



INDIANA UNIVERSITY

BORKENSTEIN
COURSE

Center for Studies
of Law in Action

Curriculum Vitae
Of
J. Robert Zettl, B.S., M.P.A.

CURRICULUM VITAE

J. ROBERT ZETTL

DBA: Forensic Consultants, Inc.
Consultant in Forensic Toxicology
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UNDERGRADUATE EDUCATION

Degree	Bachelor of Science - 1964
Major/Minor	Bacteriology/Physical Chemistry
College	Pittsburg State University – Kansas

POST GRADUATE EDUCATION

Masters - Public Administration	University of Colorado - 1991
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TITLES

Fellow, American Academy of Forensic Science

AWARDS

Local Heroes Award	- Colorado Governor's DUI Task Force - 1997
R. F. Borkenstein Award	- National Safety Council - 1999
Ray Abernathy Award	- American Academy of Forensic Science Toxicology Section - 2000

CERTIFICATIONS

State of Wyoming – Peace Officers Standards and Training Commission as a
Practitioner/Lecturer in Toxicology and Breath Test Instrumentation.

State of Wyoming – Peace Officers Standards and Training Commission on the Intoximeter
EC/IR, EC/IR I and EC/IR II and Alco Sensor IV.

Publications

Clinical Ethanol Tests Can Be Used in Forensic Situations. J. Robert Zettl and Donald L. Frederick. *Clinical & Forensic Toxicology News*. September 2011.

The Review and Assessment of Methods and Technologies for Detecting and Testing Drugs in Drivers - Texas Transportation Institute Project – NHTSA Project DTNH22-07-R-00047. Project Participant/Toxicology – 2008.

Medical-Legal Aspects of Alcohol, 5th Edition, James C. Garriott Editor. Lawyers & Judges Publishing Company, Inc. 2008. Chapter 8, “Methods for Breath Analysis”, Patrick Harding, B. S. and J. Robert Zettl, BS, MPA, FABFE.

Forensic Issues in Alcohol Testing, Steven B. Karch, MD, Editor. CRC Press, Taylor and Francis Group, Boca Raton, Florida, 2007. Chapter 5, “Alcohol Determination in Point of Collection Testing”, J. Robert Zettl, BS, MPA, FABFE.

“Should a Positive THC Metabolite (THC-COOH) Found in Urine be used in a Driving Under the Influence Legal Proceeding”. ICADTS/TIAFT, Seattle, WA August 2007 Poster Presentation.

“Can a Positive THC Metabolite in Urine (THC-COOH) be used to Prove Impairment in a DUID (Driving Under the Influence of Drugs) Cannabis Case”. Society of Forensic Toxicologists, Austin, Texas October 2006 Platform Presentation.

Forensic Science Handbook, Vol. 1, 2nd Ed. Richard Saferstein Editor. Prentice Hall, 2002. Chapter 12, “The Determination of Alcohol in Blood and Breath”, Yale H. Caplan, Ph.D., DABFT and J. Robert Zettl, BS, MPA, DABFE.

Intoxication Test Evidence, 2nd Ed., Edward F. Fitzgerald Editor, Thomson & West, 2006. Chapter 36, “The Current State of Breath Testing: The Experts Comment”.

Drug Abuse Handbook, 2nd Ed., Steven Karsh, Ph.D. Editor. CRC Press, 2006. Chapter 11, Section 11.4, “Alcohol Determination in Point of Collection Testing”, J. Robert Zettl, B.S., M.P.A., DABFE.

Intoximeter EC/IR I and II and Alco-Sensor IV Operators and Senior Operators Training Curriculum. State of Wyoming Department of Health, Chemical Test Program. Cheyenne, Wyoming. On-Going Project.

Robert F. Borkenstein Course on Alcohol: Testing, Research and Litigation. Indiana University, Bloomington, IN. “Breath Test Instrumentation Current State of the Art”. On-Going Project.

The Determination of Blood Alcohol Concentration by Transdermal Measurement, A White Paper. J. Robert Zettl, BS, MPA, DABFE, 2002.

