

EDWARD G. BERNSTINE, PH.D.
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CURRICULUM VITAE

PERSONAL

Date of birth: February 27, 1945 Place of birth: Philadelphia, PA U.S. Citizen

EDUCATION

University of New Haven - M.S. Forensic Science, Criminalistics - August, 1998

Forensic Internship: Westchester, NY Forensic Science Services. Extended internship (8 months) with broad exposure to trace evidence, postmortem exams, arson examination, DNA/serology, reconstruction of crime scenes, SEM, FTIR, GC/MS, impression and other physical evidence.

Gave a series of lectures suitable for educational credits to Westchester staff on molecular biology, biochemistry, statistics and genetics

Research: Identification of powerful PCR inhibitors from certain denim fabrics

Independent Study: Comparison of the informational content of fingerprints and DNA

Princeton University - Ph.D. - Biology - 1972

Specialization in biochemistry and genetics – passed examinations in both areas.

Ph.D. Dissertation: Purification and characterization of a yeast mitochondrial leucine tRNA

Temple University A.B. - Biology - 1966

POSTDOCTORAL RESEARCH

September, 1971-September, 1973 Centre de Génétique Moléculaire du CNRS

NSF–CNRS Exchange Fellow; Fellow of the *Fondation Pierre Philippe*

October, 1973-October, 1974 The Jackson Laboratory

Fellow in Genetics and Cancer

EMPLOYMENT

August 28, 2006 – present: Professor of Biology and Forensic Science, Bay Path College, Longmeadow, MA

September, 2005 – August 31, 2006: Chemist III, Massachusetts State Police Crime Laboratory Office of Alcohol Testing and special assignment with LT Charles D. Heaton, Commanding Officer of the MSP Crime Laboratory System

December, 1999 – September, 2005: Supervising Chemist III, Massachusetts State Police Crime Laboratory, Agawam Satellite Laboratory

December, 1998 – December, 1999 Chemist II, Massachusetts State Police Crime Laboratory

June, 1992-June, 1996 Fibromed, Inc. (Boston)
Chief Scientific Officer

May, 1988- April, 1991 International Biotechnology Laboratories, Inc. (Cambridge)
Vice President, R&D

April, 1986 – April, 1988 Consultant
Work performed for Granada Genetics, Inc. (Houston) and International Biotechnology Laboratories

January, 1982- March, 1986 Integrated Genetics, Inc. (Framingham)
Sr. Research Scientist, Project Manager

November, 1974- December, 1981 Biology Division, Mammalian Genetics Section Oak Ridge National Laboratory
Staff Scientist; Sr. Staff Scientist

FORENSIC TRAINING RECEIVED

Annual Training Conference – IABPA, October 4-7, 2005
Introductory Forensic Photography, Nikon (2/02)
Weapons of Mass Destruction, Massachusetts State Police Academy (1/02)
Advanced Shooting Reconstruction, 40h, Henry C. Lee Institute of Forensic Sciences (8/01)
Advanced Bloodstain Pattern Analysis, 40h, Miami-Dade Police Department (5/01)
Expert Witness Workshop, 8h, NEAFS Meeting, Mt. Snow, VT 2001
Tier II Management, 40h (5/00)
Bloodstain Pattern Analysis, 40h, Miami-Dade Police Department (3/00)
Forensic Microscopy, 40h, McCrone Research Institute (3/99)
Gunshot Residue Analysis, 40h, Massachusetts State Police Sudbury Laboratory (5/99)

Advanced Crime Scene Reconstruction, 12h, NEAFS Meeting, Hyannis, MA 1999
Robert F. Borckenstein Course on Alcohol and Highway Safety (40 hours), Indiana University, December, 2005
MSP Office of Alcohol Testing: calibration of instruments; preparation of standards; expert testimony on serum-to-blood-alcohol conversions, back- and forward-calculations of blood alcohol levels – September-October, 2005

FORENSIC TEACHING

September 1, 2006 – present: Teaching at Bay Path College: Biochemistry, Genetics, Cell & Molecular Biology, Biotechnology, Crime Scene Investigation, Forensic Biology

September, 2004 – May, 2006: Adjunct Professor of Biology at Bay Path College, Longmeadow, MA: Forensic Biology (advanced); Crime Scene Investigation; Forensic Biology (introductory), Biochemistry

Fall semester, 1998. Taught 40hr course, “Foundations of Forensic Science”, for Advanced Investigation students in the MS program in Forensic Sciences at the University of New Haven

LECTURES & PRESENTATIONS GIVEN (FORENSIC SCIENCE)

