

## Curriculum Vitae

DAVID L. BURROWS, Ph.D.

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**Contact:**

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**Profile:**

Instrumentation: •GC/MS •GC/FID •GC/NPD •GC/UV-VIS(DAD) •LC/MS/MS •EMIT  
•FPIA •ELISA •TECAN •RANDOX •AA •Combustion •UV/VIS  
Software: •Microsoft Office •LIMS (FACE, Common Sense, Labworks) •Winlab  
•ChemStation •MassHunter •Windows 95 - 10 •Macintosh OSX  
Interpersonal  
Skills: •Collaborative Problem Solving

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**Experience:**

**Radeas Laboratory** 2016-Present  
Laboratory Supervisor  
Wake Forest, NC

- ❖ Peer review, off-site laboratory management, and on-site forensic/reference laboratory development.

**Forensic Toxicology Consultant** 2013-Present  
Self Employed  
Holly Springs, NC

- ❖ Lecture on topics of pharmacology and toxicology in academic settings and in seminars that earn continuing education credits recognized by the North Carolina Bar. Review data generated from the analysis of biological samples for various substances, interpret and testify to the results as needed.

**Duke Translational Medicine Institute** 2015  
Regulatory Affairs Internship  
Durham, NC

- ❖ Review submissions including INDs, IDEs, IND Exemption Requests, IND Amendments, Study Determination Requests, pre-IND meeting briefing packets, and other FDA communications related to pharmaceuticals and medical devices.

**Chemistry Technician III** 2014  
North Carolina Department of Agriculture  
Raleigh, NC

- ❖ Received a grade of "Outstanding" on performance reviews for contributions to the laboratory workflow. Identified several issues relevant to future ISO17025 audits and improvements to analytical methods and troubleshooting analytical problems.

**Forensic Toxicologist**  
Virginia Department of Forensic Science  
Norfolk, VA 2013  
Roanoke, VA 2005-2012

- ❖ Testified as an expert witness in over 200 judicial proceedings. Received excellent performance evaluations during my entire tenure. Wrote a Microsoft Access database for inventory of drugs and Excel spreadsheet Levey-Jennings charts for QC of ethanol analysis. Performed forensic analyses of biological specimens submitted by the medical examiner's office and law enforcement agencies. Interpreted results of toxicological findings with respect to therapeutic, toxic and lethal concentrations and psychomotor effects. Consulted on a case by case basis with law enforcement agencies.