The Intoxilyzer Model 5000's Precision and Accuracy in Direct Breath Testing for Alcohol and Its Ability to Trap and Store Ethanol on Silica Gel Columns for Subsequent Retesting. The American Academy for Forensic Sciences, February 1987, San Diego, California.

Evaluation of the Intoximeters Model IR 3000 for Breath Alcohol Analysis and Storage of Breath Samples on Magnesium Perchlorate. Denver, Colorado, 1987.

A Long-Term Field Experience with Breath Ethanol Collection Employing Silica Gel. Journal of Analytical Toxicology, Vol. 10, September/October 1986.

Trapping and Storing of Ethanol on Silica Gel Columns for Subsequent Analysis Using the Intoxilyzer 4011 AS. Mid-Atlantic Conference of Forensic Scientists, Washington, D.C., May 1985.

Quantitative Determination of the Effects of Alcohol on Reaction Responses. Proceedings of the 21st Meeting of the International Association of Forensic Toxicologists, September 1984, Brighton, U.K. L. Kier, J. Kier, G. Kataoka, R. Zettl.

The Colorado Program, Trapping and Storing of Ethanol on Silica Gel Columns for Subsequent Analysis. Southwestern Association of Forensic Scientists, May 4, 1984, Phoenix, AZ.

Evaluation and Analysis of the Advantages to a State Alcohol Test Program on Trapping of Breath Alcohol Samples. Colorado Department of Health, Alcohol Test Program. J. R. Zettl, M. T. Davia, D. Dupree and K. Niswonger. 1982. Combined Forensic Science Group. Lexington, Kentucky.

The Trapping of Ethanol and Subsequent Analysis of Silica Gel Columns Using the CMI Intoxilyzer. Proceeding of the National Conference on Occupant Protection and Alcohol Countermeasures, Detroit, Michigan, April 1, 1982.

Evaluation of the ToxTrap Silica Gel Device for Trapping Breath Alcohol Samples Using the Intoxilyzer Model 4011 and 4011AS. Denver, Colorado, 1981-82.

The Trapping and Storing and Subsequent Analysis of Ethanol In-Vitro Samples Previously Analyzed by a Non-Destructive Technique. Journal of Forensic Sciences, October 1981.

Affect upon Concentration Over Time After Daily Use of a Know Breath Alcohol Concentration in a Simulator. Intoxilyzer Model 4011. Denver, Colorado, 1980.

Indium Encapsulation Research and Evaluation Study. Denver, Colorado, 1976

Evaluation of the Nalco Pressurized Breath Alcohol Device. Denver, Colorado, 1975.

Affects of Various Preservatives on Blood Alcohol Concentration After Long Term Storage, Kier Study. Denver, Colorado, 1975.

Affects of Altitude vs. Sea Level upon Breath Analyzer Results as Compared to Blood Alcohol Concentrations. Berthoud Pass, Colorado Experiment. 1974.

Affects of Sodium Fluoride Upon Blood Alcohol Concentrations when Using Headspace Chromatography as a Means of Determining Concentration. Denver, Colorado, 1973.

Colorado Department of Public Health, Laboratory Division Breath and Blood Alcohol Test Criteria. Colorado Law Enforcement Academy Training. Recruit and In-Service Staff. Golden, Colorado, 1972-80.

Colorado Breath Alcohol Program. Health Laboratory Science, Vol. 8, No. 3, July 1971.

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Technical Experience

Expert witness and forensic testimony in some 1200 plus Colorado cases on DUI/DUID related matters, reliability of SFST's and their relationship to impaired driving, BAC/BrAC levels of impairment, and reliability of tests and testing procedures by blood, urine and breath to include the practice and use of breath alcohol test results and their related analytical device.

Testimony provided in additional states: Alabama, Alaska, Arizona, California, Colorado, Florida, Georgia, Hawaii, Indiana, Kansas, Maine, Massachusetts, Mississippi, Missouri, Montana, New Jersey, New Mexico, Nebraska, New York, Oregon, Tennessee, Texas, Utah and Wyoming.

