

## Curriculum Vitae

**NICHOLAS D. BEYDA, PharmD**

### **WORK ADDRESS**

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University of Houston College of Pharmacy  
4349 Martin Luther King Blvd. Houston, TX 77204  
Office number: (832) 842-8351  
E-mail: ndbeyda@uh.edu

### **CURRENT ACADEMIC APPOINTMENTS**

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University of Houston College of Pharmacy Pharmacy Practice & Translational Research Houston, TX	Assistant Professor	2014-
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### **PAST APPOINTMENTS**

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University of Houston College of Pharmacy Pharmacy Practice & Translational Research Houston, TX	Research Assistant Professor	2013-14
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### **EDUCATION**

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Creighton University Omaha, NE	General Studies	2000-02
Auburn University Auburn, AL	Bachelor of Science in biomedical sciences	2002-05
Auburn University Auburn, AL	Doctorate of Pharmacy	2005-09

### **PROFESSIONAL TRAINING**

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Louisiana State University Health Sciences Center Shreveport, LA	Pharmacy Practice Residency	2009-10
St. Luke's Episcopal Hospital / Univ. of Houston College of Pharmacy Houston, TX	Infectious Diseases Fellowship	2010-13

## **OTHER POST-GRADUATE TRAINING**

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Clinical Research Curriculum University of Texas Medical School Houston, TX	2010-
Molecular Mycology: Current Approaches to Fungal Pathogenesis Marine Biological Laboratory, Woods Hole, MA	2013

## **WORK EXPERIENCE**

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Auburn University Auburn, AL	Supplemental Instructor Biochemistry	2005-07
CVS Pharmacy Phenix City, AL	Pharmacy intern	2006-07

## **PROFESSIONAL ORGANIZATIONS**

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American Society for Microbiology	2009-
Society of Infectious Diseases Pharmacists	2009-
American College of Clinical Pharmacy	2009-

## **HONORS AND AWARDS**

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Infectious Diseases Fellows Grant Program 52 <sup>nd</sup> International Conference on Antimicrobial Agents & Chemotherapy	2012
Infectious Diseases Resident/Fellow Travel Grant Infectious Diseases Society of America	2012
Scholarship award supported by Howard Hughes Medical Institute and Burroughs Wellcome Fund to attend Woods Hole Molecular Mycology Course	2013
“Top 10 Mycology Papers for 2014” – Beyda ND, et al. CID 2014; 58(6):819-25 54 <sup>th</sup> International Conference on Antimicrobial Agents & Chemotherapy	2014
“Top 10 Mycology Papers for 2015” – Beyda ND, et al. CID 2014; 58(6):819-25 55 <sup>th</sup> International Conference on Antimicrobial Agents & Chemotherapy	2015

## **LICENSURE AND CERTIFICATION**

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Board Certified Pharmacotherapy Specialist (2012 – 2019)  
Louisiana Board of Pharmacy Registered Pharmacist

Texas State Board of Pharmacy Registered Pharmacist  
Texas State Board of Pharmacy Certified Pharmacist Preceptor  
Pharmacy Based Immunization Delivery - American Pharmacists Association  
Advanced Cardiac Life Support  
Basic Life support

## **COMMITTEES**

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### **University of Houston College of Pharmacy Committees**

Member	Research Committee	2015-
Member	Graduate Studies Committee	2016-
Member	Faculty Grievance Committee	2023-

### **Baylor – St. Luke’s Medical Center Hospital Committees**

Member	Center for Antimicrobial Stewardship & Epidemiology	2013-
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## **TEACHING EXPERIENCE**

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### **Didactic**

#### **Undergraduate (Auburn University)**

Supplemental instructor for Biochemistry 3200 (30 lecture hours per semester)	2005-07
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#### **Graduate (University of Texas School of Nursing at Houston)**

Advanced concepts in infectious diseases (2 lecture hours per year)	2011-13
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#### **Doctorate of Pharmacy (University of Houston College of Pharmacy)**

