AOAC INTERNATIONAL AWARDS PROGRAM
Recognizing Analytical Excellence

Nominate a colleague for 2013!

AOAC INTERNATIONAL AWARDS PROGRAM
The AOAC INTERNATIONAL Awards Program recognizes significant contributions to AOAC and the analytical science community.

AOAC presents these awards at its Annual Meeting each fall, providing worldwide recognition to the recipients. Through your nominations, the AOAC INTERNATIONAL Awards Program can continue to recognize those individuals who are deserving of this honor.

AWARDS
The Harvey W. Wiley Award for the Development of Analytical Methods
AOAC’s most prestigious scientific award is presented to a scientist (or group of scientists) who have made an outstanding contribution to analytical method development in an area of interest to the Association. Application deadline is January 31, 2013.

Fellow of AOAC INTERNATIONAL
Recognizes the dedication and commitment of members who have served the Association with distinction. Application deadline is February 15, 2013.

For More Information:
For eligibility and nominations guidelines, including nomination forms and deadlines contact:

AOAC INTERNATIONAL
Membership and Professional Development Department
481 North Frederick Avenue, Suite 500
Gaithersburg, MD 20877-2417, USA
Phone: 1.301.924.7077 (Worldwide)
Fax: 1.301.924.7089
Toll Free within North America: 1.800.379.2622
E-mail: members@aoac.org · Web: www.aoac.org
The Harvey W. Wiley Scholarship (US$1,000) is awarded to an upper-level undergraduate or graduate student to encourage and assist study in the analytical sciences. A college chosen by the current year’s Harvey W. Wiley Award recipient makes the scholarship selection based on criteria established by the Association.

**HARVEY W. WILEY AWARD PRESENTED TO:**

**ROGER WOOD**, Food Standards Agency, United Kingdom (Retired), Norwich, Norfolk, United Kingdom

ROGER WOOD has spent much of his career helping the United Kingdom harmonize its food regulation standards with those of the European Union (EU). He has worked with AOAC and other organizations to help lead a series of guidelines on proficiency testing and quality assurance protocols for laboratories working under international standards.

After working in a UK food control laboratory, he joined the UK Ministry of Agriculture, Fisheries and Food (MAFF; now the UK's Food Standards Agency) and was responsible for the legislative aspects of methods of analysis and sampling for foods. This mainly required negotiation with European colleagues within the EU Commission Expert Groups. During his career, he introduced the MAFF collaborative trial program, MAFF Research Program Methods for Analysis and the Food Analysis Performance Assessment Scheme (FAPAS), and was co-author of a number of IUPAC protocols relevant to food analysis. Wood retired from the UK’s Food Standards Agency, Scientific Data Quality Branch, Analysis and Research Division, in March 2010.

In addition to the Wiley Award, in 1994, Wood was named a Fellow of AOAC INTERNATIONAL. He is also a Fellow of the UK Royal Society of Chemistry (1976) and Institute of Food Science and Technology (1982). In 2003, Wood was appointed an Officer of the Order of the British Empire. He is chairman of the Royal Society of Chemistry's Analytical Methods Committee and also of the Inter-Agency Meeting.

Wood graduated from Hull University in 1967 with a B.Sc. in Chemistry. He then went on to obtain an M.Sc. (1968) and Ph.D. (1970) in Analytical Chemistry from the Imperial College of Science and Technology, University of London. In 1974, he received a Mastership in Chemical Analysis, Foods, Drugs and Water from the Royal Society of Chemistry (a statutory requirement in the UK for official control analysts).

The Harvey W. Wiley Award is presented each year to a scientist or group of scientists who have made an outstanding contribution to analytical methodology in an area of interest to AOAC INTERNATIONAL. The award consists of US$5,000, an award plaque, and reimbursement of travel expenses incident to attending the AOAC INTERNATIONAL Annual Meeting and Exposition.

**HARVEY W. WILEY SCHOLARSHIP AWARD PRESENTED TO:**

**PETER ROSTRON**, University of Sussex, Brighton, United Kingdom

PETER ROSTRON is in the final year of his Ph.D. program project, “Optimized Investigation of Radioactively Contaminated Land.” He was awarded first class honors on completion of a degree program in Environmental Science at the University of Sussex in 2009. His current work aims to further develop existing methods for the optimization of the uncertainty of measurements (including that from sampling) and the numbers of samples in contaminated land investigations. He is then applying this optimization strategy to both in situ and ex situ gamma-ray characterization of areas of land and floors of buildings that have been contaminated with radionuclides. His background is in the computing and seismic survey industries, and he draws heavily on his computing experience in order to conduct this research.

