

Samenvatting verklaring DNA forensic specialist Dan Krane (US).

(In de bijlage treft u de volledige verklaring aan)

1. I am an Associate Professor in the Department of Biological Science at Wright University in Dayton, Ohio.
Since 1991 I have testified in approx. 70 criminal cases that have involved DNA forensic typing.
2. Contemporary DNA profiling tests are generally not capable of determining the tissue source of DNA sampling.
3. Generally speaking, it is very unlikely that handling a piece of clothing with bare hands would transfer a sufficient amount of material for the reliable generation of a DNA-profile, especially if larger amounts of DNA from another individual (e.g. the habitual wearer of the piece of clothing) are present.
4. Contamination and cross-contamination of evidence samples can easily occur. It is essential that evidence samples be handled with great care and that chain of custody (or continuity) records of articles are meticulously maintained to ensure that there either was no opportunity for contamination or cross-contamination to occur or that adequate measures were employed to minimize their possibility if opportunities existed.
5. It is reasonable to expect that DNA associated with one portion of an article of evidence (i.e. a blouse) could be transferred to another portion of the same article if those portions came in direct contact (i.e. in an envelope) during prolonged storage. The potential for transfer between one portion of an article of evidence and another portion of the same article is generally greater when the article is wet than when it is dry. Similarly, a blouse that has been draped on a mannequin, both right-side out and inside out, opportunities for transferring DNA from one location on the blouse to another are introduced. In such circumstances it is usually not possible to distinguish between an individual's DNA being associated with a particular location as a result of direct contact or a result of a transfer that has occurred during the course of storage, handling or examination.

Wat zegt deze verklaring over de onderbouwing van de veroordeling van Ernest Louwes in 2004 door het Hof in Den Bosch?

Bij de veroordeling van Ernest Louwes op basis van de gevonden DNA contactsporen in 2004 wordt gesteld dat:

- **Het gevonden DNA “greepsporen” zou betreffen.**

Dan Krane stelt in punt 3 dat hij het zeer onwaarschijnlijk (“very unlikely”) acht dat door het vastgrijpen van de blouse DNA contactsporen zijn overgedragen.

(De hoeveelheid DNA gevonden in spoor 20 door het NFI, die als relatief veel wordt beschreven, wijst er dus sterk op dat dit juist geen greepspoor is. Deze hoeveelheid past veel meer bij een microdruppel speeksel).

- **Er geen contaminatie kan hebben plaatsgevonden**

Dan Krane stelt in punt 4 dat zowel zeer goed bijgehouden moet worden wat er met het kledingstuk is gebeurd en dat het kledingstuk zelf zeer zorgvuldig moet worden bewaard en behandeld.

In werkelijkheid is de blouse van de weduwe een tijd zoek geweest en juist zeer onzorgvuldig behandeld (vochtig in een zak gepropt, vier jaar in een A4 doosje opgevouwen bewaard, voor een onderzoek naar de messcheuren in de blouse onderzocht en binnenste buiten op een etalagepop opgehangen).

- **Uit de locatie waarop de DNA sporen wel en niet gevonden zijn is geconcludeerd dat het er niet tijdens het bezoek 's morgens is opgekomen, maar tijdens de moord.**

Dan Krane stelt in punt 5 dat de onzorgvuldige wijze waarop de blouse is behandeld gezorgd kan hebben voor de overdracht van DNA sporen van de ene plek op de blouse naar een andere plek, zodat de locatie waarop de sporen na vier jaar zijn gevonden niets zegt over de plek waar de DNA contactsporen waren op het moment van de moord.

Statement by: Dan E. Krane

Expertise: Molecular biology, population genetics and forensic DNA profiling

1. I am an Associate Professor in the Department of Biological Sciences at Wright State University in Dayton, Ohio. I have a B.S. degree with a double major in Biology and Chemistry from John Carroll University (Cleveland, OH), and a Ph.D. from the Biochemistry program of the Cell and Molecular Biology Department of the Pennsylvania State University (State College, PA). I have also done postdoctoral research using the tools of molecular biology to answer questions in the fields of population genetics and molecular evolution in the Genetics Department of the Washington University Medical School (St. Louis, MO) and in the Department of Organismic and Evolutionary Biology of Harvard University (Cambridge, MA). I have published more than 30 scholarly papers in a variety of topics including population genetic studies of the genetic diversity of human populations at DNA typing loci, of organisms exposed to environmental stressors, and the use of DNA typing in forensic science. I have also published a widely-used textbook, "Fundamental Concepts of Bioinformatics." Since 1991 I have also testified in approximately 70 criminal cases (from at least 22 of the United States, three different United States Federal courts, coroner's inquest in Australia and in Northern Ireland Crown Court) that have involved forensic DNA typing. Since 2005 I have also been a founding member of the Commonwealth of Virginia's Scientific Advisory Committee – a panel of gubernatorial appointees charged by statute with the task of overseeing the Virginia Department of Forensic Science's policies and

testing protocols. My CV describes these activities and educational background in greater detail (attached as Appendix A).

2. Contemporary DNA profiling tests are generally not capable of determining the tissue source of a DNA sample. In some circumstances, it is possible to perform a differential extraction that would allow a DNA profile to be generated from sperm cells associated with an evidence sample but there is no DNA-based test available at the present time that can distinguish between DNA that comes from cells associated with saliva, skin or blood cells regardless of how much material is available for testing.
3. Studies have indicated that DNA can be transferred from an individual to an object simply by normal handling of the object. When such transfers occur, only very small amounts of DNA are transferred (and the amount that is transferred varies greatly between individuals and over time). Generally speaking, it is very unlikely that handling a piece of clothing with bare hands would transfer a sufficient amount of material for the reliable generation of a DNA profile – especially if larger amounts of DNA from another individual (e.g. the habitual wearer of the piece of clothing) are present.
4. Contemporary DNA profiling methodologies are extremely sensitive and in some circumstances have been able to generate complete DNA profiles from as little as a single cell. Contamination and cross-contamination of evidence samples can easily occur in ways that were unimaginable prior to the use of PCR-based approaches in the 1990's. It is essential that evidence samples be handled with great care and that chain of custody (or continuity) records for articles are meticulously maintained to ensure that there either was no

opportunity for contamination or cross-contamination to occur or that adequate measures were employed to minimize their possibility if opportunities existed.

5. It is reasonable to expect that DNA associated with one portion of an article of evidence (i.e. a blouse) could be transferred to another portion of the same article if those portions came in direct contact (i.e. in an envelope) during prolonged storage. The potential for transfer between one portion of an article of evidence and another portion of the same article is generally greater when the article is wet than when it is dry. Similarly, a blouse that has been draped on a mannequin, both right-side out and inside out, opportunities for transferring DNA from one location on the blouse to another are introduced. In such circumstances it is usually not possible to distinguish between an individual's DNA being associated with a particular location as a result of direct contact or as a result of transfer that has occurred during the course of storage, handling or examination.

Place: Dayton, Ohio, USA

Date: Thursday, April 19, 2007

Signature: 

Curriculum Vitae

Name: Dan E. Krane

Address: Department of Biological
Sciences
Wright State University
Dayton, OH 45435-0001

Educational background:

B.S. (1985) in Biology and Chemistry at John Carroll University, University Heights, OH

Ph.D. (1990) Biochemistry program of the Department of Molecular and Cell Biology, The Pennsylvania State University, University Park, PA

Research interests: Molecular and genome evolution; human population substructuring; genetic diversity measures; bioinformatics.

Training and positions held:

Undergraduate researcher (1984-1985) Department of Chemistry, John Carroll University

Graduate assistant (1985-1990) Department of Molecular and Cell Biology, The Pennsylvania State University

Participant (1988) UCLA International School on Molecular Evolution

Research Associate (1990-1991) Howard Ochman and Daniel L. Hartl's laboratory, Department of Genetics, Washington University School of Medicine

Research Associate (1991-1993) Daniel L. Hartl's laboratory, Department of Organismic and Evolutionary Biology, Harvard University

Assistant Professor (1993-2000) Department of Biological Sciences, Wright State University.

