



NAME:	Haley Melbourn	DATE:	8/23/2024
LABORATORY:	Houston Forensic Science Center		
JOB TITLE:	Forensic Scientist - Toxicology		

Indicate all disciplines in which you do casework:

<input type="checkbox"/>	Seized Drugs	<input type="checkbox"/>	Forensic Biology/DNA
<input type="checkbox"/>	Crime Scene	<input type="checkbox"/>	Latent Prints
<input type="checkbox"/>	Digital Forensics	<input checked="" type="checkbox"/>	Toxicology
<input type="checkbox"/>	Firearms	<input type="checkbox"/>	Forensic Audio/Video

List all categories or sub-disciplines in which you do casework:

Human Performance Toxicology: Alcohol Analysis, Drug Screen by Immunoassay, Drug Screen and Qualitative Confirmation by GC-MS

Texas Forensic Science Commission (TFSC) Licensing

Per TFSC section 651.203, starting January 1, 2019, the following disciplines are subject to licensing: Seized Drugs, Toxicology, Forensic Biology & Firearms/Toolmarks. If applicable, select the type of license issued by TFSC (Select N/A if not applicable):

Type of License:	Toxicologist (Interpretive)
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Certifications:

Organization	Discipline	Type/Level (N/A if not applicable)
N/A	N/A	N/A

Education:

List all higher education institutions attended (list high school if no college degree has been attained)

Institution	Dates Attended	Major	Type of Degree Earned
Cedar Crest College	08/2017-05/2020	Forensic Science	Master of Science
Western New England University	08/2013-05/2017	Forensic Chemistry	Bachelor of Science

Other Training:

List continuing education, workshops, in service, and other formal training received. Please include the course title, source, and dates of training.

<ul style="list-style-type: none"> • SOFT Annual Meeting (Society of Forensic Toxicologists, Denver, CO, October 30, 2023- November 3, 2023) <ul style="list-style-type: none"> ○ Workshop 2: The Human Brain and Factors Affecting the Neurobiological Development from Adolescent to Adulthood Exploring the Intersection of Mental Illness, Addiction, and the Role of Laboratory Science (October 30, 2023) ○ Workshop 12: Drug-Facilitated Crimes Analytical Approaches/Drug Demographics – Overview – 2023 (October 31, 2023)



- Workshop 16: Career Development and Leadership Techniques for the Forensic Toxicologist (October 31, 2023)
- Advanced Roadside Impaired Driving Enforcement (ARIDE) Training Course (Houston Police Department, October 11-12, 2023)
- Florida TSRP DRE/DUI Webinar Series (Florida TSRP, January 4, 2023-May 3, 2023)
- Overview of the Advanced Roadside Impaired Driving Enforcement (ARIDE) Program (Houston Forensic Science Center, November 16, 2022)
- 2022 Testimony Training (Houston Forensic Science Center, October 27, 2022)
- Analytical, Interpretive, and Legal Issues Surrounding THC Analogs in Casework Webinar (American Association for Clinical Chemistry, August 9, 2022)
- The Evaluation and Certification of Drug Caused and Related Deaths for Pathologists, Toxicologists and Death Investigators: Module II – 2022. (CFSRE, April 20-22, 2022)
- 2022 TIAFT Virtual Meeting: Around the World in 80 Talks. (The International Association of Forensic Toxicologists, February 1-3, 2022)
- Introduction to Pharmacology (Houston Forensic Science Center, January 19, 2022)
- Moving on from Xanax: Impaired Driving with Novel Benzodiazepines Webinar (National Association of Prosecutor Coordinators, January 11, 2022)
- Autumn 2021 IACFT Virtual Meeting (International Alliance of Clinical and Forensic Toxicologists/CFSRE, November 2-4, 2021)
- Introduction to Expert Witness Testimony (Society of Forensic Toxicologists, June 14, 2021)
- 2021 Current Trends in Forensic Toxicology (International Alliance of Clinical and Forensic Toxicologists/CFSRE, June 1, 2021)
- The Robert F. Borkestein Course on Alcohol and Highway Safety: Testing, Research, and Litigation – Virtual (Indiana University, May 18-20 and 25-27, 2021)
- 2020 TIAFT Education Symposium (The International Association of Forensic Toxicologists, December 20, 2020)
- TFSC Legal and Professional Responsibility Course (Texas Forensic Science Commission, October 29, 2020)
- SOFTember Virtual Program (Society of Forensic Toxicologists, 2020)
- AAFS Annual Meeting (American Academy of Forensic Sciences, Anaheim, CA, 2020)
- NEAFS Annual Meeting (Northeastern Association of Forensic Scientists, Lancaster, PA, 2019)
- NEAFS Annual Meeting (Northeastern Association of Forensic Scientists, Bolton Landing, NY, 2018)
- NEAFS Annual Meeting (Northeastern Association of Forensic Scientists, Atlantic City, NJ, 2016)

Courtroom Experience:

List the disciplines/sub-disciplines in which you have testified as an expert witness and indicate over what time period and approximately how many times you have testified in each.