Provided training in DUI/DUID related matters to: Judicial and related court personnel; Attorney's prosecuting and defense; Law enforcement personnel and agencies; and private sector companies and their personnel in over 45 states and several foreign countries.

As Program Manager for the State of Colorado, I supervised and managed the work of multiple laboratory professionals on a daily basis who performed alcohol and drug testing and other supervisory duties as assigned by Laboratory Director. Responsible for program budget and accounting and grant preparation.

Local, state and national consultant relative to alcohol and drug testing as well as instrumentation, procedures, operation and court acceptance of alcohol drug test results on the impaired driver. Appeared before legislative committees, governor's office, federal and district courts.

Attended training courses and informational sessions on the use of individual analytical breath alcohol device at CMI, Intoximeters, National Patent and Draeger.

Instructional Experience

Certified by the State of Wyoming – Peace Officers Standards and Training Commission as a Practitioner Lecturer and instructor for their Peace Officers Training Program on the Intoximeter – EC/IR and EC/IR II and Alco Sensor IV.

“The Robert F. Borkenstein Course on Alcohol and Highway Safety: Testing, Research and Litigation”. I am presently instructing or have in the past: Blood Alcohol Determination, Breath Alcohol Instrumentation (includes all present and past generation of Breath Alcohol Testing Devices approved under DOT/NHTSA, Program Quality Assurance and Quality Control and Program Administration and Management.

Toxicology - Blood and Breath Alcohol Testing: Colorado District Attorney's Council.

Toxicology - Blood and Breath Alcohol Testing: National District Attorney's Association, American Prosecutor's Research Institute and National College for Defense.

Toxicology - Blood and Breath Alcohol Testing: Colorado and Missouri Bar Associations and New Mexico “Continuing Legal Education Seminar”.

Consulting

Member of SWG-TOX – Scientific Working Group for Forensic Toxicology since 12-16-2010.

Contract/Consultant/Expert Witness to Draeger for the State of New York since 2010.

Contract/Consultant to the State of Wyoming, Department of Health in Toxicology related matters since 2002.

Contract/Consultant to Continental Airlines in Toxicology related matters since 2006.

Contract/Consultant to Dräger to provide consultation and court testimony on the Alcotest 9510 Evidential Breath Alcohol Measurement Instrument used in the State of New York since 2010.

Consultant/Expert Witness to United States Air Force in Toxicology related matters since 2010.

Contract/Consultant to United States Airline Pilots Association in Toxicology related matters since 2010.

Consultant and scientific research/advisor to Alcohol Monitoring Systems, Littleton, Colorado and a member of the AMS Ethics Committee since 2000.

Consultant and scientific research/advisor to Indiana State Department of Toxicology, Indianapolis, Indiana 2009-2011.

Past Consultant and scientific research/advisor to Arrive Alive Technologies. Technology and research in developing an Automobile Steering Wheel Monitor for Ethyl Alcohol, which would have immobilized the vehicle prior to operation.

Consultant and scientific research/advisor to Sober Steering Sensors, LLC. Technology and research in developing an Automobile Steering Wheel Monitor for Ethyl Alcohol to immobilize the vehicle prior to operation.

Consultant and scientific research advisor to Center for Transportation Safety, Texas Transportation Institute – Texas A & M University System.

Provided consultation to USDOT, NHTSA, National Traffic Law Center/American Prosecutors Research Institute, National Association of Defense Attorney’s and various state Task Forces and other interested parties on matters related to highway safety and DUI/DUID enforcement.

Experienced with the majority of procedures used for alcohol and drug enforcement and testing. Instrumental in developing delayed breath alcohol testing procedures accepted in Colorado and other jurisdictions. Acquired skills to run gas chromatographs, I.R. devices and related laboratory equipment critical to the operation of microbiology, chemistry, and toxicology laboratories.

