

The 10th International Symposium on Human Identification

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The 10th International Symposium on Human Identification was held at the Coronado Springs Resort near Orlando, Florida, from September 29–October 2, 1999. Three, one-day meetings and workshops preceded the actual symposium. Approximately 150 participants attended each workshop, and approximately 500 delegates from approximately 30 countries attended the symposium.

PRE-SYMPOSIUM MEETINGS

SWGAM. On September 27, Bruce Budowle, Ph.D., of the United States Federal Bureau of Investigation (FBI) chaired a one-day meeting of the Scientific Working Group on DNA Analysis Methods (SWGAM). Topics of this meeting included standardizing training programs, STR and mitochondrial DNA interpretation guidelines, short tandem repeat (STR) and mitochondrial DNA casework experience, human-specific quantitation, a concordance study on Promega and Perkin-Elmer products and the Combined DNA Index System (CODIS).

Statistics Workshop. George Carmody, Ph.D., Carleton University, and Ranajit Chakraborty, Ph.D., University of Texas, Houston School of Public Health (UTHSC), led a full-day Statistics Workshop on September 28. The topics covered included computation of profile frequencies in the population (both conditioned on genotype of the individual and unconditional), interpretation of mixtures, minimum allele frequencies,



Participants in the workshops had an opportunity to listen to a number of talks on SWGDAM, statistical analyses and mitochondrial casework.

confidence interval estimates, exclusion probabilities and likelihood computations for parentage statistics and correct reporting of statistical calculations. Interpretation of mixtures and paternity, maternity and missing child analyses were also discussed.

Mitochondrial Workshop. Mitchell Holland, Ph.D., Armed Forces DNA Identification Laboratory (AFDIL), and Walther Parson, Ph.D., Institute of Forensic Medicine, University of Innsbruck, Austria, organized the mitochondrial workshop on Wednesday, September 29. Talks included an introduction by Dr. Holland on the status of mtDNA analysis, analysis of the cytochrome b gene in humans by Dr. Parson, a discussion of mtDNA population genetics of statistical analysis by Dr. Tom Parsons (AFDIL), additional population genetics by Dr. Ranajit Chakraborty (UTHSC) and mtDNA casework talks by Ms. Charity Diefenbach (The Bode Technology Group, Springfield, VA, USA) and Dr. Mark Wilson (FBI). The last session of the day focused on heteroplasmy detection and interpretation with talks by Dr. Holland, Ms. Sabine Lutz, Institut für Rechtsmedizin im Klinikum der Freiburg, Germany, and Dr. Rebecca Reynolds, Roche Molecular Systems.

SYMPOSIUM PROCEEDINGS

The three-day 10th International Symposium on Human Identification featured approximately 50 oral presentations and 70 posters, covering many topics pertinent to DNA analysis. Oral presentations addressed the future of DNA typing, forensic casework, DNA databanking, paternity, mitochondrial DNA analysis, Y-chromosome analysis and STR developments.

The Future of DNA Typing. James Crow, Ph.D., from the University of Wisconsin (Madison, WI, USA) discussed DNA forensics past, present and future. Mr. Jeffrey Ban of the Virginia Division of Forensic Science (Richmond, VA, USA) introduced Debbie Smith, a victim of a violent crime solved by DNA typing. Shirley Abrahamson, J.D., Supreme Court of Wisconsin, and Chris

Asplen, J.D., National Institute of Justice (NIJ), reported on the National Commission on the Future of DNA Evidence. Dr. Arthur Eisenberg (DNA Advisory Board chairman) from the University of North Texas gave an update on the DNA Advisory Board. Dr. Tia Aulinkas, GeneLex Corporation (Seattle, WA, USA), discussed the use of the *GenePrint*[®] PowerPlex[™] Systems for forensic casework, convicted felon databanking and nonsuspect casework screening. Dr. Lisa Forman of the NIJ Office of Science and Technology reported on U.S. federal support for the investigative and forensic sciences.

Case Studies Using DNA Typing. A number of very interesting case studies from around the world were presented at this year's symposium. Among these talks was one by Dr. Dragan Primorac from the Clinical Hospital Split, Croatia, who reported on the identification of human remains from mass graves found in Croatia, Bosnia and Herzegovina. Dr. Hermann Schmitter, Bundeskriminalamt, Wiesbaden, Germany, presented strategies for forensic stain analysis. Mr. Ray Wickenheiser, Royal Canadian Mounted Police, reported on obtaining DNA profiles from weapon handles, and Dr. Nalin Goonesekere, University of Colombo, Sri Lanka, gave a talk on the use of DNA typing for criminal casework in Sri Lanka.

Status of DNA Typing Around the World. DNA databanking was a popular topic of this symposium. Dr. Jennifer Smith of the FBI and George Clarke, J.D., Deputy District Attorney's Office, San Diego County, CA, USA, discussed the California v. Bodkin trial court decision concerning the admissibility of STR evidence. Rockne Harmon, J.D., Alameda County District Attorney's Office, CA, USA, examined the legal history of STR typing. Peter Neufeld, Esq., updated the audience on the Innocence Project in the United States. Rick Conway, J.D., from the Commonwealth of Virginia discussed how DNA typing evidence is presented in the Virginia courts, and Dr. Larry Presley from the FBI discussed the evolution of quality assurance tools in forensic DNA testing. Dr. Jose Lorente, University of Granada, Spain, updated conference partic-

ipants on the GITAD project in Latin America. An overview of DNA in criminal investigations in Europe was given by Peter Martin, (retired) Metropolitan Police Forensic Science Laboratory, United Kingdom. A history, update and future outlook on DNA typing in Colombia was presented by Dr. Juan Yunis, Servicios Medicos Yunis Turbay y Cia and Institute de Genetica, Universidad Nacional de Colombia.

