

Analytical Chemistry Division
Outputs and Interactions, FY04

1. **Publications**

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- Wise, S.A., Poster, D.L., Schantz, M.M., Kucklick, J.R., Sander, L.C., Lopez de Alda, M., Schubert, P., Parris, R.M., and Porter, B.J., "***Two New Marine Sediment Standard Reference Materials (SRMs) for the Determination of Organic Contaminants,***" Anal. Bioanal. Chem., 378, 1251-1264 (2004).
- Wise, S.A., Sharpless, K.E., Sander, L.C., and May, W.E., "***Standard Reference Materials to Support U.S. Regulations for Nutrients and Contaminants in Food and Dietary Supplements,***" Accred. Quality Assur., 9, 543-550 (2004).

Yu, L.L., Fassett, J.D., MacDonald, B.S., Butler, T.A., Ramsey, D.A., Key-Schwartz, R.J., and Rains, T.C., "***Development of SRMs 295x and 296x, Respirable Crystalline Silica on Filter,***" J. ASTM Internatl., (in press).

Zeisler, R., "***New NIST Sediment SRMs for Inorganic Analysis,***" Anal. Bioanal. Chem., 378, 1277-1283 (2004).

Zeisler, R., Clark, S.B., Parry, S. J., and Heller-Zeisler S. F., "***Nuclear Science Manpower and Education Panel,***" J. of Radioanal. Nucl. Chem., (in press).

Zeisler, R., Lindstrom, R.M., and Greenberg, R.R., "***Instrumental Neutron Activation Analysis, a Valuable Link in Chemical Metrology,***" J. Radioanal. Nucl. Chem., (in press).

Zhao, Wei, Lukic-Zrnica, R., Gorman, B.P., Cottier, R.L., Golding, T.D., Littler, C.L., Dinan, J.H. Lindstrom, R.M., Schaake, H.F., Liao, P., "***Magnetoconductivity Tensor Analysis of Anomalous Transport Effects in Neutron Irradiated HgCdTe Epilayers,***" Physica E, 20, 246-250 (2004).

2. Talks

Becker, D.A., "***Results of the ASTM Task Group Intercomparison Exercise for Determination of Elemental Content of the NIST SRM 1575a, Pine Needles,***" American Nuclear Society International Winter Meeting, New Orleans, LA, November 18, 2003. Invited

Becker, P.R., "***Expansion of Environmental Specimen Banking in the United States for Marine Research and Monitoring,***" 1ST International Symposium on Environmental Behavior and Ecological Impacts of Persistent Toxic Substances, Matsuyama, Japan, March 18, 2004. Invited

Becker, P.R., "***Environmental Specimen Banking – An Investment in the Future,***" International Workshop on Time Capsule for Environment and Endangered Wildlife, Tsukuba, Japan, March 22, 2004. Invited

Becker, P.R., "***NIST Activities at the Hollings Marine Laboratory,***" CSTL/ACD NRC Sub- Panel Review, Gaithersburg, MD, June 3, 2004.

Bedner, M., "***Making Chlorine Greener: An Investigation of Alternate Dechlorination Agents for Chloramine Removal in Wastewater,***" American Chemical Society National Meeting, Philadelphia, PA, August 23, 2004.

Bedner, M., "***Environmental Pharmaceutical Transformations by Chlorination Processes,***" American Chemical Society National Meeting, Philadelphia, PA, August 26, 2004.

- Benner, Jr., B.A., "*Explosives-Contaminated Soil: Development and Characterization of a Candidate Matrix Material by GC/NICI-MS*," The Pittsburgh Conference 2004, Chicago, IL, March 9, 2004.
- Brown Thomas, J., "*NIST Micronutrients Measurement Quality Assurance: Review of Results from Interlaboratory Comparison Exercises*," NIST Micronutrients Measurement Quality Assurance Workshop, Washington, DC, April 21, 2004.
- Bryan, C.E., "*Non-lethal Monitoring of Trace Elements in Bottlenose Dolphin, Tursiops Truncatus*," Southeast and Mid-Atlantic Marine Mammal Symposium, Fort Pierce, FL, March 27, 2004.
- Choquette, S.J., "*SRM 2036: A Reflectance Wavelength Standard Utilizing Rare Earth Oxide Glasses*," International Diffuse Reflectance Conference, Chambersburg, PA, August 8, 2004.
- Christopher, S.J., "*Benchmarking Trace Element Contaminant Data in Marine Mammals*," 15th Biennial Conference on Biology of Marine Mammals, Greensboro, NC, December 15, 2003.
- DeRose, P.C., "*Portable Fluorometer Standards and Performance for Bioagent Detection and Point-of-Care Applications*," The Pittsburgh Conference 2004, Chicago, IL, March 8, 2004.
- DeRose, P.C., "*Qualification of a Steady-State Fluorometer Using Conventional and Material Standards*," Council for Optical Radiation Measurements (CORM) Annual Conference 2004, May 14, 2004. Invited
- DeRose, P.C., "*Development of Fluorescence Standards for Biological Assays Using Modern Fluorometers*," Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), Fort Lauderdale, FL, October 18, 2004.
- Dodder, N.G., "*Brominated Flame Retardants: Current Sources, Fate and Transformation in the Environment*," Building and Fire Research Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, February 24, 2004.
- Dodder, N.G., "*Quantitation of Intact Proteins by Matrix Assisted Laser Desorption Ionization Time-of-Flight Mass Spectrometry (MALDI-TOF-MS)*," The 11th Annual Sigma Xi Postdoctoral Presentation, Gaithersburg, MD, February 19, 2004.
- Dodder, N.G., "*Studies on the Quantitation of Proteins Using Matrix Assisted Laser Desorption Ionization Time-of-Flight Mass Spectrometry (MALDI-TOF-MS)*," American Society for Mass Spectrometry (ASMS) Conference, Nashville, TN, May 25, 2004.
- Dorko, W.D., "*Gas Standard Traceability in the U.S.*," The Pittsburgh Conference 2004, Chicago, IL, March 9, 2004.
- Duewer, D.L., "*A New Approach to the Determination of CCQM Key Comparison Reference Values and Uncertainties*," CCQM Organic Working Group, Queretaro, Mexico, September 12, 2003.

Duewer, D.L., “*A Robust Approach for the Determination of CCQM Key Comparison Reference Values and Uncertainties*,” CCQM Spring Meeting, Sevres, France, April 23, 2004.

Duewer, D.L., “*Location and Dispersion Estimates for Measurements With Evaluated Uncertainties*,” Spring Research Conference on Statistics in Industry and Technology, Gaithersburg, MD, May 19, 2004.

Ellisor, M.B., “*NIST-Charleston: Who, What, When, Where, and Why*,” The Citadel ACS Student Affiliates Monthly Meeting, Charleston, SC, March 2004.

Forry, S.P., “*Fast-scan Cycle Voltammetry (FSCV) in Microfluidic Channels*,” American Chemical Society, Philadelphia, PA, August 23, 2004.

Greenberg, R.R., “*Development of a Facility for Rapid Ultratrace Detection of Fissionable Materials*,” American Nuclear Society International Winter Meeting, New Orleans, LA, November 19, 2003.
Invited

Greenberg, R.R., “*Chemical Measurement Quality and Neutron Activation Analysis*,” 11th International Conference on Modern Trends in Activation Analysis, Guilford, United Kingdom, June 24, 2004. Invited

Greenberg, R.R., “*NIST Matrix Standard Reference Materials for Validating Chemical Measurements*,” CITAC Workshop on Traceability, Wellington, New Zealand, May 4, 2004.
Invited

Greenberg, R.R., “*Potential Errors (not uncertainties) in Dissolving Samples for Inorganic Analysis*,” CITAC Workshop on Traceability, Wellington, New Zealand, May 5, 2004. Invited

Greenberg, R.R., “*Uncertainty Evaluation of Neutron Activation Analysis (NAA)*,” CITAC Workshop on Traceability, Wellington, New Zealand, May 5, 2004. Invited

Guenther, F.R., “*Errors in Variables (EIV)*,” CCQM Gas Working Group Meeting, St. Petersburg Russia, October 2, 2003.

Guenther, F.R., “*The Development of Standards for Mercury Measurements in Power Plant Emissions*,” CCQM Gas Working Group Meeting, Sevres, France, April 20, 2004.

Guenther, F.R., “*The Development of Standards for Mercury Measurements in Power Plant Emissions*,” SIM Chemical Metrology Awareness Seminar, INTI, Buenos Aires, Argentina, September 22, 2004.

Guenther, F.R., “*Comparison Results on Automobile Emissions*,” SIM Chemical Metrology Awareness Seminar, INTI, Buenos Aires, Argentina, September 24, 2004.