Advanced Therapeutics II PHAR 5582 (skills lab group leader) Infectious Diseases module	2010-20
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Advanced Infectious Diseases II PHAR 5208 Immune response to pathogens (2 lecture hours)	2011-19
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Advanced Therapeutics II PHAR 5582 Overview of immunology (1 lecture hour) Drug hypersensitivity (1 lecture hour) Treatment of fungal infections (1 lecture hour) Influenza (1 lecture hour)	2011-19
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Cellular Life Sciences II PHAR 4200 Adversarial strategies during infection (2 lecture hours)	2011-18
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Literature Evaluation PHAR 5325 Cohort studies (1 lecture hour)	2018-
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Immunology & Rheumatology Module PHAR 5236; <i>Co-Course coordinator</i> Drug hypersensitivity (1 lecture hour)	2019-
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Infectious Diseases 2 Module PHAR 5338	2019-
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Antifungal pharmacotherapy (1 lecture hour)	
Foundations in Medicinal Chemistry, Microbiology, and Receptor Action PHAR 4275	2019-
Fungal infections (1 lecture hour)	
Literature Evaluation PHAR 5325	2018-
Cohort studies (1 lecture hour)	

**Clinical instructor / Experiential training**

**Pharmacy student preceptor**

Infectious Diseases Clinical Rotation (2 students per year)	2015-
Baylor-St. Luke's Medical Center & University of Houston College of Pharmacy	

**Mentoring**

**Undergraduate students**

Julie John	Research assistant in my lab Current position: Clinical pharmacist, Hendrick Medical Center	2011-13
Jonathan Amadio	Clinical research and study coordinator in my lab Current position: Study coordinator/researcher	2012-16

**Professional Pharmacy program (PharmD)**

Alex Nguyen	Clinical and laboratory research volunteer in my lab Current position: Pharmacist	2011-13
Katie Kidwell	Clinical research volunteer in my lab Current position: Pharmacist	2012-13
Samantha Sangabi	Laboratory research volunteer Current position: Pharmacist at Houston Methodist Hospital	2016-17
Jeff Mezzone	Laboratory research volunteer Current position: Pharmacy resident TriHealth-Good Samaritan Hospital	2018-20
Rudy Sanz	Laboratory research volunteer Current position: 4 <sup>th</sup> year pharmacy student	2020-22

**Post-graduate training**

Chenlin Hu	Post-doctoral researcher Current position: Research Scientist, University of Houston	2015-22
Gary Fong	Infectious Diseases Pharmacy Fellow Current position: Clinical Assistant Professor, Chapman University	2015-17
Joshua Hendrickson	Infectious Diseases Pharmacy Fellow Current position: Infectious Diseases Pharmacist, MD Anderson	2018-20

### **PhD thesis advisor**

Elise Waldron-Young, PharmD Ph.D. Pharmacology with Emphasis in Medicinal Chemistry 2020-21

## **PEER REVIEW CONTRIBUTIONS**

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### **Editorial boards**

Frontiers in Fungal Biology – Review Editor

2022-

Current Fungal Infections Report – Section Editor;  
Pharmacology & Pharmacodynamics of Antifungals

2015-19

### **Ad hoc reviewer**

American Chemical Society – Chemical Biology

Annals of Pharmacotherapy

Epidemiology and Infection

Journal of Chemotherapy

Journal of Fungi

Journal of Pharmacy Technology

Medical Mycology

Mycoses

US Pharmacist

Virulence

## **RESEARCH SKILLS**

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**Clinical research:** Trained and have experience with grantsmanship, IRB submission, conducting research using various study designs (retrospective chart reviews, mixed-method analysis, prospective observational), FDA clinical trial enrollment and study coordination, patient recruitment and follow-up, data collection, database creation and management (MS Access, Excel, RedCAP), and statistical analysis (STATA, NCSS software)

**Translational laboratory research:** Trained and have experience in microbiology and mycology (bacterial and fungal growth, maintenance, and culture), *in-vitro* antimicrobial susceptibility testing, time-kill assays, *in-vitro* pharmacodynamic models, DNA sequencing, strain typing, whole genome sequencing, comparative genomic analysis, mammalian cell culture, *in-vitro* immunopharmacologic assays, invertebrate models of pathogenesis and host immune response to infection, fluorescent microscopy, imaging cytometry, imaging flow cytometry, image analysis utilizing supervised and unsupervised machine learning methods, Pharmaco-EEG analysis in the context of sleep disorders

## **PUBLICATIONS**

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\* Denotes corresponding author

### **Book Chapters**

**Beyda ND**, Lewis RE, Kontoyiannis DP. Micafungin. In: Kucers the Use of Antibiotics: A Clinical Review of Antibacterial, Antifungal, Antiparasitic, and Antiviral Drugs, 7<sup>th</sup> edition. 2017