The Harvey W. Wiley Scholarship (US$1,000) is awarded to an upper-level undergraduate or graduate student to encourage and assist study in the analytical sciences. A college chosen by the current year’s Harvey W. Wiley Award recipient makes the scholarship selection based on criteria established by the Association.
LEI BAO
Shan Dong Import-Export Inspection and Quarantine Bureau of China, Mycotoxins and Marine Toxins Laboratory, Qing Dao City, Peoples Republic of China

A 2012 Fellow Award is presented to LEI BAO for her many contributions to the Association. Bao is currently director and scientific leader of Central Laboratory at General Administration of Quality Supervision, Inspection and Quarantine of People’s Republic of China (AQSIQ)/Shandong Branch, in Qingdao, China. Prior to that, she was director, National Reference Mycotoxins and Marine Toxins Laboratory, AQSIQ. Bao has been responsible for food safety analysis and monitoring, proficiency testing, and methods development and validation for 12 years. In 2011, she was nominated as senior advisor, Committee for Standardization, AQSIQ; and voting member, Food Safety Analytical Committee, Council for Science, AQSIQ. Bao received the 2011 AQSIQ’s Outstanding Scientist Award, 2010 Shandong Provincial Outstanding Woman Staff Award, 2009 Shandong Provincial Outstanding Young Award, and five AQSIQ’s Scientific Prizes.

Bao has been a highly active member of AOAC. She currently serves as president of the AOAC China Section and was instrumental in bringing AOAC closer to the Chinese analytical community. Currently Bao is a voting member of the AOAC Marine and Freshwater Toxins Task Force, member of the AOAC Mycotoxin Community, and voting member of the AOAC Chemical Contaminants and Residues in Food Community. She also chaired the AOAC Annual Meeting Symposiums for Marine Toxins in 2009 and 2010, and co-chaired the whey:casein proteins ratios working group for the AOAC Stakeholder Panel on Infant Formula and Adult Nutritional (SPIFAN) in 2012. In addition, Bao organized and chaired the SPIFAN preparatory meeting in China, actively involving Chinese scientists in whey protein method discussion and submission. She has been serving as Study Director for the study “Determination of Allatoxins B., B2, G1, and G2 in Olive Oil, Peanut Oil, and Sesame Oils.” As part of the project, Bao invited 17 international collaborators from China, the United States, European Commission, United Kingdom, Brazil, and Argentina to participate in the collaborative study.

Bao has shared her knowledge and expertise internationally. She served as Asia Representative for the International Society for Mycotoxicology in 2007, Advisory Board Member for the 6th World Mycotoxin Forum (WMF) in 2010, and Chinese delegation member for the Codex Committee on Food Contaminants at the Fifth and Sixth sessions. Bao was nominated as Scientific Committee Member for when WMF meets IUPAC in 2012. She received a Ph.D. from the College of Marine Life Science, Ocean University of China, in 2009.

OLIVER O. BENNETT, JR., Kansas Department of Agriculture, Topeka, Kansas, USA

OLIVER O. BENNETT, JR. is presented with a Fellow Award for his many contributions to the Association. In 1973 he joined the staff of the Kansas Department of Agriculture Laboratories and was assigned to work in the feed and fertilizer laboratory. Bennett then went on to the pesticide development and was involved in pesticide formulations for over a decade. Shortly after, he attended an AOAC Midwest Section meeting, felt inspired to contribute, and joined the Association. Bennett attended many AOAC Midwest Section meetings and served as chair of the Pesticide Section, co-president, and Planning Committee member. He presented a training seminar on pesticide sampling and analysis while serving as a member of the Pesticide Formulation and Sections Committee. In 2010 Bennett received an AOAC General Referee of the Year Award.
ANA GAGO-MARTINEZ, University of Vigo, Vigo, Spain

A recipient of a 2012 Fellow Award, ANA GAGO-MARTINEZ is currently a professor at the University of Vigo and director at the EU Reference Laboratory on Marine Biotoxins, Vigo, Spain.

She was vice president of the Galician Society of Chemistry and co-chairs on the AOAC Task Force on Marine and Freshwater Toxins. Gago-Martinez has supervised 14 Ph. D. students working in the field of marine and freshwater toxins, published extensively on phycotoxins analysis, and organized several international conferences. She divides her job duties between teaching and research at the University of Vigo and the EU Reference Laboratory on Marine Biotoxins, where she is responsible for directing method training and validation to support relevant EU seafood safety mandates.

REFERENCE MATERIAL ACHIEVEMENT AWARD (Continued):

Scheelings has been a member of the Australian delegation to the Codex Committee on Pesticide Residues (CCPR) and currently chairs the CCPR Working Group on Methods of Analysis and Sampling. He was appointed a member of the editorial Advisory Board of Managing the Modern Laboratory in 2000. He has undertaken a number of reviews of laboratories in developing countries and undertaken quality-based training programs. His current professional interests include quality systems, management and training, food allergens, novel foods, food reference materials, and measurement uncertainty.