- Keller, J.M., "***Occurrence and Effects of Contaminants in Sea Turtles***," The North Atlantic Loggerhead Sea Turtle (*Caretta caretta*) Mortality Workshop, St. Catherine's Island, GA, November 20, 2003.
- Keller, J.M., "***Organochlorine Contaminant Concentrations in Healthy Versus Debilitated Loggerhead Sea Turtles***," The 11th Annual Sigma Xi Postdoctoral Poster Presentation, Gaithersburg, MD, February 19, 2004.
- Keller, J.M., "***A Review of Persistent Organic Pollutants in Sea Turtles and a Need for More Comprehensive Health Assessment Studies***," 24th Annual Symposium on Sea Turtle Biology and Conservation, San Jose, Costa Rica, February 25, 2004.
- Kucklick, J.R., "***An Interlaboratory Comparison Exercise for Organohalogenes in Marine Mammal Blubber***," 24th International Symposium on Halogenated Environmental Organic Pollutants and POPs, Berlin, Germany, September 8, 2004.
- Lamaze, G.P., "***Analyses of Thin Films and Surfaces by Cold Neutron Depth Profiling***," 1st International Meeting on Applied Physics, Badajoz, Spain, October 13, 2003. Invited
- Lamaze, G.P., "***Development and Applications of Neutron Depth Profiling Techniques Using Cold Neutron Beams***," American Nuclear Society International Winter Meeting, New Orleans, LA, November 17, 2003. Invited
- Lindstrom, R.M., "***Nuclear Analytical Methods with Thermal and Cold Neutrons***," Annual Meeting of the Society of German Chemical Society, München, Germany, October 7, 2003. Invited
- Lindstrom, R.M., "***Accuracy and Uncertainty in Radioactivity Measurement for NAA***," 11th International Conference on Modern Trends in Activations Analysis, Guilford, United Kingdom, June 24, 2004. Invited
- Lippa, K.A., "***Molecular Simulation of Alkylsilane Stationary Phases in Liquid Chromatography: An Investigation of Shape Selectivity***," HPLC 2004, Philadelphia, PA, June 16, 2004.
- Locascio, L.E., "***Temperature-Programmed Mixing in Microchannels Using Liposomes***," Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), Ft. Lauderdale, FL, October 22, 2003.
- Locascio, L.E., "***Nature's Packaging Using Bio-Inspired Liposomes for Rapid High-Efficiency Mixing in Microfluidic Systems***," University of Michigan, Chemistry Department, Ann Arbor, MI, October 29, 2003.
- Locascio, L.E., "***Using Liposomes for High-Efficiency Mixing in Microfluidic Systems***," LabAutomation Conference, San Jose, CA, February 5, 2004.

- Locascio, L.E., "***Microfluidic-Assisted Lipid Nanotube Formation and Manipulation with Light,***" MicroTAS 2004, 8th International Conference on Miniaturized Systems for Chemistry & Life Science, Malmo, Sweden, September 25, 2004.
- Long, S.E., "***Recent Research Activities in the Spectrochemical Methods Group,***" University of Massachusetts, Amherst, MA, December 18, 2003.
- MacCrehan, W.A., "***Development of NIST Reference Materials for Explosives Analysis,***" Middle Atlantic Association of Forensic Scientists (MAAFS), Wilmington, DE, April 22, 2004.
- MacCrehan, W.A., "***NIST Reference Materials for Explosives Analysis,***" International Symposium on the Analysis and Detection of Explosives (ISADE), Ottawa, Canada, June 6, 2004.
- MacCrehan, W.A., "***Determination of Explosives by Liquid Chromatography and Capillary Electrophoresis,***" HPLC 2004, Philadelphia, PA, June 16, 2004.
- Mackey, E.A., "***Analytical Developments in Prompt Gamma Activation Analysis,***" International Conference on Nuclear and Radiochemistry, Aachen, Germany, September 2, 2004. Invited
- Mackey, E.A., "***Metals Analysis for Fertilizers and Soils,***" Association of American Plant and Food Control Officials, Tampa, Florida, February 18, 2004. Invited
- May, W.E., "***NIST Activities for Underpinning Industrial Compliance with U.S. Regulations Regarding Nutrients and Contaminants in Food,***" Chemical Metrology School, Rio De Janeiro, Brazil, November 20, 2003. Invited
- May, W.E., "***Critical Evaluation of Isotope Dilution Mass Spectrometry as a Primary Methods for Organic Chemical Analysis,***" Rio De Janeiro, Brazil, November 21, 2003. Invited
- May, W.E., "***Chemical Metrology and Its Impact in Trade, Productivity and Quality of Life,***" International Week of Chemical Metrology, Caracas, Venezuela, November 24, 2003. Invited
- May, W.E., "***New Traceability Requirements in Clinical Chemistry,***" International Week of Chemical Metrology, Caracas, Venezuela, November 25, 2003. Invited
- May, W.E., "***New Traceability Requirements for Clinical Chemistry: Activities of the Joint Committee on Traceability in Laboratory Medicine,***" International Week of Chemical Metrology, San Jose, Costa Rica, February 3, 2004. Invited
- May, W.E., "***SIM Program in Chemical Metrology: Current Activities and Future Plans,***" International Week of Chemical Metrology, San Jose, Costa Rica, February 3, 2004. Invited
- May, W.E., "***Publication of the List of Higher Order Reference Materials and Methods,***" JCTLM Executive Meeting, Sevres, France, February 27, 2004. Invited

- May, W.E., "***NIST Program in Chemical Metrology and Its Impact on U.S. Industrial Productivity, Trade, and Quality of Life***," 2004 Lloyd N. Ferguson Distinguished Lecturer at California State University, Los Angeles, CA, March 11, 2004. Invited
- May, W.E., "***NIST Activities in Support of New Standardization and Traceability Requirements in Laboratory Medicine***," 2004 Lloyd N. Ferguson Distinguished Lecturer at California State University, Los Angeles, CA, March 12, 2004. Invited
- May, W.E., "***Implementing Metrological Traceability in Laboratory Medicine: JCTLM Role in Identifying Reference Methods and Materials of Higher Order***," NCCLS's 2004 Leadership Conference Delegate Workshop on Metrological Traceability, Washington, DC, March 20, 2004
- May, W.E., "***Implementing Metrological Traceability in Laboratory Medicine: JCTLM Role in Identifying Reference Methods and Materials of Higher Order***," NCCLS Leadership Conference Delegate Workshop on Metrological Traceability, March 20, 2004. Invited
- May, W.E., "***Overview of NIST Measurement and Standards Activities in Support of Clinical Diagnostics***," Beckman Coulter Company, Los Angeles, CA, July 22, 2004. Invited
- May, W.E., "***Overview of NIST Chemical Measurement and Standards Activities***," Praxair Inc., Los Angeles, CA, July 27, 2004. Invited
- May, W.E., "***Activities of JCTLM Working Group-I, Update on the Activities of the Joint Committee for Traceability in Laboratory Medicine***," Los Angeles, CA, July 28, 2004.
- May, W.E., "***Overview of NIST Measurement and Standards Activities in Support of Clinical Diagnostics***," Roche Diagnostics, Inc., Indianapolis, IN, August 6, 2004. Invited
- May, W.E., "***NIST Activities in Support of New Standardization and Traceability Requirements in Laboratory Medicine***," III Congress on Quality in Clinical Laboratories, Buenos Aires, Argentina, September 17, 2004. Invited
- May, W.E., "***New Requirements for Quality and Traceability in Laboratory Medicine: Activities of the JCTLM Working Group on Reference Materials and Reference Laboratory Procedures***," III Congress on Quality in Clinical Laboratories, Buenos Aires, Argentina, September 17, 2004. Invited
- May, W.E., "***SIM Activities in Chemical Metrology***," SIM Chemical Metrology Awareness Seminar, INTI, Buenos Aires, Argentina, September 20, 2004. Invited
- May, W.E., "***Traceability Structure for Chemical Measurements in the USA***," SIM Chemical Metrology Awareness Seminar, INTI, Buenos Aires, Argentina, September 21, 2004. Invited

- May, W.E., "***New Measurement Traceability Requirements in Laboratory Medicine – Global Situation: Activities of the JCTLM***," SIM Chemical Metrology Awareness Seminar, INTI, Buenos Aires, Argentina, September 21, 2004. Invited
- McGuire, S.C., "***Recent Results from INAA Measurements on LIGO Sapphire Materials***," American Nuclear Society International Winter Meeting, New Orleans, LA, November 18, 2003. Invited
- Mitchell, G.D., "***Permeation Systems as a Source of Traceable Gas Standards***," The Pittsburgh Conference 2004, Chicago, IL, March 9, 2004.
- Murphy, K.E., "***Inductively Coupled Plasma Mass Spectrometry at NIST***," NIST-Wide Mass Spectrometry Meeting, Gaithersburg, MD, September 22, 2004.
- Nelson, B.C., "***Simultaneous Determination of Homocysteine and 5-Methyltetrahydrofolic Acid in Human Plasma or Serum***," Experimental Biology Meeting, NIST Micronutrients Measurements Quality Assurance Workshop, Washington, DC, April 21, 2004.
- Norris, J.E., "***NIST Standard Reference Photometer and International Ozone Traceability***," Hong Kong Environment Protection Department, Hong Kong S.A.R., China, December 9, 2003.
- Norris, J.E., "***NIST Standard Reference Photometer and International Ozone Traceability***," New South Wales Environment Protection Authority, Sydney, Australia, December 17, 2003.
- Norris, J.E., "***NIST Standard Reference Photometer and International Ozone Traceability***," National Institute of Environmental Studies, Tsukuba, Japan, April 15, 2004.
- Norris, J.E., "***Upgrade and Intercomparison of U.S. Environmental Protection Agencies Ozone Reference Standards***," 2004 Air and Waste Management Association Annual Conference, June 22, 2004.
- Paul, R., "***Determination of Hydrogen in Semiconductors and Related Materials by Cold Neutron Prompt Gamma-ray Activation Analysis***," Materials Research Society Spring Meeting, San Francisco, California, April 13, 2004. Invited
- Phinney, C.S., "***Value Assignment for Fatty Acids in Foods by Gas Chromatography***," Washington Chromatography Discussion Group, U.S. Pharmacopeia (USP), Rockville, MD, November 20, 2003.
- Phinney, C.S., "***Gas Chromatographic Approaches to the Determination of Fat in Foods – Applications and Limitations***," RESTEK Corporation, Bellefonte, PA, January 22, 2004. Invited
- Phinney, C.S., "***Fatty Acid Distributors in Arctic and Marine Animal Lipid Materials***," AOAC International Annual Meeting, St. Louis, MO, September 21, 2004.

