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CURRICULUM VITAE

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EDUCATION:

<u>Dates</u>	<u>Institution</u>	<u>Degree</u>
2010	University of Helsinki, Faculty of Medicine	Doctor Honoris causa in Medicine and Surgery
1988-1992	University of Maryland, Baltimore, MD	Ph.D. in Toxicology (with honors)
1977-1979	University of New Mexico, Albuquerque, NM	M.S. in Clinical Chemistry (with honors)
1966-1970	Mount Holyoke College, South Hadley, MA	A.B. in Biochemistry (cum laude)

PROFESSIONAL POSITIONS:

2010-present	Scientific Working Group-Toxicology
2010-present	White House Forensic Science Subcommittee, Education, Ethics, and Terminology Interagency Working Group
2010-present	White House Forensic Science Subcommittee, Liaison to the Research, Development, Technology and Evaluation Interagency Working Group
2010	National Institute of Justice's General Forensics Research and Development Technology Working Group (TWG)
2009-present	Transportation Research Board Committee on Alcohol and Other Drugs
2008-present	World Anti-doping Agency Prohibited List Committee
2008-present	University of Maryland at Baltimore, Adjunct Professor, School of Medicine
2006-present	National Safety Council Committee on Alcohol and Other Drugs (COAD), Executive Board
2005-present	Tenured Senior Investigator, National Institute on Drug Abuse, National Institutes of Health
2002-present	Faculty, Borkenstein Course on "Effects of Drugs on Human Performance"

1998-present	Chief, Chemistry and Drug Metabolism, Clinical Pharmacology and Therapeutics Research Branch, Intramural Research Program, National Institute on Drug Abuse, NIH
2001-2008	Research Advisory Board for United States Anti-Doping Agency (USADA)
1995-2008	University of Maryland at Baltimore, Adjunct Associate Professor, School of Medicine
1995-1998	Senior Research Scientist, Chemistry & Drug Metabolism, Clinical Pharmacology Branch, Intramural Research Program, National Institute on Drug Abuse, NIH
1994	Acting Associate Director, National Laboratory Certification Program, Research Triangle Institute, Research Triangle Park, NC.
1992-1995	Independent toxicology consultant for government agencies and private industry
1992-1995	Toxicology Consultant, National Laboratory Certification Program (NLCP), Research Triangle Institute, Research Triangle Park, NC. Preparation of inspection critiques, Faculty for NLCP Inspector Training, Special Projects
1992-1995	Inspector for the College of American Pathologists Forensic Urine Drug Testing Laboratory Accreditation Program
1992-1995	Inspector for the College of American Pathologists Athletic Drug Testing Laboratory Accreditation Program
1989-1995	Inspector and Team Leader for the National Laboratory Certification Program
1992-1993	Member Grant Review Board for National Institute of Child Health and Development, Washington, DC
1989-1992	Research Staff Fellow, Addiction Research Center, National Institute on Drug Abuse, Lead investigator on the protocol "Fast action pharmacokinetics and pharmacodynamics of marijuana use in humans"
1989-1992	Staff Scientist, Duo Research Inc., Annapolis, MD
1988-1989	Assistant Toxicologist, Office of the Chief Medical Examiner, Baltimore, MD
1983-1988	Chief Toxicologist-Toxicology Department Head, Nichols Institute, San Diego, CA
1980-1982	Technical Director, Meridian Pathology Laboratory, Meridian, MS
1979-1980	Clinical Chemist/Toxicologist, New Mexico Medical Reference Laboratory, Albuquerque, NM
1969-1971	Clinical Chemist/Toxicologist, Pen-Bay Biological Laboratory, Pensacola, FL
1968	Chemist, Harlem Valley State Hospital Laboratory, Pawling, NY

ACADEMIC EXPERIENCE

University of Maryland at Baltimore, Adjunct Professor, School of Medicine

University of Maryland at Baltimore 1995-present

Toxicology Doctoral Students

Primary Mentor and Committee Chair

Richard A. Gustafson, CDR, USN, Ph.D.	1999 - 2003
Riet Dams, Ph.D. Co-chair	2001 – 2003
Robin E. Choo, Ph.D., LPN	1999 – 2005
Erin A. Kolbrich, Ph.D.	2002 – 2007
Sherri L. Kacinko, Ph.D.	2002 – 2008
Eugene Schwilke, Ph.D.	2003 – 2010
Theresa Gray, Ph.D.	2006 – 2010
Erin Karschner, Ph.D.	2005 – 2010