Scheelings graduated with an Honors degree and Ph.D. in organic chemistry from the University of Melbourne in 1973.

The Reference Material Achievement Award recognizes contributions and encourages active participation of members of the AOAC Technical Division on Reference Materials in pursuit of the goals and objectives of the Association.

SPECIAL RECOGNITION AWARD: AOAC 50-Year Member

PRESENTED TO:

JAMES WILLIAM FITZGERALD, Windham, New Hampshire, USA

A Special Recognition Award is presented to JAMES FITZGERALD. In 1962 he joined the FDA as an analytical chemist and served in both the Buffalo and Philadelphia District Laboratories. He was a supervisory chemist in the New York Laboratory, and director of the Analytical Branch and the FDA’s Winchester Engineering and Analytical Center. While at the FDA, he received several awards, including the FDA Award of Merit in 1988 and “The Eaton E. Smith Award” from the North East Food and Drug Officials Association in 2002. Fitzgerald retired from the FDA in 2001.

As a member of AOAC he served as an Associate Referee for Selenium in High-Concentration Preparations, and Quaternary Ammonium Compounds in Foods, and as a General Referee for Acidic Drugs. He was a member of the Harvey W. Wiley Scholarship Committee. Fitzgerald became a Fellow of AOAC in 1986.

AOAC INTERNATIONAL is pleased to present the Special Recognition Award for exemplary contributions and volunteerism.
SINGLE-LABORATORY VALIDATION OF THE YEAR (continued):

The Single-Laboratory Validation of the Year award is given to an SLV study and method in regards to innovative technology or application, breadth of applicability, critical need, difficult analysis, range of collaborators, etc.

ACHIEVEMENT IN TECHNICAL AND SCIENTIFIC EXCELLENCE AWARD PRESENTED TO:

PAUL WEHLING, General Mills, Inc., Minneapolis, Minnesota, USA

ROBERT A. LABUDEDE, Least Cost Formulations, Ltd., Virginia Beach, Virginia, USA

Co-Authors:
Sharon Brunelle and María Nelson, AOAC INTERNATIONAL, Gaithersburg, MD, USA

A statistical model is presented for use in validation of qualitative methods. This model, termed Probability of Detection (POD), harmonizes the statistical concepts and parameters between quantitative and qualitative method validation. POD characterizes method response with respect to concentration as a continuous variable. The POD del provides a tool for graphical representation of response curves for qualitative methods. In addition, the model allows comparisons between candidate and reference methods, and provides calculations of repeatability, reproducibility, and laboratory effects from collaborative study data. Single laboratory study and collaborative study examples are given.

The Award in Recognition of Technical and Scientific Excellence recognizes a team, stakeholder panel or working group that has published a major document or other body of work that demonstrates a unique or particularly noteworthy level of technical and scientific expertise.

REFERENCE MATERIAL ACHIEVEMENT AWARD PRESENTED TO:

PIETER SCHEELINGS, FRACI, Queensland Health, Forensic and Scientific Services, Coopers Plains, Australia

A Reference Material Achievement Award is presented to PIETER SCHEELINGS. After taking a post-doctoral position with the Australian Government Analytical Laboratories (now the National Measurement Institute), he worked as a senior research chemist and finally as a regional laboratory director for some 24 years before taking up his current position of principal scientist and team leader of the Food Chemistry laboratory, Forensic and Scientific Services, Queensland Health in 1997.

He is a member of a number of professional societies, including the Royal Australian Chemical Institute (RACI), Australian Institute of Food Science and Technology (AIFST), IFT, and AOAC INTERNATIONAL and served as a member-at-large of the AOAC Technical Division on Reference Materials (TDRM) for some 8 years. Since 2001, Scheelings has held the role of Coordinator of the Asia Pacific Food Analysis Network (APFAN), which provides training support on food analysis and quality management to food scientists from developing countries in the Asia-Pacific region.

After completing bachelors and masters degrees in chemistry and analytical chemistry at the universities of Salamanca and Santiago de Compostela, respectively, Gago-Martinez earned a Ph.D. in Analytical Chemistry at the University of Vigo. She then did post-doctoral research at the Institute of Marine Biosciences (National Research Council) Halifax, Canada. She has been a visiting fellow at Health Canada, Ottawa, Canada; University of Jena, Germany; Cork Institute of Technology, Ireland; Institute of Marine Research in Bergen, Norway; University of Porto, Portugal; and University of California at San Francisco, California, USA.