- Phinney, K.W., "***Determination of Ephedra Alkaloid Stereoisomers in Dietary Supplements by Capillary Electrophoresis***," HPLC 2004, Philadelphia, PA, June 16, 2004.
- Phinney, K.W., "***Use of Dynamically Coated Capillaries for Enantioselective Separations by Capillary Electrophoresis***," Chirality 2004, New York, NY, July 12, 2004.
- Poster, D.L., "***On the Use of Gas Chromatography Mass Spectrometry for the Determination of Organic Contaminants in Environmental Standard Reference Materials***," NIST-Wide Mass Spectrometry Meeting, Gaithersburg, MD, September 22, 2004.
- Poster, D.L., "***Two New Particle-Related Standard Reference Materials for Organic Contaminants***," National Environmental Monitoring Conference, Washington, DC, July 20, 2004.
- Poster, D.L., "***Newly Developed SRMs for Organic Contaminant Analysis***," 24th International Symposium on Halogenated Environmental Organic Pollutants and POPs, Berlin, Germany, September 7, 2004.
- Poster, D.L., "***Radiolytic Degradation of Chlorinated Contaminants in Marine Sediment with Food-grade Surfactants***," 24th International Symposium on Halogenated Environmental Organic Pollutants and POPs, Berlin, Germany, September 8, 2004.
- Pratt, K.W., "***Adventures in CO₃ pH(S) CRM Certification: How They Improved pH(S) Metrology***," CCQM Electrochemical Analysis Working Group Fall Meeting, EMPA, St. Gallen, Switzerland, October 13, 2003.
- Pratt, K.W., "***KHP Assay and pH(S): Linking CCQM-K17 and CCQM-P36***," CCQM Electrochemical Analysis Working Group Fall Meeting, EMPA, St. Gallen, Switzerland, October 13, 2003.
- Pratt, K.W., "***Final Report for Pilot Study CCQM-P19/-P19.1***," CCQM Spring Meeting, Inorganic Analysis/Electrochemical Analysis Working Groups, BIPM, Sevres, France, April 20, 2004.
- Pugh, R.S., "***Use of Tissue Samples from the National Marine Mammal Tissue Bank (NMMTB) for Research and Monitoring***," Society for Marine Mammalogy 15th Biennial Conference, Greensboro, NC, December 14, 2003.
- Pugh, R.S., "***The Marine Environmental Specimen Bank. A Satellite Facility of the National Biomonitoring Specimen Bank at the Hollings Marine Laboratory, Charleston, SC***," International Society of Biological and Environmental Repositories Annual Meeting, New York, NY, May 6, 2004. Invited
- Rhoderick, G.C., "***Halocarbon and VOC Primary Gravimetric Standards Method at NIST***," Organizational/Steering Committee of the International Halocarbon in Air Comparison Experiment (IHALACE), Boulder, CO, November 12, 2003.

- Ross, D.J., "***Micellar Affinity Gradient Focusing***," MicroTAS 2003, Lake Tahoe, CA, October 6, 2003.
- Ross, D.J., "***Micellar Affinity Gradient Focusing***," Frederick Conference on Capillary Electrophoresis, Frederick, MD, November 4, 2003.
- Ross, D.J., "***Micellar Affinity Gradient Focusing***," American Institute of Chemical Engineers (AIChE), San Francisco, CA, November 16, 2003.
- Ross, D.J., "***Microfluidic Gradient Focusing Methods: A New Approach to Separations***," Sandia Livermore, San Francisco, CA, November 20, 2003.
- Ross, D.J., "***Microfluidic Gradient Focusing Methods: A New Approach to Separations***," NIST Polymers Division Seminar, Gaithersburg, MD, January 6, 2004.
- Ross, D.J., "***Microfluidic Focusing Methods: A New Paradigm for Biomolecular Separations***," NIST Sigma Xi Colloquium, Gaithersburg, MD, February 11, 2004.
- Ross, D.J., "***Microfluidic Focusing Methods: Prospects for High-Sensitivity Detection and Separation of Biological and Chemical Warfare Agents***," Micro-Electromechanical Systems (MEMS) Alliance 2004, Laurel, MD, March 29, 2004.
- Ross, D.J., "***Temperature Gradient Focusing, What it is and How Might it be Used with Aptamer-Based Probes***," SomaLogic, Inc., Boulder, CO, August 24, 2004.
- Ross, D.J., "***Chiral Temperature Gradient Focusing***," MicroTAS 2004, 8th International Conference on Miniaturized Systems for Chemistry & Life Science, Malmo, Sweden, September 25, 2004.
- Sander, L.C., "***Order and Disorder in Alkyl Stationary Phases***," 28th International Symposium on High Performance Liquid Phase Separations and Related Techniques, Philadelphia, PA, June 16, 2004.
- Sander, L.C., "***Dietary Supplement Standard Reference Materials***," 228th ACS National Meeting, August 25, 2004. Invited
- Satterfield, M.B., "***New Standard Reference Material (SRM) for Homocysteine and Folate in Human Serum***," Experimental Biology Meeting, Washington, DC, April 18, 2004.
- Satterfield, M.B., "***Use of Modified Experimental Parameters to Increase the Dynamic Range in Complex Mixtures of Multiple Analytes***," American Society for Mass Spectrometry (ASMS) Conference, Nashville, TN, May 24, 2004.
- Schantz, M.M., "***SRM 1946, Lake Superior Fish Tissue***," CSTL Colloquium, Gaithersburg, MD, October 1, 2003.
- Schantz, M.M., "***Environmental Standard Reference Materials for Organic Analysis***," Measurement Services Division Lunch-Time Seminar, Gaithersburg, MD, November 4, 2003. Invited

- Schantz, M.M., "**Results from SIM.8.14P, Ethanol in Aqueous Matrix,**" International Week of Chemical Metrology, San José, Costa Rica, February 5, 2004.
- Schantz, M.M., "**Plans for Trial III Intercomparison Study,**" Organic Speciation Working Group Meeting, Las Vegas, NV, April 5, 2004.
- Schantz, M.M., "**Performance-Based Quality Assurance Programs for Organic Contaminants in Marine Tissue, Marine Sediment, and Air Particulate Matter,**" National Environmental Monitoring Conference, Washington, DC, July 20, 2004.
- Sharpless, K.E., "**Food-Matrix SRMs,**" Measurement Services Division Lunch-Time Seminar, Gaithersburg, MD, February 23, 2004. Invited
- Sharpless, K.E., "**Carotenoid Standards and Stability,**" NIST Micronutrients Measurements Quality Assurance Program Workshop, Washington, DC, April 21, 2004.
- Sharpless, K.E., "**Commutability: Lyophilized vs. Fresh-Frozen Serum,**" NIST Micronutrients Measurements Quality Assurance Program Workshop, Washington, DC, April 21, 2004.
- Sharpless, K.E., "**Development of Standard Reference Materials for Dietary Supplements,**" NIH's Analytical Methods and Reference Materials Program for Dietary Supplements: Part 1 and 2, Supply Side East International Trade Show and Conference, Baltimore, MD, May 5, 2004.
- Sharpless, K.E., "**Status of NIST Activities to Produce Standard Reference Materials for Dietary Supplements,**" 118th Annual Meeting of AOAC International, St. Louis, MO, September 21, 2004.
- Sharpless, K.E., "**Suitable Reference Materials for Allergen Detection in Food,**" 118th Annual Meeting of AOAC International, St. Louis, MO, September 21, 2004. Invited
- Sieber, J.R., "**Progress on New and Renewal SRMs for Metals, Ores, and Related Materials,**" ASTM International Committee E01 Meeting, Tampa, FL, November 17, 2003.
- Sieber, J.R., "**Development of a Standard Reference Material (SRM) for Metals Characterization in Polyolefin's,**" ASTM International Committee D20 Meeting, November 18, 2003.
- Sieber, J.R., "**Update of NIST SRM Projects,**" ASTM International Committee E01 Meeting, Salt Lake City, UT, May 17, 2004.
- Sieber, J.R., "**Traceability Validation, and Uncertainty in Quantitative X-Ray Fluorescence Spectrometry,**" Symposium 2004, London, Ontario, Canada, July 28, 2004. Invited
- Sieber, J.R., "**Update of NIST SRM Projects,**" Interlaboratory Analysis Program, Steamboat Springs, CO, July 30, 2004.

