

Curriculum Vitae

Heather Miller Coyle, Ph.D.

Associate Professor, Forensic Science Department, Henry C. Lee College of Criminal Justice & Forensic Sciences, University of New Haven, 300 Boston Post Road, West Haven, CT 06516 USA
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Employment

Associate Professor -Forensic Science Department, University Of New Haven
Private Consultant-Identacode Consulting LLC (www.identacode.org)

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

Specialized Training

- 2021-STRmix USA Open Virtual Training Workshop. On-Line Training, June 7-10, 2021, Institute of Environmental Science and Research (ESR) & NicheVision Forensics LLC
- 2021-3rd Annual Northeast Forensic Lab Probabilistic Genotyping Users Group Meeting, April 13, 2021, NicheVision & Nassau County Medical Examiner's Office, On-Line Training & Presentations
- 2019-Probabilistic Software and STRmix by Nathan Adams, On-Line Presentation, April 24, 2019, Orange & Osceola Public Defender Meeting
- 2018-Illumina User Group Meeting, October 9, 2018, New York, NY
- 2018-OSIRIS Software Training, On-Line Training Webinar, www.ncbi.nlm.nih.gov/projects/SNP/osiris/
- 2018-Overview of Statistical Applications for DNA Mixtures by Todd Bille, On-Line Presentation, DNA Mixture Interpretation Workshop, March 15-17, 2011, Florida International University, Clearwater FL
- 2016-GeneMarker Software Training by Teresa Snyder-Leiby, University of New Haven, West Haven, CT
- 2015-eDNA Bullet Software Training for Probabilistic Genotyping by Kent Hartman, On-Line Training with Kent Hartman, November 30, 2015, University of New Haven, West Haven, CT
- 2015-Edu: Eliminate Campus Sexual Violence, On-Line Course, West Haven, CT
- 2014-Advanced STR & Y-STR Mixture Statistics, NEAFS Workshop, Valhalla, NY
- 2011-Familial DNA Workshop, 22nd International Symposium on Human Identification, National Harbor, MD
- 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
- 2001-Forensic Statistics In The Courtroom, Dr. Fred Bieber, CODIS Workshop-FBI, February 7, 2001, Crystal City, VA
- 2001-CSFSL Genetics And Statistics Course, Dr. Fred Bieber, April 04, 2001, Meriden, 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, w/GeneMapper, Genotyper, GeneScan software, 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 (AAFS)
- Northeastern Association Of Forensic Scientists (NEAFS)
- Council of Forensic Science Educators (COFSE)

Professional Teaching & Experience

- Associate Professor (2011-Current) Forensic Science Undergraduate And Graduate Courses In Forensic Biology And DNA; Advisor For Student Research Projects In Biological Evidence, Forensic Botany/Plant Genetics, Human Remains, And Touch DNA From Epithelial Cells.
- Consultant (2002-Present) Review Of Casework, Testimony, Biological Evidence, Trial Preparation, Testimony In Frye Hearings on LCN And FST (2013), and LCN (2018).
- Assistant Professor (2006-2011) Forensic Science Undergraduate and Graduate Level Courses in Forensic Biology and DNA, Professional Practices; Advisor for Student Research Projects in DNA and Forensic Botany.
- Lecturer/Laboratory Coordinator (2005-2006) Lectured For Forensic Science Undergraduate And Graduate Level Courses, Training Workshops; Supervised Graduate Teaching Assistants In The Organization And Preparation Of Laboratory Experiments For The Forensic Science Program; Oversight Of General Laboratory Operations And Budget For Supplies And Equipment.
- Editor and Co-Author Of A Book Entitled “Non-Human DNA Testing: Principles and Applications”, c. 2007, CRC Press, Boca Raton, FL.
- Editor and Co-Author Of A Book Entitled “Forensic Botany: Principles and Applications”, c. 2005, CRC Press, Boca Raton, FL.; c. 2024 (edition 2) In press.
- Technical Leader/Lead Criminalist (2003-2004)-Organized And Managed The Technical Operations Of The Regional Mitochondrial DNA Section At The CSFSL In Meriden, CT. Supervised Daily Activities Of The Mitochondrial DNA Analysis Team, Responsible For Training Of Personnel And Validation of All New Testing Procedures. Developed And Implemented The Quality Assurance Program For The Regional Facility (CT Laboratory-FBI Collaboration).