DAVID L. SODERBERG, U.S. Environmental Protection Agency (EPA; Retired), Gaithersburg, Maryland, USA

DAVID SODERBERG is presented with a 2012 Fellow Award for his many contributions to the Association. While employed with the U.S. Department of Agriculture (USDA), he held various positions, including regulatory food chemist, USDA-APHIS, New York, New York, USA, 1972-1974; regulatory and special projects food chemist, USDA-FSIS, Athens, Georgia, USA, 1975-1984; supervisory residue chemist, USDA-FSIS, St. Louis, Missouri, USA, 1984-1987; program management chemist, USDA-FSIS, Washington, DC, USA, 1987-2000; and residue chemist and risk assessor, EPA, Office of Pesticide Programs, Arlington, Virginia, USA, 2000-2012.

Soderberg has served as an AOAC General Referee for Meat and Meat Products and for Pesticides and Other Contaminants. He was a member of the AOAC Task Force on Methods of Analysis for Nutritional Labeling in the early 1990s. He also served as a member of the Pesticide Residue on Tea project and a member of the Editorial Board.

Soderberg received college degrees in chemistry from Ripon College in Wisconsin, USA, and Pomona College in California, USA.

MARY LEE JANE WEITZEL, Quality Analysis Consultants, Winnipeg, Manitoba Canada

AOAC is pleased to present a Fellow Award to MARY LEE JANE WEITZEL for her meritorious contributions to the Association. Weitzel has worked in analytical chemistry for over 35 years and was director/associate. She is currently a full-time consultant and assessor. Since 1990 she has been writing and revising guidelines for laboratory accreditation of the food, mining, microbiological, and pharmaceutical industries and providing training on these requirements.

Weitzel has applied quality systems in a wide variety of technical and scientific businesses. She worked in the mining industry for 20 years and in pharmaceutical manufacturing for 14 years. This diverse experience enables her to quickly understand and assess novel techniques. In the mines laboratory, she used atomic absorption, ICP-OES, spectrophotometry, fire assay, and classical wet chemistry methods. She also prepared geological samples for analysis using rock crushing and pulverizing, and maceration. In the pharmaceutical industry, she learned new technologies quickly and worked with R&D scientists in order to apply quality systems in diverse areas such as transdermal manufacturing, solid dosage manufacturing, plasma collection, plasma fractionation, and contract manufacturing. Her knowledge of analytical techniques include ELISA, PCR, ICP-OES, AA, mouse bioassays, and cell culture. As member of the USP Expert Committee on Reference Standards, she is familiar with USP requirements and how to meet them.

Weitzel’s experience with laboratory accreditation programs began in 1990 when she assisted in creating a guide of requirements for the Accreditation of Mineral Analysis
The Fellow of AOAC INTERNATIONAL Award recognizes the dedication of the volunteers who serve the Association.

MULTI-LABORATORY STUDY OF THE YEAR PRESENTED TO:

JEFFREY VAN DE RIET, CFIA, Dartmouth Laboratory, Dartmouth, Nova Scotia, Canada

Method Co-Authors:

Ryan S. Gibbs, Patricia M. Mugg ah, Wade A. Rourke, and James D. MacNeil, CFIA, Dartmouth Laboratory, Dartmouth, Nova Scotia, Canada

Michael A. Quilliam, National Research Council of Canada, Institute of Marine Biosciences, Halifax, Nova Scotia, Canada

Liquid Chromatography Post-Column Oxidation (PCOX) Method for the Determination of Paralytic Shellfish Toxins in Mussels, Clams, Oysters, and Scallops: Collaborative Study

Sixteen laboratories participated in a collaborative study to evaluate method performance parameters of a liquid chromatographic method of analysis for paralytic shellfish toxins (PST) in blue mussels (Mytilus edulis), soft shell clams (Mya arenaria), sea scallops (Placopecten magellanicus), and American oysters (Crassostrea virginica). The specific analogs tested included saxitoxin, neosaxitoxin, gonyautoxins-1 to -5, decarbamoylgonyautoxins-2 and -3, decarbamoyl-saxitoxin, and N-sulfo carbamoylgonyautoxin-2 and -3. This instrumental technique has been developed as a replacement for the current AOAC biological method (AOAC Official Method® 959.08) and an alternative to the precolumn oxidation LC method (AOAC Official Method® 2005.06). The method is based on reversed-phase liquid chromatography with post-column oxidation and fluorescence detection (excitation 330 nm and emission 390 nm). Shellfish samples used in the study were prepared from the edible tissues of clams, mussels, oysters, and scallops to contain concentrations of PST representative of low, medium, and high toxicities and with varying profiles of individual toxins. These concentrations are approximately equivalent to ½ maximum level (ML), ML, or 2×ML, respectively. Recovery for the individual toxins ranged from 104 to 127%, and recovery of total toxin averaged 116%. Horwitz Ratio (HorRat) values for individual toxins in the materials included in the study were generally within the desired range of 0.3 to 2.0. For the estimation of total toxicity in the test materials, reproducibility relative standard deviation ranged from 4.6 to 20%. A bridging study comparing the results from the study participants using the PCOX method with the results obtained in the Study Director’s laboratory on the same test materials using the accepted reference method, the mouse bioassay (MBA; AOAC Official Method® 2005.08) for the matrix study, the acceptance criteria of 95/96 expected calls was met for three of four matrices, clean dry filters being the exception. Ninety-four of the 96 clean dry filter samples tested gave the expected calls. The nucleic acid LOD was 5-fold lower than AOAC’s acceptable minimum detection limit. The system demonstrated no tendency for false positives when tested with Bacillus cereus. Environmental substances did not inhibit accurate detection of B. anthracis.