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<b>Experience:</b>	<p><b>Regulated Laboratory Director</b> 2012-2013  DrugScan, Inc.  Horsham, PA</p> <ul style="list-style-type: none"> <li>❖ Served as an integral part of the management team to relocate the entire laboratory in 48 hours. Contributed to restoring laboratory operations after an extended power outage that resulted from Hurricane Sandy. Responsibilities included evaluation and modification of current standard operating procedures for quantitative analyses on forensic specimens such that they meet with ABFT guidelines. Modification of the laboratory information management system to manage workflow within the regulated laboratory to reduce turnaround time. Validation of new instruments and equipment. Review of data and assigned additional analyses as needed.</li> </ul> <p><b>Forensic Laboratory Graduate Assistant</b> 2001-2004  Section of Toxicology, Department of Pharmacology,  James H. Quillen College of Medicine, East Tennessee State University  Johnson City, TN</p> <ul style="list-style-type: none"> <li>❖ Performed SPE and liquid/liquid extraction and analysis of various biological specimens. Interpreted results of toxicological findings with respect to therapeutic, toxic and lethal concentrations and psychomotor impairment. Supervised medical residents during their rotation in the laboratory.</li> </ul> <p><b>Graduate Teaching Assistant</b> 1998-2004  East Tennessee State University  Johnson City, TN</p> <ul style="list-style-type: none"> <li>❖ Facilitated laboratory exercises for general chemistry and medical pharmacology students.</li> </ul> <p><b>Inorganic Chemist</b> 1997-1998  Flowers Chemical Laboratory  Altamonte Springs, FL</p> <ul style="list-style-type: none"> <li>❖ Demonstrated proficiency in over 30 inorganic analyses, organic extractions, and specimen preparation using EPA, Standard Methods, and RCRA guidelines for drinking water, wastewater, sludge and soil.</li> </ul>
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<b>Academic Positions:</b>	<p><b>Substitute Teacher</b> 2015-Present  Wake County Public School System  Wake County, NC</p> <ul style="list-style-type: none"> <li>❖ Middle and High School</li> </ul> <p><b>Adjunct Professor</b> 2008-2010  Jefferson College of Health Science  Roanoke, VA.</p> <ul style="list-style-type: none"> <li>❖ Pharmacology for Health Care Professionals.</li> </ul>
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<b>Education:</b>	<p><b>Doctor of Philosophy</b> 2004  Biomedical Science/Pharmacology/Toxicology  James H. Quillen College of Medicine, East Tennessee State University  Johnson City, TN  Dissertation: <i>"Papain, A Novel Urine Adulterant"</i></p>
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<b>Education:</b>	<b>Master of Science</b> Inorganic Chemistry East Tennessee State University Johnson City, TN Thesis: <i>"The Kinetics and Mechanism of [Co(HEDTA)NO<sub>2</sub>]<sup>1-</sup> Oxidation of [Fe(CN<sub>6</sub>)]<sup>4-</sup>"</i>	2000
	<b>Bachelor of Science</b> Chemistry (ACS accredited) Florida State University, Tallahassee, FL	1997
<b>Product Development:</b>	<b>Sciteck® SVT™ Proteolytic Reagent</b> James H. Quillen College of Medicine, East Tennessee State University Johnson City, TN ❖ Primary dissertation research led to the development of a commercial reagent for specimen validity testing.	2004
<b>Academic Awards:</b>	<b>Educational Research Award (ERA)</b> Society of Forensic Toxicologists Annual Meeting Washington, DC <i>"Papain, A Novel Urine Adulterant"</i>	Aug. 2004
	<b>First Place Award</b> Southeastern Chapter of the Society of Toxicology Annual Symposium Chattanooga, TN <i>"Sevoflurane Analysis by Headspace Gas Chromatography"</i>	Oct. 2003
	<b>Third Place Award</b> Southeastern Chapter of the Society of Toxicology Annual Symposium Athens, GA <i>"A Fatal Drug Interaction Between Oxycodone and Clonazepam"</i>	Oct. 2002
<b>Societies and Professional Organizations:</b>	<b>North Carolina Attorneys for Science and Technology</b>	2016-Present
	<b>North Carolina Regulatory Affairs Forum</b>	2015-2016
	<b>Marquis Who's Who in Medicine and Healthcare</b>	2005
	<b>Marquis Who's Who in American Law</b>	2004
	<b>Society of Forensic Toxicologists</b> Professional Organization ❖ Member	2002-Present
	<b>President's Pride</b> Academic Honor Society ❖ Member/Alumnus	2004

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**Societies and Professional Organizations:**

- Alpha Chi Sigma** 1997  
 Professional Chemistry Fraternity  
 ❖ Member/Alumnus  
 ❖ Pledge Class President, 1997
- Chi Phi** 1993-1997  
 National Fraternity  
 ❖ Member/Alumnus  
 ❖ Pledge Class Vice President, 1994

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**Committees:**

- LIMS Redesign Committee** 2009  
 Virginia Department of Forensic Science  
 Roanoke, VA
- Liaison Committee on Medical Education** 2003  
 Basic Science Division  
 James H. Quillen College of Medicine, East Tennessee State University  
 Johnson City, TN