- Sieber, J.R., "*CIPM MRA and Traceability*," Interlaboratory Analysis Program, Steamboat Springs, CO, July 30, 2004.
- Sieber, J.R., "*Traceability, Validation and Uncertainty in Quantitative X-Ray Fluorescence Spectrometry*," Interlaboratory Analysis Program, Steamboat Springs, CO, July 30, 2004.
- Sieber, J.R., "*Basics of Petroleum Analysis Using XRF Elemental Analysis of Lubricants and Fuels*," Workshop W-12, Denver X-Ray Conference, Steamboat Springs, CO, August 3, 2004, Invited
- Sieber, J.R., "*Traceability, Validation and Uncertainty in Quantitative X-Ray Fluorescence Spectrometry*," Norwegian X-Ray Conference, Kristiansand, Norway, September 7, 2004, Invited
- Stapleton, H.M., "*Debromination of Polybrominated Diphenyl Ether Congeners by the Common Carp, (Cyprinus carpio)*," Society of Environmental Toxicology and Chemistry 24th Annual Meeting, Austin, TX, November 12, 2003.
- Stapleton, H.M., "*Brominated Flame Retardants: Current Sources, Fate and Transformation in the Environment*," Building and Fire Research Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, February 24, 2004.
- Stapleton, H.M., "*Polybrominated Diphenyl Ether Measurements in House Dust*," International Workshop on Brominated Flame Retardants, Toronto, Ontario, Canada, June 6-9, 2004.
- Stapleton, H.M., "*Measurement of the Flame Retardants Polybrominated Diphenyl Ethers (PBDEs) and Hexabromocyclododecane (HBCDD) in House Dust*," International Symposium on Halogenated Environmental Organic Pollutants and POPs, Berlin, Germany, September 8, 2004.
- Stapleton, H.M., "*Measurement of Polybrominated Diphenyl Ethers in Environmental Matrix Standard Reference Materials*," International Symposium on Halogenated Environmental Organic Pollutants and POPs, Berlin, Germany, September 7, 2004.
- Tai, S. S-C., "*Method Development for Total T4 and T3 in Human Serum Using Isotope-Dilution Liquid Chromatography-Mass Spectrometry and Liquid Chromatography-Tandem Mass Spectrometry*," American Society for Mass Spectrometry (ASMS) Conference, Nashville, TN, May 23, 2004.
- Travis, J.C., "*An Intrinsic Wavelength Standard for UV/VIS Molecular Absorption Spectrophotometry*," Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), Ft. Lauderdale, FL, October 19, 2003.
- Turk, G.C., "*NIST Single-Element Primary Solution Standards and the SRM 3100 Series*," EMPA Workshop on Methodology for High Purity Materials and Calibration Solutions, St. Gallen, Switzerland, October 15, 2003.

- Turk, G.C., "**CCQM-P46 on Preparation of Inorganic Solutions: Discussion of Approach and Timetable**," Sevres, France, April 21, 2004.
- Vander Pol, S.S., "**Mercury Concentration Trends in Eggs from Alaskan Murre (*Uria spp.*) Colonies**," Society of Environmental Toxicology and Chemistry 24th Annual Meeting, Austin, TX, November 12, 2003.
- Vander Pol, S.S., "**Benchmarking Trace Element Contaminant Data in Marine Mammals**," Society for Marine Mammology 15th Biennial Conference, Greensboro, NC, December 14, 2003.
- Vander Pol, S.S., "**Efforts to Improve the Quality of Persistent Organic Pollutant Measurements Made on Marine Mammal Tissues**," Society for Marine Mammology 15th Biennial Conference, Greensboro, NC, December 14, 2003.
- Vander Pol, S.S., "**Use of Samples from the National Marine Mammal Tissue Bank (NMMTB) for Research and Monitoring**," Society for Marine Mammology 15th Biennial Conference, Greensboro, NC, December 14, 2003.
- Vander Pol, S.S., "**Murre (*Uria spp.*) Eggs as Environmental Monitors**," Pacific Seabird Group 31st Annual Meeting, La Paz, BCS, Mexico, January 22, 2004.
- Vreeland, W.N., "**Nature's Packaging: Using Bio-Inspired Liposomes for Rapid, High Efficiency Mixing in Microfluidic Systems**," MicroTAS 2003, Lake Tahoe, CA, October 5, 2003.
- Vreeland, W.N., "**Mixing in Micro Devices to Micro Reactors**," American Electrophoresis Society to American Institute of Chemical Engineers, San Francisco, CA, November 16, 2003.
- Vreeland, W.N., "**Multichannel Continuous Flow Microfluidic System for Single Molecule Vials**," MicroTAS 2004, 8th International Conference on Miniaturized Systems for Chemistry & Life Science, Malmo, Sweden, September 25, 2004.
- Winchester, M.R., "**Glow Discharge Spectrometries in the National Metrology Institutes**," Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), Fort Lauderdale, FL, October 23, 2003.
- Wise, S.A., "**NIST Activities to Underpin Industrial Compliance with U.S. Regulations Regarding Nutrients and Contaminants in Food and Dietary Supplements**," CCQM Workshop on Comparability and Traceability in Food Analysis, Sevres France, November 18-19, 2003. Invited
- Wise, S.A., "**Status of Reference Materials for Organic Speciation**," Organic Speciation Working Group Meeting, Desert Research Institute, Las Vegas, NV, April 5, 2004.
- Wise, S.A., "**Reference Materials and Quality Assurance Needs to Support Organic Speciation Measurements in Air Particulate Matter**," International State of the Science Workshop on Organic Speciation in Atmospheric Aerosols Research, Desert Research Institute, Las Vegas NV, April 5-7, 2004. Invited

Wise, S.A., “*New Trends in Environmental CRMs*,” Metropolis Workshop on State-of-the-Art and New Trends in the Use of Reference Materials for Environmental Monitoring and Analysis, Laboratoire National d’Essai (LNE), Paris, France, April 13-14, 2004. Invited

Wise, S.A., “*Status of CCQM-P31 Pilot Studies for Organic Solutions and CCQM-P40 Pilot Study for Organic Contaminants in Mussel Tissue*,” CCQM Organic Working Group Meeting, BIPM, Sevres, France, April 15-16, 2004.

Wise, S.A., “*Improving Quality in Environmental Measurements – Certified Reference Materials for Organic Pollutants in the Environment*,” 9th FECS Conference and 2nd SFC Meeting on Chemistry and the Environment – Behavior of Chemicals in the Environment, Bordeaux, France, August 29 -September 1, 2004. Invited

Wise, S.A., “*Reference Materials for Organic Contaminants in the Environment*,” University of Pau, Pau, France, September 3, 2004. Invited

Wise, S.A., “*CRM Development to Address Challenges from U.S. Regulations Regarding Nutrients and Contaminants in Food and Dietary Supplements*,” CCQM Workshop on Reference Measurements for Food Analysis, BIPM, Sevres, France, September 13, 2004. Invited

Wise, S.A., “*Standard Reference Materials for Organic Pollutants in Environmental Samples*,” U.S. EPA, Research Triangle Park, NC, September 21, 2004.

Yu, L.L., “*Accurate and Precise Determination of Si and Ge Ratio of Si-Ge Chip*,” Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), Fort Lauderdale, FL, October 22, 2003.

Yu, L.L., “*Respirable Crystalline Silica on Filters*,” ASTM Symposium, Salt Lake City, UT, April 23, 2004.

Zeisler, R., “*Determinations of Sub-Nanomole Elemental Levels in Reference Materials*,” American Nuclear Society International Winter Meeting, New Orleans, LA, November 18, 2003. Invited

Zeisler, R., “*Instrumental Neutron Activation Analysis Procedures for Determinations with Very Low Uncertainties*,” 11th International Conference on Modern Trends in Activation Analysis, Guilford, United Kingdom, June 24, 2004. Invited

3. Cooperative Research Development Agreements (CRADAs) and Consortia

- Evident Technologies, Inc., “Nanocrystal Composite Materials for Fluorescence Standards.”
- Mayo Collaborative Services, Inc., “Assessment of Accuracy of Clinical Reference Materials for the Determination of Calcium in Human Serum, Plasma, and Urine.”

- Nova Scientific, “Development of High Resolution Imaging for Neutrons.”

3a. Guest Researchers (GR)/Research Associates (RA)

Mariana Arce Osuna	CENAM - Mexico
Michael Armani	University of Maryland
Folahan Ayorinde	Howard University
Donald Becker	Self
Dawn Bennett	UMBC
Doug Blackburn	Self
M. James Blackman	Smithsonian Institution
Ronald Bishop	Smithsonian Institution
Bill Bowman	Self
Mahnaz Chaychian	University of Maryland
Kyung Cho	KRISS – Korea
Richard Christensen	Self
Bruce Coxon	NIH
Greg Downing	Self
Angela Douglas	Louisiana State University
Mike Epstein	Mount Saint Mary's College
Jack Fassett	Self
Winthrop B. Feller	Nova Scientific
Andre Henrion	PTB
Alyssa Henry	NIH
Stacey Hoebel	University of Wisconsin-Madison
Peter Howell	Self
Barbara Jones	Arizona State University
John Kakareka	NIH
Cheuk-Wai Kan	Northwestern Univ.
Dal-Ho Kim	KRISS - Korea
Lily Yee Koo	NIH
John Langland	Self
Randolph Larsen III	St. Mary's College of Maryland
Melissa Long	American University
Sam Margolis	Self
Jackie Mann	University of Maryland
Stephen McGuire	Southern University and A&M College
Christoph Meyer	Eberhad-Karls-University of Tuebingen
Anh Dao Nguyen	Fachhochschule Wiesbaden – Germany
Gavin O'Connor	LGC – UK
Dominik Poetz	Fachhochschule Wiesbaden – Germany
Thomas Pohida	NIH
Pedro Ramirez-Cruz	CENAM - Mexico
Zsolt Revay	Institute of Isotopes and Surface Chemistry
Marlene Santander	Comision Nacional de Ciencia y Tecnologia

Burkhard Schaefer	Universitaet Kaiserslautern - Germany
Kellie Smith	Mississippi State University
Paul Smith	NIH
Lorna Sniegowski	Self
Annaporna Sriram	Self
Tracy Stover	Murray State University
Robert Thompson	Oberlin College
Emanuel Waddell	Morgan State University
Felicia Williams	FDA; American University
Yung Wu	Self

4. Patent Awards and Applications

1. Balss, K.M., Ross, D.J., and Tarlov, M.J., "*Mixing Reactions by Temperature Gradient Focusing*," invention disclosure submitted, provisional patent application filed.
2. Ross, D.J., Howell, P, and Vreeland, W.N., "*Micellar Gradient Focusing*," non-provisional patent application filed.
3. Ross, D.J. and Maliaris, C., "*Whole Column Resistance Detection for Focusing Methods of Separation*," invention disclosure submitted.
4. Ross, D.J., Balss, K.M., and Vreeland W.N., "*Chiral Temperature Gradient Focusing*," invention disclosure submitted, provisional patent application filed.