The ILV studies yielded similar results for the matrix and inclusivity/exclusivity studies. The ILV environmental interference study included environmental substances and environmental organisms. Subsoil at a high concentration was found to negatively interfere with the pXO1 reaction. No interference was observed from the environmental organisms. The nucleic acid LOD, however, was 10 times higher (1 pg/reaction, equivalent to about 200 spores) than that found in the MD study. These results indicate that the RAZOR System is a sensitive and specific system that accurately identifies B. anthracis in aerosol matrices and in the presence of interfering substances, and that the method can be performed by an independent laboratory and achieve similar results.

SINGLE-LABORATORY VALIDATION OF THE YEAR [continued]:

For the matrix study, the acceptance criteria of 95/96 expected calls was met for three of four matrices, clean dry filters being the exception. Ninety-four of the 96 clean dry filter samples tested gave the expected calls. The nucleic acid LOD was 5-fold lower than AOAC’s acceptable minimum detection limit. The system demonstrated no tendency for false positives when tested with Bacillus cereus. Environmental substances did not inhibit accurate detection of B. anthracis.

The ILV studies yielded similar results for the matrix and inclusivity/exclusivity studies. The ILV environmental interference study included environmental substances and environmental organisms. Subsoil at a high concentration was found to negatively interfere with the pXO1 reaction. No interference was observed from the environmental organisms. The nucleic acid LOD, however, was 10 times higher (1 pg/reaction, equivalent to about 200 spores) than that found in the MD study. These results indicate that the RAZOR System is a sensitive and specific system that accurately identifies B. anthracis in aerosol matrices and in the presence of interfering substances, and that the method can be performed by an independent laboratory and achieve similar results.

All or part of this work was funded by the Department of Homeland Security, Science, and Technology Directorate, awards HSHQDC-05-P-00012 to AOAC INTERNATIONAL-AI, HSHQDC-07-C-00127 to MRGlobal, and NBCHC00028 and D10PC20004 to Idaho Technology, Inc.

PRESENTED TO:

THOMAS J. BURNETT, Elanco Animal Health, Greenfield, Indiana, USA

Method Co-Authors:

Kim Lombardi, Elanco Animal Health, Greenfield, Indiana, USA; John M. Rodewald, Covance Laboratories, Greenfield, Indiana, USA; Sharon L. Brunelle, Brunelle Biotech Consulting, Woodinville, Washington State, USA; Johannie MacDougall, Charles River, Edinburgh, United Kingdom; Mark R. Coleman, Elanco Animal Health, Greenfield, Indiana, USA


The SLV of an LC-MS/MS method for determination and confirmation of two ionophores, narasin and monensin, in animal tissues is described. The data demonstrated linearity of matrix-matched calibration curves using a weighted (1/x) regression and selectivity of the method for narasin and monensin in the presence of lasalocid, salinomycin, maduramycin, nicarbazin, and sulfadiazine. Recoveries varied from 86.2 to 103.5% for narasin and 89.1 to 105.1% for monensin. Intertial repeatability precision [relative standard deviation of repeatability (RSD)] varied from 3.9 to 13.8% for narasin and 3.3 to 16.3% for monensin in fortified tissue. Precision of the method was verified in incurred tissues. The LOQ of the method was validated and ranged from 0.45 ng/g in milk, to 4.0 ng/g in chicken fat, but was 0.75 ng/g for most tissues. Two confirmatory ions for each analyte were examined across all matrices, resulting in estimated false-negative rates of 0.00% (95% confidence interval of 0.00–0.58%) for monensin ions (540 samples) compared to the U.S. and EU acceptance criteria. The confirmatory ions for narasin demonstrated 0.00% false-negative rates (95% confidence interval of 0.00–0.58%) when compared to either the U.S. or EU criteria in 630 samples. The method was robust when small changes in method parameters were made and stability of fortified tissues, extracts, and calibration solutions were estimated. The data satisfy the requirements of the AOAC Stakeholder Panel on Veterinary Drug Residue for SLV studies, and the method was adopted First Action Official Methods of Analysis® 2011.24 by the AOAC ERQ on Veterinary Drug Residues.
LaBudde is a Professional Animal Scientist and Charter Diplomat of the American College of Animal Food Science. He has served on the Scientific Affairs Committee of the American Meat Institute, has been an Associate Referee and Statistical Advisor of AOAC, and is a professional member of several technical societies, including ASA, AOAC, IAFP, and ARAPAS. LaBudde is a past recipient of the AOAC Advisor of the Year award in 2007 and the AOAC Community Volunteer of the Year award in 2011.