As a volunteer for the National Safety Council, some of my work was a coordinator for several projects and tasks. The major tasks were authoring the NSC's guidelines and documents on "Alcohol Testing in the Workplace" and co-authoring the "Breathalyzer Testing Process" for workplace testing. I have also presented numerous talks on issues related to drinking and driving at NSC Annual Meetings.

Provided training in a variety of venues such as "The Robert F. Borckenstein Course on Alcohol, Drugs and Highway Safety: Testing, Research and Litigation"; the Colorado District Attorney's Council; American Prosecutor's Research Institute; Colorado - Missouri and New Mexico "Continuing Legal Education Seminars" Bar Associations.

PROFESSIONAL EXPERIENCE

Employment History

Dates

04-98 to Present	Forensic Consultants, Inc.
04-65 to 04-98	State of Colorado Department of Public Health and Environment Division of Laboratories
07-94 to 04-98	Supervisor/Program Manager Forensic Alcohol Program

Implemented and administered the Rules and Regulations of the Colorado Board of Health relating to Chemical Tests for Alcohol and Other Drugs, 5CCR-1005-2, pursuant to Colorado Revised Statutes 1973, 42-4-1301 and 42-4-1304 as amended. Provided chemical testing and analysis for forensic samples, provided testimony, analyzed Quality Assurance and Proficiency Test Data and provided technical assistance on biological samples and devices for alcohol determinations to protect the health and welfare of citizens of the state. Designed and implemented a statewide external and internal Proficiency Test Program for certified forensic laboratory facilities. Performed all duties commensurate with that of a unit supervisor except decisions impacting pay status, and tenure of unit staff. Budgeted unit resources, monitored unit expenditures, and billed for unit work. Assured the quality of chemical and analytical test results by performing final review and interpretation prior to authorizing the release of certified equipment, reports and data. Appeared as an expert witness as a Forensic Scientist in State and Federal courts as to the pharmacology and physiology of forensic analysis performed, Standardized Field Sobriety Tests and the use of the Intoxilyzer 5000 and 5000EN.

10-92 to 07-94

**Operations Section Administrator
Forensic Laboratory Program/Alcohol Analytical Section**

Program responsibilities included the direction, management, and administration for the laboratory section that provided support functions to other sections within the Division of Laboratories. The Operations Section was comprised of Data Entry and Clerical, Central Services, Central Receiving/Storeroom, Administration, Preventive Maintenance and Calibration, Child Article Testing, Inventory Control, and General Laboratory Operations.

10-88 to 10-92

**Toxicology Section Supervisor
Forensic Drug & Alcohol Analytical Sections**

Program responsibilities as previously described with the additional assignment of Toxicology Section Administrator and Drug Test Section Chief. The Drug Unit consisted of six full time FTE's with a daily workload of 250 – 300 forensic samples. It was a full service drug-testing laboratory with TLC, G.C., EMIT, RIA, FPIA and GCMS capabilities.

07-71 to 10-88

Section/Unit Supervisor – Forensic Alcohol Program

Program responsibilities for implementing Colorado Board of Health rules and regulations relating to chemical tests for alcohol and drug testing. Supervisory duties for four full time FTE's. Administered state, federal and local grants. Guidance from Colorado statutes relative to DUI/DUID legislation. Administered budgets, data evaluation, accounting and general correspondence. Performed research and published scientific articles on alcohol and other drugs as they related to Highway Safety. Coordinated DUI and DUID activities with federal, local and state highway safety officials, law enforcement agencies, judiciary, legislature, Department of Revenue, prosecutors, defense attorneys, special interest groups such as MADD and SADD, A.D.A.D. and others.

Appeared as an expert witness as a Forensic Scientist in State and Federal courts as to the pharmacology and physiology of forensic analysis performed, Standardized Field Sobriety Tests and the use of the Breathalyzer 900, 900A & 1000; Intoxilyzer 4011, 4011AS, 5000 and 5000EN.

and

From 1987, additional responsibilities for Child Article Testing grant from the Consumer Product Safety Commission and Project Coordinator for the HIV Blinded Seroprevalence Project. HIV Program responsibilities related to the coordination and implementation of HIV testing on specimens from neonates, fatal auto crashes, I.V. drug users and other at risk groups.

