

Caleb M. Bunton, Ph.D.

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SUMMARY

I bring over 12 years of extensive experience as a highly skilled professional with a robust interdisciplinary background. My proficiency spans complex research projects, research methodology, process improvement, project management and development. I also possess expertise in data analysis and validation, method development, technical writing, and administrative and operational management.

PROFESSIONAL EXPERIENCE

U.S. Naval Research Laboratory – Washington D.C.

Post-Doctoral Fellow

November 20, 2020 – Current

- Spearheading research programs to produce new surfactants for the Congressionally mandated replacement of PFAS surfactants (toxic substance) in firefighting foams used in military and industrial settings, producing 10+ viable surfactant replacements.
- Developing and utilizing a new artificial intelligence model and 5 advanced data analysis techniques to improve key performance metrics of firefighting foam, establishing a correlation between surfactant structure and properties.
- Leading a 6-member research team for the production and characterization of high temperature resin materials for use in aerospace and other National Defense projects, resulting in 2 patent applications and an advance in resin design methodology.
- Managing a shared laboratory space including proper hazardous waste disposal, other chemical hygiene considerations, equipment maintenance, and safety issues, increasing the efficiency of research while reducing waste generation.

Southern Methodist University – Dallas TX

Graduate Research Assistant

August 8, 2014 – May 8, 2020

- Coordinated with a local medical research facility for the production, characterization, and implementation of 20 new drug delivery materials for the treatment of age-related macular degeneration, resulting in a patent application and expanded treatment options for clinicians.
- Leveraged software solutions to conduct statistical, qualitative, and quantitative analysis, resulting in the optimization of 17+ new drug delivery materials.
- Maintained attention to detail in the assessment and production of chemical reagents for specialized applications, achieving expertise in a variety of chemical reactions, analytical techniques, and instrumentation.
- Managed heavy workloads, overseeing the planning, modification, and execution of research procedures and tests, and trained 14 incoming laboratory assistants on relevant research concepts and laboratory policies.

The University of Texas at Tyler – Tyler TX

Undergraduate Research Assistant

August 10, 2013 – May 9, 2014

- Expanded knowledge base concerning experimental design by incorporating creative methods to better understand ester hydrolysis rates in organic reactions, which led to a new experimental procedure for undergraduate Organic Chemistry courses.
- Achieved expertise with UV-Vis, FTIR, and Raman spectroscopy while strictly adhering to lab standards, leading to a Departmental award for Outstanding Student in Analytical Chemistry.
- Recorded data and maintained source documentation while assiduously following good documentation practices and promoted the use of administrative techniques, reducing work related to reporting by 3 hours per week.

The University of Texas at Tyler – Tyler TX

Chemistry Laboratory Teaching Assistant

August 9, 2010 – May 9, 2014

- Initiated an equipment calibration and regular cleaning method, reducing pre-classroom preparatory time by 45 minutes and ensuring safety and efficiency across nine Departmental laboratory spaces.
- Built a detailed and accurate database of all supplies and equipment, managing a department-wide inventory while maintaining budgets.
- Organized instructional materials, facilities, solutions for experiments, and supported other assistants in establishing 6 new instructional processes, leading to a Departmental award for Outstanding Teaching Assistant.
- Organized and led the development of a Science Mentorship curriculum and weekend hands-on program for 4 local Boy Scout Troops, providing the opportunity to 80+ Boy Scouts to earn multiple science-related badges.

ABeeCo LLC – Canton TX – (Regional Commercial and Residential HVAC company)

Director of Information Technology Services

September 13, 2009 – June 16, 2018

- Maintained hardware and software with regards to new installations, repairs, and patches in a fast-paced workplace, facilitating top-tier service for 20+ end users.
- Implemented specialized company policies, technical procedures, and standards for the utilization and implementation of Information Technology solutions (hardware, software), increasing the integrity and security of data, reports, and access.
- Authored a custom handbook to share best technology related practices across the organization, and sought as subject matter expert with multiple technologies, reducing time spent on troubleshooting by 6 hours per week while increasing company-wide proficiency.
- Created and maintained internal accounting and customer information Microsoft Access and SQL databases, streamlining business analytics by providing accurate and easily understood spending and profit charts and graphs.
- Designed, coded, and implemented unique and accessibility compatible websites to meet user requirements, resulting in a 46% increase in lead capture and a 22% increase in sales.

EDUCATION

Doctor of Philosophy (Ph.D.) in Chemistry

Southern Methodist University – Dallas, TX

Bachelor of Science (B.S.) in Chemistry

The University of Texas at Tyler – Tyler, TX

Associate of Applied Science (A.A.S) in Emergency Medical Services

Tyler Junior College – Tyler, TX

SKILLS

Interdisciplinary Communication, Project Management, Quantitative Analysis, Qualitative Analysis, Creative Problem Solving, Technical Writing, Quality Control, Task Management, Administrative Management, Operational Management, Technology Utilization, Strategic Planning, Cross-Functional Collaboration, Safety Compliance Management

HONORS AND AWARDS

American Society for Engineering Education (ASEE) Post-Doctoral Fellowship (2020–2023), NASA (TSGC) Graduate Fellowship Award (2016 & 2017), Dean's Award–Research Poster, Lazenby Graduate Award, Outstanding Student in Senior Seminar, Welch Foundation Scholar, Outstanding Student in Analytical Chemistry, Outstanding Teaching Assistant, Integration Bee Award (Mathematics)