Probability and statistics – training for DNA Unit at Massachusetts State Police Crime Lab (6 lectures)
Instructor: Bloodstain Pattern Analysis School, MSPCL, March 27-31 and April 10-14, 2006
Bloodstain pattern evidence on clothing, Annual Training Conference of the International Association of Bloodstain Pattern Analysts, Santa Barbara, 2005
Genetics, DNA & Fingerprints – MSPCL, Sudbury
Biological Evidence – Springfield PD
Detective In-Service Training – Agawam - Crime Scenes 3/00, 5/00, 11/00, 1/01, 3/01, 5/01
Sexual Assault Training – Agawam Academy - 6/8/00, 5/3/01
Evidence Examinations - New Chemists - 10/26/00 and 10/27/00
Emergency Nurses Association, "Investigation of Sexual Assaults" 10/11/00
NEAFS, “Potent Inhibitors of PCR from Denim Fabrics”, 1999 Ann. Meeting
NEAFS, "Visualization of Bloodstains and Bloodstain Patterns with Fluorescein" 10/14/00
Validation of the Use of Fluorescein at Crime Scenes - Springfield PD 10/25/00
Critical Thinking in Criminalistics- MSPCL, Sudbury - 10/25/00
Respiratory Therapists, Annual Meeting April 27, 2001
Co-author – NEAFS, “Extraction of Sperm Cells and p30 from Cotton Swabs” 10/4/01
Co-author – NEAFS, “Fluorescein and Cyanoacrylate Fuming to Enhance Fingerprints in Blood”, 10/4/01
NEAFS, “Ethics of Crime Scene Reconstruction,” Plenary Session, 10/5/01
Co-author – NEAFS, “Recovery of Spermatozoa” 11/5/02
Moderator – NEAFS, Workshop on preparing for the ABC-GKE 11/7/02
Crime scene reconstruction

PROFESSIONAL ASSOCIATIONS/HONORS

Recipient of MSP Division Commander's Commendation for work on serial murders, October, 2005
American Academy of Forensic Sciences, Member, Criminalistics Section
Northeastern Association of Forensic Scientists (NEAFS)
 Organizer of Forensic Biology Presentations, 2001 Meeting
 Representative to Examination Committee of American Board of Criminalistics (2001)
 Coordinator for ABC Molecular Biology examinations
 Chairperson, Education Committee (2002)
International Association of Bloodstain Pattern Analysts
Diplomate of the American Board of Criminalistics (ABC), 12/20/00-2003
Crime Scene Analyst – Certified by IAI, 10/7/02
Senior Fellow in Forensic Sciences, Program in Psychiatry and the Law, Harvard Medical School

EXPERT TESTIMONY

Cases:

Fatal and non-fatal beatings, shootings, stabbings, strangulations; sexual assaults; hit-and-run motor vehicle incidents; motor vehicle homicides; OUI

Areas:

Bloodstain pattern analysis/crime scene procedures and reconstruction
Identification of body fluids: blood, semen, saliva, urine, fecal matter
Recognition and collection of biological and trace evidence – crime scene and laboratory examinations
Development and interpretation of gunshot residue patterns
Conversion of serum/plasma ethanol concentrations to blood-alcohol concentrations
Forward and retrograde extrapolations of blood ethanol concentrations

PUBLICATIONS

Bernstine, E.G. (1971) *Mitochondrial-specific leucine transfer RNA in Saccharomyces*, Doctoral dissertation, Princeton University

Morrison, A. *et al.* (1989). **REV3**, a *Saccharomyces cerevisiae* gene whose function is required for induced mutagenesis is predicted to encode a nonessential DNA polymerase. *J. Bacteriol.*, **171**, 5659-5667.

Reddy, V.B. *et al.* (1985). Expression of human choriogonadotropin in monkey cells using a single SV40 vector. *Proc. Nat. Acad. Sci., USA* **82**, 3644-3648.

Bernstine, E.G. (1979). Genetic control of mitochondrial malic enzyme in mouse brain. *J. Biol. Chem.* **254**, 83-87.

Bernstine, E.G. *et al.* (1978). Effect of gene dosage on expression of mitochondrial malic enzyme in the mouse *Mus musculus*. *Nature* (London) **271**, 748-750.

Bernstine, E.G., Hooper, M., Grandchamp, S. and Ephrussi, B. (1973). Alkaline phosphatase activity in mouse teratoma. *Proc. Nat. Acad. Sci. USA* **70**, 3899-3903.

Bernstine, E.G. and Ephrussi, B. (1975). Alkaline phosphatase activity in embryonal carcinoma and its hybrids with neuroblastoma. In: Sherman, M.I. and Solter, D., eds., *Teratomas and Differentiation*, pp. 271-287. New York, Academic Press.

Bernstine, E.G., Koyama, H. and Ephrussi, B. (1977). Enhanced expression of alkaline phosphatase in hybrids between neuroblastoma and embryonal carcinoma. *Somat. Cell Genet.* **3**, 217-225.

Bernstine, E.G. (1978). Satellite DNA content of chromatin fractions isolated from **EcoRI**-digested mouse liver nuclei. *Exp. Cell Res.* **113**, 205-208.

Bernstine, E.G. *et al.* (1979). Regulation of mitochondrial malic enzyme synthesis in mouse brain. *Proc. Nat. Acad. Sci., USA* **76**, 6539-6541.

Bernstine, E.G. and Koh, C.-K. (1980). A *cis*-active regulatory gene in the mouse: direct demonstration of *cis*-active control of the rate of enzyme subunit synthesis. *Proc. Nat. Acad. Sci., USA* **77**, 4193-4195.

Lustbader, J. *et al.* (1987). Characterization of the expression products of recombinant human choriogonadotropin and subunits. *J. Biol. Chem.* **262**, 14204-14212.

Abstracts

Beck, A. *et al.* (1984). Cloning and expression of cDNAs coding for human choriogonadotropin and luteinizing hormone. 7th International Congress on Endocrinology (Abstracts) p. 308.

Libonati, J. *et al.* (1995). Prevention of Increased LV Diastolic Stiffness with Collagen Cross-link Inhibition. *Circulation* **92**, I-714 [Abstract].