5. SRM Activities

16	f	Basic Open-Hearth Steel, 1% Carbon
39	j	Benzoic Acid, Calorimetric Standard
133	b	Chromium-Molybdenum Steel
173	c	Titanium-Base Alloy (6A1-4V)
185	h	Potassium Hydrogen Phthalate - pH Std.
186I,		
186II	g	Potassium Dihydrogen Phosphate & Disodium Hydrogen Phosphate
187	e	Sodium Tetraborate Decahydrate (borax)
191	c	pH Standards - Sodium Bicarbonate, Sodium Carbonate - 191-I-c, 191-II-c
909	b	Human Serum
919	a	Sodium Chloride (Clinical Standard)
930	e	Neutral Glass Filters
955	b	Lead in Bovine Blood
956	b	Electrolytes in Human Serum
965	a	Glucose in Frozen Human Serum
970		Ascorbic Acid Serum
987		Strontium Carbonate Standard

991 Lead-206 Assay and Isotopic Standard
 1492 Chlorinated Pesticides in Hexane
 1494 Aliphatic Hydrocarbons in 2,2,4-Trimethylpentane
 1507 b 11-Nor-Delta-9-tetrahydrocannabinol-9-carboxylic Acid in Freeze-Dried Urine
 1514 Thermal Analysis Purity Set
 1548 Typical Diet
 1549 Non-Fat Milk Powder
 1622 e Sulfur in Residual Fuel Oil
 1623 c Sulfur in Residual Fuel Oil
 1640 Trace Elements in Natural Water
 1643 e Trace Elements in Water
 1646 a Estuarine Sediment
 1647 d Priority Pollutant Polycyclic Aromatic Hydrocarbons
 1664 a Sulfur Dioxide in Nitrogen - 2500 umol/mol, Lot No. 91-D-XX
 1665 b Propane in Air, 3 umol/mol, Lot No. 85-I-XX
 1666 b Propane in Air - 10 umol/mol, Lot No. 84-I-XX
 1667 b Propane in Air - 50 umol/mol, Lot No. 83-I-XX
 1669 b Propane in Air - 500 umol/mol, Lot No. 81-H-XX
 1675 b Carbon Dioxide in Nitrogen - 14% mol/mol, Lot No. 6-F-XX
 1687 b Nitric Oxide in Nitrogen - 1000 umol/mol, Lot No. 41-K-XX
 1694 a Sulfur Dioxide in Nitrogen - 100 umol/mol, Lot No. 95-I-XX
 1696 a Sulfur in Dioxide in Nitrogen - 3500 umol/mol, Lot No. 90-C-XX
 1742 Zinc-Aluminum Alloy
 1800 b 18 Non-Methane Hydrocarbon Compounds in Nitrogen
 1804 c Toxic Volatile Organic Compounds in Nitrogen, 5.0 nmol/mol, Lot No. C
 1828 b Ethanol-Water Solutions (Blood-Alcohol Testing: Six Levels)
 1846 Infant Formula
 1847 Ethanol-Water Solutions (Breath-Alcohol Testing: Three Levels)
 1930 Extended Visible Absorbance Filter
 1932 Fluorescein Solution
 1951 b Lipids in Frozen Human Serum
 2031 a Metal-on-Fused-Silica Filters
 2034 Holmium Oxide Solution Wavelength Standard
 2036 Diffuse Reflectance Wavelength Standard
 2037 Solvent Red 24 Diesel Fuel Dye
 2065 UV-Visible, Near-Infrared Transmission Wavelength/Vacuum Wavenumber Standard
 2241 Relative Intensity Correction Standard for Raman Spectroscopy: 785 nm Excitation
 2242 Relative Intensity Correction Std. for Raman Spectroscopy: 532 nm Excitation
 2243 Relative Intensity Correction Standard for Raman Spectroscopy
 2285 Arson Test Mixture in Methylene Chloride
 2294-2297 Reformulated Fuels
 2385 Slurried Spinach
 2387 Peanut Butter
 2453 Hydrogen in Titanium Alloy

2622 a Carbon Dioxide in Nitrogen - 2.0% mol/mol, Lot No. 33-XX-D
2623 a Carbon Dioxide in Nitrogen, 2.5 % mol/mol, Lot No. 34-C-XX
2625 a Carbon Dioxide in Nitrogen, Lot No. 36-B-XX
2625 a Carbon Dioxide in Nitrogen, Lot No. 36-C-XX
2626 a Carbon Dioxide in Nitrogen, 4 % mol/mol, Lot No. 37-E-XX
2624 a Carbon Dioxide in Nitrogen - 3.0% mol/mol, Lot No. 35-D-XX
2630 Nitric Oxide in Nitrogen, 1500 umol/mol, Lot No. 46-D-XX
2630 Nitric Oxide in Nitrogen - 1500 umol/mol, Lot No. 46-E-XX
2631 a Nitric Oxide in Nitrogen, Lot No. 47-E-XX
2644 a Propaine in Air - 250 umol/mol, Lot No. 101-C-XX
2660 a Total Oxides of Nitrogen (Nox) in Air - 100 umol/mol, Lot No. 2660-B-XX
2693 Determination of Sulfur Stability Testing (Ga)
2696 Silica Fume
2702 Inorganics in Marine Sediment
2723 a Sulfur in Diesel Fuel Oil
2891 Ethanol-Water Solutions (nom 0.02% by mass)
2892 Ethanol-Water Solutions (nom 0.04% by mass)
2893 Ethanol-Water Solutions (nom 0.08% by mass)
2894 Ethanol-Water Solutions (nom 0.1% by mass)
2895 Ethanol-Water Solutions (nom 0.2% by mass)
2896 Ethanol-Water Solutions (nom 0.3% by mass)
2897 Ethanol-Water Solutions (nom 2% by mass)
2898 Ethanol-Water Solution (nom 6% by mass)
2899 Ethanol-Water Solutions (nom 25% by mass)
2921 Human Cardiac Troponin Complex
2930 Glass Filters for Spectrophotometry
3000-3016 VOC/Methanol SRMs
3105 a Beryllium Standard Solution, Lot No. 892707
3102 a Antimony Standard Solution, Lot No. 990707
3104 a Barium Standard Solution, Lot No. 992907
3107 Boron Standard Solution, Lot No. 991907
3111 a Cesium Standard Solution, Lot No. 792210
3114 Copper Standard Solution, Lot No. 891811
3114 Copper Standard Solution, Lot No. 011017
3119 a Gallium Standard Solution, Lot No. 890709
3120 a Germanium Standard Solution, Lot No. 000411
3121 Gold Standard Solution, Lot No. 991806
3123 a Holmium Standard Solution, Lot No. 790812
3128 Lead Standard Solution, Lot No. 991504
3130 a Lutetium Standard Solution, Lot No. 892704
3131 a Magnesium Standard Solution, Lot No. 991107
3133 Mercury Standard Solution, Lot No. 991304
3134 Molybdenum Standard Solution, Lot No. 891307
3135 a Neodymium Standard Solution, Lot No. 992803
3138 Palladium Standard Solution, Lot No. 990207
3139 a Phosphorus Standard Solution, Lot No. 890607

3141		Potassium Standard Solution
3142		Praseodymium Standards Solution, Lot No. 990501
3147	a	Samarium Standard Solution, Lot No. 892911
3150		Silicon Standard Solution, Lot No. 991108
3152	a	Sodium Standard Solution, Lot No. 990907
3153	a	Strontium Standard Solution, Lot No. 990906
3154		Sulfur Standard Solution, Lot No. 892205
3155		Tantalum Standard Solution, Lot No. 993108
3157	a	Terbium Standard Solution, Lot No. 891603
3160	a	Thulium Standard Solution, Lot No. 790912
3161	a	Tin Standard Solution, Lot No. 993107
3162	a	Titanium Standard Solution, Lot No. 992801
3165		Vanadium Standard Solutino, Lot No. 992706
3169		Zirconium Standard Solution, Lot No. 990109
3183		Fluoride Anion Solution, Lot No. 991510
3185		Nitrate Anion Standard Solution, Lot No. 991508
3190		Aqueous Electrolytic Conductivity, Lot No. 030904
3190		Electrolytic Conductivity, Lot No. 042203
3191		Aqueous Electrolytic Conductivity, Lot No. 031906
3191		Electrolytic Conductivity, Lot No. 042402
3192		Aqueous Electrolytic Conductivity, Lot No. 031121
3193		Electrolytic Conductivity, Lot. No. 032608
3194		Aqueous Electrolytic Conductivity, Lot No. 011511
3198		Electrolytic Conductivity, Lot No. 032608
3198		Electrolytic Conductivity, Lot No. 042503
3199		Aqueous Electrolytic Conductivity, Lot No. 043001
8040		Sodium Oxalate
8107		Additivies in Smokeless Powder
8441	a	Wheat Hardness

