

## Andrew M. Mullins, M.S.

### EDUCATION

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**University of Minnesota, Twin Cities, Minneapolis, MN** *November 2016*  
M.S. Chemistry

**Grinnell College, Grinnell, IA** *May 2011*  
B.A. Chemistry and Russian

### EXPERIENCE

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**CBI Biological Sciences Section - Toxicology** *February 2020 - Present*  
Forensic Scientist/Laboratory Agent

**ChemaTox Consulting** *October 2019 - January 2020*  
Forensic Toxicologist

- Expert consulting and testimony related to: toxicological testing methods including reliability, and accuracy of results; the review of toxicology results, and associated interpretation of the results, as they relate to a specific case; the effects of drugs, including alcohol, on the human body with a focus on impairment relating to the performance of tasks such as the ability to operate a motor vehicle.

**ChemaTox Laboratory, Inc.** *January 2018 - September 2019*  
Forensic Toxicologist

- Provide services to governmental and private agencies for analysis of bodily fluids and tissues for alcohol, drugs and other toxic substances. Responsible for quantitative analysis of blood, urine and other bodily fluids for the presence of alcohol and other volatiles using Headspace Gas Chromatography-Flame Ionization Detection (GC/FID). Perform quantitative analysis on blood and other bodily fluids for the presence of drugs and other chemical substances using Gas Chromatography/Mass Spectrometry (GC/MS) and Ultra Performance Liquid Chromatography/Tandem Mass Spectrometry (UPLC/MS/MS). Provide expert testimony on alcohol analysis and the effects of drugs on human performance.

**Rm3 Labs** *February - December 2017*  
Lead Analyst, Pesticides

- Analyzed a wide variety of samples via HSGC/MS, HPLC, and LC/MS/MS
- Followed GLP standards in a regulated laboratory while performing all tests and experiments
- Performed wet chemistry analysis of a variety of food products including QuEChERS extractions
- Tasked with the regular maintenance and troubleshooting on laboratory equipment including HPLC and GC/MS

**Cargill Industrial Specialties***October 2014 - June 2016*

Chemist

- Analyzed seed oil, asphalt, and other products using GC, GC/MS, HPLC
- Developed and analyzed novel asphalt additives using GPC, iatrosan, and DSR
- Followed GLP standards while performing all tests, experiments, and studies
- Utilized LIMS on a daily basis to track all experiments and data from instrument analyses
- Maintained and performed troubleshooting on laboratory equipment including GPC, GC/MS, and iatrosan

**University of Minnesota: Twin Cities Hoyer & Hillmyer Labs***Fall 2011 - September 2015*

Research Assistant

- Developed novel polymers from renewable resources i.e. soybean oil-based polyurethanes as well as thermoplastic elastomers via RAFT
- Completed a multi-step synthesis of a small molecule for use as a novel RAFT initiator
- Analyzed key intermediates using an Agilent LC/MS and GC/MS and final polymers with a Waters GPC with light scattering and RI capabilities.
- Maintained and performed troubleshooting on laboratory equipment including LC/MS, MPLC, and vacuum pumps

**University of Minnesota: Twin Cities Professor Jane Wissinger***Fall 2011 - Spring 2013*

Organic Chemistry Teaching Assistant

- Facilitated inquiry-based learning in undergraduate laboratory setting
- Modeled proper laboratory techniques to reinforce student understanding and ensure safety
- Designed and led discussions on key chemistry principles to promote engagement
- Collaborated to develop new laboratory experiment for undergraduate coursework

**PRESENTATIONS****Toxicology 101 - Assistant Presenter***May 31<sup>st</sup> 2018,  
May 9<sup>th</sup> 2018*

Arvada Police Department

- A training presentation on the basics of drug and alcohol testing, results interpretation and a brief overview of ChemaTox services.