Lewis RE, **Beyda ND**, Kontoyiannis DP. Caspofungin. In: Kucers the Use of Antibiotics: A Clinical Review of Antibacterial, Antifungal, Antiparasitic, and Antiviral Drugs, 7<sup>th</sup> edition. 2017

Lewis RE, **Beyda ND**, Kontoyiannis DP. Butenafine. In: Kucers the Use of Antibiotics: A Clinical Review of Antibacterial, Antifungal, Antiparasitic, and Antiviral Drugs, 7<sup>th</sup> edition. 2017

### **Original Research Articles**

1. Zaki A, Gonzalez-Luna AJ, **Beyda ND**, Lasco T, Garey KW. Micafungin pharmacodynamics predict clinical outcomes in hospitalized patients with candidemia caused by certain *Candida* species. *Pharmacotherapy* 2023; Apr 17; doi: 10.1002/phar.2804. Online ahead of print. PMID:37067155
2. Jo J, Tran TT, **Beyda ND**, Simmons D, Hendrickson JA, Almutairi MS, Alnezary FS, Gonzales-Luna AJ, Septimus EJ, Garey KW. Development of the invasive candidiasis discharge [I Can Discharge] model: a mixed methods analysis. *European Journal of Clinical Microbiology and Infectious Diseases* 2022; Oct; 41(10):1207-1213. PMID: 36002777
3. Hu C, **Beyda ND**, Garey KW. A vancomycin HPLC assay for use in gut microbiome research. *Microbial Spectrum* 2022;Jun 29;10(3):e0168821. PMID: 35536037
4. Hu C, Fong G, Wurster S, Kontoyiannis DP, **Beyda ND\***. Clumping morphology influences virulence uncoupled from echinocandin resistance in *Candida glabrata*. *Microbial Spectrum* 2022;Feb 23;10(1):e0183721. PMID: 35107318
5. Hendrickson JA, Hu C, Aitken SL, **Beyda ND\***. Antifungal resistance: A concerning trend for the present and future. *Current Infectious Diseases Reports* 2019; 21(12):47. PMID: 31734730
6. Lewis RE, Wurster S, **Beyda ND**, Albert ND, Kontoyiannis DP. Comparative in vitro pharmacodynamic analysis of isavuconazole, voriconazole, and posaconazole against clinical isolates of aspergillosis, mucormycosis, fusariosis, and phaeohyphomycosis. *Diagnostic Microbiology and Infectious Diseases* 2019; 95(3):114861. PMID: 31427139
7. Wurster S, Bandi A, **Beyda ND**, Albert ND, Raman NM, Raad II, Kontoyiannis DP. *Drosophila melanogaster* as a model to study virulence and azole treatment of the emerging pathogen *Candida auris*. *Journal of Antimicrobial Chemotherapy* 2019; 74(7):1904-1910. PMID: 31225606
8. Dilworth TJ, Casapao AM, Ibrahim OM, Jacobs DM, Bowers DR, **Beyda ND**, Mercier RC. Adjuvant  $\beta$ -Lactam therapy combined with vancomycin for methicillin-resistant *Staphylococcus aureus* bacteremia: Does  $\beta$ -Lactam class matter? *Antimicrobial Agents and Chemotherapy*; 2019 Feb 26;63(3). PMID: 30617094
9. **Beyda ND\***, Amadio J, Rodriguez JR, Malinowski K, Garey KW, Wanger A, Ostrosky-Zeichner L. In vitro evaluation of BacT/Alert FA blood culture bottles and T2Candida assay for the detection of *Candida* in the presence of antifungals. *Journal of Clinical Microbiology*; 2018; Jul 26;56(8). PMID: 29898999
10. Sofjan AK, Musgrove RJ, **Beyda ND**, Russo HP, Lasco TM, Yau R, Restrepo A, Garey KW. Prevalence and predictors of spontaneous bacterial peritonitis due to ceftriaxone-resistant organisms at a large tertiary center in the United States. *Journal of Global Antimicrobial Resistance* 2018; 15:41-47. PMID: 29842975

