

# Michael L. Bernauer

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## *Curriculum Vitae*

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### EDUCATION

#### UNIVERSITY OF NEW MEXICO

- 2012–Present **Doctor of Pharmacy**, UNIVERSITY OF NEW MEXICO COLLEGE OF PHARMACY, Albuquerque, NM.
- 2011 **Bachelor of Science, Biochemistry**, UNIVERSITY OF NEW MEXICO, Albuquerque, NM.

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### EXPERIENCE/EMPLOYMENT

#### EXPERIENTIAL ROTATIONS

- 01/2016 **Internal Medicine - Anticoagulation**, UNIVERSITY OF NEW MEXICO HOSPITAL.  
[Journal Club](#)
- 11/2015 **Long Term Care/Consulting**, ALBUQUERQUE HEALTH PARTNERS.  
[Drug Manuscript](#)
- 10/2015 **Advanced Community Practice**, WILEY CHEMIST COMPOUNDING PHARMACY.
- 9/2015 **Specialty Patient Care-Diabetes**, UNIVERSITY OF NEW MEXICO-HSC COLLEGE OF PHARMACY.  
[Journal Club](#), [Discussion](#)
- 8/2015 **Specialty Patient Care-Nephrology**, UNIVERSITY OF NEW MEXICO-HSC COLLEGE OF PHARMACY.  
[Journal Club](#), [Formal Presentation](#)
- 7/2015 **Research**, UNIVERSITY OF BONN, INSTITUTE OF PHARMACY, LABORATORY OF PHARMACEUTICAL TECHNOLOGY AND BIOPHARMACEUTICS, Bonn, Germany.
- 6/2015 **Research**, UNIVERSITY OF BONN, INSTITUTE OF PHARMACY, LABORATORY OF PHARMACEUTICAL TECHNOLOGY AND BIOPHARMACEUTICS, Bonn, Germany.  
Developed 3D human trachea induction port for the Anderson Cascade Impactor [poster](#)
- 7/2014 **Hospital/Institutional Pharmacy**, PRESBYTERIAN HOSPITAL PHARMACY.
- 7/2013 **Community Pharmacy**, PHIL'S PHARMACY.

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## EMPLOYMENT

- 2013–2015 **Clinical Research Coordinator**, UNIVERSITY OF NEW MEXICO COLLEGE OF PHARMACY DEPARTMENT OF PHARMACY PRACTICE AND ADMINISTRATIVE SCIENCES, Albuquerque, NM.  
Study Title: Biomarkers of Bacterial Infection in High Risk Populations  
*Description:* The purpose of the study was to identify biomarkers that predict *Staphylococcus aureus* infection in hemodialysis patients.
- 2013–2015 **Student Researcher**, UNIVERSITY OF NEW MEXICO COLLEGE OF PHARMACY DEPARTMENT OF PHARMACEUTICAL SCIENCES, Albuquerque, NM.  
Description: Research activities were directed towards the development of a device that allows monitoring and enforcement of patient medication adherence and compliance in real-time with single-dose resolution.
- 2013–2015 **Student Researcher**, UNIVERSITY OF NEW MEXICO COLLEGE OF PHARMACY DEPARTMENT OF PHARMACY PRACTICE AND ADMINISTRATIVE SCIENCES, Albuquerque, NM.  
Description: Research activities included Pulsed Field Gel Electrophoresis (PFGE) of clinical Methicillin Resistant *Staphylococcus aureus* (MRSA) isolates as well as the development and maintenance of relational databases for the storage of clinical and bacterial information.
- 2011–2013 **Clinical Research Coordinator**, NEW MEXICO VA HEALTHCARE SYSTEM, Albuquerque, NM.  
Study Title: Combined Angiotensin Inhibition for the Treatment of Diabetic Nephropathy  
Type: Multicenter, Randomized, Double-Blind, Placebo-Controlled, Phase III Clinical Trial  
Sponsor: Department of Veteran Affairs  
Description: The objective was to evaluate the combination of angiotensin converting enzyme inhibitor (ACEI) with an angiotensin receptor blocker (ARB) vs. standard treatment with angiotensin receptor blocker on the progression of kidney disease in individuals with Type 2 diabetes overt nephropathy.  
Citation: Fried LF et al. Combined angiotensin inhibition for the treatment of diabetic nephropathy. N Engl J Med. 2013 Nov 14. VA NEPHRON-D Coordinator
- 2011–2013 **Clinical Research Coordinator**, NEW MEXICO VA HEALTHCARE SYSTEM, Albuquerque, NM.  
Study Title: Systolic Blood Pressure Intervention Trial (SPRINT)  
Type: Multicenter, Randomized, Clinical Trial  
Sponsor: Wake Forest University Baptist Medical center  
Description: The Systolic Blood Pressure Intervention Trial (SPRINT) was a 2-arm, multicenter, randomized clinical trial designed to test whether a treatment program aimed at reducing systolic blood pressure (SBP) to a lower goal than currently recommended will reduce cardiovascular disease (CVD) risk.
- 2006–2011 **Laboratory Assistant**, LOVELACE RESPIRATORY RESEARCH INSTITUTE, Albuquerque, NM.  
Description: Activities included receiving and processing human tissue samples including erythrocytes, lymphocytes, sputum and urine as well as preparing and staining slides for microscopy according to established protocols and procedures.

