

Max M. Houck

Director, Forensic Science Initiative (Research); Director, Forensic Business Research and Development (Business and Economics), 2001–present, West Virginia University, Morgantown, WV

- Direction of \$32 million in resource initiatives for forensic science
- Developing educational and professional resources in forensic science
- Developing forensic business and economic applications
- Lecturer in Forensic and Investigative Sciences Program, WVU
- Senior Lecturer and Researcher, Curtin University of Technology, Department of Applied and Forensic Chemistry, Perth, Australia

Physical Scientist, Trace Evidence Unit, Laboratory Division, 1994–2001, Federal Bureau of Investigation, Washington, D.C.

- Worked over 800 cases in trace evidence and anthropology; Testified in local, state, and federal courts for prosecution and defense
- Chairman of the Scientific Working Group for Materials Analysis
- Technical Liaison Manager with outside agencies (Secret Service; Bureau of Alcohol, Tobacco and Firearms; Smithsonian Institution, and others)
- **Assisted DoD with identification of 9/11/01 Pentagon victims**

Criminalist II, 1992-1994, Tarrant County Medical Examiner, Fort Worth, TX

- Trace evidence analysis; Instituted forensic anthropology department in laboratory, including recovery of remains; **Coordinating anthropologist for the Branch Davidian Investigation, Waco, TX**

Applications Specialist, 1988-1992, Oxford Instruments, Inc., Madison, WI

Electron Microscopy Technician, 1987-1988, Michigan State University, East Lansing, MI

Archaeologist and Research Assistant, 1982-1986, Michigan State University, East Lansing, MI

Education

2010 PhD, Applied Chemistry, Curtin University of Technology, Perth, Australia: *Foundational Principles of Forensic Science: Using Supply Chains as a Basis for Evidentiary Significance*. Chancellor's Letter of Commendation.

1988 M.A., Anthropology, Michigan State University, *Individualization of Toolmarks in Bone*

1984 B.S., Anthropology, Michigan State University, Outstanding Senior in Anthropology

Professional memberships

- Fellow, American Academy of Forensic Science
- Senior Member, American Association of Textile Chemists and Colorists
- American Statistical Association
- American Association for the Advancement of Science
- American Society of Crime Laboratory Directors, Academic Member
- American Chemical Society

- West Virginia Academy of Sciences, Life Member

Editorial work

- Founding Co-Editor (with Jay Siegel), *Forensic Science Policy and Management*
- Editorial Board, *Science and Justice*
- Editorial Board, *Journal of Forensic Identification*
- Editorial Board, *Journal of Forensic Sciences*
- Founding Member, Honorary Editorial Board, *Research and Reports in Forensic Medical Science*

Awards

- Best Oral Presentation, Australian-New Zealand Forensic Science Society Symposium 2010, Management and Quality Section, "The FORESIGHT Project: Collaborative Benchmarking for Effectiveness, Efficiency, and Quality"
- Mary E. Cowan Outstanding Service Award, American Academy of Forensic Sciences, 2009
- 100 Most Influential (with Clifton Bishop), *Dominion Post*, Morgantown, WV, 2004
- American Society for Testing and Materials, Forensic Sciences Award, 2001
- Quality Award, FBI Laboratory, 1999

Committees

- Advisory Member, Executive Office of the President of the United States, National Science and Technology Council, Committee on Science, Subcommittee on Forensic Science, Education, Ethics, and Terminology Interagency Working Group (2010-present)
- NIST Human Factors in Latent Print Analysis, Co-Chair (2009-present)
- Interpol Forensic Science Symposium Planning Committee (2008-present)
- Forensic Educational Program Accreditation Commission (FEPAC), Chairman (2005-2009)
- Forensic Educational Program Accreditation Commission (FEPAC) 2004
- European Academy of Forensic Sciences Symposium Scientific Committee (2005-2006)
- National Academies Committee on Educational Paradigms for Homeland Security (2004)
- Business Conference Advisory Panel, Nemaquin Woodlands Resort and Spa (2003-2004)
- National Library of Medicine Planning Panel, History of Forensic Science exhibit, 2002-2003
- Technical Working Group on Education and Training in Forensic Science
- American Association of Textile Chemists and Colorists. Committees: Color Measurement, Spectroscopy, Statistics
- ASTM Committee E 30 on Forensic Sciences
- Imaging Technology Coordination Committee (FBI), Chairman, Standards and Practices
- AEGIS Council, Support (Non Agent) Employee Advisory Committee to the FBI Director (1997-1999). Addressed and mitigated FBI employee concerns with administration and reported to Director Freeh.
- AEGIS Representative for Division 7 (Laboratory), 1995-1997, 1997-1999. Represented Division 7 employee concerns to AEGIS Council.
- Technical Advisory Panel, Revision of Standard Reference Collection of Forensic Science Materials: Status and Needs (1977), through Office of Law Enforcement Standards (OLEs) and National Institute of Technology and Standards (NIST).