11. Sofjan AK, Mitchell A, Shah DN, Nguyen T, Sim M, Trojcek A, **Beyda ND**, Garey KW. Rezafungin (CD101), a next-generation echinocandin: A systematic literature review and assessment of possible place in therapy. *Journal of Global Antimicrobial Resistance* 2018; 14:58-64. PMID: 29486356
12. Jacobs DM, Dilworth TJ, **Beyda ND**, Casapao AM, Bowers DR. Overtreatment of asymptomatic candiduria among hospitalized patients: A multi-institutional study. *Antimicrobial Agents and Chemotherapy* 2017; 21:62(1). pii: e01464-17. PMID: 29109159
13. Casapao AM, Jacobs DM, Bowers DR, **Beyda ND**, Dilworth TJ; REACH ID Study group. Early administration of adjuvant  $\beta$ -lactam therapy in combination with vancomycin among patients with methicillin-resistant *Staphylococcus aureus* bloodstream infection: A retrospective, multicenter analysis. *Pharmacotherapy* 2017; 37(11):1347-1356. PMID: 28949410
14. **Beyda ND\***, Liao G, Endres BT, Lewis RE, Garey KW. Innate inflammatory response and immunopharmacologic activity of micafungin, caspofungin, and voriconazole against wild-type and FKS mutant *Candida glabrata*. *Antimicrobial Agents and Chemotherapy* 2015; 59(9):5405-12. PMID: 26100700
15. Garey KW, Aitken SL, Dima-Ala A, **Beyda ND**, Kuper K, Xie Y, Koo HL. Echinocandin use in hospitalized patients: A multi-institutional study. *American Journal of Medical Sciences* 2015; 349(4):316-20. PMID: 25607510
16. Jacobs DM, **Beyda ND**, Asuphon O, Jahangir Alam M, Garey KW. Host factors and clinical outcomes of *Candida* colonization in critically ill patients. *Mycopathologia* 2015; 179(1-2):87-93. PMID: 25173925
17. **Beyda ND\***, John J, Kilic A, Alam MJ, Lasco TM, Garey KW. FKS mutant *Candida glabrata*; risk factors and outcomes in patients with candidemia. *Clinical Infectious Diseases* 2014; 58(6):819-25. PMID: 24879785
18. Aitken SL, **Beyda ND**, Shah DN, Palmer HR, Lasco TM, Koo H, Garey KW. Clinical practice patterns in hospitalized patients at risk for invasive candidiasis: role of antifungal stewardship programs in an era of rapid diagnostics. *Annals of Pharmacotherapy* 2014; 48(6):683-90. PMID: 24687545
19. **Beyda ND**, Alam MJ, Garey KW. Comparison of the T2DX instrument with T2Candida Assay and automated blood culture in the detection of *Candida* species using simulated blood cultures. *Diagnostic Microbiology and Infectious Disease* 2013; 77(4):324-6. PMID: 24135411
20. **Beyda ND**, Regen S, Lewis RE, Garey KW. Immunomodulatory agents as adjunctive therapy for the treatment of resistant *Candida* species. *Current Fungal Infection Reports* 2013; 7(2):119-25
21. Jardin CG, Palmer HR, Shah DN, Le F, **Beyda ND**, Jiang ZD, Garey KW. Assessment of treatment patterns and patient outcomes before vs after implementation of a severity-based *Clostridium difficile* infection treatment policy. *Journal of Hospital Infection* 2013; 85(1):28-32. PMID: 23834988
22. **Beyda ND**, Chuang SH, Alam MJ, Shah DN, Ng TM, McCaskey L, Garey KW. Treatment of *Candida famata* bloodstream infections: case series and review of the literature. *Journal of Antimicrobial Chemotherapy* 2013; 68(2):438-43. PMID: 23085777

23. **Beyda ND**, Lewis RE, Garey KW. Echinocandin resistance in *Candida* species: mechanisms of reduced susceptibility and therapeutic approaches. *Annals of Pharmacotherapy* 2012; 46(7-8):1086-96. PMID: 22811350
24. Tran TT, **Beyda ND**, Biehle LR, Cottreau JM, Echevarria K, Musick WL, Perez KK, Schilling AN; on Behalf of The Houston Infectious Diseases Network. Significant publications on infectious diseases pharmacotherapy 2011. *American Journal of Health-System Pharmacy* 2012; 69(19): 1671-1681. PMID: 22997121
25. Eiland E, **Beyda ND**, Han J, Lindgren W, Ward R, English TM, Hassoun A, Hathcock K. The Utility of rapid microbiological and molecular techniques in optimizing antimicrobial therapy. *SRX Pharmacology* 2010, Article ID 395215
26. **Beyda ND**, Cluck D, Taba KE, Middlebrooks M. Ocular manifestations of systemic diseases. *US Pharmacist* April 2010; HS2-HS8
27. **Beyda ND**, Eiland E. Rapid molecular testing in bloodstream infections: improving patient outcomes, reducing health care costs, and aiding clinical pharmacists in decision making. *US Pharmacist* Sept 2009; HS9-13