Affiliate Member of the Biomedical Sciences faculty (1994-1995) Wright State University.

Associate Member of the Biomedical Sciences faculty (1995-present) Wright State University.

Associate Professor (2000-present) Department of Biological Sciences, Wright State University.

Associate Director, Biomedical Sciences PhD program (2000-2002) Wright State University.

President, CEO and Senior Analyst, Forensic Bioinformatics, Inc. (2002-present).

Graduate Faculty, Wright State University Microbiology and Immunology Program (2003-present) Environmental Sciences Ph.D. Program (2003-present).

Awards, honors and grant support:

- American Institute of Chemists Student Research and Recognition Foundation Award (1985).
- Pella Fay Braucher Scholarship from The Pennsylvania State University College of Science (1985).
- UCLA International School on Molecular Evolution Fellowship (1988).
- The R. Adams Dutcher Fund Award from The Pennsylvania State University Biochemistry Program (1990).
- The W. R. Keck Fellowship from the Washington University School of Medicine (1990).
- Collegium Summer Institute on Faith and Intellectual Life Fellowship (1993).
- Wright State University Alumni Grant for “Computer assisted DNA analysis” for \$2,650 (1993).
- Research Challenge Grant for \$25,000 from Wright State University (1994) for “The influence of regional GC-content on neutral substitutions”.
- Finalist, “Teacher of the Year Award,” Wright State University, College of Science and Mathematics (1994, 1995, 1997 and 2002).
- The Dean of the College of Science and Mathematics “Special Award for Outstanding Teaching,” Wright State University, College of Science and Mathematics (1995).
- Principal investigator: Ohio biological survey for \$500 for “Molecular characterization of Black and Sugar Maples in Ohio.” (1995-1996).
- Honorary induction into Alpha Lambda Delta, the National Academic Honor Society for Freshmen (1996).
- “Teacher of the Year Award,” Wright State University, College of Science and Mathematics (1997).
- Co-investigator (G. Allen Burton, project director): U.S. EPA grant for \$61,814 for “Assessment of sediment quality in the Black River.” (1997).
- Co-investigator (G. Allen Burton, project director): U.S. EPA grant for \$449,499 for “Sediment contamination assessment methods: Validation of standardized and novel approaches.” (1997).
- Principal investigator: U.S. EPA grant for \$420,277 for “Intraspecies genetic diversity measures of environmental impacts.” (1998-2002).
- Principal investigator: Wright State University Early Start/Augmentation grant for \$17,998 for “DNA quantification center for assessing changes in genetic diversity levels” (1999).
- Principal investigator: Ohio biological survey for \$500 for “Survey of the terrestrial isopods of Ohio.” (1999-2000).
- Principal investigator: Ohio biological survey for \$500 for “Survey of the Chironomid species of Ohio.” (2001-2002).

Awards, honors and grant support (continued):

Principal investigator: Various sources of compensation for consulting regarding forensic DNA analyses made payable to Wright State University for approximately \$125,000. (1993-2002).

Principal investigator: Wright State University Technology Commercialization Initiative Grant for \$99,985 for “Commercialization of DNA profiling expertise.” (2001-2002).

Co-investigator (Mike Raymer, PI): National Science Foundation (Computer Science Directorate) grant for \$542,056 (\$47,254 under the direct control of D. E. Krane) for “Crossing the interdisciplinary barrier: An integrated undergraduate program in bioinformatics.” (2001-2005).

Co-investigator (Keith Grasman, PI): Wright State University College of Science and Mathematics Research Incentive Fund project for \$30,000 for “Environmental health assessments using toxicogenomic technologies.” (2001-2003).

Co-investigator (Gerald Alter, PI): Wright State University College of Science and Mathematics Research Incentive Fund project for \$30,000 for “Establishing an applied biomedical computing center: Using the nucleotide excision repair complex as a paradigm.” (2001-2003).

Co-investigator (with Keith Grasman): Canadian Wildlife Service (Toronto, ON office) for \$5,000 for “The effects of environmental contaminants on sex ratios in young herring gulls in areas of concern.” (2001-2002).

Co-Investigator: State of Ohio Biotechnology Research and Technology Transfer grant for \$5.5 million (\$1.9 million to Wright State University; \$600,293 for bioinformatics work; \$33,273 under the direct control of D. E. Krane) (2002-2005).

Principal investigator: Wright State University Technology Commercialization Initiative Grant for \$9,007 for “Developing software that generates forensic DNA profiles and meaningful statistics from mixed evidence samples.” (2006).

Publications:

Cheng, J.-F., D. E. Krane and R. C. Hardison. 1988. Nucleotide sequence and expression of rabbit globin genes ζ_1 , ζ_2 , and ζ_3 : Pseudogenes generated by block duplications are transcriptionally competent. *J. Biol. Chem.* **263**:9981-9993.

Krane, D. E. and R. C. Hardison. 1990. Short interspersed repeats in rabbit DNA can provide functional polyadenylation signals. *Mol. Biol. Evol.* **7**:1-8.

Publications (continued):

- Krane, D. E. and R. C. Hardison. 1990. Short interspersed repeats in rabbit DNA propagated by successive waves of retrotransposition. Abst. #745, Session 50, ASMBM/AAI 1990 Meeting, FASEB Journal.
- Krane, D. E., A. G. Clark, J.-F. Cheng and R. C. Hardison. 1991. Subfamilies and clustering of C repeats within the rabbit genome. *Mol. Biol. Evol.* **8**:1-30.
- Hardison, R. C., D. E. Krane, D. J. Vandenberg, J.-F. Cheng, J. Mansberger, J. A. Taddie, S. Schwartz, X. Huang and W. Miller. 1991. Sequence and comparative analysis of the rabbit alpha-like globin gene cluster reveals a rapid mode of evolution in a G+C rich region of mammalian genomes. *J. Mol. Biol.*, **222**:233-249.
- Yost, S., M. James-Pederson, J. Xu, D. E. Krane, R. Miller, T. Zeigler and R. C. Hardison. 1991. Intragenic sequences and proteins regulating the rabbit α -globin gene. Pp. 220-234 in G. Stamatoyannopoulos and A. W. Nienhuis, eds. *The regulation of hemoglobin switching*. Johns Hopkins University Press, Baltimore.
- Krane, D. E., D. L. Hartl and H. Ochman. 1991. Rapid determination of nucleotide content and its application to the study of genome structure. *Nucl. Acids Res.*, **19**:5181-5185.
- Krane, D. E., R. W. Allen, S. A. Sawyer, D. A. Petrov and D. L. Hartl. 1992. Genetic differences at four DNA typing loci in Finnish, Italian, and mixed Caucasian populations. *Proc. Natl. Acad. Sci., USA*, **89**:10583-10587.
- Carulli, J. P., D. E. Krane, D. L. Hartl and H. Ochman. 1993. Compositional heterogeneity and patterns of molecular evolution in the *Drosophila* genome. *Genetics*, **134**:837-845.
- Ostrowski, R. and D. E. Krane. 1993. Unresolved issues in the forensic use of DNA profiling. *Accountability in Res.*, **3**:47-54.
- Ayala, F. J., D. E. Krane and D. L. Hartl. 1994. Genetic variation in IncI1-Collb plasmids. *J. Mol. Evol.*, **39**:129-133.
- DeVere, G. A., J. L. Uy, C. R. Eagler and D. E. Krane. 1995. The function and evolution of rabbit C repeats. *Proc. Nat. Conf. Und. Res.* , **IX**:938-942.
- Sawyer, S., A. Podleski, D. Krane and D. Hartl. 1996. DNA fingerprinting loci do show population differences. *Am. J. Hum. Genet.*, **59**:272-274.

