CURRICULUM VITAE

Heather Miller Coyle, Ph.D.

University of New Haven, Forensic Science Department

Henry C. Lee College of Criminal Justice & Forensic Sciences

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Current Employment: Assistant Professor – Forensic Science

Current Employment: Private Consultant & Sole Proprietor– Identacode Consulting LLC

Education:

- 1994-Ph.D. Plant Biology, University of New Hampshire
- 1989-M.S. Plant Science, University of New Hampshire
- 1986-B.S. In Vitro Cell Biology, State University of New York @ Plattsburgh

Grant Awards:

- 2008-National Marijuana Initiative/Office of National Drug Control Policy Research Grant
- 2001-National Institute of Justice Research Grant
- 1999-Lucas Foundation Research Grant
- 1992-Central University Research Foundation Grant

Specialized Forensic Biology Courses:

- 2004-DNA Auditor Course, FBI sponsored, St. Paul, MN
- 2004-Forensic Mitochondrial DNA Training, FBI Academy, Quantico, VA
- 2003-Intermediate Crime Scene Investigation, H.C. Lee Institute of Forensic Science/National Crime Scene Training Center, New Haven, CT
- 1999-Advances in SNP Detection, PE Biosystems Symposium, New Haven, CT
- 1999-STR Analysis and Capillary Electrophoresis, FSL, Westchester, NY
- 1999-Arnold Markle Symposium-Crimes Against Children, UNH, New Haven, CT
- 1998-Forensic Biology Training, CT Forensic Laboratory, Meriden, CT
- 1997-Introduction to Immunology, Yale University, New Haven, CT
- 1996-Advanced Immunology, University of California, San Diego, CA

Professional Affiliations:

- American Academy of Forensic Sciences
- Northeastern Association of Forensic Scientists

Professional Experience:

- **Assistant Professor (2005-present**)-Instructor for Undergraduate (FOR403) and Graduate (FOR620/621) level Forensic Biology courses with laboratories; Graduate level Biomedical Methods with laboratory (FOR673/674); Undergraduate Introduction to Forensic Science (FOR216) and Undergraduate Professional Practices/Ethics (FOR200) courses; Undergraduate (FOR498) and Graduate (FOR698) level research.

- **Technical Leader/Lead Criminalist (2003-2004)-**Organized and managed the technical operations of the Regional Mitochondrial DNA section in Meriden, CT for the first year of operation. Supervised daily activities of the mitochondrial DNA analysis team, responsible for 100% case review and validation of all new testing procedures. Implemented the quality assurance program for the regional facility.

- **Research & Validation Coordinator (2001-2003)-**Principle Investigator for NIJ grant for plant DNA typing methods. Scientific Advisor/Supervisor for students and research associates working on the following projects: DNA analysis of stomach contents, validation of AFLP for plant DNA typing, construction of a marijuana AFLP database, construction of a CT State YSTR database, validation of YPlex6 method, validation of the 3100 CE detection platform and Identifiler megaplex for DNA database samples.

- **Criminalist (1998-2003)-**DNA section of the Forensic Biology Department, Division of Scientific Services, Meriden, CT. Responsible for examination of biological evidence, DNA testing of evidence, interpretation of results, and convicted offender sample processing.

Graduate and Post-Graduate Training:

- Postdoctoral Fellow, Biology Department, Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT (1996-1998)
- Postdoctoral Research Associate, Biology Department, Yale University, New Haven, CT (1994-1996)
- Graduate Research Assistant/Student Supervisor, Plant Biology Department, University of New Hampshire, Durham, NH (1986-1994)

Research Internships:

- 1986 (summer)-Virology Laboratory, Cornell-Uihlein Farms, Lake Placid, NY
- 1985 (summer)-Plant Tissue Culture Facility, Weyerhaeuser Co., Apopka, FL
- 1985 (spring)-In Vitro Cell Biology and Biotechnology Program, W.H. Miner Agricultural Research Institute, Chazy, NY

Teaching Experience:

