little

Best Abstract Award

This award is made to the author(s) of an abstract for the AACC national meeting which is deemed to present a significant contribution to the IVD industry in one of the following areas: management, regulatory affairs, or improved patient care through a new or improved medical device. The selection is done through a vote of the Division's officers and Nominating Committee members.

Awardees for the past three years were:

- 2008** ***Disparity Between Two Automated Immunochemiluminescent Intact Parathyroid Hormone (iPTH) Assays*** by Yusheng Zhu, PhD, DABCC, FACB, Assistant Professor of Pathology, Medical University of South Carolina, Charleston, SC
- 2009** ***Disparity in Estimated Average Glucose Due to Different Hemoglobin A1c Assays and Variant Hemoglobins*** by Yusheng Zhu, PhD, DABCC, FACB, Assistant Professor of Pathology, Medical University of South Carolina, Charleston, SC
- 2010** ***A Panel of Cervicovaginal Fluid Biomarkers Efficiently Predicts Gestational Age at Delivery*** by Alison Woodworth, Ph.D., DABCC, FACB, Assistant Professor of Pathology, Associate Director of Clinical Chemistry, Vanderbilt University Medical Center, Nashville, TN

Louis J. Dunka, Jr. Award

The Louis J. Dunka, Jr. Memorial Service Award is presented annually by the AACC Industry Division to an individual for outstanding accomplishment that is evidenced by the initiation or support of a single event or continuous effort that has served the AACC Industry Division Membership and/or the IVD industry.

Awardees for the past three years were:

- 2008** ***Donald M. Powers, Ph.D.***
Powers Consulting, Pittsford, NY
- 2009** ***Ronald H. Laessig, Ph.D. (posthumously)***
Emeritus Director, Wisconsin State Laboratory of Hygiene, Madison, WI
- 2010** ***Jack Levine, M.B.A***
Siemens Healthcare Diagnostics, Tarrytown, NY

Worth Repeating

“If we knew what it was we were doing, it would not be called research, would it?”

- *Albert Einstein*

“Research is what I'm doing when I don't know what I'm doing.”

- *Werner von Braun*

“The production of useful work is strictly limited by the laws of thermodynamics. The production of useless work seems to be unlimited.”

- *Donald Simanek*

“The most exciting phrase to hear in science, the one that heralds new discoveries, is not 'Eureka!' but 'That's funny...’”

- *Isaac Asimov*

“In all science, error precedes the truth, and it is better it should go first than last.”

- *Hugh Walpole*