- Research & Validation Coordinator (2001-2003)-Principal Investigator for NIJ Grant For Plant DNA Typing Methods.
- Scientific Advisor/Supervisor For Students And Research Associates Working On The Following Projects At CSFSL: 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 Identifier Megaplex For DNA Database Samples.
- Criminalist (1998-2004)-CT State Forensic Science Laboratory (CSFSL), Division Of Scientific Services, Meriden, CT. Responsible For Examination Of Biological Evidence, DNA Testing Of Evidence, Interpretation Of Results, Court Testimony And Convicted Offender DNA Sample Processing.

Additional Teaching Experience

- 2014-Instructor, Forensic Science For Educators, H.C. Lee Institute of Forensic Science
- 2014-Instructor, Forensic Anthropology And Human Remains, H.C. Lee Institute of Forensic Science
- 2013- Instructor, STR Training Workshop with GeneMapper Software, University of New Haven
- 2012-Instructor, Biological Evidence Collection, H.C. Lee Institute of Forensic Science
- 2012-Instructor, Forensic Science For High School Educators, H.C. Lee Institute of Forensic Science
- 2005-Instructor, Latent Evidence Workshop, H.C. Lee Institute of Forensic Science
- 2004-Instructor, Crime Scene Analysis And Reconstruction, H.C. Lee Institute of Forensic Science
- 2003-Adjunct Faculty, 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

- 2023-Use of SNPs in Facial Reconstruction for Human Identification [July 19, 2023, 8th Global Webinar on Forensic Science (virtual): Sponsor – Global Scientific Guild].
- 2021-Forensic Botany: Utilizing Plant Evidence to Solve Crimes [August 6-7, 2021, MurderCon Writer's Police Academy (virtual): Sponsor – Sirchie].

- 2020-OSIRIS Software Training/Gaussian Fit & Digital Image Processing [August 19, 2020, The Legal Aid Society. (CLE, virtual): Sponsor - Attorney Terri Rosenblatt].
- 2020- Uses of a DNA Expert [June 10, 2020, New York State Association of Criminal Defense Lawyers, (CLE, virtual); Sponsor - Attorney Sherry Levin Wallach].
- 2018–Osiris and Bullet Software [June 6, 2018, The Legal Aid Society, Manhattan, NY; Sponsor – Attorney Richard Torres].
- 2015-Error Rates In Probabilistic Genotyping Software For DNA Mixtures In Human Identification – How To Compare? International Symposium On Forensic Science Error Management [July 21-24, 2015, National Institute Of Standards And Technology (NIST)].
- 2015-Continuing Legal Education (CLE) Presentation/Participation “Update On The Use Of FST And LCN Testing” (January 14, 2015; Speaker/Sponsor – Attorney Kyle Watters).
- 2013-Continuing Legal Education (CLE) Presentation/Participation “Unwrapping The Mysteries Of DNA And Use Of FST” –Bronx Hall Of Justice, New York, NY (March 14, 2013; Speaker/Sponsor – Attorney Kyle Watters).
- 2013-Continuing Legal Education (CLE) Presentation “Basic DNA And Contextual Contamination In Cases” – Assigned Counsel, New York, NY (October 17, 2013; Sponsor – Attorney Michael Alperstein).
- 2013-Continuing Legal Education (CLE) Presentation “Interpretation Of DNA And Mixtures” – Assigned Counsel, New York, NY (November 7, 2013; Sponsor – Attorney Michael Alperstein).
- 2010-National Marijuana Initiative –Camp Meeting, San Diego, CA
- 2009-American Academy Of Forensic Sciences, Seattle, WA
- 2009-National Marijuana Initiative –Camp Meeting, Sacramento, CA
- 2009-Faculty Brown Bag Luncheon, UNH, ‘Forensic Botany’
- 2008-Greenwich Science Center, Greenwich Middle and High Schools-‘Forensic Science and Careers’, Greenwich, CT 2006. Harvard Webinar Series, ‘Forensic Botany’
- 2005-Fourth European-American School In Forensic Genetics, Dubrovnik, Croatia
- 2005-Fifth Annual DNA Grantee’s Workshop, NIJ/ILJ, Washington, DC
- 2005-American Academy Of Forensic Sciences, New Orleans, LA
- 2004-Office Of National Drug Control Policy, Washington, DC
- 2004-DNA Forensics: Enabling Investigative Examination, Cambridge Healthtech Institute, Mclean, VA
- 2004-CTLA Civil Justice Foundation Seminar Series On Criminal Litigation, New Haven, CT
- 2003-Fourth Annual DNA Grantee’s Workshop, NIJ/ILJ, Washington, DC
- 2003-Future Problem-Solving Program Of Connecticut DNA Identification Workshop, UCONN, Storrs, CT
- 2003-Child Abuse Investigation Team, Winsted, CT
- 2003-Third European-American School In Forensic Genetics, Zagreb, Croatia
- 2003-New DNA Technology Expedition, Promega Corporation, Portland, ME
- 2002-Third Annual DNA Grantee’s Workshop, NIJ/ILJ, Washington, DC
- 2001-Second European-American School In Forensic Genetics, Dubrovnik, Croatia