Publications (continued):

- Skepner, A. P. and D. E. Krane. 1997. cpDNA of *Acer saccharum* and *Acer nigrum* are very similar. *OH. J. Sci.*, **97**:90-94.
- York, A. J. and D. E. Krane. 1997. Isochore-related amino acid substitution biases in chickens and humans. *Proc. Nat. Conf. Und. Res.*, **XI**:614-618.
- Skepner, A. P. and D. E. Krane. 1998. RAPD reveals genetic similarity of *Acer saccharum* and *Acer nigrum*. *Heredity*, **80**:422-428.
- Krane, D. E., D. Sternburg and G. A. Burton. 1999. Randomly amplified polymorphic DNA profile-based measures of genetic diversity in crayfish are correlated with environmental impacts. *Environ. Toxicol. Chem.*, **18**:504-508.
- Krane, D. E. 2001 Intraspecies genetic diversity measures of environmental impacts. (Lipnick, R. L., R. P. Mason, M. L. Phillips and C. U. Pittman, Eds.) in *Chemicals in the environment*, American Chemical Society Symposium Series (806) pp. 340-249.
- Newburn, E. and D. E. Krane. 2001. Molecular Identification of Chironomid species. (Lipnick, R. L., R. P. Mason, M. L. Phillips and C. U. Pittman, Eds.) in *Chemicals in the environment*, American Chemical Society Symposium Series (806) pp. 363-383.
- Pilgrim, E. M., S. A. Roush and D. E. Krane. 2002. Combining DNA sequences and morphology in systematics: testing the validity of the dragonfly species *Cordulegaster bilineata*. *Heredity* **89**:184-190.
- Doom, T. M. Raymer, D. Krane and O. Garcia. 2003. Crossing the interdisciplinary barrier: A baccalaureate computer science option in bioinformatics. *IEEE Transactions on Education* **46**:387-393.
- Krane, D. E., M. L. Raymer, and T. E. Doom. 2003. An interdisciplinary bioinformatics program. *The Journal of College Science Teaching* **XXXII**:296
- Thompson, W. C., S. Ford, T. Doom, M. L. Raymer and D. E. Krane. 2003. Evaluating forensic DNA evidence: Essential elements in a competent defense review. *The Champion* **XXVII**: April, 2003:16-25 (Cover story); and May, 2003: 24-28.
- Krane, D. E. and W. C. Thompson. 2003. DNA in the courtroom. *Psychological and Scientific Evidence in Criminal Trials*, Chapter 11 (144 pages), edited by Jane Campbell Moriarty, West, Danvers, MA.

Publications (continued):

- Gilder, J. R., S. Ford, T. E. Doom, M. L. Raymer and D. E. Krane. 2004. Systematic differences in electropherogram peak heights reported by different versions of the GeneScan software. *Journal of Forensic Sciences*, **49**:92-95.
- Doom, T., M. Raymer, and D. Krane. 2004. Bioinformatics: Where biology meets computer science. *IEEE Potentials* **23**:24-28.
- Krane, D. E., T. E. Doom, L. D. Mueller, M. L. Raymer, W. M. Shields and W. C. Thompson. 2004. Commentary on "CODIS STR loci data from 41 sample populations." *Journal of Forensic Sciences*, **49**:1388-1389.
- Paoletti, D. R., T. E. Doom, C. M. Krane, M. L. Raymer and D. E. Krane. 2005. Empirical analysis of the STR profiles resulting from conceptual mixtures. *Journal of Forensic Sciences*, **50**:1361-1366.
- Paoletti, D. R., T. E. Doom, M. L. Raymer and D. E. Krane. 2006. Assessing the implications for close relatives in the event of similar but non-matching DNA profiles. *Jurimetrics*. **46**:161-175.
- Heizer, E. M., D. W. Raiford, M. L. Raymer, T. E. Doom, R. V. Miller and D. E. Krane. 2006. Amino acid cost and codon usage biases in six prokaryotic genomes: A whole genome analysis. *Molecular Biology and Evolution*, **23**:1670-1680.
- Rowland, C. D., R. V. Van Trees, M. S. Taylor, M. L. Raymer and D. E. Krane. 2006. Was the Shawnee war chief Blue Jacket a Caucasian? (Accepted for publication as the cover story for the September, 2006 issue of the *Ohio Journal of Science*).
- Gilder, J. R., T. E. Doom and D. E. Krane. 2007. Run-specific limits of detection and quantitation for STR-based DNA testing. (Accepted for publication in the January, 2007 issue of the *Journal of Forensic Sciences*).
- Rowland, C. D. and D. E. Krane. 2007. Frequency of occurrence and magnitude of plus four (n+4) stutter in forensic DNA profiles. (Accepted with revision in August, 2006 for publication in the *Journal of Forensic Sciences*).
- Gilder, J. R., T. E. Doom, M. L. Raymer and D. E. Krane. A satisfiability approach for the deconvolution of forensic DNA mixtures. (Re-submitted to the *Journal of Forensic Sciences* in September, 2006).
- Raiford, D. W., E. M. Heizer and D. E. Krane. Metabolic efficiency effects proteome evolution in *Saccharomyces cerevisiae*. (Submitted as a general submission to the *Proceedings of the National Academy of Sciences, USA* in September, 2006).

Publications (continued):

Raiford, D. W., D. E. Krane, T. E. Doom and M. L. Raymer. An investigation of codon usage bias: Isolation and visualization of translation bias in organisms exhibiting multiple biases. (Submitted to IEEE: Transactions on Computational Biology and Bioinformatics in September, 2006).

Published textbooks/manuals:

- Krane, D. E. 1996. A laboratory perspective for introductory biology. (98 pages, hard cover). Simon and Schuster, Needham, MA (ISBN 0-536-59602-6).
- Krane, D. E. 1996. Cells, genes and genetics lecture notes. (183 pages, soft cover). Wright State University in house publication.
- Krane, D. E. 1996. Molecular genetics lecture notes. (215 pages, soft cover). Wright State University in house publication.
- Krane, D. E. 1998. A laboratory perspective for introductory biology; 2nd edition. (108 pages, hard cover). Simon and Schuster, Needham, MA (ISBN 0-536-01555-4).
- Krane, D. E. 2001. "Molecular Evolution." Chapter 24 of the fifth edition of Peter Russell's *Genetics*, published by Benjamin/Cummings. 49 pages with nine illustrations.
- Krane, D. E. and M. L. Raymer. 2003. *Fundamental Concepts of Bioinformatics*. (A 314 page sophomore/ junior level textbook for biology and computer science majors; ISBN 0-8053-4633-3) Pearson Education, Inc., publishing as Benjamin Cummings, San Francisco, CA. (International edition ISBN 0-321-10922-X; Chinese translation ISBN 7-302-09430-6/Q).
- Krane, D. E. 2006. "Molecular Evolution." Chapter 24 of the second edition of Peter Russell's *iGenetics: A Molecular Approach* and second edition of *iGenetics: A Mendelian Approach*, published by Benjamin/Cummings. 52 pages with nine illustrations.

Presentations:

- Cheng, J.-F., D. E. Krane, and R. C. Hardison. July, 1987. The expression and evolution of zeta globin genes. Sixth summer symposium in molecular biology – Developmental gene regulation, The Pennsylvania State University, University Park, PA.
- Krane D. E. July, 1988. Subfamily relationships and the structure of rabbit C repeats. UCLA school on molecular evolution, The University of California, Los Angeles.