### **Abstracts**

1. Saenz R, Mezzone J, **Beyda ND\***. Rapid determination of *Candida* spp. and micafungin susceptibility utilizing imaging flow cytometry. American Society of Health Systems Pharmacists – December 7th, 2022 Las Vegas, NV
2. Mezzone J, Cuny G, **Beyda ND\***. High throughput screening to identify novel compound inhibitors of *Candida albicans* and *Candida glabrata*. Texas Society of Health Systems Pharmacists, April 11-13<sup>th</sup>, 2021, Virtual Meeting
3. Lewis RE, **Beyda ND**, Albert ND, Kontoyiannis DP. In-vitro pharmacodynamics of isavuconazole, voriconazole, and posaconazole against agents of *Aspergillosis*, *Mucormycosis*, *Phaeohyphomycosis*, *Fusariosis*, and *Scedosporiosis*. ECCMID 2018 – April 21-24<sup>th</sup>, 2018 Madrid, Spain
4. Fong G, Ngo K, Russo HP, **Beyda ND\***. *Candida parapsilosis* candidemia resistance patterns and treatment outcomes: an opportunity for antifungal stewardship. IDWeek 2017 – October 2<sup>nd</sup>, 2017 San Diego, CA
5. Fong G, Lasco TM, **Beyda ND\***. Treatment outcomes and resistance patterns in patients with ventricular assist device (VAD) associated candidemia. ASM Microbe – June 2<sup>nd</sup>, 2017 New Orleans, LA
6. Jacobs DM, Dilworth TJ, **Beyda ND**, Casapao AM, Mashtare T, Bowers DR. Characterization of candiduria treatment: A multi-institutional study. ASM Microbe – June 2<sup>nd</sup>, 2017 New Orleans, LA
7. Sofjan AK, Mitchell A, Shah DN, Nguyen T, Sim M, Trojcek A, **Beyda ND**, Garey KW. Real-world use of echinocandins in an era of increasing antifungal resistance. ASM Microbe – June 2<sup>nd</sup>, 2017

8. **Beyda ND\***, Amadio J, Rodriguez JR, Malinowski K, Garey KW, Wanger A, Ostrosky-Zeichner. Evaluation of BacT/Alert FA blood culture bottles and T2Candida assay for detection of *Candida* in the presence of antifungals. 1<sup>st</sup> ASM Microbe – June 17<sup>th</sup> – 20<sup>th</sup>, 2016 Boston, MA
9. Casapao AM, Jacobs DM, Bowers DR, **Beyda ND**, Dilworth TJ. Early beta-lactam (BL) therapy combined with standard therapy (STAN) for methicillin resistant *Staphylococcus aureus* (MRSA) bloodstream infections (BSI) compared to STAN alone: A multicenter, retrospective, propensity-matched analysis. 55<sup>th</sup> ICAAC – September 17<sup>th</sup>-21<sup>st</sup>, 2015 San Diego, CA
10. Endres BT, Liao G, **Beyda ND\***. Mutation of FKS2 evokes significant changes in echinocandin mediated beta-glucan unmasking, chitin synthesis, and macrophage activation in *Candida glabrata*. 55<sup>th</sup> ICAAC – September 17<sup>th</sup>-21<sup>st</sup>, 2015 San Diego, CA
11. **Beyda ND\***, Lewis RE, Liao GL, Garey KW. Innate inflammatory response and immunopharmacologic activity of antifungals against clinical bloodstream isolates of wild-type (WT) and FKS mutant *Candida glabrata*. 54<sup>th</sup> ICAAC – September 5-9, 2014 Washington DC
12. **Beyda ND\***, Gschwind L, Shah DN, Nguyen A, Lasco TM, Garey KW. Risk factors and clinical significance of persistent candidemia in hospitalized patients. 54<sup>th</sup> ICAAC – September 5-9, 2014 Washington, DC
13. **Beyda ND\***, John J, Alam MJ, Kilic A, Lasco TM, Garey KW. Echinocandin resistant *Candida glabrata*; Risk factors and outcomes in patients with candidemia. 53<sup>rd</sup> ICAAC – September 10-13, 2013, Denver, CO **“Featured on the Poster Walk”**
14. Jacobs DM, Asuphon O, **Beyda ND**, Alam MJ, Garey KW. Host factors for Candida colonization in critically ill patients. 53<sup>rd</sup> ICAAC – September 10-13, 2013, Denver, CO
15. Aitken SL, **Beyda ND**, Shah DN, Palmer HR, Lasco TM, Koo H, Garey KW. Clinical practice patterns in hospitalized patients at risk for candidemia: Implications for rapid candida detection methods. 53<sup>rd</sup> ICAAC – September 10-13, 2013, Denver, CO
16. **Beyda ND\***, Alam MJ, Garey KW. Comparison of the T2 Biosystems Candida assay and automated blood culture in the detection of Candida species using simulated blood cultures. 113<sup>th</sup> American Society for Microbiology General Meeting – May 18-21, 2013, Denver, CO
17. Kidwell KN, **Beyda ND\***, Garey KW. Time to positivity of blood cultures in patients with candidemia. Texas Society of Health System Pharmacists Annual Seminar – April 25-28, 2013, Austin, TX
18. **Beyda ND**, Shah DN, Cottreau J, Salazar M, Frost C, Lasco TM, Garey KW. Aggregate measures of antifungal use in hospitalized patients: Defined daily doses vs. antimicrobial days. IDWeek 2012 – October 17-21, 2012, San Diego, CA
19. **Beyda ND\***, Kilic A, Alam MJ, Lasco TM, Garey KW. Molecular epidemiology and fluconazole susceptibility of *Candida glabrata* candidemia at a university-affiliated medical center. 52<sup>nd</sup> ICAAC – September 9-12, 2012, San Francisco, CA
20. Mason C, **Beyda ND**, Shah DN, Morgan G, Garey KW. Cross-resistance to other azoles in *Candida* isolates resistant to fluconazole among hospitalized patients with candidemia. 46<sup>th</sup> American Society of Health System Pharmacists Midyear Clinical Meeting - December 4-8, 2011, New Orleans, LA