- 2004-Instructor, Crime Scene Analysis and Reconstruction, H.C. Lee Forensic Science Institute
- 2003-Adjunct Faculty, CJ403 Advanced Forensic Science I, University of New Haven
- 2002-Adjunct Assistant Professor, DNA in Forensic Science, University of Connecticut
- 2002-Instructor, Forensic Science for High School Teachers, Pfizer Corporation
- 2001-Adjunct Assistant Professor, DNA in Forensic Science, University of Connecticut
- 2001-Instructor, Connecticut Prosecutor Training: Advances in DNA Science, CSFSL
- 2001-Instructor, Forensic Science, New Milford High School
- 2000-Instructor, Connecticut Prosecutor Training: Advances in DNA Science, CSFSL
- 2000-Adjunct Assistant Professor, DNA in Forensic Science, University of Connecticut
- 1999-Instructor, DNA in Forensic Science, Wesleyan University
- 1992-Teaching Assistant, Introduction to Genetics, University of New Hampshire
- 1991-Teaching Assistant, Introduction to Biology, University of New Hampshire
- 1988-Teaching Assistant, Introduction to Plant Physiology, University of New Hampshire

Invited Speaker:

- 2009 & 2010-National Marijuana Initiative CAMP meeting: DNA Typing of Cannabis
- 2009-UNH Faculty Series: Forensic Botany
- 2008-Greenwich Science Center: Forensic Science & Careers
- 2006-Harvard Webinar Series: Forensic Botany
- 2005-4th European School in Forensic Genetics; Dubrovnik, Croatia: Forensic Botany
- 2004-Office of National Drug Control Policy, Washington, DC : DNA Typing of Cannabis
- 2004- Cambridge HealthTech Institute, McLean, VA : DNA Forensics: Enabling Investigative Examination
- 2004-CTLA Civil Justice Foundation Seminar Series on Criminal Litigation, New Haven, CT : Forensic DNA
- 2003-Fourth Annual DNA Grantee's Workshop, NIJ/ILJ, Washington, DC : Plant DNA Typing
- 2003-Future Problem Solving Program of Connecticut DNA Identification Workshop, UCONN, Storrs, CT: Forensic DNA
- 2003-Child Abuse Investigation Team, Winsted, CT : Forensic DNA
- 2003-Third European-American School in Forensic Genetics, Zagreb, Croatia : Plant DNA Typing
- 2003-New DNA Technology Expedition, Promega Corporation, Portland, ME : Plant DNA Typing
- 2002-Third Annual DNA Grantee's Workshop, NIJ/ILJ, Washington, DC : Plant DNA Typing
- 2001-Second European-American School in Forensic Genetics, Dubrovnik, Croatia: Plant DNA Typing

- 2001-Young Women in Science Program, Simon's Rock College of Bard, Housatonic, MA: Forensic DNA
- 2001-Melanie Ilene Rieger Memorial Conference Against Violence, Central CT State University, New Britain, CT: Forensic DNA
- 2000-Tri-State Genetics in the Courts Conference for Judges, Killington Grand Resort, Killington, VT: Forensic DNA
- 1999-DNA Typing Techniques, Criminal Justice Program, Central CT State University, New Britain, CT: Forensic DNA
- 1999-Forensic DNA Typing Techniques, Pre-law and Forensic Nursing Program, Western CT State University, Danbury, CT: Forensic DNA
- 1992-Gene Transfer in Plants, Biology Department, University of New Hampshire, Manchester, NH : Forensic DNA
- 1989-DNA and Fossils, Biology Department, St. Anselm College, Manchester, NH: Forensic DNA

Selected Scientific Publications:

- D. Castro and H. Miller Coyle. 2011. The importance and proper use of blood identification reagents in forensic testing. Manuscript in preparation.
- L. Allgeier, J. Hemenway, N. Shirley, T. LaNier and H. Miller Coyle. 2011. Field testing of DNA collection cards for Cannabis sativa with a single hexanucleotide marker. Journal of Forensic Sciences. (in press, Nov. issue).
- H. Miller Coyle. 2009. Forensic Botany: Evidence & Analysis. Forensic Science Review. 1:16-23.
- H. Miller Coyle. 2009. An Introduction to Forensic Science & DNA. In: The Use of Forensic Anthropology. R. Pickering, D. Bachman (Editors). CRC Press, Boca Raton, FL.
- C-L Lee, H. Miller Coyle, H.C. Lee. 2007. Genetic analysis of individual seeds by amplification fragment length polymorphism method. Croat. Med. J. 48: 563-565.
- H. Miller Coyle, T. Palmbach. 2007. Forensic Botany- Plants as evidence in criminal cases. In: Forensic DNA Analyses. D. Primorac (Editor). Ministry of Science, Education & Sports, republic of Croatia.
- C-L Lee, H. Miller Coyle, T. M. Palmbach, I.C.Hsu, and H.C. Lee. 2006. DNA analysis of ingested tomato and pepper seeds. American J. Forensic Med. and Pathology. 27(2): 121-125.
- H. Miller Coyle, C-L Lee, W-Y Lin, H.C. Lee and T.M. Palmbach. 2005. Forensic Botany: using plant evidence to aid in forensic death investigation. Croat. Med. J. 46(4): 606-612.
- H. Miller Coyle (Editor & Contributor). 2005. Forensic Botany: Principles and Applications to Criminal Casework. CRC Press, Boca Raton, FL
- C-L Lee, H. Miller Coyle, E. Carita, C. Ladd, N. Yang, T.M. Palmbach, I.C. Hsu and H.C. Lee. 2005. DNA analysis of digested tomato seeds in stomach contents. American j. Forensic Med. and Pathology 26: 330-333.
- H. Miller Coyle, T. Palmbach, N. Juliano, C. Ladd and H.C. Lee. 2003. An overview of DNA methods for the identification and individualization of marijuana. Croatian Medical Journal 44(3): 315-321.
- H.C. Lee, H. Miller Coyle and C. Ladd. 2003. DNA typing methods using bone samples in human identification casework. In: To the Aleutians and Beyond-The Anthropology of William S. Laughlin. Publications of The National Museum Ethnographical Series, vol. 20. p. 227-242.