Presentations (continued):

- Krane D. E., and R. C. Hardison. July, 1989. Rabbit C repeats and their role in the evolution of the rabbit genome. Eighth summer symposium in molecular biology – DNA protein interactions, The Pennsylvania State University.
- Krane D. E. April, 1990. The molecular evolution of a short repetitive element in rabbits. Biology departmental seminar, University of Illinois at Champagne-Urbana.
- Krane, D. E. and R. C. Hardison. May, 1990. Short interspersed repeats in rabbit DNA propagated by successive waves of retrotransposition. ASMBM/AAI 1990 Meeting.
- Hardison, R. C., S. E. Yost, M. James-Pederson, D. E. Krane and J. Xu. May, 1990. Intragenic sequences and protein factors regulating expression of the rabbit alpha-globin gene. ASMBM/AAI 1990 Meeting.
- Krane D. E. September, 1990. The rabbit and human alpha and beta globin gene clusters: An empirical analysis of two different isochores. Department of Genetics, Washington University School of Medicine, St. Louis, MO.
- Hardison, R. C., S. E. Yost, M. James-Pederson, D. E. Krane and J. Xu. September, 1990. Intragenic sequences and protein factors regulating expression of the rabbit alpha-globin gene. Seventh Annual Conference on Hemoglobin Switching, Arlie House, VA.
- Krane, D. E. February, 1991. A new method for the analysis of the compartmentalization of vertebrate genomes. Biology and Chemistry Departments, John Carroll University, University Hts., OH.
- Krane, D. E. July, 1991. Analyses of the isochore structure of eukaryotic genomes. St. Louis Red Cross, St. Louis, MO.
- Krane, D. E. June, 1992. DNA profiling and the implications of population substructuring. Merimac Community College summer seminar series for gifted students, St. Louis, MO.
- Krane, D. E. October, 1992. Population genetics and forensic DNA typing. North Carolina Biotechnology Center/BASF Corporation Lecture Series in Biotechnology, The University of North Carolina at Charlotte.
- Krane, D. E. December, 1992. DNA profiling: A primer. Special seminar for the Missouri State Trial Lawyers Association, St. Louis, MO.
- Krane, D. E. March, 1993. Unresolved issues in the forensic application of DNA profiling. Department of Biology, Morehead State University, Morehead, KY.

Presentations (continued):

- Krane, D. E. February, 1994. The structure and evolution of warm-blooded vertebrate genomes. Department of Biochemistry and Molecular Biology, Wright State University, Dayton, OH.
- Krane, D. E. April, 1994. A homogenating bias in the accumulation of mutations in primate isochores. Museum of Comparative Zoology, Harvard University, Cambridge, MA.
- Krane, D. E. and D. Barr. May, 1994. Evolutionism vs. Creationism on "Current Perspectives: WAZU (102.9 FM), Dayton, OH.
- Krane, D. E. and R. Keyes. May, 1994. Evolution/Creation Discussion, sponsored by the Wright State University Campus Crusade for Christ, Dayton, OH.
- Krane, D. E., M. Malinowski, E. W. Morgan and B. Gorman. January, 1995. Scientific Evidence on Trial. Wright State Policy Forum, Dayton, OH.
- Krane, D. E. February, 1995. Forensic applications of DNA. The Dayton Sertoma Club, Dayton, OH.
- Krane, D. E. April, 1995. DNA forensics. 1995 Bi-state conference of the Indiana and Ohio Societies for Clinical Laboratory Science, Fairborn, OH.
- Krane, D. E. June, 1995. Computer applications in DNA analyses. 1995 Regional meeting of the Academic Computing Society, Dayton, OH.
- Krane, D. E. December, 1995. Forensics in the '90's. The University of Cincinnati and Benjamin/Cummings. Cincinnati, OH.
- Krane, D. E. February, 1996. Polymorphisms at hypervariable loci and human population substructuring. Heidelberg College, Tiffin, OH.
- Krane, D. E., P. Donnelly and M. Kreitman. February, 1996. An afternoon symposium on the statistical interpretation of DNA evidence. DePaul University, Chicago, IL.
- Krane, D. E. April, 1996. Forensics in the '90's. The University of Massachusetts at Worcester and Benjamin/Cummings. Worcester, MA.
- Sternberg, D. V., G. A. Burton, D. E. Krane and K. Grasman. April, 1996. Randomly amplified polymorphic DNA markers in determinations of genetic variation in populations affected by stressors. Abstr. Annu. Meet. Soc. Env. Toxicol. Chem., Washington, D.C., p. 259, no. P0882.
- Krane, D. E. May, 1996. DNA profiling: from start to finish. State of Missouri Public Defenders, St. Louis, MO.
- Krane, D. E. January, 1996. Strong base-composition altering mutational biases operating within primate genomes are dependent upon isochore GC-contents. American Society for Human Genetics Meeting, Minneapolis, MN.

Presentations (continued):

- Hostler, D. P. and D. E. Krane. July, 1996. The dependence of rate and mode of evolution on genomic context within primates. Fifteenth summer symposium in molecular biology – Genome and chromatin structure, The Pennsylvania State University, University Park, PA.
- Skepner, A. P. and D. E. Krane. July, 1996. The application of random amplification of polymorphic DNA to phylogenetic reconstructions. Fifteenth summer symposium in molecular biology – Genome and chromatin structure, The Pennsylvania State University, University Park, PA.
- Steinbrugge, K. and D. E. Krane. July, 1996. A re-analysis of the function and role of SINEs within mammalian genomes. Fifteenth summer symposium in molecular biology – Genome and chromatin structure, The Pennsylvania State University, University Park, PA.
- Krane, D. E. October, 1996. Isochore-dependent mutational biases: A new perspective on random genetic drift. The University of Dayton, Dayton, OH.
- Krane, D. E. January, 1997. Minor shifts in genomic GC-content alter amino acid fixational bias. International Society of Molecular Evolution meeting, Guanacaste, Costa Rica.
- Krane, D. E. February, 1997. The potential and pitfalls of DNA profiling. The Harvard Club of Dayton, Dayton, OH.
- Krane, C. M. and D. E. Krane. April, 1997. The potential of molecular genetics. American Association of University Women, Dayton, OH.
- Krane, D. E.. April, 1997. Compositional bias of point substitutions and insertion events in *Alu-J* repetitive sequences. The Jacques Monod Institute of Molecular Genetics, Paris, France.
- Krane, D. E. May, 1997. Isochore-dependent mutational biases and the neutral theory of molecular evolution. International Conference on Molecular Biology and Evolution, Munich (Kongresshaus Garmisch-Partenkirchen), Bavaria, Germany.
- Krane, D. E. September, 1997. The influence of genomic context upon neutral substitutions. Wright State University, Department of Biological Sciences, Dayton, OH.
- Krane, D. E. November, 1997. The influence of large-scale genomic context upon neutral substitutions. The University of Cincinnati, Department of Medical Genetics, Cincinnati, OH.
- Krane, D. E. February, 1998. From genes to genomes and beyond: Societal implications of genetics and biotechnology. Xenia Rotary Club, Xenia, OH.
- Krane, D. E. March, 1998. The influence of large-scale genomic context upon amino acid replacements. The Pennsylvania State University, Department of Biology, State College, PA.

Presentations (continued):

- Sternberg, D. V., G. A. Burton, D. E. Krane and K. Grasman. April, 1998. Randomly amplified polymorphic DNA markers in determinations of genetic variation in aquatic species affected by stressors. Annu. Meeting Central Great Lakes Regional Chapter Society of Environmental Toxicology and Chemistry. East Lansing, MI.
- York, Allen J. and D. E. Krane. April, 1997. Evolution and function of highly repeated short sequences within the rabbit genome. (OH. J. Sci., 98:7). 107th meeting of the Ohio Academy of Science, Middletown, OH.
- Skepner, Adam P. and D. E. Krane. April, 1997. Molecular analyses reveal genetic similarity of *Acer saccharum* and *Acer nigrum*. (OH. J. Sci., 98:14). 107th meeting of the Ohio Academy of Science, Middletown, OH.
- Krane, D. E. April, 1997. Genetic diversity provides a useful measure of environmental impacts. (OH. J. Sci., 98:7). 107th meeting of the Ohio Academy of Science, Middletown, OH.
- Krane, D. E. October, 1998. The influence of large-scale genomic context upon neutral nucleotide substitutions. The University of Cincinnati, Department of Biology, Cincinnati, OH.
- Krane, D. E. April, 1999. DNA profiling as a means of assessing environmental impacts. John Carroll University, Department of Chemistry, University Heights, OH.
- Krane, D. E. October, 1999. The potential and pitfalls of forensic DNA profiling. Wilberforce University, Natural Sciences Division, Wilberforce, OH.
- Grunwald, B., S. A. Roush, and D. E. Krane. November, 1999. Genetic diversity measures of terrestrial isopods as ecoindicators. Society of Environmental Toxicology and Chemistry 20th annual meeting, Philadelphia, PA.
- Krane, D. E., D. C. Sternberg, B. Grunwald, S. A. Roush, and G. A. Burton. November, 1999. RAPD DNA profile-based measures of genetic diversity are correlated with environmental impacts. Society of Environmental Toxicology and Chemistry 20th annual meeting, Philadelphia, PA.
- Krane, D. E. March, 2000. Examiner bias in laboratory analyses of forensic DNA evidence. Miscarriages of Justice conference (co-hosted by the University of California at Irvine and the California Public Defenders' Association), Newport Beach, CA.
- Krane, D. E. May, 2000. Genetic diversity measures of environmental impacts. 2000 STAR Ecosystem Indicators Progress Review Workshop, Las Vegas, NV.