12-69 to 07-71

Section Administrator

Alcohol Test & Evaluation and Consultation Programs

Directed Evaluation and Consultation Section activities. During this period initiated the Alcohol Test Program. Funding for the Alcohol Test Program was obtained by applying for a Highway Safety grant through the Governor's Highway Safety office. New program within the Division of Laboratories that consisted of instrument research, training and evaluation for DUI enforcement, law enforcement training, expert witness testimony, and research into the effects of alcohol on the central nervous system as it relates to operating a motor vehicle and the analysis of blood, breath and urine samples for alcohol and other drugs. I developed and implemented new rules and regulations for the DUI statute, CRS 42-4-12-2 and CRS 42-4-1211. As the Program Manager I had the responsibility for J.B.C. and O.S.P.B. budget preparation.

07-68 to 12-69

Section Administrator

Laboratory Evaluation and Consultation Program

Directed program having oversight of Colorado private laboratories, Public Health Laboratories and hospitals for Medicare, Medicaid and State of Colorado Certification. Evaluated laboratory procedures, provided specimen preparation, specimen analysis, data analysis and direct consultation for problem solving to participating laboratories.

04-68 to 07-68 Section Chief

Milk and Water Laboratory Program

Laboratory analysis on milk, water, food, and other environmental microbiological samples. State certification of laboratories for milk and water analysis under FDA approval.

08-66 to 04-68 Microbiologist

Streptococcal Laboratory

Testing of cultures for streptococcus. Participated in epidemiological pollution and enteric epidemiology.

**4-65 to 8-66 Junior Microbiologist
Syphilis Serology Laboratory**

Analyzed blood, serum and spinal fluids for Treponema pallidum.

Organizational Memberships

National Safety Council
National Safety Council Highway Traffic Safety Division.
National Safety Council Committee on Alcohol and Drugs
Executive Board Member - NSC/COAOD
NSC/COAOD Actions Program Subcommittee
Society of Forensic Toxicologists
American Academy of Forensic Sciences - Fellow
Southwest Association of Forensic Sciences
International Association for Chemical Testing
Southwest Association of Toxicologists
The International Association of Forensic Toxicologists
International Council on Alcohol, Drugs & Traffic Safety
Canadian Society of Forensic Scientist

Additional Activities

Inspector - HHS/NLCP
AAFS Moderator - Toxicology Section Open Forum
SOFT Moderator - Elmer Gordon Open Forum
Joint SOFT/AAFS Drugs and Driving Committee - Member
SOFT Ethics Committee - Member
County Sheriff's of Colorado, Inc. - member
NSC/COAOD Action Programs Sub-Committee Chair

PAST ACTIVITIES

American Board of Forensic Examiners
Forensic Science Review - Reviewer/Guest Editor
World Book – Guest Author
Past Inspector - CAP - FUDT
Awards Committee – AAFS – Toxicology Section
YMCA Advisory Board – Littleton Branch
SOFT – President, Vice President, Treasurer, Board Member
SWAFS Ethics Committee
SWAFS Nominating Committee
NSC/COAOD Education and Training Chairman
NSC/COAOD – Chairman - Vice-Chairman
Membership Chair – NSC – HTSD
Past Chair YMCA Advisory Board - Littleton Branch
Colorado Fiscal Managers Association
American Public Health Association (APHA)
APHA Laboratorians Section
California Association of Toxicologists
Drinking Driver Law Letter – Scientific Advisor
Vice President of Colorado Association of Public Employees - Sabin Chapter
CDPHE Laboratory Safety Committee - 1979
CDPHE Laboratory Equipment Committee - 1985-86
CDPHE Gramm-Rudman Committee - 1986
Arapahoe Community College Advisory Board for Vocational Services
CDPHE Laboratory Division Safety Officer
Past Chair YMCA Advisory Board - Littleton Branch
Fellow American Board of Forensic Examiners

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