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

Scientific Publications

M. Gruber, E. Bogdon, M. Blonde and H. Miller Coyle. 2023. Functional Genomics and Eye Color Prediction. *International Journal of Forensic Sciences*. 8(4): 7pp.

H. Miller Coyle. 2022. Linking the Forensic Biology Classroom to the Courtroom. *Journal of Forensic Science Education*. 4(2): 7pp.

H. Miller Coyle. 2022. Botanical Databases. Max M. Houck (Ed). In: *Encyclopedia of Forensic Sciences*, 3rd edition. Elsevier (Amsterdam, Netherlands).

J. Robertson, H. Miller Coyle. 2022. Forensic Botany. Max M. Houck (Ed). In: *Encyclopedia of Forensic Sciences*, 3rd edition. Elsevier (Amsterdam, Netherlands).

H. Miller Coyle. 2021. Quality Control Measures in Short Tandem Repeat (STR) Analysis. H. Ranjan-Dash et al. (Eds.), *Handbook of DNA Profiling*. Springer Nature (Singapore Pte Ltd.).

J. Liang, H. Miller Coyle. 2020. A SINE-Based qPCR Assay for Simultaneous Human and Dog DNA Detection & Quantification. *BioTechniques*. (www.future-science.com/doi/10.2144/btn-2020-0144).

K. Tupper, V. Feliciano, H. Miller Coyle. 2019. An Engaging Lesson Model for Biological Evidence Collection Training for DNA. *Journal of Forensic Science Education*. 1: 5pp.

H. Miller Coyle. 2019. Skin Biology for the Forensic Scientist. *Journal of Forensic Science Education*. 1: 1-2.

H. Miller Coyle, 2019. DNA Mixture Interpretation: Effect of the Hypothesis on the Likelihood Ratio. *International Research Journal of Computer Science*. 6(9): 672-675.

R. Whiting, H. Miller Coyle. 2019. Haplotype Analysis for Irish Ancestry. *Forensic Sciences Research*, DOI: 10.1080/20961790.2019.1639881

L. Reimer, S. Tardiff, J. Valoroso, R. Whiting, H. Miller Coyle. 2019. Cataloging an Early American: A Question of Ancestry. *Evidence Technology Magazine*. Spring issue: available at www.evidencemagazine.com.

H. Payne, H. Miller Coyle. 2018. Saliva & Detergent – Exploring Detergents that Contain Amylase and Assessing their Detection by the Phadebas Tube Test. *Evidence Technology Magazine*. Summer issue: available at www.evidencemagazine.com.

K. Baylor, H. Miller Coyle. 2017. Forensic Botany (Chapter 21). A. Amorim, B. Budowle (Eds). In: *Handbook of Forensic Genetics: Biodiversity and Heredity in Civil and Criminal Investigation*. (Volume 2 of Security Science and Technology). World Scientific Publishing Europe Ltd (Singapore).