Presentations (continued):

- Krane, D. E. May, 2000. Effects of stressors on genetic diversity in naturally occurring populations, Ohio Valley Chapter of SETAC, 17th annual meeting, College Corner, OH.
- Newburn, E. and D. E. Krane. August, 2000. Molecular Identification Markers of Chironomid Species for Use as an Ecoindicator of Aquatic Systems, Poster and abstract, American Chemical Society National Meeting, Washington D.C.
- Ott, L. and D. E. Krane. August, 2000. Genetic diversity in Pacific herring populations, Poster and abstract, American Chemical Society National Meeting, Washington D.C.
- Krane, D. E. October, 2000. Three generations of DNA profiling: What problems still remain? Eastern Kentucky University, Richmond, KY.
- Newburn, E. and D. E. Krane. November, 2000. Molecular Identification Markers of Chironomid Species for Use as an Ecoindicator of Aquatic Systems, Poster and abstract, 20th Annual SETAC National Meeting, Nashville, TN.
- Ott, L. and D. E. Krane. November, 2000. Genetic diversity in Pacific herring populations, Poster and abstract, 20th Annual SETAC National Meeting, Nashville, TN.
- Krane, D. E. and B. Grunwald, Jr. November, 2000. Genetic diversity as an ecoindicator, Invited presentation, 20th Annual SETAC National Meeting, Nashville, TN.
- Krane, D. E. December, 2000. Correlations between genetic diversity and exposure to stress, Biology Departmental Seminar, Akron University, Akron, OH.
- Krane, D. E. January, 2001. Business opportunities in the area of DNA consulting. Information Technology Research Initiative, Executive Board Meeting, Wright State University, Dayton, OH.
- Newburn, E. and D. E. Krane. March, 2001. Molecular Identification Markers of Chironomid Species for Use as an Ecoindicator of Aquatic Systems, Poster and abstract, MEEC Conference, Oxford, OH.
- Jastremski, K. and D. E. Krane. March, 2001. Genetic diversity in pill bugs at remediated and unremediated strip mines throughout Ohio, Poster and abstract, MEEC Conference, Oxford, OH.
- Walker, S., J. Amon, and D. E. Krane. April, 2001. A genetic comparison of *Lythrum salicaria* and *Lythrum vigratum*. Ohio Academy of Sciences 111th meeting, Tippin, OH.

Presentations (continued):

- Schmidt, S., D. Cipollini, and D. E. Krane. April, 2001. RAPD-PCR assessment of the genetic diversity within *Alliaria petiolata*. Ohio Academy of Sciences 111th meeting, Tippin, OH.
- Burton, G. A., M. Morris, D. E. Krane, K. Grasman, W. Carmichael, S. Berberich, D. Organisciak and J. Lucot. April, 2001. Human and environmental risk assessment related research at Wright State University. EPA/DOD special conference on toxicology, Dayton, OH.
- Krane, D. E. May, 2001. Hallmarks of research and forensic science. Third annual DePaul University Law School and Cook County Public Defenders' short course on DNA analysis, Chicago, IL.
- Krane, D. E. August, 2001. Genomes as information storage systems. Summer Institute on Advanced Computation, Wright State University, Dayton, OH.
- Krane, D. E. September 2001. Genetic diversity of naturally occurring populations as an ecoindicator. Biology Departmental Seminar, Northern Kentucky University, Highland Heights, KY.
- Krane, D. E. September, 2001. The potential and pitfalls of forensic DNA profiling. Sigma Xi Distinguished Lecturer Series, Northern Kentucky University, Highland Heights, KY.
- Krane, D. E. September, 2001. The science behind forensic DNA profiling. Engineer's Club of Dayton Sertoma lecture series, Dayton, OH.
- Doom, T, M. Raymer, D. Krane and O. Garcia. February, 2002. A proposed undergraduate bioinformatics curriculum for computer scientists. Proceedings of the 2002 ACM Special Interest Group on Computer Science Education (SIGCSE 2002), Covington, KY.
- Krane, D. E. May, 2002. Genophiler: Advantages of automated review of forensic DNA evidence. Fourth annual DePaul University Law School and Cook County Public Defenders' short course on DNA analysis, Chicago, IL.
- Krane, D. E. June, 2002. Reaching out to computer science and biology majors interested in bioinformatics – at the same time. Introducing Bioinformatics to Undergraduate Curricula Conference, hosted by Wheaton College, Norton, MA.
- Krane, D. E. March, 2003. Commercialization: Why do it? Ohio Valley Affiliates for Life Sciences, Kingsgate Conference Center, Cincinnati, OH.
- Gilder, J. R., D. E. Krane, T. E. Doom and M. L. Raymer. April, 2003. Identifying patterns in DNA change. Proceedings of the 2003 Midwest Artificial Intelligence and Cognitive Science Conference (MAICS 2003: **34**, 78-84). Cincinnati, OH.

Presentations (continued):

- Gilder, J., S. Ford, M. Raymer, T. Doom and D. Krane. September, 2003. Differences in electropherogram peak heights reported by different versions of the GeneScan software. Promega Meeting, Phoenix, AZ.
- Raymer, M. L., T. E. Doom and D. E. Krane. September, 2003. Bioinformatics: Crossing the interdisciplinary boundary. NSF grantees meeting, Washington, DC.
- Krane, D. E. October, 2003. Evaluating forensic DNA evidence. Indiana State Investigators Meeting, Indianapolis, IN.
- Krane, D. E. October, 2003. Bioinformatics education: Crossing the interdisciplinary boundary. Keynote address; Bio21: Teaching Biology with Bioinformatics, Chapel Hill, NC.
- Krane, D. E. November, 2003. Evaluating forensic DNA evidence. Virginia State Bar Association Capital Litigation Meeting, Richmond, VA.
- Krane, D. E. December, 2003. Evaluating forensic DNA evidence. Indiana Public Defender's Capital Litigation Meeting, Indianapolis, IN.
- Krane, D., M. Raymer and T. Doom. March, 2004. Bioinformatics at Wright State University. Ohio Valley Affiliates for Life Sciences, University of Louisville, Louisville, KY.
- Converse, K. and D. Krane. March, 2004. Forensic DNA testing and review. "Life in the Balance" conference and annual meeting of the National Association of Criminal Defense Lawyers, Memphis, TN.
- Krane, D. E. March, 2004. Evaluating forensic DNA evidence. Featured address for "Life in the Balance" conference and annual meeting of the National Association of Criminal Defense Lawyers, Memphis, TN.
- Krane, D. E. April, 2004. Evaluating forensic DNA evidence. "Mindful Explorations" seminar series funded by the William H. and Jean R. Reller Endowment, Indiana University East, Richmond, IN.
- Cooper, G., M. Raymer, T. Doom, D. Krane and N. Futamura. May, 2004. Indexing genomic databases. Proceedings of the 2004 IEEE international symposium on Bioinformatics and Bioengineering (BIBE), Taichung (Taiwan), p. 587-591.
- Krane, D. E. October, 2004. Forensic DNA evidence: collection, mixture and degradation. Virginia State Bar Association Capital Litigation Meeting, Richmond, VA.
- Krane, D. E. October, 2004. Evaluating forensic DNA evidence. Mississippi Public Defenders' Capital Litigation Meeting, Biloxi, MS.
- Thompson, W. C. and D. E. Krane. February, 2005. Evaluating forensic DNA evidence. National Association of Criminal Defense Lawyers Annual Meeting, featured presentation, New Orleans, LA.