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**Community Involvement:**

- American Heart Association** 2015-Present  
 ❖ Volunteer
- South Wake County Landfill Citizen's Committee** 2015-Present  
 ❖ Volunteer
- Roanoke City Schools** 2010, 2012  
 ❖ Governor's School Science Fair Judge
- American Cancer Society** 1998-2007  
 ❖ Relay for Life Volunteer  
 ❖ Team Captain
- Ronald McDonald House** 2004, 2011  
 ❖ Volunteer
- Human Society** 1995  
 ❖ Volunteer

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**Publications:**

- Burrows DL**, Nicolaidis A, Rice PJ, Duffourc M, Johnson DA, Ferslew KE.  
*"Papain, A Novel Urine Adulterant"* J. Analytical Toxicology. 2005  
 July/August;29(5): p.275-295
- Burrows DL**, Nicolaidis A, Stephens GC, Ferslew KE.  
*"Sevoflurane Analysis in Various Biological Matrices by Headspace Gas Chromatography"* J. Analytical Toxicology. 2004 September;28(5): p.418-421

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- Publications:** **Burrows DL**, Hagardorn AN, Stephens GC, Ferslew KE.  
Two Commentary Rebuttals to: *"A Fatal Drug Interaction Between Oxycodone and Clonazepam"* J. Forensic Sci. 2004 May; 49(3): p.641-644
- Burrows DL**, Nicolaidis A, Stephens GC, Ferslew KE.  
*"The Distribution of Sevoflurane in a Sevoflurane Induced Death"* J. Forensic Sci. 2004 March;49(2): p.394-397
- Burrows DL**, Hagardorn AN, Harlan GC, Wallen ED, Ferslew KE.  
*"A Fatal Drug Interaction Between Oxycodone and Clonazepam"* J. Forensic Sci. 2003 May;48(3): p. 683-686
- Burrows DL**, Hagardorn AN, Harlan GC, Wallen ED, Ferslew KE.  
Abstract for *"GC/MS Method for the Detection of Citalopram in Biological Matrices"* J. Analytical Tox. 2003 April; 27: p. 179-180
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- Presentations:** **Forensic Science: Two Very Different Paths to a Common Goal** Sept. 2015  
2nd Annual DWI & DUI Advocacy for North Carolina & South Carolina Practitioners  
Myrtle Beach, SC
- Witness in "Trial of a DWI Blood Case"** Mar. 2015  
North Carolina Continuing Legal Education Seminar  
Cary, NC
- Opiates and Driving** Dec. 2014  
North Carolina Continuing Legal Education Seminar  
Fayetteville, NC
- DUI/DUID** Aug. 2008  
New River Criminal Justice Training Academy  
Pulaski, VA
- Toxicology at the Virginia Department of Forensic Science of Forensic Science** Apr. 2007  
Roanoke County Police Academy  
Roanoke, VA
- Accidental Deaths Involving Cocaine and Methadone in Virginia** Oct. 2006  
Society of Forensic Toxicologists Annual Meeting  
Austin, TX
- Toxicology at the Virginia Department of Forensic Science** Sept. 2006  
Roanoke County Police Academy  
Roanoke, VA
- Papain, A Novel Urine Adulterant** Aug. 2004  
Society of Forensic Toxicologists Annual Meeting  
Washington, DC
- From Coughing to Coffin, Dextromethorphan Abuse** Apr. 2004  
James H. Quillen College of Medicine, East Tennessee State University  
Johnson City, TN

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<b>Presentations:</b>	<b>Sevoflurane Analysis in Various Biological Matrices by Headspace Gas Chromatography</b>	Oct. 2003
	James H. Quillen College of Medicine, East Tennessee State University Johnson City, TN	
	<b>The Distribution of Sevoflurane in a Sevoflurane Induced Death</b>	Oct. 2003
	James H. Quillen College of Medicine, East Tennessee State University Johnson City, TN	
	<b>A Fatal Drug Interaction Between Oxycodone and Clonazepam</b>	Oct. 2002
James H. Quillen College of Medicine, East Tennessee State University Johnson City, TN		
<b>GC/MS Method for the Detection of Citalopram in Biological Matrices</b>	Oct. 2002	
James H. Quillen College of Medicine, East Tennessee State University Johnson City, TN		
<b>Endogenous Cannabinoids and Their Receptors</b>	Apr. 2002	
James H. Quillen College of Medicine, East Tennessee State University Johnson City, TN		