DNA Databases: an Update by State. In the session on DNA databasing, Dr. Barry Brown of the FBI gave an update on the National DNA Index System (NDIS) and CODIS. Mr. Richard Guerreri, also from the FBI, gave an overview of the audit process for NDIS participants. In addition, updates on DNA databasing in U.S. states were given by Mr. Jeffrey Ban, Virginia Department of Forensic Science; Mr. Scott Whitney, Florida Department of Law Enforcement; Ms. Barbara Llewellyn, Illinois State Police; Mr. Todd Bille, Indiana State Police Laboratory; and Mr. Roger Morrison, Alabama Department of Forensic Science.

Use of DNA Typing for Paternity. A session was held this year on the use of DNA typing in paternity. During this session, Dr. George Maha of LabCorp (USA) discussed the Uniform Parentage Testing Act. Dr. Arthur Eisenberg discussed the determination of paternity in cases requiring reconstruction. The American Association of Blood Banks 4th Edition of Standards was presented by Dr. Michael Baird from LifeCodes, Inc. Dr. Tia Aulinkas of GeneLex Corporation discussed DNA testing in kinship analysis, and Dr. Robert Giles from GeneScreen, Inc., discussed the use of fluorescent STRs in parentage testing. Dr. Brian McKeown, Cellmark Diagnostics, discussed the automation of paternity analysis and assessment of STR mutations. Dr. Rick Staub from Identigene presented a comparison of STRs v. SNPs for paternity testing.

Innovations in DNA Typing. On Saturday morning, several interesting talks were given on innovations in DNA typing. Among the speakers in this session were Dr. Ron Sosnowski, Nanogen, Inc. (USA), discussing the use of DNA microchips in an automated system for STR analysis, and Dr. Yeon-Bo Chung, I.D. Gene, Inc. (Korea), who discussed palm print stickers as a replacement for blood in DNA tests. Dr. Allan Tereba from Promega Corporation (USA) discussed a new method for simultaneous purification and quantitation of DNA from database blood and buccal swab samples. There was also further discussion on the use of STRs and SNPs in human identification, lead by Dr. Ranajit Chakraborty, UTHSC.

Mitochondrial DNA and Y-Chromosome Analysis. The area of mitochondrial DNA and Y-chromosome analysis had several interesting presentations. Dr. Metchilde Prinz from the Office of the Chief Medical Examiner in New York described that laboratory's experience in using Y chromosome-specific STRs in forensic casework. Ms. Cassandra Calloway, Roche Molecular Systems, spoke on the characterization of heteroplasmy across various tissue types and age groups. Mr. Matthew Gabriel, Armed Forces DNA Identification Laboratory, shared improved strategies for mtDNA sequence analysis of highly degraded forensic remains, and Dr. Bruce Budowle from the FBI Academy outlined interpretation guidelines for mtDNA typing.

Developments in STR Typing. Several presentations focused on developments in STR typing. Ms. Debra Hobson, from the FBI Laboratory discussed STR analysis by capillary electrophoresis and development of interpretation guidelines for forensic casework. Ms. Cynthia Sprecher from Promega Corporation discussed the short tandem repeat (STR) multiplex systems available from Promega. Dr. Kevin McElfresh of The Bode Technology discussed implementing a large STR database in the Commonwealth of Virginia. Ms. Margaret Kline, National Institute of Standards & Technology, presented the results of the 1999 NIST Mixed Stain Study #2, and Ms. Rhonda Roby, Perkin-Elmer Biosystems, discussed the utility of genotyping software in forensic casework and databanks. Mr. Bill Hudlow of Hitachi Genetic Systems, described high-throughput genotyping of the thirteen core CODIS loci using the Hitachi FMBIO® Analysis 8.0 and STaR Call™ 3.0 software

Social Events. The Gala Dinner at Disney's Animal Kingdom® Park was enjoyed by many of the participants on Friday evening. Many attendees also took advantage of the Church Street Station® dine-around on Thursday evening, as well as the other Disney World® attractions throughout the week. Next year, the Eleventh International Symposium on Human Identification will be held at the elegant Beau Rivage Resort in Biloxi, Mississippi.

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Upcoming Meetings

AMERICAN ACADEMY OF FORENSIC SCIENCES

February 21–26, 2000

John Ascuaga's Nugget Hotel Resort,
Reno, Nevada, USA

Internet:
www.aafs.org

3RD ANNUAL ADVANCED FLUORESCENT-STR MEGAPLEX TECHNOLOGY WORKSHOP

March 12–17, 2000

Palmetto Dunes Resort
Hilton Head, South Carolina, USA

Contact: Thomas Bode, Jr.
e-mail: tjbode@bodetech.com

NORTHWEST ASSOCIATION OF FORENSIC SCIENTISTS

May 15–19, 2000

Sacramento, California, USA

Internet:
users.aol.com/lctox/nwafsmmeet.htm

SOUTHERN ASSOCIATION OF FORENSIC SCIENTISTS

April 25–28, 2000

River Terrace Resort and Convention Center
Gatlinburg, Tennessee, USA

MID-ATLANTIC ASSOCIATION OF FORENSIC SCIENTISTS

May 2–5, 2000

Caesar's Atlantic City Hotel Casino
Atlantic City, New Jersey, USA

11TH INTERNATIONAL SYMPOSIUM ON HUMAN IDENTIFICATION

October 8–13, 2000

Beau Rivage Resort,
Biloxi, Mississippi, USA

Internet:
www.promega.com/geneticsymp11/