Keynote addresses and Invited Lectures

- Forensic science as a gateway for women into science, Oxford Round Table invited presentation, July, 2009.
- Forensic science, CSI, and education, West Virginia Science Teachers Association, October, 2008.
- Presentations to the National Academies of Science "Needs of Forensic Science" Committee on forensic science education and forensic hair comparisons
- Crime Scene Investigation, NASA Goddard Engineering Colloquium, Goddard Space Flight Center, Greenbelt, MD, November 2005
- The Role of Forensic Science and Academia, Educational Session, International Association of Forensic Sciences, 2005, Hong Kong, China.
- Forensic Science and Business, 2005, West Virginia University Alumni Association, Cleveland, OH
- Forensic Science is History, 2004 Combined Meeting of the Southern, Midwestern, MidAtlantic Associations of Forensic Scientists and the Canadian Society of Forensic Scientists, Orlando, FL, September.
- Science and the Law: Nexus of Conflict and Resolution, 2003 Forum on Crime Laboratory Management for Criminal Justice Agencies, The Performance Institute, Arlington, VA, July 30-31.
- Making Legal Evidence Count, 2003, Max Planck Institute Summer Course in Bounded Rationality, Berlin, Germany.

Books and book chapters

Houck, M.M. and Siegel, J.A. *Fundamentals of Forensic Science*, 2nd edition. Academic Press, San Diego. 2010.

Houck, MM. "Trace Evidence" in *Forensic Science Handbook*, James Fraser and Robin Williams, eds. Willan Publishing, Devon, UK, 2009.

Houck, MM, *Trace Evidence*, Facts on File, New York. 2009.

Houck, MM, *Science vs Crime*, Facts on File, New York. 2009.

Houck, MM (ed) *Fiber Identification*, Woodhead Publishing, London. 2009.

Feder, H. and Houck, M.M. *Feder's Succeeding as an Expert Witness*, CRC Press, Boca Raton, FL, 2008.

Houck, MM. *Forensic Science: Modern Methods of Solving Crime*, Praeger Publishing, Westport, CT. 2007.

Houck, MM and Siegel, JA, *Fundamentals of Forensic Science*, Academic Press, San Diego, 2006.

Houck, MM, "Preparation of Witnesses (U.S.)", *Encyclopedia of Legal and Forensic Medicine*, Payne-James, J., Byard, R.W., Corey, T.S., Henderson, C. (eds). Elsevier: Oxford, UK, 2005, 490-495.

Houck, MM (editor), *Trace Evidence Analysis: More Cases from Mute Witnesses*, Academic Press: San Diego, 2003.

Grieve, M. and Houck, MM, "Introduction", in Houck, MM (ed) *Trace Evidence Analysis: More Cases from Mute Witnesses*, Academic Press: San Diego, 2003.

Houck, MM, "My Roommate is Using the Refrigerator", in Houck, MM (ed) *Trace Evidence Analysis: More Cases from Mute Witnesses*, Academic Press: San Diego, 2003.

Houck, MM (editor), *Mute Witnesses: Trace Evidence Analysis*, Academic Press: San Diego, 2001.

Houck, MM, "A Case of Cross Transfer", in Houck, MM (ed), *Mute Witnesses: Trace Evidence Analysis*, Academic Press: San Diego, 2001.

Ryland, S and Houck MM, "Only Circumstantial Evidence," in Houck, MM (ed), *Mute Witnesses: Trace Evidence Analysis*, Academic Press: San Diego, 2001.

Wiggins, K and Houck, MM, Introduction, in Houck, MM (ed), *Mute Witnesses: Trace Evidence Analysis*, Academic Press: San Diego, 2001.

Siegel, J and Houck, MM, Chapter 36: Forensic Textile Fiber Analysis, In *Forensic Sciences* (3 vol.), C. Wecht, ed., 2001.

Houck, MM, 1998, Skeletal Trauma and the Individualization of Knife Marks in Bone, in *Forensic Osteology*, 2nd ed., Reichs K (ed.), 410-424.

Journal Publications

Crispino, F., Ribaux, O., Houck, M., and Margot, P. 2010. "Forensic science--A true science?" *Australian Journal of Forensic Sciences*, in press.

Fleming, S., Speaker, P., Riley, R., Houck, M. 2010. "The balanced scorecard: Sustainable performance assessment for forensic laboratories," *Forensic Science International*, in press.

Mnookin, J., Cole, S., Fisher, B., Houck, M., Inman, K., Kaye, D., Koehler, J., Langenburg, G., Risinger, M., Rudin, N., Siegel, J. and Stoney, D. "The need for a research culture in the forensic sciences," *University of California Law Review* 2010, in press.