**Halide Abstraction of Hydrido-Tungstenocene Tin Complexes  
(poster)***2009*

ACS National Convention, Anaheim, CA

**CONTINUING EDUCATION****The Robert F. Borckenstein Course on the Effects of Drugs on  
Human Performance and Behavior***September 23<sup>rd</sup>-27<sup>th</sup> 2019*The Center for Forensic Science Research & Education, Long  
Beach, CAThrough the Indiana University Robert F. Borckenstein Center for Studies of Law in  
Action and The Center for Forensic Science Research & Education**Topics:** DUID and Overview of Approaches to Drug Impaired Driving Casework;  
Drug Recognition Expert (DRE) Program and Validation Studies; Principles of Phar-

macology and Drug Effects - Stimulants, Hallucinogens, Cannabinoids, Opiates, Benzodiazepines, and CNS Depressants; Effects on Human Performance and Behavior - Cocaine, Methamphetamine, Hallucinogens, "Bath Salts", Cannabis, Synthetic Cannabinoids, Opiates, Carisoprodol, Butalbital, Topiramate; Effects on Cognitive Function and Actual Driving - MDMA, NPS and Other Stimulants; On-Road Driving Studies - Cannabis, CNS Depressants: Antidepressants and Anxiolytics; Benzodiazepines, Zolpidem, and other Imidazopyridines and Driving Impairment; Online Resources and Literature Searching for Drug-impaired Driving; National Trends in DUID Laws; National Safety Council Recommendations for Drug Testing in DUID Investigations; Legalizing Cannabis in Canada: Implications for Drugged Driving; Forensically Defensible Drug and Alcohol Testing in DUID - Laboratory Aspects; Presenting Drug Impairment Evidence in Court - Prosecution Perspective, Defense Perspective, and Toxicologist Perspective.

### **Arapahoe County Sheriff's Office SFST Training**

*February 1<sup>st</sup> 2019*

Centennial, CO

- Participated in training session for junior officers on Standardized Field Sobriety Tests. Volunteers imbibed alcohol at a documented rate or were controls and then were administered Standardized Field Sobriety Tests by junior officers.

### **Drug Impaired Driving**

*September 26<sup>th</sup> 2018*

Fort Collins, CO

- Emerging Drug Trends, Drug Impaired Driving Investigations, Advanced Toxicological Testing Services, Trial Tactics

### **The Robert F. Borckenstein Course on Alcohol and Highway Safety: Testing, Research and Litigation**

*May 13<sup>th</sup>-18<sup>th</sup> 2018*

Bloomington, IN

Through the Indiana University Robert F. Borckenstein Center for Studies of Law in Action and The Center for Forensic Science Research & Education

**Topics:** Historical Perspective on Forensic Alcohol Analysis; Pharmacology and Physiology of Alcohol; Chemistry and Biochemistry of Alcohol; Forensic Pharmacokinetics of Ethanol; 0.08 The Film that Changed a Nations' Law; Blood Alcohol Analysis: Theory and Practice; Breath Alcohol Instrumentation: Theory and Practice; Behavioral and Performance Effects of Alcohol on Driving; Approaches to Widmark Calculations; Practice and Pitfalls of Retrograde Extrapolation; Predicting Impairment: The Role of BAC and Complexity of the Driving Task Impairment; Principles and Applications of Standardized Field Sobriety Tests; Distribution of Ethanol between Blood and other Biological Specimens from Living and Deceased Persons; Basic Principles of Mathematics and Statistics in Alcohol Toxicology; The Changing Landscape: Standards in the Forensics Laboratory; Uncertainty of Measurement Determination in Blood and Breath Alcohol Testing; The Legal Framework for DUI - Constitutional Issues and Case Law; Analysis and Response to Defense Challenges in Forensic Alcohol Testing; The Confrontation Clause and Scientific Testimony; Expert Testimony: Basic Principles; Discussion - Expert Testimony: Practical Considerations

**AFFILIATIONS**

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**Front Range Forensic Chemist Association (FRFCA)***Since September 2018***International Association of Chemical Testing (IACT)***Associate Member***Society of Forensic Toxicologists***Associate Member*