Presentations (continued):

- Krane, D. E. April, 2005. Evaluating forensic DNA evidence. Cuyahoga County Capital Litigation Seminar, Cleveland, OH.
- Krane, D. E. April, 2005. The strengths and weakness of forensic DNA profiling techniques. Biology departmental seminar, John Carroll University, University Heights, OH.
- Krane, D. E. April, 2005. Deciphering the human genome with bioinformatics techniques. Café Scientifique Seminar Series, Cox Arboretum, Dayton, OH.
- Krane, D. E. May, 2005. Objective interpretation of forensic DNA testing evidence. Seventh annual DePaul University Law School and Cook County Public Defenders' short course on DNA analysis, Chicago, IL.
- Krane, D. E. and W. C. Thompson. July, 2005. Evaluating forensic DNA evidence. North Carolina Academy of Defense Lawyers, Sunset Beach, NC.
- Krane, D. E., T. E. Doom and M. L. Raymer. August, 2005. Assessing the implications for close relatives in the event of similar but non-matching DNA profiles. Fourth annual Expert Forum on the Science of DNA Profiling, University of Dayton School of Law, Dayton, OH.
- Heizer, E. and D. Krane. September, 2005. Correlation between major codon usage and amino acid biosynthetic costs in eight prokaryotic species. Wright State University Biology Department Research Forum, Dayton, OH.
- Sharma, M. and D. Krane. September, 2005. Molecular characterization of Chironomid Species and their use as bioindicators. Wright State University Biology Department Research Forum, Dayton, OH.
- Gilder, J. R. and Krane, D. E. October, 2005. Objective evaluation of DNA evidence. Indiana University East, Richmond, IN.
- Krane, D. E. October, 2005. Evaluating forensic DNA evidence: What software can and cannot do. Illinois Institute for Continuing Legal Education Death Penalty Litigation Seminars, Springfield, IL.
- Rowland, C, R. Van Trees, M. Taylor, and D. Krane. February, 2006. Was the Shawnee war chief Blue Jacket a Caucasian? 58th Annual Meeting of the American Academy of Forensic Sciences, Seattle, WA.
- Krane, D. E. March, 2006. Essential elements of a review of forensic DNA profile evidence. National Legal Aid and Defender Association National Meeting, Philadelphia, PA.
- Krane, D. E. March, 2006. Objective characterization of technical artifacts in forensic DNA profiles. Illinois Institute for Continuing Legal Education Scientific Evidence Seminars, Chicago, IL.
- Rowland, C, R. Van Trees, M. Taylor, and D. Krane. April, 2006. Was the Shawnee war chief Blue Jacket a Caucasian? Annual Meeting of the Ohio Academy of Science, Dayton, OH.

- Gilder, J. R., T. E. Doom, M. L. Raymer, K. Inman, and D. E. Krane. April, 2006. Resolution of forensic DNA mixtures. Annual Meeting of the Ohio Academy of Science, Dayton, OH.
- Krane, D. E. May, 2006. Familial searches and debating the significance of DNA database “cold hits.” Illinois Institute for Continuing Legal Education Death Penalty Litigation Seminars, Springfield, IL.
- Krane, D. E. May, 2006. GenoStat®: A user-friendly alternative to PopStats for calculating random match probabilities. Eighth annual DePaul University Law School and Cook County Public Defenders Seminar Series on DNA Analysis, Chicago, IL.
- Raiford, D. W., D. E. Krane, T. E. Doom and M. L. Raymer. July, 2006. An investigation of codon usage bias: Isolation and visualization of translation bias in organisms exhibiting multiple biases. The Ohio Collaborative Conference on Bioinformatics, Athens, OH.
- Krane, D. E., T. E. Doom and M. L. Raymer. August, 2006. Run-specific limits of quantitation and detection (an alternative to minimum peak height thresholds for DNA profile analyses). Fifth annual Expert Forum on the Science of DNA Profiling, Sinclair Center, Dayton, OH.
- Krane, D. E. September, 2006. Evaluating forensic DNA evidence. Wright State University Department of Biological Sciences departmental seminar, Dayton, OH.
- Krane, D. E. and R. Cassanova. September, 2006. Evaluating forensic DNA evidence. Indiana Public Defender’s Capital Litigation Meeting, Indianapolis, IN.
- Raiford, D. W., D. E. Krane, T. E. Doom, and M. L. Raymer. October, 2006. Isolation and visualization of codon usage biases. Proceedings of the 6th IEEE Symposium on Bioinformatics and Bioengineering, Washington, DC.

Graduate students and post-doctoral fellows mentored:

- David P. Hostler, III. 1993-1995, M.S.: The dependence of rate and mode of evolution on genomic context within primates.
- Adam P. Skepner. 1994-1996, M.S.: The application of random amplification of polymorphic DNA to phylogenetic reconstructions.
- Keri Steinbrugge. 1994-present, M. S. candidate: The role of the predominant SINE within lagomorph genomes.
- Krista E. Bloniarz. 1995-1996, M.S., non-thesis option: The application of RAPD-PCR in genome analyses.

Graduate students and post-doctoral fellows mentored (continued):

- Cynthia Kiefer. 1996-1999, M.S., non-thesis option: The influence of genome compartmentalization on nucleotide substitutions.
- Allen J. York. 1997-2000, M.S.candidate: The subfamily relationships and functional roles of repetitive elements.
- Dalana Barnett. 1997-2000, M. S. recipient: Characterization of a novel, short and highly repeated sequence in carnivores.
- Terry Oroszi. 1998-2000, M.S. candidate: Characterization of a novel, short and highly repeated sequence in pigs.
- Billy Grunwald. 1998-present, M.S. candidate: Utilization of genetic diversity measures a means of assessing terrestrial environmental impacts.
- John F. Sojda, III. 1999, post-doctoral research fellow: Sequence variation in the superoxide dismutase gene in Caribbean *Drosophila* populations.
- Emmanuel Aigbokhan. 1999-2000, post-doctoral research fellow: Utilization of genetic diversity measures a means of assessing aquatic environmental impacts.
- Lee Ott. 1999-2002, M.S. recipient: Genetic population structures of Pacific Coast herring populations exposed to anthropogenic stressors.
- Erin Newburn. 1999-2002. M.S. recipient: Molecular identification of Chironomid species.
- Balasubramanian Abiramikumar. 1999-2003. M.S. recipient: Characterization of a novel, short and highly repeated sequence in African elephants.
- Michael C. Kuneman. 2001-2003. M.S. recipient: Progress in understanding genetic diversity: The use of genetic diversity for assessment, conservation and protection purposes.
- Randall J. Loges. 2000-2003. M.S. candidate: Genetic diversity and characterization of *Hyallela azteca* from Ohio, Montana and commercial suppliers.
- Krista Jastremski. 2000-2004. M.S. recipient: Changes in genetic diversity within pill bug populations at historically impacted terrestrial sites.
- Norman Scott Blair. 2000-2004. M.S. candidate: Molecular characterization of the sex of Great Lakes birds.
- Joseph Bartozcek. 2001-present. Ph. D. candidate: Effects of habitat loss/fragmentation on Ambystomatid salamanders.
- Esley Heizer. 2003-2005. M.S. recipient: Correlation between major codon usage and amino acid biosynthetic costs in eight prokaryotic species.
- Monita Sharma, 2004-present, M.S. candidate: Molecular characterization of chironomid species.

Graduate students and post-doctoral fellows mentored (continued):

Chad Ferguson, 2004-present, Ph. D. candidate: Using chironomids for environmental impact assessment.

Nina Archie, 2004-2006, M.S. recipient: Characterization of n+4 stutter artifacts in forensic DNA profiles (non-thesis option).

Esley Heizer. 2005-present. Ph.D. candidate: Correlation between major codon usage and amino acid biosynthetic costs in prokaryotes and eukaryotes.

Peichang Shi, 2006, M.S. recipient: Gene expression patterns as an indicator of exposure to environmental stresses (non-thesis option).

