

IAN ANTHONY

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EDUCATION

BAYLOR UNIVERSITY	2015–2020 (EST.)
Ph.D. in Chemistry, Analytical Division Advisor: Dr. Touradj Solouki	
UNIVERSITY OF UTAH	2008–13
B.S. in Philosophy B.S. in Chemistry, Biological Emphasis, ACS Certified	
DIXIE STATE COLLEGE	2006–08

EMPLOYMENT

BAYLOR UNIVERSITY	2015–PRESENT
Mass Spectrometry Center Teacher of Record 2016–Present	
<ul style="list-style-type: none">Analyzed samples provided to the Mass Spectrometry CenterTrained users on liquid chromatographs and mass spectrometersWrote and taught hands-on lessons on <i>de novo</i> peptide sequencingTaught lessons in collaboration with Organic and Inorganic professors	
General Chemistry (II) Teacher of Record Fall 2015	
<ul style="list-style-type: none">Educated students on basic laboratory techniques and safety procedures	
Instrumental Analysis Teacher of Record Spring 2018	
<ul style="list-style-type: none">Instructed students on the use of HPLC, GC, CE, and MS instrumentation	
WESTECH ENGINEERING, INC.	2008–15
Laboratory Technician 2014–15	
<ul style="list-style-type: none">Determined properties of wastewater samplesTraveled to provide rapid, on-site response to customer needs	
Pilot Plant Operator & Laboratory Manager 2013–14	
<ul style="list-style-type: none">Managed laboratory team to determine concentrations of chemicals	
Engraving Manager 2009–10	
<ul style="list-style-type: none">Coordinated with engraving team to produce signage using engraving machinesCommunicated with customers to ensure satisfactory results	
Document Imaging Specialist 2008–13	
<ul style="list-style-type: none">Built and maintained a database of documents	

RESEARCH EXPERIENCE

BAYLOR UNIVERSITY

2015–PRESENT

Graduate Researcher in Dr. Touradj Solouki's Research Group

2015–Present

- Developed custom mass spectrometry instrumentation
- Authored custom software for deconvolution of spectroscopic data
- Combined gas-phase concentration, separation, and detection techniques
- Devised and characterized methods for analyzing complex mixtures

Mass Spectrometry Center Researcher

Spring 2016

- Quantified concentration of BAIBA and other metabolites in human serum samples
- Collaborated with multiple research groups for successful publication

Student Mentor

2016–Present

Mentored undergraduate students Adam R. Floyd (2016–2018), Christina A. Gaw (2016–Present), Shubhneet Warar (2018–Present), and Annie Arvidson (2018–Present) in instrument and experiment design, laboratory procedures, technical writing, and data analysis

PUBLICATIONS

Anthony, I. G. M.; Brantley, M. R.; Floyd, A. R.; Gaw, C. A.; ; Solouki, T. “Library-Integrated SIMPLISMA-ALS Deconvolution of Gas Chromatography-Vacuum Ultraviolet Absorption Spectroscopy Data” *Submitted for Review to Analytica Chimica Acta*

Spiegel, M.; **Anthony, I. G. M.**; Brantley, M. R.; Alton, C. H.; Farmer, P. J.; Solouki, T. “Reactivities of Aromatic Protons in Crude Oil Fractions Toward Br₂ Tagging for Structural Characterization by NMR and EPR Spectroscopy and Mass Spectrometry” *Energy & Fuels* **2018**, *32* (10), 10549–55

Anthony, I. G. M.; Brantley, M. R.; Floyd, A. R.; Gaw, C. A.; Solouki, T. “Improving Accuracy and Confidence of Chemical Identification by Gas Chromatography/Vacuum Ultraviolet Spectroscopy-Mass Spectrometry: Parallel Gas Chromatography, Vacuum Ultraviolet, and Mass Spectrometry Library Searches” *Analytical Chemistry* **2018**, *90* (20), 12307–13

Anthony, I. G. M.; Brantley, M. R.; Gaw, C. A.; Floyd, A. R.; Solouki, T. “Vacuum Ultraviolet Spectroscopy and Mass Spectrometry: A Tandem Detection Approach for Improved Identification of Gas Chromatography-Eluting Compounds” *Analytical Chemistry* **2018**, *90* (7), 4878–85

Morales, F.; Forsse, J.; Andre, T.; McKinley-Barnard, S.; Hwang, P.; **Anthony, I. G.**; Tinsley, G.; Spillane, M.; Grandjean, P.; Ramirez, A.; Willoughby, D. “BAIBA Does Not Regulate UCP-3 Expression in Human Skeletal Muscle as a Response to Aerobic Exercise” *Journal of the American College of Nutrition* **2016**, *36* (3), 200–9