New Primary Standards

W.R. Miller

3 Carbon Monoxide in Nitrogen, to support the certification of SRM 1677c.

1 Carbon Monoxide in Nitrogen, to support certification of a gas mixture for the Naval Western Standards Laboratory.

W.J. Thorn

May 13, 2004 (0.975 ± 0.003) mole % Nitrogen dioxide (NO₂) in helium FF8125 PSM

June 14, 2004 (1.0578 ± 0.003) mole % Nitrous oxide (N₂O) in helium FF8110 PSM

June 15, 2004 (0.10202 ± 0.0004) mole % Nitrous oxide (N₂O) in helium FF8155 PSM

Aug 6, 2004 (0.8393 ± 0.0006) mole % Nitric oxide (NO) in nitrogen AAL068132 Lv 1-#1

Aug 6, 2004 (0.9452 ± 0.0006) mole % Nitric oxide (NO) in nitrogen CC63454 Lv 1-#2

Aug 10, 2004 (1.1052 ± 0.0007) mole % Nitric oxide (NO) in nitrogen AAL053322 Lv 1-#3

Aug 10, 2004 (1.1746 ± 0.0007) mole % Nitric oxide (NO) in nitrogen ALM021461 Lv 1-#4

Aug 19, 2004 (1.2478 ± 0.0008) mole % Nitric oxide (NO) in nitrogen AAL034597 Lv 1-#5

Aug 19, 2004 (1.3839 ± 0.0008) mole % Nitric oxide (NO) in nitrogen ALM021475 Lv 1-#6

Analytical services have been provided for the following (235)

- Advanced Micron Devices
- Air Force Technical Applications Center
- Argonne National Laboratory
- Cornell University
- Corning Glass Works
- Dow Chemical
- E.I. DuPont de Nemours & Co., Inc.
- Institute of Isotope and Surface Chemistry - Budapest
- Johns Hopkins University
- NASA-Goddard Space Flight Center
- Neutek, Inc.
- NIST Center for Neutron Research
- Pacific Northwest National Laboratory
- Penn State University
- Rutgers University
- Southern University
- Texas Instruments
- Thomas Jefferson National Accelerator Laboratory
- Tufts University
- University of California – Berkeley
- University of Delaware
- University of Erlangen-Nürnberg
- University of North Texas
- University of Puerto Rico
- U.S. Army Research Laboratory
- X-Ray Optical Systems, Inc.

Gas NTRMs (15) were produced in collaboration with the following companies:

BOC Gases (5)

Scott Specialty Gases (7)

Spectra Gases, Inc. (3)

6. SRD Activities

None

7. Calibrations

Gas Cylinder (41) Re-certifications have been provided for the following:

AGA/Linde (9)

Airgas (2)

Air Liquide America Corp. (1)
BOC (5)
Scott Specialty Gases (24)

Commercial Ozone Instrument Calibrations have been provided for the following:

- Thermo Electron Nippon Company; Calibration of TEI Model 49CPS, serial # 72972 Ozone Calibrator; January, 2004.
- NOAA-CMDL; Calibration of TEI 49 CPS, serial # 49 CPS-75573-380 Ozone Calibrator; May, 2004.
- Teledyne-API; Calibration of API Model 700 Ozone Calibrator, serial # 1077; January, 2004.
- Teledyne-API; Calibration of API Model 401 Ozone Calibrator, serial # 152; August, 2004.
- Howard University; Calibration of TEI Model 49PS, serial # 50622-285; February, 2004.
- NASA Langley, Calibration of Dasibi 1008 AH, serial # 6877 Ozone Monitor; May, 2004.
- Tanabyte Engineering, Inc.; Calibration of Dasibi Model 1008-AH, serial # TEI-R01, February, 2004.

NIST Standard Reference Photometer (SRP) Certifications/Re-certifications have been provided for the following:

- Hong Kong Environment Protection Department, Hong Kong S.A.R., China; Certification of NIST SRP 34; December, 2003.
- U.S. EPA Region 9 Laboratory, San Francisco, CA; Certification of NIST SRP 36; August, 2004.
- National Institute for Environmental Studies, Tsukuba, Japan; Certification of NIST SRP 35; April, 2004.
- New South Wales Environment Protection Authority, Sydney, Australia; Re-certification of NIST SRP 21; December, 2003.
- U.S. EPA Radiation and Indoor Environments; Re-certification of NIST SRP 7; February, 2004.
- Czech Hydrometeorological Institute, Prague, Czech Republic; Re-certification of NIST SRP 17; May, 2004.
- National Physical Laboratory, London, United Kingdom; Re-certification of NIST SRP 20; May, 2004.

Gas Standard Calibrations (40) have been provided for the following:

National Specialty Gases, RTP, NC (6)
Florida Dept. of Environmental Protection, Tallahassee, FL (3)
Scott Specialty Gases, Inc., Troy, MI (11)
US EPA, Las Vegas, NV (1)
BOC Gases, Royal Oak, MI (1)
General Motors Corp., Milford, MI (5)

Brookhaven National Laboratory, Upton, NY (1)
Air Liquide America LP, Santa Fe Springs, CA (1)
Air Liquide, LaPorte, TX (6)
Linde Gas LLC, Maumee, OH (4)
Wisconsin Department of Natural Resources, WI (1)

Optical Filter Recertifications (221) have been provided for the following:

3M	DepoMed
Abbott, IL (10)	Dexin Grupo Chim.
Abbott, PR	Diosynth
Abbott, TX	Dow Chemical, LA
Agilent, Belgium	Dow Chemical, MI
Agilent, Germany	DSET/Atlas
Agilent, Ireland	DuPont
Agilent, Italy (2)	E Hong (2)
Agilent, Spain	Eastman Kodak (3)
Agilent, TX (13)	Elan
Agilent, UK (2)	Electromedica Peruana
Alphatech	Eli Lilly, IN (6)
Amer. Pharm. Ptrs. (2)	EMD Chemicals
Amgen, CA (5)	Endo Pharm
Amgen, WA	Evesa
Analytical Standards	Exelon Power Labs
Andover	FDA
Arch Chemicals	Fresenius Kabi
Astrazeneca (2)	Fugro Tech. Serv.
Barr Labs (5)	Genentech
Bausch & Lomb	GlaxoSmithKline, Italy
Bayer, CA (2)	GlaxoSmithKline, Panama
Bayer, IN	GlaxoSmithKline, SC (2)
Beckman Coulter (3)	Hach
Becton Dickinson	Hanna Inst.
BioDesign	Hemotec GmbH
BioKyowa	Hi-Tech Pharmacal
Biovail Labs, Canada	Honeywell, CO
Biovail Labs, PR (2)	Honeywell, IN
Bristol Myers Squibb	Imclone
Cal Check (2)	Insight Calibrations
Cell Tech	Intracel
Celltech	IPR Pharmaceuticals (2)
Centocor, NJ	Ivax Pharm., PR
Centocor, PA	Jasco (3)
Ciba	Jenck SA
Clariant (3)	Juliette Metrology (2)
Customs and Border Protection	Kendall
Cyro Industries	Lancaster Labs

Laureate Pharma
LifeScan (2)
McNeil, PA
McNeil, PR
MDS Pharma
MEMC
Merck Sharp & Dohme
Merck, GA
Merck, PA
Metro Tech (2)
Micron
Midwest Res. Inst.
Mobil, Australia
Molecular Devices (2)
NCI
Nova Chimica
Novartis (2)
Nu-Tech
Optiglass
Optometrics
Ortho Biologics (2)
Ortho Biotech (2)
PAR Pharm (2)
Parkedale (2)
Patheon
Pfizer, Canada
Pfizer, CT (5)
Pfizer, PR (3)
Precision Meas.

Prodek
Refmacal (4)
Riso National Lab
Roche
Sethness (2)
Shimadzu
Shipley
Simco Elec.
Soquimica
Sterigenics (4)
Tangent Labs
Tech Comp (2)
Teledyne Monitor
Teva Pharm (2)
Thermo Electron, DE
Thermo Electron, UK (2)
Thermo Electron, WI (3)
Thibiant Int'l
Tomas Cuerda
Transcat (6)
Tyco Healthcare
Union Carbide
UOP
V.A. Medical Ctr.
Vical
Wyeth Ayerst
Wyeth Medica
Wyeth, PA
Wyeth, VA (2)

8. Committee Assignments

P.R. Becker

Fort Johnson Five (committee on inter-organizational activities and policies at the Fort Johnson Campus, Charleston, SC)
Hollings Marine Laboratory Science Board
Review Panel for the Florida Protect Wild Dolphins Program (Harbor Branch Oceanographic Institute, Inc.)