Graduate thesis committees served upon:

Keri Pedly. 1993-1994. M.S. recipient.

Liang Shi. 1993-1996, Ph.D. recipient.

Melissa Goldman. 1994-1996, M.S. recipient.

Lou Li. 1994-1997, Ph.D. recipient.

Adrienne Moran. 1994-1996, M.S. recipient.

Steve Hendrix. 1994-1996, M.S. recipient.

David Brown. 1994-1996, M.S. recipient.

Michelle Malotte. 1994-1999, Ph.D. recipient.

David Ellis. 1995-2000, M.S. student.

Scott Rousch. 1995-1997, M.S. recipient.

Elizabeth Smucker. 1996-1999. M.S. recipient.

David Sternberg. 1995-2002, M.S. recipient.

Deborah Vallance. 1995-1996, M.S. student.

Andrea Alexander. 1999-2002, M.S. recipient.

Patricia Morgan. 1997-present. Ph.D. candidate.

Billy Grunwald. 1998-2001. M.S. student.

Terry Oroszi. 1998-2001. M.S. student.

Kelly Jo Peterson. 1998-2003. Ph.D. recipient.

Lee Ott. 1999-2002. M.S. recipient.

Erin Newburn. 1999-2002. M.S. recipient.

Balasubramanian Abiramikumar. 1999-2003. M.S. recipient.

Norman Scott Blair. 2000-present. M.S. candidate.

Randall Loges. 2000-present. M.S. candidate.

Graduate thesis committees served upon (continued):

Marc Greenberg. 2001-2002. Ph.D. recipient.
Michael C. Kuneman. 2001-2003. M.S. recipient.
Joseph Bartozcek. 2001-present. Ph.D. candidate.
David Paoletti. 2001-present. Ph.D. candidate.
Gina Cooper. 2001-present. Ph.D. candidate.
Jason Gilder. 2001-2003. M.S. recipient.
Sundeep “Sunny” Anand. 2001-2003. M.S. recipient.
Sharon Reilly. 2002-2004. M.S. candidate (non-thesis option).
Prashanth Athri. 2002-2004. M.S. recipient.
Balasubramanian Abiramikumar. 2002-2004. M.S. recipient.
Jeanette Frey. 2003-2005. M.S. recipient.
Esley Heizer. 2003-2005. M.S. recipient.
Doug Raiford. 2003-2005. M.S. recipient.
Jason Gilder. 2004-present. Ph.D. candidate.
Monita Sharma. 2004-present. M.S. candidate.
Chad Ferguson. 2004-present. Ph.D. candidate.
Esley Heizer. 2005-present. Ph.D. candidate.
Doug Raiford. 2005-present. Ph.D. candidate.
Peichang Shi. 2006. M.S. recipient (non-thesis option).

Undergraduate honors thesis advisees:

Carri Eagler: 1993-1996.	Libby Provci: 1994-1996.
Michelle Gnam: 1994-1996.	Jeanne Uy: 1994-1996
Michelle Lawhun: 1995-1998.	Lora Dodson: 1996-1998.
Jason Soderquist: 1997-1999.	Elizabeth Zimmer: 1998-1999.
Sarah Schmidt: 2000-2001.	Melissa Strain: 2000-2001.
Denada Sharra: 2001-2004.	Roger Fecher: 2005-2006.

Courses taught/developed:

Molecular Genetics (BIO 211). An introduction to molecular biology and genetics for majors in Biological Sciences at Wright State University. Winter, 1994 through 2006; Summer 1998 through 2006.

Courses taught/developed (continued):

Cells and Genetics (BIO 112). An introduction to biology for majors in Biological Sciences at Wright State University. (Extensively redeveloped in Summer, 1993) Fall, 1994 through 2000; 2002.

Molecular and Cell Biology Laboratory (BIO 410). An introduction to molecular and cell biology laboratory techniques for majors in Biological Sciences at Wright State University. (Developed course in Winter, 1994) Spring, 1994; (redeveloped in Spring, 2003) Spring, 2003.

Molecular Evolution (BIO 461/661). A senior/graduate level course describing the basis of evolutionary inferences using molecular data including phylogenetic reconstruction and mutational tendencies. Biological Sciences at Wright State University. (Developed course in Winter, 1995) Spring, 1996, 1997, 1999, 2001, 2004.

Population Genetics (BIO 460/660). A senior/graduate level course focusing on the statistical basis of changes in allele frequencies within populations of organisms. Biological Sciences at Wright State University. (Developed course in Winter, 1998) Spring, 1998 and 2000, 2003.

Human Genetics (BIO 426/626). A senior/graduate level course on the special considerations and approaches used to study the patterns of inheritance in humans. Biological Sciences at Wright State University. (Developed course in Winter, 2002) Spring, 2002.

Advanced Cell Biology (BMS 991/BIO 701). An advanced literature based course survey on the principles of cell structure and function for incoming biomedical sciences PhD students and graduate students in Biology. (Co-developing course in Summer, 1998) Fall, 1998 and 1999.

Introduction to Research Biology (BIO 702). A graduate level course on current research in biological sciences at Wright State University. Fall, 1993 and 1996.

Independent Studies in Biology (BIO 499). A senior level course of guided independent, laboratory research for majors in Biology. Winter, 1994 to present.

Introduction to Bioinformatics (BIO 271/CS 271). A sophomore level course that introduces computer science and biology majors to the most important algorithms and current problems in bioinformatics. Spring, 2002 through 2006.

Bioinformatics algorithms (BIO 471/CS 471). A senior level, capstone course focusing on algorithm development for biology and computer science students in the Wright State bioinformatics program. Fall, 2002 through 2006.

Courses taught/developed (continued):

Honors Genetics (BIO 119). A course featuring selected readings on genetics and evolution for Honor's students. Biological Sciences at Wright State University. (Developed course in Summer, 1994) Fall, 1994 through 2000; 2002.

Academic service at Wright State University:

Biological Sciences Molecular and Cell Biology Curriculum Development Committee, 1993 to present.

Science Apprenticeship Program for Women and Minority Students (mentor and co-investigator, Prem Batra – founding program director), 1994 to 2005.

Short Term Research Experience/Access for Minority Students (STREAMS) (faculty advisor and co-investigator, Robert Putnam – program director), 1994 to present.

Computer-assisted Learning Center Committee (elected chair), 1993 to 1996.

Ohio Science Fair Judge and Awards Presenter, 1994 to 1997.

Biological Sciences Seminar Program Committee, 1994 to present (Chair in 2005).

College of Science and Mathematics Computer Network Facilitation Committee, 1994 to 1996.

Biomedical Sciences PhD Program Nomination Committee, elected to terms running from 1994 to 1996 and from 2005 to 2007.

Developmental Biology Search Committee, 1994.

Honors and Scholarships Committee, 1995 to 2001.

Cell Biology Search Committee, 1995.

Research and Sponsored Programs Associate Director Search Committee, 1995.

University Resident Life Committee, 1995 to 1996.

Computer-assisted Learning Center Committee, 1996 to 1999.

Space and Equipment Allocation Committee, 1997 to 2000.

Faculty liaison for Wright State University's varsity baseball team, 1997 to present.

University Commencement Committee, 1998 to 2000.

University Honors' Committee, 1998 to 2001.

Biological Sciences Undergraduate Curriculum Committee, 1998 to 2001; 2003 to present.

Plant Physiologist Search Committee, 1998.

Academic service at Wright State University (continued):

College of Science and Mathematics Faculty Development Committee, elected 1999 to 2001.

Cell/Molecular Biologist Search Committee, 2000.

Information Technology Research Initiative, Research Committee, 2000 to 2004.

College of Science and Mathematics Scholarships Committee, 2000 to 2001.

College of Science and Mathematics Dean Search Committee, 2001 to 2002.

Assistant to the Director (Technology Transfer) of the Office of Research and Sponsored Programs Search Committee, 2002.

Aquatic Biologist Search Committee, 2002-2003.