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2009 **Student Researcher**, UNIVERSITY OF NEW MEXICO DEPARTMENT OF BIO-CHEMISTRY AND MOLECULAR BIOLOGY, Albuquerque, NM.

Description: Research was directed at establishing a non-invasive approach for the identification of prostate cancer in male patients through  $H^1$ NMR analysis of citrate levels via prostatic secretions.

2008 **Undergraduate Research Fellow**, UNIVERSITY OF TEXAS M.D. ANDERSON CANCER CENTER SCIENCE PARK-RESEARCH DIVISION, Smithville, TX.

Study Title: Functional Analysis of ER Transcriptional Inhibition by CtIP Co-repressor Complex

Description: Admission to the program is granted on a competitive basis to academically talented undergraduates considering careers in basic biomedical research. Research was directed towards CtIP mediated silencing of endonuclear estrogen receptors in breast cancer.

2006 **Certified Nursing Assistant**, CARLSBAD MEDICAL CENTER, Carlsbad, NM.

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## LICENSURE

2013–Present **Pharmacy Intern License**, NEW MEXICO REGULATION AND LICENSING DEPARTMENT, Albuquerque, NM..

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## PROFESSIONAL AFFILIATIONS

2015–Present **Student Membership**, AMERICAN SOCIETY FOR MICROBIOLOGY (ASM), Membership ID: 57348369.

2014–Present **Student Membership**, AMERICAN ASSOCIATION OF PHARMACEUTICAL SCIENTISTS (AAPS), Membership ID: 231752.

2014–2015 **President**, STUDENT PHARMACIST RESEARCH INTEREST GROUP (SPRIG), University of New Mexico College of Pharmacy.

2013–2014 **President Elect**, STUDENT PHARMACIST RESEARCH INTEREST GROUP (SPRIG), University of New Mexico College of Pharmacy.

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## HONORS/AWARDS

12/2013 **Dean's List**, UNIVERSITY OF NEW MEXICO COLLEGE OF PHARMACY.

12/2007 **Dean's List**, UNIVERSITY OF NEW MEXICO COLLEGE OF ARTS AND SCIENCES.

05/2007 **Dean's List**, UNIVERSITY OF NEW MEXICO COLLEGE OF ARTS AND SCIENCES.

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## RESEARCH/PROJECTS

2015 **drugstandards**

Description: Python library for standardizing drug names. Facilitates conversion of brand name to generic name and correction of misspellings using Jaro-Winkler similarity. [GitHub](#)

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- 2015 **faers**  
Description: Python library for working with data from the FDA Adverse Event Reporting System. Contains tools for computing Proportional Reporting Ratios (PRR), Reporting Odds Ratios (ROR), and Multi-item Gamma Poisson Shrinker (MGPS) as well as other frequencies and statistics for drug-event pairs. [GitHub](#)
- 2015 **FAERS**  
Description: Repository containing scripts to download, process, and analyze adverse event data from the FDA Adverse Event Reporting System. [GitHub](#)
- 2015 **DASH Meal Planner**  
Description: Web-based tool written in R that uses genetic-optimization to create individualized weekly meal plans based on to Dietary Approaches to Stop Hypertension (DASH) guidelines. <https://mlbernauer.shinyapps.io/meal-planner>
- 2015 **Application of Supervised Learning Algorithms for Rapid Identification of MRSA PFGE Strain Types**  
Description: Classification of MRSA PFGE strain type using k-Nearest Neighbors, Support Vector Machines, Random Forests and Artificial Neural Networks. [PDF](#)
- 2015 **Assessment of ACI performance on particle distribution using a modified 3D printed trachea induction port**  
Description: Development of 3D printed airways for use in medication inhalation studies. [PDF](#)
- 2014 **Development of Intelligent Pharmaceutical Packaging for Real-Time Monitoring of Patient Compliance**  
Description: Development of a wireless medication monitor for real-time monitoring and enforcement of patient medication adherence. [colorbluePDF](#)
- 2014 **Online/interactive epidemiology mapping tool**  
Description: Interactive mapping tool developed in Processing.
- 2008 **Functional Analysis of ER Transcriptional Inhibition by CtIP Co-Repressor Complex**  
Description: Elucidating mechanisms of CtIP mediated silencing of endonuclear estrogen receptors in breast cancer.

