

# ANDREW J. SHURER

---

3220 MSRB III Ann Arbor, MI 48109 | 734.763.0641 | [ajshurer@gmail.com](mailto:ajshurer@gmail.com) | [www.linkedin.com/in/andrewjshurer](http://www.linkedin.com/in/andrewjshurer)

---

## SUMMARY

---

Professional scientist with 12+ years of experience applying analytical chemistry techniques to the execution of research projects in industrial biotechnology.

---

## EDUCATION

---

Master of Science, **Chemistry** – May 2009  
University of Maryland – College Park, MD  
Advisor: Dr. Herman O. Sintim

Bachelor of Science, **Chemistry** (*cum laude*) – May 2007  
Lycoming College – Williamsport, PA

---

## PROFESSIONAL EXPERIENCE

---

**Alexion Pharmaceuticals**, New Haven, CT

**Associate Scientist III, Protein Characterization**

**2019-2022**

- Tested biotherapeutics using a variety of analytical methods within the Protein Characterization group.
- Collaborated with members of Process Development and Analytical Sciences to advance the development of Alexion's therapeutic candidates.
- Developed and optimized characterization methods.
- Performed characterization and comparability testing to support regulatory requirements.

**Ginkgo Bioworks**, Boston, MA

**Senior Test Engineer II, Omics and Analytical Chemistry**

**2018-2019**

**Test Engineer, Omics and Analytical Chemistry**

**2015-2018**

- Onboarded new analytical capabilities and assays as required to support Ginkgo programs.
- Optimized high-throughput methods for fatty acid, pathway and product analysis for a variety of projects.
- Maintained non-MS based analytical services including the management of an entry-level scientist.
- Developed methods for the extraction and purification of cultured ingredients and for the production of compounds and blends for prospective Ginkgo products.
- Synthesized or isolated and purified key metabolic intermediates to support assay development and organism engineering efforts.

**DSM Nutritional Products (formerly Martek Biosciences)**, Columbia, MD

**Scientist**

**2014-2015**

**Associate Scientist**

**2012-2014**

**Research Associate II**

**2009-2012**

- Worked with members from other scientific disciplines within DSM to design and carry out analytical work packages answering questions related to on-going research projects, product manufacturing and stability, and communicated results to project leads.
- Performed analytical and preparative-scale chromatographic separations utilizing a variety of techniques for identification and quantitation of various compounds.
- Developed and characterized methods for quantitation of various analytes in oils and fermentation broth.
- Coordinated the analytical work for clients in the intellectual property, competitive intelligence and marketing areas, communicating regularly with members of these groups to discuss scientific aspects of patents and other materials.
- Assisted in the development and improvement of methods to support on-going research projects.
- Performed compositional analysis (e.g. fatty acid and lipid class profiling, elemental analysis, free fatty acid analysis) and physical property measurements (e.g. flash point, cloud point, pour point) of oil produced by microorganisms via fermentation and biodiesel samples prepared from these oils.
- Provided compositional analysis (e.g. carbohydrate content, elemental analysis, organic acid content, anion content) of aqueous fermentation broth.

# ANDREW J. SHURER

---

1322 Minerva Road, Ann Arbor, MI 48104 | 443.478.0798 | [ajshurer@gmail.com](mailto:ajshurer@gmail.com) | [www.linkedin.com/in/andrewjshurer](http://www.linkedin.com/in/andrewjshurer)

---

## RELEVANT SKILLS

---

### Instrumentation Techniques

- U/HPLC-MS/UV/RI/FL/ELS/CAD, GC-FID, ICP-MS, IEC, multinuclear NMR, TD-NMR, UV-Vis, FT-IR

### Software Packages

- Agilent, Bruker, Shimadzu, Thermo, Varian and Waters software packages
- Protein Metrics (MS) and MestReNova (NMR) software packages

### Laboratory Techniques

- Peptide mapping and intact mass analysis (reduced and non-reduced)
  - Derivatization and analysis of released glycans
  - Ion-exchange, thin-layer, preparative HPLC and column chromatography including automated systems
  - Size-exclusion chromatography for the characterization of protein-small molecule interactions
  - Production and purification of milligram to multi-gram or kilogram quantities of target compounds
  - Experience using modern techniques in multi-step organic synthesis
  - Inert atmosphere synthesis techniques including both air- and water-free techniques
  - Experience with maintenance and troubleshooting of analytical instrumentation
  - Extensive experience working with triglyceride-based microbial or marine oils and biodiesel
  - Traditional wet-chemistry techniques including extraction, recrystallization and distillation
  - Phosphoramidite chemistry, automated DNA synthesis and related solid-phase synthesis techniques
  - Biochemical techniques including experience with biological assays in *E. Coli*.
  - Experience working in a GLP environment
- 

## PRIOR EXPERIENCE

---

**University of Maryland**, College Park, MD  
**Research Assistant**

**2007-2009**

- Synthesized and characterized structural analogs of the bacterial second-messenger, c-di-GMP.
- Supported the development of a novel approach to the synthesis of small cyclic nucleotides.
- Assayed synthesized analogs for their ability to regulate bacterial biofilm formation.
- Prepared and guided recitations and laboratory sections in introductory organic chemistry.

**University of Virginia**, Charlottesville, VA

**Summer Research Assistant**

**2006**

- Synthesized and characterized novel analogs of the immunosuppressant compound FTY720.

**Lycoming College**, Williamsport, PA

**Research Assistant**

**2005-2007**

- Synthesized, purified and characterized substrates for metal-catalyzed hydroacylation.
  - Subsequently optimized reaction conditions for the preparation of medium ring heterocycles from prepared substrates.
- 

## PUBLICATIONS AND PRESENTATIONS

---

**Shurer, A.**, Chang, A., Burger, D. "Determination of Total Fat in Microbial Biomass by Time Domain NMR: An Alternative to FAME Analysis." (Poster) AOCs Annual Meeting, Orlando, FL, **2015**.

Bendorf, H.D., Ruhl, K., **Shurer, A.**, Shaffer, J., Duffin, T., LaBarte, T., Maddock, M., Wheeler, O. "Amine-Directed Intramolecular Hydroacylation of Alkenes and Alkynes." *Tetrahedron Lett.* **2012**, *53*, 1275–1277.

Kiburu, I., **Shurer, A.**, Yan, L., Sintim, H.O. "A Simple Solid-Phase Synthesis of the Ubiquitous Bacterial Signaling Molecule, c-di-GMP and Analogues." *Mol. BioSyst.* **2008**, *4*, 518 – 520.