Current Candidates

David Schwope, MS	2007 – present
Dayong Lee, MS	2009 – present
Nathalie Desrosiers MS	2010-present
Sarah Himes, BS	2010-present
Rebecca Hartman, BS	2010-present

Committee member

Marc Lebeau, PhD University of Maryland Baltimore, Baltimore, MD

External Examiner

Elizabeth McArdle, PhD	University of Aberdeen, Aberdeen, Scotland 2004
Mark Hok Chu, PhD	Monash University, Melbourne, Australia
Beata Silber, PhD	Swinburne University of Technology, Hawthorne, Australia

University of California at San Diego

Lecturer in Toxicology, Undergraduate students 1987-1988

CERTIFICATIONS:

California Clinical Chemist #00482

HONORS AND AWARDS:

Alan Curry Award, The International Association of Forensic Toxicologists (TIAFT) Lifetime Achievement Award for Service to the Organization and Contributions to Forensic Toxicology 2010

Doctor Honoris causa, Doctor of Medicine and Surgery, University of Helsinki, School of Medicine June 4, 2010

Award for Outstanding Contributions in a Selected Area of Research, American Association for Clinical Chemistry, 2008

Irving Sunshine Award, International Association of Therapeutic Drug Monitoring and Clinical Toxicology, 2007

Women in Science at NIH, 2007

Rolla N. Harger Award for Forensic Toxicology, American Academy of Forensic Sciences, 2005

President of The International Association of Forensic Toxicologists, 2002-2005

President of Society of Forensic Toxicologists, 1999-2000

Chair of Toxicology Section of the American Academy of Forensic Sciences, 1999-2000

Research Fellowship and Academic Scholarship, University of Maryland at Baltimore 1988-1992

Irving Sunshine Award for Outstanding Research in Toxicology, American Academy of Forensic Sciences 1992

Nominated for the Staff Fellow Award at the Addiction Research Center, National Institute on Drug Abuse, National Institutes of Health, Baltimore, MD. 1992

Phi Kappa Phi Honor Society for outstanding academic achievement, 1992

Mary Lyon Award 1969 and 1970 Mount Holyoke College for outstanding biology student

EDITORIAL TASKS:

Therapeutic Drug Monitoring: Editorial Board – 2007-present

Clinical Chemistry: Editorial Board 2006-present

Forensic Science International: Editorial Board 2005-present

Journal of Analytical Toxicology: Editorial Board 1994-present

TDM/Tox In-Service Training and Continuing Education Program: Editorial Board 1996-2001

Invited Reviewer for *Journal of the American Medical Association*, *Clinical Chemistry*, *Analytical Chemistry*, *Addiction*, *Journal of Chromatography A*, *Psychopharmacology*, *Journal of Chromatography B*, *Clinical Pharmacology and Therapeutics*, *Biological Psychiatry*, *Drug and Alcohol Dependence*, *Journal of Mass Spectrometry*, *Rapid Communications in Mass*

Spectrometry, Annals of Internal Medicine, Journal of Clinical Pharmacology, Drug Metabolism and Disposition, Biochemical Pharmacology, Journal of Pharmaceutical Sciences, Therapeutic Drug Monitoring, Journal of Chromatographic Sciences, Journal of Pharmaceutical and Biomedical Analysis, Clinical Chemistry and Laboratory Medicine, Analytical and Bioanalytical Chemistry, Psychopharmacology, Biomedical Chromatography, Acta Paediatrica, Bioanalytical Chromatography, Pediatrics, Journal of Analytical Toxicology, British Journal of Pharmacology, Journal of Clinical Psychopharmacology, Human and Experimental Toxicology, Analytical Methods, Acta Paediatrica, Nicotine and Tobacco Research, Journal of Psychopharmacology, Drug Testing and Analysis, Journal of Separation Science, Journal of Forensic Sciences, American Journal of Alcohol and Drug Dependence, Life Sciences, Forensic Science International, Chemistry and Ecology, Forensic Science Review, Forensic Science Communications, Clinical Pharmacokinetics, International Journal of Psychopharmacology, and American Journal of Drug Delivery.