University Athletics Council, elected to terms running from 2002 to 2004 and 2005 to 2006; Faculty Senate Appointee 2006 to 2007 (elected Vice-Chair in 2006 to 2007).

Athletics Council Gender Equity Committee, 2003 to present.

Athletics Council Team Liaison Committee, 2002 to present.

Athletics Council Athletic Director Review Committee, 2002-2007 (Chair in 2005-2006).

Athletics Council Constitution and By-laws Committee, 2006-2007 (Chair).

Steering Committee, College of Science and Mathematics, elected 2006 to 2007.

Court recognized expert in DNA profiling:

Missouri *vs.* Nethery (St. Charles, MO., 1991).

Iowa *vs.* Ripperger (Burlington, IA., 1992).

North Carolina *vs.* Fisher (Charlotte, NC., 1992).

Illinois *vs.* Tynes (Kankakee, IL., 1992).

Nebraska *vs.* Bundy (Columbus, NE., 1992).

North Carolina *vs.* White (Edenton, NC., 1993)

North Carolina *vs.* Jones (Winnsboro, NC., 1993).

Ohio *vs.* Honzu (Columbus, OH., 1994).

Ohio *vs.* Saylor (Urbana, OH., 1994).

Ohio *vs.* McGuire (Dayton, OH., 1994).

Ohio *vs.* Brewer (Hillsboro, OH., 1995).

South Carolina *vs.* Eubanks (Columbia, SC., 1995).

Ohio *vs.* Parks (Columbus, OH., 1995).

Ohio *vs.* Oldham (Hamilton, OH., 1995).

Court recognized expert in DNA profiling (continued):

California *vs.* Strange (Nevada City, CA., 1996).
California *vs.* Wenger (Long Beach, CA., 1996).
United States *vs.* Lowe (First Circuit, Boston, MA., 1996).
Washington *vs.* Gore (Seattle, Washington, 1996).
Virginia *vs.* Gray (Martinsville, VA., 1996).
Kentucky *vs.* Tipton (Stanton, KY., 1997).
California *vs.* Allen (Compton, CA., 1997).
Virginia *vs.* Brogan (Roanoke, VA., 1998).
Missouri *vs.* Taylor (St. Louis, MO. 1998).
Ohio *vs.* Sapp (Springfield, OH. 1998).
Missouri *vs.* White (St. Louis, MO. 1998).
Indiana *vs.* Smith (Middletown, IN. 1999).
Indiana *vs.* Jones (Vincennes, IN. 2000).
Florida *vs.* Esty (Pensacola, FL. 2000).
Indiana *vs.* Williams (Terre Haute, IN., 2001).
Minnesota *vs.* Roman Nose (St. Clair, MN., 2001).
Massachusetts *vs.* Greineder (Welsley, MA., 2001).
Indiana *vs.* Wilburn (Covington, IN, 2001).
South Dakota *vs.* Luce (Aberdeen, SD, 2002).
Minnesota *vs.* Bailey (Minneapolis, MN, 2002).
California *vs.* Howard (Los Angeles, CA, 2002).
California *vs.* Quinones (San Francisco, CA, 2002).
Minnesota *vs.* Traylor (Minneapolis, MN, 2002).
Ohio *vs.* Knott (Athens, OH, 2002).
Indiana *vs.* Guffey (Tipton, IN, 2002)
Indiana *vs.* Ward (Rockport, IN, 2002).
California *vs.* Robsinson (Sacramento, CA, 2003).
New Mexico *vs.* Arviso (Farmington, NM, 2003).
California *vs.* Cheung (Orange County, CA, 2003).
Ohio *vs.* Henderson (Athens, OH, 2003).
Ohio *vs.* Fears (Lebanon, OH, 2003).

Court recognized expert in DNA profiling (continued):

- Maryland *vs.* Daniels (Frederick and Rockville, MD, 2003).
- United States *vs.* Zephier (Sioux Falls, SD, 2003).
- Montana *vs.* Jones (Lewistown, MT, 2004).
- Indiana *vs.* Cooper (Goshen, IN, 2004).
- New Mexico *vs.* Garcia (Albuquerque, NM, 2004).
- New York *vs.* Alvarez (Schenectady, NY, 2004).
- Ohio *vs.* Hines (Cleveland, OH, 2004).
- Victoria State Coroner's Inquest into the Death of Jaidyn Leskie (Melbourne, Victoria, Australia, 2004 and 2005)
- Montana *vs.* Misner (Great Falls, MT, 2005).
- California *vs.* Avila (Orange County, CA, 2005).
- Minnesota *vs.* Bailey (Minneapolis, MN, 2005).
- United States *vs.* Jenkins (Washington DC District Court, 2005).
- Iowa *vs.* LaMasters (Waterloo, IA, 2005).
- Minnesota *vs.* Temple (Minneapolis, MN, 2005).
- Michigan *vs.* Leiterman (Ann Arbor, MI, 2005).
- Michigan *vs.* Spagnola (2nd Circuit Court of Appeals, Benton Harbor, MI, 2005).
- Ohio *vs.* McClure (Batavia, OH, 2005).
- Virginia *vs.* Davis (Norfolk, VA, 2005).
- Maryland *vs.* Derr (La Plata, MD, 2006).
- Colorado *vs.* Brownlow (Adams County, CO, 2006).
- Maryland *vs.* Odom (Prince George's County, MD, 2006).

Administrative responsibilities:

- Faculty advisor, Wright State University Biological Sciences Association. (1994 to 2002).
- Organizer and co-founder, Wright State University Molecular Biology Retreat. (1995-2003).
- Chapter president, Sigma Xi (National Scientific Honor Society). (1997-2001).
- Associate director's board member, The Engineers' Club of Dayton. (1997-2001).
- Board of Directors, Chairman, Forensic Bioinformatic Services, Inc. (2002-present).
- Gubernatorial appointee, Forensic Chemistry Representative to the Scientific Advisory Committee for the Virginia Department of Forensic Science. (appointed by Governor Mark Warner for a term of 2005-2006; reappointed by Governor Tim Kaine for a term of 2006 to 2010).

Professional service:

Featured appearances on “Court TV,” “CBS Nightly News,” “Unsolved Mysteries” and numerous appearances on all Dayton-area local TV broadcasts.

Technical consultant for “Court TV,” “CBS Nightly News,” NBC’s “Unsolved Mysteries,” CBS’s “Sixty Minutes,” CBS’s “Eye to Eye with Connie Chung,” the Gannett News Service, “Weekly Reader Magazine,” “The Washington Post,” “The Los Angeles Times” and “The Dayton Daily News.”

Reviewer for the journals: “Appraisals,” “Molecular Biology and Evolution,” “Genetics,” “Genomics,” “Journal of Molecular Evolution” “The American Biology Teacher,” “IEEE Bioinformatics,” and “Accountability in Research.”

Presiding officer, Animal Molecular Biology Section, Ohio Academy of Science 107th Annual Meeting at Miami University-Middletown, April 1998.

Review panel member, U. S. Environmental Protection Agency “Ecological Indicators Panel,” 1999, 2000, 2001, 2002 and 2004.

Review panel member, U. S. Environmental Protection Agency “Nanotechnology Panel,” 2006.

Ad hoc reviewer for the Hudson River Foundation, 2002 and 2004.

Virginia Scientific Advisory Committee Subcommittee on Familial Searches (appointed 2006 to 2007).

Professional societies:

The Academy of Science of St. Louis (1992-2003)

The American Association for the Advancement of Science (1992-present)

The Molecular Biology and Evolution Society (1992-present)

The Engineers’ Club of Dayton, OH (1993-2003)

Honorary member of Alpha Lambda Delta, National Academic Honor Society for Freshmen (1996-present)

Chapter president and member, Sigma Xi, National Scientific Honor Society (1996-2003)

International Society of Molecular Evolution (1997-present)

The Ohio Academy of Sciences (1997-present)

The American Chemical Society (2002-2004)

U.S. Patents:

Genophiler, an automated system for the review of electronic data associated with DNA profiles (application submitted, Spring, 2003).

A satisfiability approach for mixture deconvolution (provisional patent application filed, Spring 2005).