- H. Miller Coyle, G. Shutler, S. Abrams, J. Hanniman, S. Neylon, C. Ladd, T. Palmbach and H.C. Lee. 2003. A simple DNA extraction method for marijuana samples used in amplified fragment length polymorphism (AFLP) analysis. J. Forensic Sciences 48(2): 343-347.
- H. Miller Coyle, B. Budowle, M. Bourke, E. Carita, J. Hintz, C. Ladd, C. Roy, N.C.S. Yang, T. Palmbach and H.C. Lee. 2003. Population data for seven Y-chromosome STR loci from three different population groups residing in Connecticut. J. Forensic Sciences 48(2): 435-437.
- H. Miller Coyle, J. Germano-Presby, C. Ladd, T. Palmbach and H.C. Lee. 2002. Tracking clonal marijuana using amplified fragment length polymorphism (AFLP) analysis: an overview. Conference proceedings: 13th International Symposium on Human Identification. Phoenix, AZ. Available on-line at www.promega.com.
- S. L. Tausta, H. Miller Coyle, B. Rothermel, V. Stiefel and T. Nelson. 2002. Maize C4 and non-C4 NADP-dependent malic enzymes are encoded by distinct genes derived from a plastid-localized ancestor. Plant Molecular Biology 50: 635-652.
- H. Miller Coyle, C. Ladd, T. Palmbach and H.C. Lee. 2001. The Green Revolution: botanical contributions to forensics and drug enforcement. Croatian Medical Journal 42(3): 340-345.
- H. Miller Coyle, C. Ladd and H.C. Lee. Database Facilitates Investigation. The Connecticut Law Tribune. February 26, 2001.
- H. Miller Coyle, C. Ladd and H.C. Lee. The Science of DNA Testing: the new STR technology. The Connecticut Law Tribune. February 26, 2001.
- C. Scherczinger, J. Hintz, B. Peck, M. Adamowicz, M. Bourke, H. Miller Coyle, C. Ladd, N.C.S. Yang, B. Budowle and H.C. Lee. 2000. Allele frequencies for the CODIS core STR loci in Connecticut populations. J. Forensic Sciences 45(4): 938-940.
- H.C. Lee, C. Ladd and H. Miller Coyle. 1999. Forensic Biology. In: 9th Edition of McGraw-Hill Encyclopedia of Science and Technology. McGraw-Hill Publishers (available on-line at www.AccessScience.com)
- S. Pullen, H. Miller, D. Everdeen, T. Dang, J. Crute and M. Kehry. 1998. CD40-tumor necrosis factor receptor associated factor (TRAF) interactions: regulation of CD40 signaling through multiple TRAF binding sites and TRAF hetero-oligomerization. Biochemistry 37(34): 11836-11845.
- H. Miller, T. Kocher and J. Loy. 1995. New MADS box domains in Asparagus officinalis L. Sexual Plant Reproduction 8: 318-320.
- L. Peirce and H. Miller. 1992. Asparagus emergence in Fusarium-treated and sterile media following exposure of seeds or radicles to one or more cinnamic acids. J. Amer. Soc. Hort. Sci. 118(1): 23-28.
- L. Peirce, M. Crispi and H. Miller. 1992. 'Superb Hybrid', 'NewIda' and 'Gold Dust' tomatos. HortScience 27(8): 935-937.