SERVICE TO OTHER FEDERAL GOVERNMENT AGENCIES:

Interagency Agreement Office of the National Drug Control Policy 2011-2015

Scientific Working Group- Toxicology White House Forensic Science Subcommittee, Education, Ethics, and Terminology Interagency Working Group 2010-present

White House Forensic Science Subcommittee, Liaison to the Research, Development, Technology and Evaluation Interagency Working Group 2010-present

National Institute of Justice's General Forensics Research and Development Technology Working Group (TWG) 2010

Transportation Research Board Committee on Alcohol and Other Drugs 2009-present

Consultant for Office of National Drug Control Policy, 1998-present

Consultant, Maternal Lifestyle Study, National Institute of Child Health and Human Development, NIH 1992-present

Interagency Agreement Department of Defense 1998-2001

Interagency Agreement Department of Transportation 1998-2001

Interagency Agreement Substance Abuse Mental Health Services Administration 1998-2001

Consultant to the Clinical Chemistry and Clinical Toxicology Devices Panel of the Medical Devices Advisory Committee, Center for Devices and Radiological Health, Food and Drug Administration 2000-2001

COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT (CRADA)

Principal Investigator, CRADA with Sanofi Aventis, 2006- (NIH#410)

“Antagonist-elicited Withdrawal”

Principal Investigator, CRADA with Sanofi Synthelabo 2000-2001 (NIH#805)

“Antagonism of Inhaled Δ 9-THC by Single and Multiple Doses of SR141716

Principal Investigator, CRADA with Sanofi Winthrop 1997-1999 (NIH#362)

“Antagonism of Delta-9-THC by SR141716 in Healthy Male Subjects”, this was the first CRADA in the clinical research program of the IRP, NIDA

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES:

International:

The International Association of Forensic Toxicologists (TIAFT)

Past-President	2005-2008
President	2002-2005
Member	1990-present
Co-Chair TIAFT-SOFT Joint Congress	1994, 2004
Scientific Chair, SOFT-TIAFT Joint Congress	2011
Scientific Committee	1994, 1996, 1997-1999, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2011
Plenary speaker	2001, 2003, 2005

International Association of Therapeutic Drug Monitoring and Clinical Toxicology (IATDMCT)

Director of Education	2007-2009
Board of Editors	2007-present
Chair, Addiction as a Disease (Workshop)	2001
Chair, Biochemical Mechanisms of Addiction (Workshop)	2005
Member	1990-present

International Cannabinoid Research Society

Member	1994-present
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International Council on Alcohol, Drugs and Traffic Safety

Member	2006-present
Meeting Organizing Committee ICADTS-TIAFT-T2007	2007

National:

American Academy of Forensic Sciences (AAFS)

Academy Activities	
Board of Directors	2008-2011
International Committee	2009-present
Fellow	1987-present
Program Committee	1997-1998
Council	1998-2000
Nominating Committee	1999-2000

Toxicology Section Activities	
Chair	1999-2000
Chair, Nominating Committee	2000-2001
Secretary	1998-1999
Chair, Policies and Procedures Committee	1992-1997
Program Chair	1997-1998
Program Committee	1995-present
Awards and Scholarship Committee	2003, 2007-2009
Minutes Review Committee	1996, 1998, 2001
Steering Committee	1996-present
Drugs and Driving Committee	1995-present
Co-chair Medical Toxicology Workshop	1995
Member	1985
Society of Forensic Toxicology (SOFT)	
President	1999-2000
Vice President	1998-1999
Secretary	1996-1997
Board of Directors	1993-1995
Meeting Chair	1994
Meeting Co-chair, Organizing Committee	2004, 2011
Meeting Hosts Guidelines Committee	1993-present
Chair, Nominating Committee	2000-2001
Ethics Committee	2000
Educational Research Awards Committee	1999-2000
Joint Committee on Education and Training in Toxicology	1996-1998
Drugs and Driving Committee	1995-present
Advisory Committee on Hair Analysis	1991-1992
Chairperson, Health and Safety Committee	1992-1993
Member	1989-present
American Association for Clinical Chemistry	
Member	1979-present
Board of Editors	2005-present
Therapeutic Drug Monitoring and Clinical Toxicology Committee	1996- 2003
Treasurer, San Diego Section	1985
San Diego Molecular Biology Conference Committee	1987-1988
Society of Hair Testing	
Member	1996-present
California Association of Toxicologists	
Secretary	1993-1995
Membership Chair	1993-1995
Member	1983-present

RESEARCH BIOGRAPHY:

Professor Dr. Dr. (h.c.) Marilyn A. Huestis is a tenured senior investigator and Chief, Chemistry and Drug Metabolism Section, Intramural Research Program, National Institute on Drug Abuse, National Institutes of Health and Adjunct Professor in the Department of Epidemiology and Preventive Medicine, School of Medicine, University of Maryland Baltimore. She thoroughly enjoys mentoring doctoral students in Toxicology, has to date overseen the research of eight distinguished new toxicologists, and currently has five students pursuing their dissertation research. Her research program seeks to discover mechanisms of action of cannabinoid agonists and antagonists, effects of *in utero* drug exposure, and the neurobiology and pharmacokinetics of MDMA (Ecstasy). Professor Huestis is focused on new medication targets for cannabis dependence, including oral tetrahydrocannabinol (THC) and Sativex, a 1:1 ratio of tetrahydrocannabinol and cannabidiol. She is interested in the disposition of drugs and metabolites in a wide variety of biological fluids and tissues following controlled drug administration; data that provide a scientific database for interpreting drug concentrations in many alternative matrices. Professor Huestis was the first to evaluate the effects of the CB-1 cannabinoid receptor antagonist rimonabant in cannabis users. She directed the first clinical Cooperative Research And Development Agreement (CRADA) for the Intramural Research Program that has served as a model for future research endeavors. Professor Huestis also is investigating the effectiveness of buprenorphine and methadone for the treatment of opioid-dependent pregnant women and is the Intramural Research Program's responsible investigator in a multi-center study of *in utero* methamphetamine exposure. She has published 224 peer-reviewed manuscripts, book chapters, monographs and over 283 abstracts presented at national and international meetings. She received a bachelor's degree in biochemistry from Mount Holyoke College (cum laude), a master's degree in clinical chemistry from the University of New Mexico (with honors), and a doctoral degree in toxicology from the University of Maryland Baltimore (with honors). Professor Huestis received a Doctor Honoris Causa from the Faculty of Medicine, University of Helsinki in Finland in 2010. She has received many awards including The International Association of Forensic Toxicologists (TIAFT) Alan Curry Award in 2010, the American Association for Clinical Chemistry Outstanding Contributions in a Selected Area of Research Award in 2008, the International Association of Therapeutic Drug Monitoring and Clinical Toxicology (IATDMCT) Irving Sunshine Award in 2007, the American Academy of Forensic Sciences' Rolla N. Harger Award in 2005, and the Irving Sunshine Award for Outstanding Research in Forensic Toxicology in 1992. She was director of one of the first forensic urine drug testing laboratories certified by NIDA. She currently serves on the World Anti-doping Agency's Prohibited List Committee, White House Forensic Science Subcommittees on Education, Ethics, and Terminology and Research, Development, Technology and Evaluation Interagency Working Groups (IWGs), the Scientific Working Group on Toxicology (SWG-TOX), Transportation Research Board Committee on Alcohol and Other Drugs, and the National Safety Council Committee on Alcohol and Other Drugs (COAD) Executive Board. Professor Huestis is past president of the Society of Forensic Toxicologists, past Chair of the Toxicology Section of the American Academy of Forensic Sciences, and the first woman president of the International Association of Forensic Toxicologists.

PUBLICATIONS: Most recent 20 articles of 224 published
(Refereed)

1. **Huestis MA.** Q & A Oral Fluid Testing. *Clinical Chemistry*. In press.
2. Karschner EL, Darwin WD, Goodwin RS, Wright S, **Huestis MA.** Plasma cannabinoid pharmacokinetics following controlled oral Δ^9 -tetrahydrocannabinol and oromucosal cannabis extract administration. *Clinical Chemistry*. In press.
3. Karschner EL, Darwin WD, McMahon RP, Liu F, Wright S, Goodwin RS, **Huestis MA.** Subjective and physiological effects after controlled Sativex and oral THC administration. *Clinical Pharmacology and Therapeutics*. In press.
4. de Castro A, Jones, HE, Johnson RE, Gray TR, Shakleya DM, **Huestis MA.** Maternal methadone dose, placental methadone concentrations and neonatal outcomes. *Clinical Chemistry*. In press.
5. Concheiro M, Shakleya DM, **Huestis MA.** Simultaneous analysis of buprenorphine, methadone, cocaine, opiates, nicotine and metabolites in sweat by liquid chromatography tandem mass spectrometry. *Analytical and Bioanalytical Chemistry*, In press.
6. Gray TR, Choo RE, Concheiro M, Williams E, Elko A, Jansson LM, Jones HE, **Huestis MA.** Prenatal methadone exposure, meconium biomarker concentrations and neonatal abstinence syndrome. *Addiction*, 2010 Dec;105(12); 2151-2159. Epub 2010 Sep 20.
7. Schwilke EW, Gullberg RG, Darwin WD, Chiang N, Cadet JL, Gorelick DA, Pope HG, **Huestis MA.** Differentiating new cannabis use from residual urinary cannabinoid excretion in chronic, daily cannabis users. *Addiction*, In press.
8. Sutherland MT, Ross TJ, Shakleya DM, **Huestis MA,** Stein EA. Chronic smoking, but not acute nicotine administration, modulates neural correlates of working memory. *Psychopharmacology*, 2010 Sep 23. [Epub ahead of print]
9. Scheidweiler, KB, Kolbrich Spargo EA, Kelly TL, Cone EJ, Barnes AJ, **Huestis MA.**