He has published numerous research articles, two books, and several book chapters; holds several patents; has provided consulting services to hundreds of manufacturing companies; and is an internationally renowned speaker on food safety and food science.

LaBudde holds a B.S. degree in Chemistry and Mathematics from the University of Michigan and M.S. and Ph.D. degrees in Chemistry from the University of Wisconsin.

The Technical Advisor of the Year award is given to a Committee Statistician, Safety or other advisor, in recognition of outstanding service in assisting Study Directors in reviewing methods, protocols, and collaborative studies.

SINGLE-LABORATORY VALIDATION OF THE YEAR
PRESENTED TO:

USHA SPAULDING, Idaho Technology, Inc. (ITI), Salt Lake City, Utah, USA

Method Co-Authors:
Claire A. J. Christensen, Robert J. Crisp, Michael B. Vaughan, Robert C. Trauschert, Jordan R. Gardner, Stephanie A. Thatcher, Kristine M. Clements, David H. F. Teng, Abigail Bird, and Irene M. Ota, ITI, Salt Lake City, Utah, USA
Ted Hadfield and Valerie Ryan, MRIGlobal, Palm Bay, Florida, USA

Sharon L. Brunelle, AOAC INTERNATIONAL, Gaithersburg, Maryland, USA

Razor<sup>®</sup> EX Anthrax Air Detection System: Performance Tested Method<sup>SM</sup> Study Report

The Razor<sup>®</sup> EX Anthrax Air Detection System, developed by ITI, is a qualitative method for the detection of Bacillus anthracis spores collected by air collection devices. The system comprises a DNA extraction kit, a freeze-dried PCR reagent pouch, and the Razor<sup>®</sup> EX real-time PCR instrument. Each pouch contains three assays, which distinguish potentially virulent B. anthracis from avirulent B. anthracis and other Bacillus species. These assays target the pXO1 and pXO2 plasmids and chromosomal DNA. When all targets are detected, the instrument makes an “anthrax detected” call, meaning that virulence genes of the anthrax bacillus are present. The report describes results from AOAC Method Developer (MD) and Independent Laboratory Validation (ILV) studies, which include matrix, inclusivity/exclusivity, environmental interference, upper and lower LOD of DNA, robustness, product consistency and stability, and instrument variation testing. In the MD studies, the system met the acceptance criteria for sensitivity and specificity, and the performance was consistent, stable, and robust for all components of the system.

MULTI-LABORATORY STUDY OF THE YEAR (continued):

959.08 showed that the average ratio of results obtained from the two methods was 1.0. A good match of values was also achieved with a new certified reference material. Results from this study demonstrated that the PCOX method is a suitable method of analysis for PST in shellfish tissue and provides both an estimate of total toxicity, equivalent to that determined using the MBA AOAC Official Method<sup>SM</sup> 959.08, and a detailed profile of the individual toxin present in the sample.

PRESENTED TO:

BARRY Y. MCCLEARY, Megazyme International, Bray, Co. Wicklow, Ireland; and

JONATHAN W. DEVRIES, Medallion Laboratories/General Mills, Minneapolis, Minnesota, USA

Method Co-Authors:
Jeanne L. Rader, U.S. Food and Drug Administration, College Park, Maryland, USA; A Gerald Cohen, Kraft Foods, Tarrytown, New York, USA; Leon Prosky, U.S. Food and Drug Administration (Retired), Rockville, Maryland, USA; David C. Mugford, BRI Research Pty. Ltd, Ryde, NSW, Australia; Marine Champ, University of Nantes, Nantes, France; Kazuhiro Okuma, Matsutani Chemical Research Laboratory, Itami City, Hyogo, Japan