J. Brown Thomas

Supervisory Committee, Comstar
CSTL SURF Co-Coordinator
American Chemical Society Presidential Board Task Force for the Advancement of Women in Science and Engineering

D.M. Bunk

NCCLS Subcommittee on Free Thyroid Hormone Measurements (Member)
NCCLS Area Committee on Clinical Chemistry and Toxicology (Advisor)

S.J. Choquette

ASTM E13, Molecular Spectroscopy
ASTM E13.08, Vice Chair, Raman Spectroscopy
Journal of the Association for Laboratory Automation (Editorial Review Board)
Analytical Chemistry (Editorial Advisory Board)

S.J. Christopher

F.J. Marine Science Seminar Committee (Chair)

P.C. DeRose

Analytical Chemistry Division Safety Representative
ASTM E13, Molecular Spectroscopy
ASTM E13.01, Ultraviolet Spectroscopy
ASTM E13.06, Vice Chair, Luminescence
ASTM E13.90, Executive Subcommittee
ASTM E13.97, Chair, Membership Subcommittee

W.D. Dorko

ASTM D22, Sampling and Analyses of Atmospheres
ASTM SC.03, Ambient Atmospheres

D.L. Duerer

Analytical Chemistry Division Safety Officer

R.R. Greenberg

ASTM E10, Nuclear Technology and Applications
ASTM SC.05, Nuclear Radiation Metrology
ASTM WG.12, Nuclear Methods of Chemical Analysis
American Nuclear Society, Executive Committee – Isotopes and Radiation Division
American Nuclear Society, Executive Committee – Biology and Medicine Division
American Nuclear Society, Trace Analysis Committee, Division of Biology and
Medicine
International Committee on Activation Analysis
International Scientific Committee on Nuclear Analytical Methods in the Life Sciences

F.R. Guenther

CCQM Working Group on Gas Standards
ASTM D22, Sampling and Analysis of Atmospheres
ASTM SC.03, Ambient Atmosphere
ASTM SC.05, Indoor Air

S.B. Howerton

National Postdoc Association Oversight Committee
National Postdoc Association Policy Committee
National Postdoc Association Publications Committee

G. W. Kramer

ASTM E13, Molecular Spectroscopy
ASTM E13.01, Ultraviolet and Visible Spectroscopy
ASTM E13.06, Molecular Luminescence
ASTM E13.15, Chair, Analytical Data Management
NCCLS C016, Lab Automation Area Committee

J.R. Kucklick

Fort Johnson Library Committee
NOAA/NOS/CCEHBR Chemistry Committee

G.P. Lamaze

ASTM E10, Nuclear Technology and Applications (Past Chairman)
ASTM E10.05, Nuclear Metrology (Vice Chair)
ASTM SC10.92, Awards (Chair)
ASTM SC.94, Membership Subcommittee, Nuclear Technology and Applications
ASTM E42, Surface Analysis
ASTM, Planning Committee for 11th ASTM-EWGRD Symposium on Reactor Dosimetry
American Physical Society, Division of Material Physics, Division of Nuclear Physics, Topical Group on Fundamental Constants and Precise Tests, Topical Group on Instrument and Measurement Science, Forum on Industrial and Applied Physics, and Forum on Physics and Society

R.M. Lindstrom

NIST Ionizing Radiation Safety Committee (Vice-Chair)
NCNR Safety Evaluation Committee

L.E. Locascio

SEMI International MEMS Steering Group
Sigma Xi, Chair, Nominations Committee

S.E. Long

Joint Committee on Traceability in Laboratory Medicine (JCTLM) Organic Working Group, Electrolytes Team Member

W.A. MacCrehan

ASTM E30, Forensics Sciences
ASTM E30.01, Criminalistics

E.A. Mackey

Representative on NVLAP Chemical Calibration Team
ACD Quality Assurance Committee

M. D. Maley

ASTM E13, Molecular Spectroscopy and Chromatography
ASTM E13.01, UV-Visible Spectroscopy

W.E. May

External

American Chemical Society; Committee on Minority Affairs
Consultative Committee on the Quantity of Material, International Treaty of the Meter
Convention; Organic Analysis Working Group (Chair)
Interamerican System for Metrology (SIM); Chemical Metrology Working Group (Chair)
NCCLS Board of Directors (Member)
Joint Committee on the Traceability of Laboratory Medicine (JCTLM) Co-Chair,
Working Group on Reference Measurement Procedures
Advisory Board for Development Opportunities for First Year Students, Tennessee State
University (Member)
Committee of Distinguished Advisors, Department of Chemistry and Biochemistry,
University of Maryland, College Park
Advisory Board for Department of Chemistry, Howard University
Peer Review Panel for Chemical Metrology programs at CENAM (NMI for Mexico) and
NRCCRM (NMI for China)
Selection Panel for Director, U.S. Weather Service, NOAA (Member)

Internal

NIST People Council (Member)
SRM Quality Systems Taskforce (Chair)
National Measurement System Taskforce (Member)

W.R. Miller

NIST representative to the AIGER Direct Measurement of Non-Methane Hydrocarbon
Group

R. Oflaz Spatz

Analytical Chemistry Division Safety Representative

R. Parris

ACD Quality Systems Committee (Member)
Consultative Committee on the Quantity of Material, International Treaty of the Meter
Convention; Organic Analysis Working Group (Rapporteur)

United States Pharmacopeia Council of Experts: Reference Standards Project Team
Washington Chromatography Discussion Group (Secretary, Executive Board)
Representative on NVLAP Chemical Calibration Team
SRM Quality Systems Taskforce (Member)

K.W. Phinney

CSTL Colloquium Committee

B.J. Porter

National Children's Study, Repository Workgroup, Co-Chairman

D.L. Poster

U.S. EPA Toxic Substances Control Act Interagency Testing Committee, Office of
Pollution Prevention and Toxics
Nanomaterials Environmental and Health Implications Working Group,
National Nanotechnology Coordination Office, National Science Foundation

K.W. Pratt

CCQM Electrochemical Analysis Working Group (EAWG) (Member)
CCQM Working Group on Key Comparisons and CMC Quality (Member)
NCCLS Working Group on Reagent Water
ASTM Committee D19 (Water) (Member)

R.S. Pugh

NOAA/NOS/CCEHBR Laboratory Safety Committee
Hollings Marine Lab Safety, Environmental Compliance, and Security Committee

G.C. Rhoderick

Organizational/Steering Committee of the International Halocarbon in Air Comparison
Experiment (IHALACE), Steering/Planning Committee

C.A. Rimmer

Washington Chromatography Discussion Group, Vice President and Co-Program Chair

L.C. Sander

United States Pharmacopeia Working Group on HPLC Columns

M.B. Satterfield

Washington Chromatography Discussion Group, Vice President and Co-Program Chair
Analytical Chemistry Division Safety Representative

K.E. Sharpless

CSTL WERB Member and WERB Vice-Chairman
ACD Quality Committee
AOAC Food Nutrition Methods Committee (Member)
AOAC Dietary Supplements Task Group (Member)

AOAC Presidential Task Force on Food Allergens (Member)
Secretary of Executive Committee, AOAC Technical Division on Reference Materials
AOAC Reference Material/Matrix Matching Committee (Member)
United States Pharmacopeia Advisory Panel on Botanicals

J.R. Sieber

ASTM E01, Committee on Analysis of Metals, Ores and Related Materials
ASTM E01.20, Fundamental Practices And Measurement Traceability
ASTM E01.21, Laboratory Quality
ASTM E01.22, Fundamental Practices

M.V. Smith

ASTM E13, Molecular Spectroscopy and Chromatography
ASTM E13.01, Ultraviolet and Visible Spectroscopy

W.J. Thorn

ASTM F29.01.11, Nitric Oxide Devices

J.C. Travis

ASTM E13, Molecular Spectroscopy and Chromatography
ASTM E13.01, Vice-Chair, Ultraviolet and Visible Spectroscopy

T.W. Vetter

NVLAP Team Assessor

M.J. Welch

ISO 212 Standards for In Vitro Diagnostic Testing
AACC Troponin Subcommittee
Joint Committee on Traceability in Laboratory Medicine (JCTLM) Organic Working
Group, Chair of Metabolites and Substrates Team

E. White V

NIST Museum Committee
Validation Group for the Updating of the Organization for the Prohibition of Chemical
Weapons Central Analytical Database (U.S. representative), MS Coordinator

M.R. Winchester

ISO TC201 SC8 (Glow Discharge Spectrometry): U.S. Delegate
ISO TC201 SC8 WG1 (Characterization of Coatings): U.S. Expert
ISO TC201 SC1 (Terminology); U.S. Delegate
ASTM E42.92 (ISO US TAG TC201)

S.A. Wise

President (2003-2005), International Society for Polycyclic Aromatic Compounds
(ISPAC).

Lee L. Yu

Joint Committee on Traceability in Laboratory Medicine (JCTLM) Organic Working Group, Chair of Non-Electrolytes Team

R. Zeisler

NIST Member Representative, Committee on the Environment and Natural Resources, Air Quality Research Subcommittee
American Nuclear Society, Biology and Medicine Division, Isotopes and Radiation Division
American Nuclear Society Executive Committee of TC Metrology in Nuclear Methods of Analysis, Biology and Medicine Division
International Scientific Committee on Nuclear Analytical Methods in the Life Sciences Technical Program Committee: Methods and Applications of Radioanalytical Chemistry
International Advisory Board 14th Radiochemical Conference
International Committee on Activation Analysis (Secretary)

9. Editorships

S.J. Choquette

Analytical Chemistry Editorial Advisory Review Board

G.W. Kramer

Journal of the Association for Laboratory Automation (Editorial Review Board)

L. E. Locascio

Analytical Chemistry Editorial Advisory Review Board

D.L. Poster

Polycyclic Aromatic Compounds (Editorial Advisory Board)

L.C. Sander

Journal of Chromatography (Editorial Advisory Board)

J.R. Sieber

News Editor and member of Editorial Advisory Board, X-Ray Spectrometry

S.A. Wise

Analytical and Bioanalytical Chemistry, Editor
Polycyclic Aromatic Compounds (Topical Editor)
Accreditation and Quality Assurance (Editorial Board)

10. Seminars

October 23, 2003

“ACD Plans for Compliance with ISO 17025 and Guide 34,” Willie May, Reenie Parris, and Walter Miller, NIST, Gaithersburg, MD. (Sponsor: W.E. May)

“Lessons Learned from the Fire,” Thomas Vetter, NIST, Gaithersburg, MD. (Sponsor: W.E. May)

November 3, 2003

“So You Want to be an Eminent Scientist,” John Fetzer. (Sponsor: S.A. Wise)