Discipline or Sub-Discipline	Time Period	Times Testified
Toxicology – Alcohol Analysis	January 2022 – Present	4



Professional Affiliations:

List any professional organizations of which you are or have been a member. Indicate any office(s) or positions held and the dates of these activities.

Organization	Member Status & Position(s) Held	Dates of Membership
Society of Forensic Toxicologists	Full Member	01/09/2024 – Present

Employment History:

List all scientific or technical positions held, particularly those related to forensic science. List current position first. Be sure to indicate employer and give a brief summary of duties. Please list your dates of employment by month and year.

Job Title:	Forensic Scientist – Toxicology	Dates of Employment:	08/2020 – Present
Employer:	Houston Forensic Science Center		

Provide a brief description of duties below:

Perform the following analyses on blood and urine samples (or liquid samples*):

- Analysis of Alcohol and Other Volatiles by Headspace GC-FID
- Analysis of 1,1-difluoroethane by Headspace GC-FID
- Drug Screen by Enzyme-Linked Immunosorbent Assay (ELISA)
- Drug Screen and Qualitative Confirmation by GC-MS

Review analytical data and draft technical reports related to the above analyses.

Provide court testimony pertaining to the results of the above analyses. Additionally provide court testimony pertaining to the interpretation of alcohol results, including retrograde extrapolation and Widmark calculations.

Perform batch technical review for the following techniques:

- Analysis of Alcohol and Other Volatiles by Headspace GC-FID**
- Analysis of 1,1-difluoroethane by Headspace GC-FID**
- Drug Screen by Enzyme Linked Immunosorbent Assay (ELISA)

*** Additionally perform case report technical and administrative review*

Job Title:	Graduate Assistant	Dates of Employment:	08/2017 – 04/2019
Employer:	Cedar Crest College – Forensic Science Program		

Provide a brief description of duties below:

Performed weekly maintenance and quality checks on the following instruments: GC-MS, GC-FID, HS-GC-FID, and FTIR; participated in corrective action when required. Demonstrated and observed undergraduate and graduate student use of FTIR, Raman microscope, UV-Visible spectrophotometer, GC-MS, GC-FID, and HS-GC-FID instruments. Prepared mock case samples and reagents for graduate level Forensic Chemistry and Toxicology Laboratory course.



Other Qualifications:

List below any scientific papers authored or co-authored and/or scientific presentations given, research in which you have been involved, academic or teaching positions you have held, and any other information you consider relevant to your qualification as a forensic scientist.

Publications Authored:

- Melbourn, H.; Brettell, T.A.; Maldonado, H.; Staretz, M.E.*. Development of a Raman microspectrophotometric method to quantitate carboxyhemoglobin in blood. *Journal of Raman Spectroscopy*. 2020.
- Melbourn, H.; Smith, G.; McFarland J.; Rogers M.; Wieland, K.; DeWilde, D.; Lighthart, S.; Quinn, M.; Baxter, A.; Quarino, L.*. Mandatory certification of forensic science practitioners in the United States: A supportive perspective. *Forensic Science International: Synergy*. 2019.

Scientific Presentations:

- Melbourn, H.; Johnson, A.; Rodgers, C.; Stout, P.; Lee, D. Long-term Volatile Stability in Whole Blood Containing Different Additives and Assessment for Isobutylene Interference in BD Vacutainer® Tubes. *Society of Forensic Toxicologists Annual Meeting, Poster Session*. Denver, CO. 2023.
- Johnson, A.; Melbourn, H.; Stout, P.; Lee, D. Evaluation of Volatile Stability in Whole Blood Containing Different Additives. *Society of Forensic Toxicologists Annual Meeting, Poster Session*. Cleveland, OH. 2022.
- Melbourn, H.; Staretz, M.; Maldonado, H.; Brettell, T. Developing a Raman Microspectrophotometric Method to Quantitate Carboxyhemoglobin (COHb) in CO-Exposed Blood Samples. *American Academy of Forensic Sciences, Annual Meeting, Toxicology Section*. Anaheim, CA. 2020.
- Melbourn, H.; Staretz, M.; Maldonado, H.; Brettell, T. Developing a Raman Microspectrophotometric Method to Quantitate Carboxyhemoglobin (COHb). *Northeastern Association of Forensic Scientists, Annual Meeting, Toxicology Session*. Lancaster, PA. 2019.
- Melbourn, H.; Staretz, M.; Maldonado, H.; Brettell, T. Developing a Method to Quantitate Carboxyhemoglobin (COHb) Using Raman Microspectrophotometry. *Northeastern Association of Forensic Scientists, Annual Meeting, Poster Session*. Bolton Landing, NY. 2018.

Teaching Positions Held:

- Adjunct Professor, *Cedar Crest College Department of Chemical and Physical Sciences*
 - Survey of Organic Chemistry Laboratory (Fall 2018)
 - Organic Chemistry II Laboratory (Summer 2019)
 - Chemical Equilibria and Analysis Laboratory (Summer 2019)
 - Concepts in Chemistry Laboratory (Fall 2019)