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**Continuing Education**

<b>Workshops:</b>	<b>Leading At All Levels / Ethics</b>	Aug. 2014
	North Carolina State Employee / Information Technology Raleigh, NC	
	<b>QQQ LC/MS Techniques and Operation</b>	Jul. 2011
	Agilent Technologies Roanoke, VA	
	<b>Mapping and Exhumation of Clandestine Burials</b>	Jun. 2010
	RTI International in collaboration with the National Institute of Justice Internet Collaborative Workshop	
	<b>Concentrations of Oxymorphone in Postmortem Fluids and Tissues</b>	Jun. 2009
	RTI International in collaboration with the National Institute of Justice Internet Collaborative Workshop	
<b>Uncertainty Measurement in Forensic Toxicology</b>	Feb. 2009	
RTI International in collaboration with the National Institute of Justice Internet Collaborative Workshop		
<b>SOP Writing for ISO 17025 Accreditation</b>	Nov. 2008	
RTI International in collaboration with the National Institute of Justice Internet Collaborative Workshop		
<b>To Hell and Back: The Ethics of Stewardship and the Stewardship of Ethics</b>	Nov. 2008	
RTI International in collaboration with the National Institute of Justice Internet Collaborative Workshop		

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**Continuing  
Education**

<b>Workshops:</b>	<b>Best Practices for Volumetric Measurement</b> RTI International in collaboration with the National Institute of Justice Internet Collaborative Workshop	Oct. 2008
	<b>Opioids and Pain Management</b> RTI International in collaboration with the National Institute of Justice Internet Collaborative Workshop	Jun. 2008
	<b>Expert Testimony II</b> RTI International in collaboration with the National Institute of Justice Internet Collaborative Workshop	May 2008
	<b>Z-Drugs</b> RTI International in collaboration with the National Institute of Justice Internet Collaborative Workshop	May 2008
	<b>Expert Testimony I</b> RTI International in collaboration with the National Institute of Justice Internet Collaborative Workshop	Apr. 2008
	<b>LC/MS/MS</b> RTI International in collaboration with the National Institute of Justice Internet Collaborative Workshop	Apr. 2008
	<b>Addiction and Pain Management for Forensic Toxicologists – Update on Drug Therapy, Clinical and Forensic Toxicology and the Emerging Role of Pharmacogenomics</b> Society of Forensic Toxicologists Annual Meeting Austin, TX	Oct. 2006
	<b>Principles of Forensic Toxicology</b> Society of Forensic Toxicologists Annual Meeting in collaboration with the Federal Bureau of Investigation and the International Association of Forensic Toxicologist Washington, D.C.	Aug. 2004
	<b>Drug Facilitated Sexual Assault</b> Society of Forensic Toxicologists Annual Meeting in collaboration with the Federal Bureau of Investigation and the International Association of Forensic Toxicologists Washington, D.C.	Aug. 2004
	<b>Chemical, Biological, and Nuclear Threat: Challenges for the Toxicologist</b> Society of Forensic Toxicologists Annual Meeting Portland, OR	Oct. 2003
	<b>Protecting Lives, Saving Futures</b> Tennessee District Attorney General Conference Greenville, TN	Mar. 2003
	<b>Pharmacology and Toxicology of Brain Drugs</b> Society of Forensic Toxicologists Annual Meeting Dearborn, MI	Oct. 2002

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**Continuing  
Education**

**Workshops:** **Liposomal Delivery of alpha-Tocopherol, Therapy for Mustard Gas  
Poisoning**

Aug. 2001

James H. Quillen College of Medicine  
East Tennessee State University  
Johnson City, TN

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**References:** Available upon request.