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## GRANTS/FUNDING

- 2015/09 **ASM Student and Post Doctoral Fellow Travel Grant, ICAAC/ICC Annual Meeting, San Diego, CA, September 2015.** [PDF](#)

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## PATENTS/INVENTIONS

- 2015 **Wireless Dispensing Device Monitor**  
*STC Ref No.* 2016-036  
Description: The invention allows for real-time monitoring of patient use of medications. Dispensing devices include: medication bottles, medication sachets, pressurized metered dose inhalers, dry powder inhalers.
- 2014 **Wireless Medication Monitor**  
*STC Ref No.* 2014-051  
Description: The invention allows real-time monitoring and enforcement of patient medication compliance.

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## ABSTRACTS/PUBLICATIONS

- 2015 **M. L. Bernauer**, J. M. Lewis, J. J. Shroba, R. C. Mercier. Application of Supervised Learning Algorithms for Rapid Identification of MRSA PFGE Strain Types, *ICAAC/ICC Annual Meeting, San Diego, CA, September 2015*. [PDF](#)
- 2015 J. J. Shroba, T. J. Dilworth, **M. L. Bernauer**, R. C. Mercier. Clinical and Microbiological Characterization of Recurrent Invasive Methicillin Resistant *Staphylococcus aureus* (MRSA) Infections, *ICAAC/ICC Annual Meeting, San Diego, CA, September 2015*. [PDF](#)
- 2015 M. C. Vazquez-Guillamet, J. J. Shroba, B. Deaton, R. Vazquez, **M. L. Bernauer**, R. C. Mercier. Trajectory and Long-Term Outcomes in Patients with MRSA Bacteremia, *ICAAC/ICC Annual Meeting, San Diego, CA, September 2015*. [PDF](#)
- 2014 **Michael L. Bernauer**, Jason T. McConville. Development of Intelligent Pharmaceutical Packaging for Real-Time Monitoring of Patient Compliance, *American Association of Pharmaceutical Scientists (AAPS) Meeting and Exposition, San Diego, CA, November 2014*. [PDF](#)

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## PRESENTATIONS

- 09/2015 **M. L. Bernauer**, J. M. Lewis, J. J. Shroba, R. C. Mercier. Application of Supervised Machine Learning Algorithms for Rapid Identification of MRSA PFGE Strain Types, *ICAAC/ICC Annual Meeting, San Diego, CA, September 2015*. [PDF](#)
- 11/2014 **Michael L. Bernauer**, Jason T. McConville. Development of Intelligent Pharmaceutical Packaging for Real-Time Monitoring of Patient Compliance, *American Association of Pharmaceutical Scientists (AAPS) Meeting and Exposition, San Diego, CA, November 2014*. [PDF](#)
- 03/2013 **Michael L. Bernauer**, Jason T. McConville. Development of Smart Blister Pack to Increase Medication Adherence, *University of New Mexico College of Pharmacy Annual Research Day, Albuquerque, NM, March 2014*.

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07/2008 **Michael L. Bernauer.** Functional Analysis of ER Transcriptional Inhibition by CtIP Co-repressor Complex, *MD Anderson Cancer Center Science Park-Research Division (MDACC-SPRD), Smithville, TX, July 2008.*

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## INTERESTS/SKILLS

- Access, MySQL, SQLite
- Machine learning/Statistical Learning
- Research, Informatics, Pharmacoeconomics
- R, Python, Julia, Matlab, SQL, Processing, HTML, CSS,  $\text{\LaTeX}$
- Data Mining, Data Visualization
- Text Mining, Natural Language Processing