Houck, M.M. and Boyle, J. 2010. "A content analysis of fingerprint literature for educational curricula," *Science and Justice*, 50: 123-126.

Houck, MM, Riley, R, Speaker, P and Witt, T. 2009. "FORESIGHT: A business approach to improving forensic services" *Forensic Science Policy and Management* 1(2): 85-95.

Vatsa, M., Singh, R., Noore, A. and Houck, M. 2009. "Quality-augmented fusion of level-2 and level-3 fingerprint information using DSsm theory" *International Journal of Approximate Reasoning* 50: 51-61.

Houck, MM. 2009. "Is Forensic Science a Gateway for Women into Science?" *Forensic Science Policy and Management* 1(1): 65-69.

Houck, MM and Houck, LD. 2008. "What is Touch DNA?", *Scientific American*, 299(5): 108.

Houck, MM and Quarino, L. 2008. "Saving Us From Ourselves: Recreating Forensic Science," *Forensic Magazine*, 5(1): 38, 40-41.

- Noore, A, Vatsa, M, Singh, R, Morris, K., and Houck, M. 2007 "Enhancing security of fingerprint images," *Journal of Documents and Identity* 22: 3-5.
- Noore, A, Singh, R, Vatsa, M. and Houck, MM. 2007. "Enhancing security of fingerprints through contextual biometric watermarking," *Forensic Science International*, 169: 188-194.
- Houck, MM, Kranacher, M, Morris, B, Riley RA, Robertson, J, and Wells, JT. 2006. "Forensic Accounting as an Investigative Tool", *The CPA Journal*, 76 (8): 68-69.
- Houck, MM. 2006. "The difference between painting and poetry", *The Science LINK* V1, N6, (September 6, 2006), published by Kimberly-Clark Professional, Roswell, Georgia.
- Houck, MM. 2006. CSI: Reality, *Scientific American*, V295 N1; 84-89.
- Houck, MM. 2006. "The growing use of accreditation standards in college-level forensic science education," *Evidence Technology Magazine*, March-April, 22-26.
- Asbaugh, D and Houck, MM (2005) "Fingerprints and Admissibility: Friction, Ridges, and Science", *The Canadian Journal Of Police & Security Services Practice, Policy & Management*, 3(2), pages not available.
- Houck, MM. (2005) DNA and the criminal justice system (book review), *The Journal of Clinical Investigations* 115 (6): 1398.
- Houck, MM, and Bisbing, RE, (2005) Forensic Human Hair Examination and Comparison in the 21st Century, *Forensic Science Review*, V17, N1: 51-66.
- Houck, MM and Bowen, R (2005) An Argument for Microscopy: A Review of Forensic Microscopy, *Forensic Science Review*, V17, N1: 1-16.
- Houck, MM (2005) Forensic Fiber Examinations and Analysis, *Forensic Science Review*, V17, N1:29-50.
- Houck, MM (2005) Editor's Introduction, *Forensic Science Review* V17, N1.
- Noore, A, Tungala, N, and Houck, MM. (2004) Embedding biometric identifiers in 2D barcodes for improved security, *Computers and Security*, 23: 679-686.
- Houck, MM, (2004) The Nature of Physical Evidence, *Law Enforcement Technology*, October, 124-133.
- Houck, MM, Bisbing, RE, Watkins, T, and Harmon, RE, The Science of Forensic Hair Comparisons and the Admissibility of Hair Comparison Evidence: *Frye* and *Daubert* Reconsidered, on-line at: www.modernmicroscopy.com, 02 March 2004.
- Houck, MM, 2003, Inter-comparison of unrelated textiles, *Forensic Science International*, 135(2): 146-149.

Ubelaker, DH, and Houck, MM, 2002, Utilization of Radiocarbon Dating and Paleontological Extraction Techniques in the Analysis of a Human Skull in an Unusual Context, *Forensic Science Communications*, V4, N4, available: www.fbi.gov.

Houck, MM, and Budowle, B, 2002, Correlation of Microscopic and Mitochondrial DNA Analysis of Hairs, *Journal of Forensic Sciences*, V45, N5: 1-4.

Houck, MM, 2001, A bibliography of hair references for the forensic scientist, *Forensic Science Communications*, V4, N1, Available: www.fbi.gov.

Houck, MM, Menold, RE, Huff, R, and Lowe, P, 2001, Poly(trimethylene) terephthalate (PTT): A new type of polyester, *Forensic Science Communications*, V3, N3, Available: www.fbi.gov.

Houck, MM, 1999, Statistics and Trace Evidence: The Tyranny of Numbers, *Forensic Science Communications*, V1, N3, Available: www.fbi.gov.

Houck MM, Ubelaker DH, Owsley DW, Craig EA, Grant WE, Fram R, Woltanski T, Sandness KL, 1996, The Role of Forensic Anthropology in the Recovery and Analysis of Branch Davidian Compound Victims: Assessing the Accuracy of Age Estimations, *Journal of Forensic Sciences*, 41(5): 796 801.