PRESENTATIONS

Anthony, I. G. M.; Spiegel, M. T.; Warar, S.; Arvidson, A.; Solouki, T. “Speciation of asphaltenes using mass-deficient tagging mass spectrometry and metal-reduced nuclear magnetic resonance spectroscopy” *67th ASMS Conference on Mass Spectrometry and Allied Topics*, Atlanta, GA, June 4th, **2019** (Poster)

Warar, S.; **Anthony, I. G. M.**; Gaw, C.; Solouki, T. “Populating a Vacuum Ultraviolet Spectroscopy Library using Tandem GC/VUV-MS and Chemometric Deconvolution of Real-World Sample Data” *67th ASMS Conference on Mass Spectrometry and Allied Topics*, Atlanta, GA, June 3rd, **2019** (Poster)

Arvidson, A.; **Anthony, I. G. M.**; Spiegel, M. T., Warar, S.; Solouki, T. “Inductively-Coupled Plasma-Mass Spectrometry Characterization of Asphaltene Metals Pre- and Post-Cleanup for Enhanced Nuclear Magnetic Resonance Spectroscopy Results” *67th ASMS Conference on Mass Spectrometry and Allied Topics*, Atlanta, GA, June 4th, **2019** (Poster)

Spiegel, M.; **Anthony, I. G. M.**; Warar, S.; Arvidson, A.; Sasmal, A.; Farmer, P.; Solouki, T. “New insights in crude oil using MS, NMR, and EPR” *67th ASMS Conference on Mass Spectrometry and Allied Topics*, Atlanta, GA, June 4th, **2019** (Poster)

Warar, S.; **Anthony, I. G. M.**; Solouki, T. “Automated Sample Analysis Using Vacuum Ultraviolet Automated Library-Integrated Deconvolution (VALID)” *Capital of Texas Undergraduate Research Conference*, Austin, TX, November 3rd, **2018** (Oral)

Gaw, C. A.; **Anthony, I. G. M.**; Floyd, A. R.; Solouki, T. “A Triple-Domain Gas Chromatography-Vacuum Ultraviolet Spectroscopy-Mass Spectrometry Library Search Methodology for Improved Chemical Identification” *Gulf Coast Undergraduate Research Symposium*, Houston, TX, October 6th, **2018** (Oral)

Warar, S.; Arvidson, A.; Ehlmann, M.; Von Waaden, N.; **Anthony, I. G. M.**; Solouki, T. “Adjusting Sample Concentration Within Dynamic Range for Improved Data Analysis using Vacuum Ultraviolet Automated Library Integrated Deconvolution” *American Society of Biochemistry and Molecular Biology*, Dallas, TX, September 29th, **2018** (Poster) — **2019 Winner of the Outstanding Poster Presentation** for the Undergraduate Re-search Scholars Achievement (URSA) Scholars Week

Anthony, I. G. M.; Brantley, M. R.; Floyd, A. R.; Gaw, C. A.; Solouki, T. “Chemical Identification by Combined Use of GC Retention Indices, EI-MS Fingerprints, and VUV Spectroscopic Signatures” *66th ASMS Conference on Mass Spectrometry and Allied Topics*, San Diego, CA, June 7th, **2018** (Poster)

Spiegel, M.; **Anthony, I. G. M.**; Brantley, M. R.; Hassel, A. C.; Solouki, T. “Investigation of Asphaltene Structure Using Br-Tagging High-Resolution Mass Spectrometry and Metal-Free NMR” *66th ASMS Conference on Mass Spectrometry and Allied Topics*, San Diego, CA, June 6th, **2018** (Poster)

Brantley, M. R.; **Anthony, I. G. M.**; Villacob, R.; Zhou, S.; Solouki, T. “An Imaging FT-ICR Platform Utilizing Gallium Ablation for Biomolecule Analysis” 66th ASMS Conference on Mass Spectrometry and Allied Topics, San Diego, CA, June 4th, **2018** (Poster)

Brantley M. R.; Zhou, S; **Anthony I. G. M.**; Villacob, R.; Solouki, T. “Custom Mass Spectrometry Instrumentation: Best Practices” 66th ASMS Conference on Mass Spectrometry and Allied Topics, San Diego, CA, June 4th, **2018** (Poster)

Brantley, M. R.; **Anthony, I. G. M.**; Villacob, R.; Lantz, C.; Floyd, A. R.; Gaw, C. A.; Koziol, S.; Solouki, T. “Development of an Imaging FT-ICR-MS with SIMS, FIB-SEM, and Post-Ionization Capabilities for Biological Applications” 65th ASMS Conference on Mass Spectrometry and Allied Topics, Indianapolis, IN, June 7th, **2017** (Poster)