- A. Kirby, J. Chance-Johnson, H. Miller Coyle. 2017. The Effect of the Analytical Threshold on the Loss and Gain of Data from Single Source and Mixed DNA Samples. *International Research Journal of Computer Science*. 4(8): 50-55.
- K.B. Watters, H. Miller Coyle. 2016. Forensic Statistical Tool (FST): A Probabilistic Genotyping Software Program for Human Identification. *Jurimetrics*. 56(2): 183-195.
- R. Clarke, H. Miller Coyle. 2016. A Re-evaluation of the Current NMI01 STR Sizing System of *Cannabis* DNA. *International Research Journal of Computer Science*. 3(6): 6-12.
- H. Miller Coyle. 2015. Touch DNA in A Complicated Alleged Child Abuse Case. *Austin Journal of Forensic Science and Criminology*. 2(5): 1042.
- H. Miller Coyle. 2015. Quality Control and Duplication for Concordance in Forensic DNA Samples: Implications for Interpretation of Mixtures. *International Research Journal of Computer Science*. 2(6): 16-18.
- H. Miller Coyle. 2015. Sources Of Computational Error In Probabilistic Genotyping Software Used For DNA Mixture Interpretation. *International Research Journal of Computer Science*. 2(5): 12-16.
- J. Miles, H. Miller Coyle. 2015. Quality Control and Transfer of Touch DNA in Fingerprinting Methods. *Northeastern Association of Forensic Scientists (NEAFS) Newsletter*. 40(3): 38-43.
- M. Hazell-Smith, T. Callahan, H. Miller Coyle. 2014. Touch DNA And The Ability To Detect The Correct Source. *International Journal of Advanced Technology and Science*. 1 (1): 45-51.
- K. Baylor, H. Miller Coyle. 2014. Cold Case Homicide with Paternity as an Investigative Lead (People of State Of New York v. Robert Symonds, Jr.). *Journal of Forensic Research and Crime Studies*. 1:102. (formerly: *Journal of Forensic Research and Criminal Studies*)
- K. Curtis, H. Miller Coyle. 2014. Development of a Quantitative Real-Time Polymerase Chain Reaction (RT-PCR) Assay for Plant Species. *Journal of Forensic Research and Crime Studies*. 1: 104. (formerly: *Journal of Forensic Research and Criminal Studies*)
- N. Shirley, L. Allgeier, T. Lanier, H. Miller Coyle. 2013. Analysis of the NMI01 Marker for a Population Database of *Cannabis* Seeds. *Journal of Forensic Sciences*. 58(S1):176-182.
- H. Miller Coyle. 2012. The Importance of Scientific Evaluation of Biological Evidence – Data from Eight Years of Case Review. *Science & Justice*. 52(4):268-270.
- P. Massey, P. Valentin, H. Miller Coyle. 2012. Botany and Bodies –Forensic Science Applications to the Crime Scene. J. Roberts, N. Marquez-Grant (Eds). In: *Forensic Ecology: From Crime Scene to Court*. Wiley-Blackwell (UK).
- H. Miller Coyle. 2012. Capillary Electrophoresis of DNA from *Cannabis sativa* for Correlation of Samples to Geographic Origin. *Methods Mol Biol*. 830: 241-251.
- L. Allgeier, J. Hemenway, N. Shirley, T. Lanier, H. Miller Coyle. 2011. Field Testing Of Collection Cards for *Cannabis Sativa* Samples With a Single Hexanucleotide Marker. *Journal of Forensic Sciences*. 56(5):1245-59.
- K. M. Reidy, A. Gareis, D. Sun, R. Auclair, T. Wong, R. Lang, H. Meng, H. Miller Coyle, H.C. Lee And A. B. Harper. 2009. Gender Identification Differences Observed For DNA Quantification Versus DNA Genotyping Of Mummified Human Remains –How It Relates To Human Identifications In Forensic Science. *Investigative Sciences Journal*. 1: 1-12.
- H. Miller Coyle. 2009. Forensic Botany: Evidence and Analysis. *Forensic Science Review*. 1:16-23.
- H. Miller Coyle. 2009. An Introduction to Forensic Science and DNA. In: *The Use of Forensic Anthropology*, Editor: R. Pickering, D. Bachman. CRC Press, Boca Raton, FL. (US).
- C.L. Lee, H. Miller Coyle, H.C. Lee. 2007. Genetic Analysis of Individual Seeds by Amplified Fragment Length Polymorphism. *Croatian Medical Journal* 48(4): 563-565.
- C.L. Lee, H. Miller Coyle, E. Carita, C. Ladd, N.C. Yang, T.M. Palmbach, I.C. Hsu and H.C. Lee. 2006. DNA Analysis of Digested Tomato Seeds in Stomach Contents. *American Journal of Forensic Medicine 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. *Croatian Medical Journal* 46(4): 606-612.
- C.-L. Lee, H. Miller Coyle, T. M. Palmbach, I. C. Hsu and H. C. Lee. 2005. DNA Analysis of Ingested Tomato and Pepper Seeds. *American Journal of Forensic Medicine and Pathology* 26 (4):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, 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): 938940.
- 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 (www.Accessscience.Com)

University and Community Service

- Private Consultant – Criminal and Civil Casework DNA Review on Request by Legal Counsel
- University Tenure and Promotion Committee
- Editorial Board & Guest Reviewer for *Journal of Forensic Sciences*
- Editorial Board for *Journal of Forensic Research and Crime Studies*
- Editorial Board for *Council of Forensic Science Educators (COFSE) Journal*