Singer RL, Davis D, and Houck MM, 1996, A Survey of Gunshot Residue Analysis Methods, *Journal of Forensic Sciences*, 41(2):195 198.

Ubelaker DH, Owsley DW, Houck MM, Craig EA, Grant WE, Woltanski T, Fram R, Sandness KL, and Peerwani N, 1995, The Role of Forensic Anthropology in the Recovery and Analysis of Branch Davidian Compound Victims: Recovery Procedures and Characteristics of the Victims, *Journal of Forensic Sciences*, 40(3): 335 340.

Owsley DW, Ubelaker DH, Houck MM, Sandness KL, Grant WE, Craig EA, et al., 1995, The Role of Forensic Anthropology in the Recovery and Analysis of Branch Davidian Compound Victims: Techniques of Analysis, *Journal of Forensic Sciences*, 40(3): 341 348.

Houck, MM, 1994, Peak Performance Column, *The SEMinar*, FBI Publication. (Publication ended 1995).

Houck, MM, 1992, Logical Conclusions From Pattern Analysis: Matches, Non Matches and Exclusions, *Journal of the Canadian Society of Forensic Sciences*, 25(1): 25 29.

Houck, MM, 1992, Microscopy in Forensic Science, *Microscopy Today*, July.

Houck, MM, 1992, Gunshot Residue Analysis by SEM/EDS, *Microscopy Today*, August.

Houck, MM, 1989, Microanalysis of the Earliest French Issue Coins in the New World, *Midwest Microscopy*, 20(1), 24 30.

Skowronek R and Houck MM, 1989, The Non Destructive Identification of the Earliest French Issue Coins in North America, *American Antiquity*, 55(2): 337 347.

Houck, MM, 1987, Histological Analysis of Bone: 20WA176, *Michigan Archaeologist*, 33

Presentations

I have given hundreds of presentations at professional conferences and to committees on forensic science, education, business practices of forensic laboratories, philosophy of forensic science, and my research areas of hairs, fibers, and forensic anthropology. I have also taught dozens of short courses in forensic science, trace evidence, leadership, expert testimony, grants, and visualization of data.

Training and education

- RFID University, course in radio frequency devices, RFID Journal, New York City, 2004
- Statistical Accuracy in Diagnostic Medicine, Joint Statistical Meeting, New York City, 2002
- National Institute of Justice Financial Manager Training Seminar, Chicago, IL, 2002
- Violent Sexual Homicides, American Academy of Forensic Sciences Workshop, Seattle, WA, 2001.
- SEE, Inc. microspectrophotometry training session, FBI Headquarters, Washington, D.C., 2000
- Hair Structure and Cosmetic Chemistry, TRI/Princeton, Princeton, NJ, 2000
- Statistics in Forensic Science Workshop, Ames University Statistics Department, at FBI Headquarters, 2000
- Advanced Fiber Science, TRI/Princeton, Princeton, NJ, 1999
- Fundamentals of Color, GretagMacbeth, King of Prussia, PA, 1998.
- Fundamentals of Melt Spinning and Synthetic Yarn Production, Clemson University, Clemson, S.C. 1997.
- Color Measurement for the Textile Industry, Clemson University, Clemson, SC, 1997
- Visual Display of Information, Crystal City, VA, 1996.
- Management Training for Laboratory Supervisors, FBI Academy, Quantico, VA, 1996.
- Fundamentals of Textiles, North Carolina State University, Raleigh, NC., 1995.
- FBI Employee Assistance Program Training, Xerox University, VA, 1995.
- Dyeing and Finishing, North Carolina State University, Department of Textiles, Raleigh, NC, 1995.
- FBI Hairs and Fibers School, FBI Academy, Quantico, VA, 1993.
- Forensic Anthropology, Smithsonian Institution, Washington, D.C., 1993.
- Internship, Michigan State Police Laboratory, East Lansing, MI. 1988.
- Overseas Study. Forensic Anthropology and Human Identification at University of London and Cambridge University. 1987.
- Forensic Pathology: The Investigation of Violent Death, Edward E. Sparrow Hospital and Michigan State Police, Lansing, MI, 1984.

Academic teaching

FIDP 210 Introduction to Forensic Science (2004, 2005)

FIDP 401 Senior Forensic Capstone (2003, 2004, 2005)

FIDP 406 Court Testimony (2005, 2006)

FIDP 402 Forensic Professional Communications (2008-2010)

Grants

National Institute of Justice

2001-RC-CX-K003 \$17 million

2003-RC-CX-K001 \$8 million

2008-DN-BX-K223 \$3.57 million

2009-DI-BX-K012 \$4 million

DEA Research \$127,000