Villacob, R.; Brantley, M. R.; **Anthony, I. G. M.**; Solouki, T. “A Monte-Carlo Approach to Automated Ion Trajectory Calculations for Optimization of an Imaging FT-ICR MS with Post-Ionization Capabilities” 65th ASMS Conference on Mass Spectrometry and Allied Topics, Indianapolis, IN, June 7th, **2017** (Poster)

Anthony, I. G. M.; Floyd, A. R.; Gaw, C. A.; Brantley, M. R.; Solouki, T. “Characterization of Perfumes via Tandem Vacuum Ultraviolet Spectroscopy and Mass Spectrometry” 65th ASMS Conference on Mass Spectrometry and Allied Topics, Indianapolis, IN, June 6th, **2017** (Poster)

Anthony, I. G. M.; Brantley, M. R.; Gaw, C. A.; Floyd, A. R.; Solouki, T. “Tandem Vacuum Ultraviolet Spectroscopy and Mass Spectrometry for Improved Identification of GC-Eluting Species” 65th ASMS Conference on Mass Spectrometry and Allied Topics, Indianapolis, IN, June 5th, **2017** (Poster)

Villacob, R.; Brantley, M. R.; **Anthony, I. G. M.**; Solouki, T. “Development and Optimization of an Ultra-High Spatial & Mass Resolution Chemical Microscope with FIB-SEM Capabilities” 52nd Annual Meeting of the Texas Society for Microscopy, Waco, TX, February 24th, **2017** (Oral)

Gaw, C. A.; **Anthony, I. G. M.**; Brantley, M. R.; Floyd, A. R.; Solouki, T. “Analysis of Closely Related Volatile Organic Compounds with a Gas Chromatography-Vacuum Ultra-violet-Mass Spectrometry System” *Gulf Coast Undergraduate Research Symposium*, Houston, TX, Oct 22nd, **2016** (Oral)

Floyd, A. R.; **Anthony, I. G. M.**; Brantley, M. R.; Gaw, C. A.; Solouki, T. “Improved Compound Identification Utilizing a Complementary Vacuum Ultraviolet Spectroscopy/Mass Spectrometry Library-Matching Approach” *Gulf Coast Undergraduate Research Symposium*, Houston, TX, Oct 22nd, **2016** (Oral)

Anthony, I. G. M.; Brantley, M. R.; Floyd, A. R.; Olaitan, A. D.; Erdogan, D. A.; Ozensoy, E.; Solouki, T. “Unambiguous Identification of Reaction Products from Conversion of Nitric Oxide over Novel Photocatalyst Surfaces” 64th ASMS Conference on Mass Spectrometry and Allied Topics, San Antonio, TX, June 9th,

2016 (Poster)

Spiegel, M.; **Anthony, I. G. M.**; Brantley, M. R.; Hassell, A. C.; Moffett, C.; Yoon, S.; Stephensen, M.; Farmer, P. J.; Solouki, T. "Kendrick Mass Defect Visualization of Asphaltenes Pre- and Post-Reaction with Bromin" *64th ASMS Conference on Mass Spectrometry and Allied Topics*, San Antonio, TX, June 6th, 2016 (Poster)

AWARDS AND SCHOLARSHIPS

Baylor Outstanding Graduate Research Productivity Yearly Award	April 2019
Baylor Research Showcase Competition (1 st place STEM Category)	April 2018
Baylor 3-Minute Thesis Competition (1 st place Ph.D. Category)	November 2016
Baylor Graduate Student Fellowship	2015–20
Franklin & McAtee Travel Award	2016–18
Baylor Graduate School Travel Award	2016–18
WesTech Biannual Don Bailey Award for Superior Service	Spring 2015
University of Utah Honors at Entrance Scholarship	2008–12
Dixie State College Philosophy Student of the Semester	Spring 2008
Dixie State College Early High School Graduation Scholarship	Spring 2008

PROFESSIONAL SERVICE

Baylor Graduate Recruitment Host	2016–19
Baylor Advanced Instrumentation Workshop Host	2017, 2019
AMSA Research & Internship Learning Facilitator	2017–19
Laboratory Safety Officer	2017–19

SKILLS

- Works well alone or in a team
- Willing to travel
- Enjoys presentations and public speaking
- Proficient in programming Python and Rust
- Able to manipulate vector, raster, and CAD data files
- Knowledgeable in the areas of mass spectrometry, ion mobility, and chromatography
- Able to learn new skills quickly