Pharmacokinetics of Cocaine and Metabolites in Human Oral Fluid and Correlation with Plasma Concentrations following Controlled Administration. *Therapeutic Drug Monitoring*. 2010 Oct;32(5) 628-37. Epub 2010 Sep 1.

10. Gray TR, Dams R, Choo RE, Jones HE, **Huestis MA**. Methadone disposition in oral fluid during pharmacotherapy for opioid-dependence. *Forensic Science International*, 2010 Jul 26. [Epub ahead of print]
11. Concheiro M, Gray TE, Shakleya DM, **Huestis MA**. High Throughput Simultaneous Analysis of Buprenorphine, Methadone, Cocaine, Opiates, Nicotine, and Metabolites in Oral Fluid by Liquid Chromatography Tandem Mass Spectrometry. *Analytical Bioanalytical Chemistry*, 2010 Sep;398(2):915-24. Epub 2010 Jul 23.
12. Gray TR, Eiden RD, Leonard KE, Connors GJ, Shisler S, **Huestis MA**. Identifying prenatal cannabis exposure and effects of concurrent tobacco exposure on neonatal growth. *Clinical Chemistry*, 2010 Sep;56(9):1442-50. Epub 2010 Jul 13.
13. Milman G, Barnes AJ, Schwoppe DM, Schwilke EW, Darwin WD, Goodwin RS, Kelly DL, Gorelick DA, **Huestis MA**. Disposition of cannabinoids in oral fluid following controlled around-the-clock oral THC administration. *Clinical Chemistry*, 2010 Aug;56(8):1261-9. Epub 2010 Jun 8.
14. Gray TR, Barnes AW, **Huestis MA**. The effect of hydrolysis on identifying prenatal cannabis exposure. *Analytical and Bioanalytical Chemistry*, 2010 July; 397(6):2335-2347. Epub 2010 Jun 2.
15. Gray TR, Eiden RD, Leonard KE, Connors G, Shisler S, **Huestis MA**. Nicotine and metabolites in meconium as evidence of maternal cigarette smoking during pregnancy and predictors of neonatal outcome. *Nicotine & Tobacco Research*, 2010 Jun;12(6):658-64. Epub 2010 Apr 28.
16. Barnes AW, Brunet BR, Choo RE, Mura P, Johnson RE, Jones, HE, **Huestis MA**. Excretion of methadone in sweat of pregnant women throughout gestation after controlled methadone administration. *Therapeutic Drug Monitoring*, 2010 Aug;32(4):497-503.

17. Schwoppe DM, Milman G, **Huestis MA**. Validation of an enzyme immunoassay for detection and semi-quantification of cannabinoids in oral fluid. *Clinical Chemistry*, 2010 Jun;56(6):1007-14. Epub 2010 Apr 1.
18. Gray TR, Kelly T, LaGasse LL, Smith LM, Derauf C, Grant P, Shah R, Arria A, Haning W, Della Grotta S, Strauss A, Lester BM, and **Huestis MA**. New meconium biomarkers of prenatal methamphetamine exposure increase identification of affected neonates? *Clinical Chemistry*, 2010 May;56(5):856-60. Epub 2010 Feb 25.
19. Milman G, Barnes AW, Lowe RW, **Huestis MA**. Simultaneous quantification of cannabinoids and metabolites in oral fluid by two-dimensional gas chromatography mass spectrometry. *Journal of Chromatography A*, 2010 Feb 26; 1217(9): 1513-1521. Epub 2010 Jan 4.
20. Concheiro M, Jones HE, Johnson RE, Choo R, Shakleya DM, **Huestis MA**. Maternal Buprenorphine Dose, Placenta Buprenorphine and Metabolite Concentrations and Neonatal Outcomes. *Therapeutic Drug Monitoring*, 2010 Apr;32(2):206-15.

More than 300 peer-reviewed abstracts to national and international meetings