Determination of Insoluble, Soluble, and Total Dietary Fiber (CODEX Definition) by Enzymatic-Gravimetric Method and Liquid Chromatography: Collaborative Study

A method for the determination of insoluble (IDF), soluble (SDF), and total dietary fiber (TDF), as defined by the CODEX Alimentarius, was validated in foods. Based upon the principles of AOAC Official Methods<sup>SM</sup> 985.29, 991.43, 2001.03, and 2002.02, the method quantitates water-insoluble and water-soluble dietary fiber. This method extends the capabilities of the previously adopted AOAC Official Method<sup>SM</sup> 2009.01, Total Dietary Fiber in Foods, Enzymatic–Gravimetric–Liquid Chromatographic Method, applicable to plant material, foods, and food ingredients consistent with CODEX Definition 2009, including naturally occurring, isolated, modified, and synthetic polymers meeting that definition. The method was evaluated through an AOAC/AACC collaborative study. Twenty-two laboratories participated, with 19 laboratories returning valid assay data for 16 test portions (eight blind duplicates) consisting of samples with a range of traditional dietary fiber, resistant starch, and nondigestible oligosaccharides. The dietary fiber content of the eight test pairs ranged from 10.43 to 29.90%. Digestion of samples under the conditions of AOAC 2002.02 followed by the isolation, fractionation, and gravimetric procedures of AOAC 985.29 and its extensions 991.42 and 993.19 and 991.43 results in quantitation of IDF and soluble dietary fiber that precipitates (SDF). The filtrate from the quantitation of water–alcohol-insoluble dietary fiber is concentrated, deionized, concentrated again, and analyzed by LC to determine the SDF that remains soluble (SDFS), i.e., all dietary fiber polymers of degree of polymerization = 3 and higher, consisting primarily, but not exclusively, of oligosaccharides. SDF is calculated as the sum of SDFP and SDFS. TDF is calculated as the sum of IDF and SDF. The within–laboratory variability, repeatability SD (sr), for IDF ranged from 0.18 to 0.71, and the between-laboratory variability, reproducibility SD (sR), for IDF ranged from 0.42 to 2.24. The within- laboratory variability sr for SDF ranged from 0.28 to 1.03, and the between-laboratory variability sR for SDF ranged from 0.85 to 1.66. The within-laboratory variability sr for TDF ranged from 0.47 to 1.41, and the between-laboratory variability sR for TDF ranged from 0.95 to 3.14. This is comparable to other official and approved dietary fiber methods, and the method is recommended for adoption as an Official First Action.
MULTI-LABORATORY STUDY OF THE YEAR [continued]:

The Multi Laboratory Study of the Year Award recognizes a multi-laboratory study and method that demonstrates some unique or particularly noteworthy aspect of a multi-laboratory study such as innovative technology or application, breadth of applicability, critical need, impact, difficult analysis, range of multi-laboratory collaborators, or special handling required for study materials. All candidates for the Multi-Laboratory Study of the Year must have been completed within the past three (3) years.

COMMUNITY VOLUNTEER OF THE YEAR [continued]:

The Community Volunteer of the Year award recognizes the dedication and excellence on the part of a volunteer who significantly contributes to AOAC INTERNATIONAL’s analytical and technical communities with noted accomplishments relating to his or her area of expertise.

EXPERT REVIEW PANEL OF THE YEAR PRESENTED TO:

Darryl M. Sullivan, Covance Laboratories, Poyntette, Wisconsin, USA
Chair of ERP on Infant Formula and Adult Nutritional (SPIFAN)

Expert Review Panel Members:
Sneh D. Bhandari, Silliker, Inc., Chicago Heights, Illinois, USA; Scott Christiansen, PBM Nutritional, Georgia, Vermont, USA; Jonathan W. DeVries, Sr., Medicilon Laboratories/General Mills, Minneapolis, Minnesota, USA; Brendon D. Gill, Fonter Co-operative Group Ltd., Waitoa, New Zealand; Donald L. Gilliland, Abbott Nutrition, Columbus, Ohio, USA; Min Huang, Agios Sciences Corp., Nashville, Tennessee, USA; Harvey E. Indyk, Fonter Co-operative Group Ltd., Waitoa, New Zealand; Guifeng Jiang, ThermoFisher Scientific, San Jose, California, USA; Estela A. Kneeteman, National Institute of Industrial Technology, San Martin, Argentina; Erik J. M. Konings, Nestlé Research Center, Lausanne, Switzerland; Robert Joseph McMahon, Mead Johnson Nutrition, Evansville, Indiana, USA; William Mindak, U.S. Food and Drug Administration-CHS, Maryland, USA; Jeanne I. Rader, U.S. Food and Drug Administration, CFSAN ORS, College Park, Maryland, USA; Guenthier Rafler, Danone, Friedrichsdorf, Germany; Karen Schimpf, Abbott Laboratories, Columbus, Ohio, USA; Katherine E. Sharpless, National Institute of Science and Technology (NIST), Gaithersburg, Maryland, USA; David C. Woolard, Auckland Chemistry Laboratory Eurofins NZ Laboratory Services Ltd., Auckland, New Zealand; Jinchuan Yang, Waters Corp., Hopkinton, Massachusetts, USA.