“What Graduate School Did Not Teach You,” John Fetzer. (Sponsor: S.A. Wise)

November 13, 2003

“Activities in Support of ‘Defense Threat Reduction Agency’ Programs,” Ed White V, NIST, Gaithersburg, MD. (Sponsor: W.E. May)

“Evacuation Steps,” David Duewer, NIST, Gaithersburg, MD. (Sponsor: W.E. May)

November 19, 2003

“Microfluidic Systems for Single Molecule Analysis,” Matieu Foquet, Cornell University (Sponsor: L.E. Locascio)

December 9, 2003

“U.S. Metals Industry Needs for Reference Materials,” John Sieber, NIST, Gaithersburg, MD. (Sponsor: W.E. May)

“Laser Safety,” John Travis, NIST, Gaithersburg, MD. (Sponsor: W.E. May)

December 11, 2003

“How to Scale Capillary Electrofocusing by a Factor of 1,000,000,” Cornelius F. Ivory, Department of Chemical Engineering, Washington State University. (Sponsor: D.J. Ross)

December 12, 2003

“Unanswered Questions of Modern Liquid Chromatography,” John Dorsey, Florida State University. (Sponsor: S.A. Wise)

January 16, 2004

“Analytical GC, GC-MS, and GC-FTIR Techniques to Verify Compliance with the Demands of the Chemical Weapons Convention,” Martin Söderström, VERIFIN, University of Helsinki. (Sponsor: E. White V)

January 21, 2004

“Running on Empty: The Future of Fossil Energy and the CO₂ Problem,” W.Robert Kelly, NIST, Gaithersburg, MD (Sponsor: W.E. May)

“A ‘Designer’ Calibration Standard Method: User Prepared NIST Traceable CRMs with Known Concentrations and Uncertainties,” W.Robert Kelly, NIST, Gaithersburg, MD. (Sponsor: W.E. May)

“Solvents Handling,” Bruce Benner, NIST, Gaithersburg, MD. (Sponsor: W.E. May)

February 6, 2004

“Amino Carboxylate Chelating Agent Interactions with Ferric Hydroxide Surfaces: Adsorption and Ligand-Assisted Dissolution,” Charles Whitehead, Johns Hopkins University. (Sponsor: G.C. Turk)

February 12, 2004

“History and Current Status of Fast and Sensitive Analytical Methods for Measuring Compounds of Environmental Concern at the CDC,” Donald Patterson, Centers for Disease Control. (Sponsor: S.A. Wise)

February 20, 2004

“Materials and Methodologies for Chromatographic Separations,” Luis Colon, State University at Buffalo. (Sponsor: M. Satterfield)

March 16, 2004

“Analyzing Heavy Compounds in Crude Oil: Petroleomics and the Sulfur Compounds in Petroleum Products,” Jan Andersson, Institut für Anorganische und Analytische Chemie Westfälische Wilhelms-Universität Münster. (Sponsor: S.A. Wise)

March 17, 2004

“Radioisotope Safety,” Richard Lindstrom, NIST, Gaithersburg, MD. (Sponsor W.E. May)

March 29, 2004

“Crosslinked Network Synthesis by Radical Chain Photopolymerization Natural and Directed Evolution of Macromolecular Structure” J. Brian Hutchison, Department of Chemical and Biological Engineering, University of Colorado, Boulder, CO. (Sponsor: L.E. Locascio)

April 9, 2004

“Exposure Assessment in the Real World: Novel Approaches to Measuring Bioavailability and Chronic Exposure,” Rebecca Heltsley, Department of Environmental and Molecular Toxicology, North Carolina State University, Raleigh, NC. (Sponsor: W.A. MacCrehan)

April 26, 2004

“IDMS in Protein Quantification: Challenges and Solutions,” Andre Henrion, PTB. (Sponsor: D.M. Bunk)

May 19, 2004

“PGAA,” LIZ

“Perchloric Acids,” Laura Wood, NIST, Gaithersburg, MD. (Sponsor: W.E. May)

June 4, 2004

“Hollings Marine Laboratory,” W.Clay Davis, NIST, Charleston, SC (Sponsor: G.C. Turk)

June 7, 2004

“LIGO, Materials Research and Physics Education at Southern University,” Stephen McGuire, Southern University and A&M College. (Sponsor: R.R. Greenberg)

June 10, 2004

“What’s So Great About NIST: A College Professor’s Perspective,” Robert Thompson, Oberlin College. (Sponsor: M. Welch)

June 10, 2004

“New Approaches for DNA Sample Preparation in Microfluidic Channels,” Dr. Sabeth Verpoorte, Groningen University Institute for Drug Exploration, University of Groningen, The Netherlands. (Sponsor: L. E. Locascio)

July 15, 2004

“Quality Manual (QM) – II: Review and Implementation Strategy Meeting,” Reenie Parris, NIST, Gaithersburg, MD. (Sponsor: W.E. May)

August 17, 2004

“Mercury Emissions Trading,” Gerald Mitchell, NIST, Gaithersburg, MD. (Sponsor: W.E. May)

“Safety Spill Kits,” Bryant Nelson, NIST, Gaithersburg, MD. (Sponsor: W.E. May)

August 23, 2004

“Developing MALDI TOF Signatures for Biological Microbes: Reproducibility,” Joany Jackman, John Hopkins University, Applied Physics Laboratory. (Sponsor: E White V)

September 14, 2004

“Standards for UV-Visible Spectrometry: From Artifacts to Intrinsic,” John Travis, NIST, Gaithersburg, MD. (Sponsor: W.E. May)

September 13, 2004

“Neutron Detection and Imaging: NOVA’s Electron Multiplier Technology for Science and Security Applications,” R.Gregory Downing, NOVA Scientific, Inc. (Sponsor: R.R. Greenberg)

September 15, 2004

“European Union ‘Green’ Directives: Challenges for Industry and Analytical Chemistry,”
Timothy J. McGrady, IMR Test Laboratories. (Sponsor: J.R. Sieber)

11. Conferences/Workshops/Sessions Sponsored/Co-Sponsored

October 29-31, 2003

“12th Annual Meetings of ISO/TC201 Surface Chemical Analysis and its Subcommittees” NIST, Gaithersburg, MD (M.R. Winchester)

March 9, 2004

“Direct Traceability of Gas Reference Materials to SI-Units, What’s in it for You?”
Pittcon 2004, Chicago, Illinois, (B. Shroyer and F.R. Guenther)

April 4, 2004

“NIST Micronutrients Measurement Quality Assurance” (Workshop-Sponsored,
Chaired) (J. Brown Thomas)

June 16-17, 2004

“ASTM E13.15 AnIML Working Group,” Creation of ASTM AnIML Standards, NIST,
Gaithersburg, MD (G.W. Kramer)

August 25, 2004

“Session V on the Analysis of Nutraceutical and Dietary Supplements,” 228 ACS
National Meeting (Session Organized) (L.C. Sander)

September 5-9, 2004.

“Remediation and Control Techniques,” 24th International Symposium on Halogenated
Environmental Organic Pollutants and POPs, Technical University, Berlin, Germany
(Session Organized) (D.L. Poster)

12. Awards

Colleen Bryan received the Best Student Poster Award for “Non-lethal Monitoring of Trace Elements in Bottlenose Dolphins, *Tursiops Truncatus*” at the Southeast and Mid-Atlantic Mammal Symposium.

Steven Choquette, Edgar Etz, Wilbur Hurst, and Douglas Blackburn received the Edward Bennett Rosa Award for their development of SRM 2241 through SRM 2244, Raman Intensity Correction Standards that will enable U.S. industry to accurately inter-compare data.

Rusty Day received the Conference of Southern Graduate Schools (CSGS) Master Thesis Award.

Donna Kimball received the CSTL Secretarial Achievement Award for her outstanding skills and providing extraordinary service to the staff and programs of CSTL.

George Rhoderick received the Department of Commerce Bronze Medal for his outstanding efforts in the development of a series of Volatile Organic Compounds (VOC) in air standards.

13. Intercomparisons – confirmed by RMP's list

Bold = NIST as Coordinating Laboratory or Co-coordinator

CCQM-K34	KHP assay
CCQM-K15	SF6 and CFCs in Nitrogen
CCQM-K22	Volatile Organic Compounds in Air
CCQM-K26.a	Reactive Gases: Nitrogen Monoxide (NO) in Nitrogen (N2)
CCQM-K27.a	Subsequent Ethanol in Aqueous Matrix (Forensic Levels)
CCQM-K31	Arsenic in Shellfish
CCQM-K33	Minor Elements in Steel
CCQM-K35	Sulfur in Fuels (Low Level)
CCQM-K41	H₂S in Air/Nitrogen
CCQM-P26.1	Sulfur in Fuels (Very Low Levels)
CCQM-P28	Ozone - Ambient Levels
CCQM-P20c	Purity Assessment: Atrazine (2 Levels)
CCQM-P20d	Purity Assessment: Chlorpyrifos (Organophosphate Pesticide)
CCQM-P31.a, b, c	Organic Solutions: PAHs, PCBs, Chlorinated Pesticides
CCQM-P40	Organic Contaminants in Tissue
CCQM-P46	Preparation of Inorganic Solutions
CCQM-P61	Volatile Organic Compounds in Organic Solvents
SIM.8.12P	Automotive Exhaust Emissions
SIM.8.13Pa	Clinical Diagnostic Markers: Cholesterol in Serum
SIM.8.14P	Ethanol in Aqueous Matrix
SIM.8.14P1	Subsequent Ethanol in Aqueous Matrix