During the “Standards Development and International Harmonization: AOAC INTERNATIONAL Mid-Year Meeting,” in June 2011, the ERP on Infant Formula and Adult Nutritional adopted 11 methods for First Action (folate and vitamins A, B12, and D) and made recommendations for additional information needed, when needed, to advance the methods from First to Final Action status.

In September 2011, during the AOAC Annual Meeting, SPIFAN approved standard method performance requirements (SMPRs) for ultra trace minerals and nucleotides. Subsequently, the ERP adopted three First Action methods for ultra trace minerals and nucleotides, as well as one First Action method for inositol. These 14 manuscripts were published in the March/April, May/June, and July/August 2012 issues of the Journal of AOAC INTERNATIONAL.

Under the SPIFAN project, the ERPs recommended that all First Action methods should undergo further study in a single-laboratory validation (SLV) using centrally prepared testing materials. SLV data are reviewed by ERPs in an effort to recommend one candidate dispute resolution method per nutrient, which will also be published in J. AOAC Int. Recommended candidate dispute resolution methods most likely will need to demonstrate reproducibility in compliance with the SMPRs for consideration as Final Action status.

The Expert Review Panel (ERP) of the Year award recognizes an ERP for achieving and completing significant milestone(s) (e.g., Final Report, First Action Method, Final Action Method) highlighted by some unique or particularly noteworthy aspect of a review panel report, such as innovative technology or application, breadth of applicability, critical need, difficult analysis, or timeliness. The report demonstrates significant merit as to the scope of the project, diversity of the panel, or an innovative approach to difficult analytical challenge. The report must have been submitted within the last 3 years.

STUDY DIRECTOR OF THE YEAR PRESENTED TO:

FRANCES VAN DOLAH, National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Center for Coastal Environmental Health and Biomolecular Research, Charleston, South Carolina, USA

FRANCES VAN DOLAH is the recipient of the 2012 Study Director of the Year award. She is a research biochemist with NOAA, where she has been a project leader in the Marine Biotoxins Program for the past 22 years. A priority for NOAA has been the development of detection methods for marine biotoxins relevant to seafood safety and the health of coastal ecosystems. Van Dolah focused on the use of the pharmacological receptors of these toxins to develop receptor binding assays. Put in a microplate format, these assays are capable of reporting composite toxicity of samples containing complex mixtures of toxin congeners typical of marine toxins. The recent completion of the AOAC collaborative study on the receptor binding assay for paralytic shellfish toxins is a critical milestone in the validation and implementation of this assay for monitoring and shellfish commerce. Van Dolah has worked with the United Nations International Atomic Energy Agency to transfer this technology to developing countries with marine biotoxin concerns and, with the Marine Biotoxins Program, has provided training to interested state laboratories in the United States. For 10 years, she served as the lead scientist for the NOAA Marine Biotoxins Analytical Response Team, which utilizes rapid and validated confirmatory LC-MS to investigate the involvement of marine biotoxins in algal blooms and marine animal mortality events. She more recently expanded into the application of genomics to develop indicators of biotoxin exposure in marine mammals and to understand the regulation of growth and toxicity in the toxin-producing organisms. She has over 80 publications in the fields of marine biotoxins and harmful algae. Van Dolah received a Ph.D. in Molecular and Cellular Biology from the Medical University of South Carolina and a B.S., Cum Laude, Honors in Biology, Phi Beta Kappa from Wilson College, Pennsylvania.

The Study Director of the Year award recognizes consistently outstanding performance by Study Directors over a period of years.

COMMUNITY VOLUNTEER OF THE YEAR PRESENTED TO:

Paul Wehling, General Mills, Inc., Minneapolis, Minnesota, USA

The 2012 Community Volunteer of the Year award is presented to PAUL WEHLING. Wehling started his career with General Mills in 1983. Since that time, he has been a bench chemist, a chromatographer, laboratory supervisor, quality engineer, and a technical consultant. Along the way he developed an interest in statistics, especially in developing experiments to characterize analytical method variation. His special area of interest is the intersection of probability, statistics, and analytical chemistry. He has served AOAC as a methods committee advisor, member of the Official Methods Board (OMB), and chair of the Committee on Statistics.