21. Alimi AD, Shah DN, **Beyda ND**, Kilic A, Garey KW. Incidence of positive microbiological cultures in patients with Clostridium difficile infection (CDI). 46<sup>th</sup> American Society of Health System Pharmacists Midyear Clinical Meeting - December 4-8, 2011, New Orleans, LA
22. Morgan GH, Shah DN, **Beyda ND**, Mason C, Garey KW. Change in fluconazole susceptibilities based on application of revised Clinical Laboratory Standards Institute (CLSI) breakpoints. 46<sup>th</sup> American Society of Health System Pharmacists Midyear Clinical Meeting - December 4-8, 2011, New Orleans, LA
23. Jardin CG, Palmer HP, Le F, **Beyda ND**, Garey KW. Assessment of treatment patterns and patient outcomes pre-versus post-implementation of a severity based Clostridium difficile infection (CDI) treatment policy. 51<sup>st</sup> ICAAC – September 17-20, 2011, Chicago, IL
24. **Beyda ND**, Garey KW, Palmer H. Examination of Antifungal Exposure and Persistent Candidemia Isolate Susceptibility. ALCALDE XXV Southwest Leadership Conference - April 14-15, 2011, San Antonio, TX
25. **Beyda ND**, Cockerham M, Parish R, Trimble K. Fungal prophylaxis: Incidence of invasive fungal infections in acute myelogenous leukemia and myelodysplastic syndrome. ALCALDE XXIV Southwest Leadership Conference –April 8-9, 2010, Galveston, TX
26. **Beyda ND**, Cockerham M, Parish R, Trimble K. Posaconazole versus Fluconazole for Prophylaxis of Invasive Fungal Infections in Patients with Hematologic Malignancies. 44<sup>th</sup> American Society of Health System Pharmacists Midyear Clinical Meeting – Decemeber 6-10, 2009, Las Vegas, NV
27. Eiland EH, **Beyda ND**, Han J, Hassoun A, Lindgren W, Ward R, English TM, Hathcock K. Utility of Target Enriched Multiplex Polymerase Chain Reaction (Tem-PCR) by Clinical Pharmacists in Optimizing Antimicrobial Therapy in Patients with Staphylococcal Bloodstream Infections. Association for Molecular Pathology 2009 Annual Meeting - November 19-22, 2009, Kissimmee, FL

## RESEARCH SUPPORT

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### Current:

Jazz Pharmaceuticals	ND Beyda (PI)	3/2023 –
“Using an at-home EEG headband to improve outcomes among narcolepsy patients initiating Xywav therapy”		
This prospective observational study aims to utilize an at-home EEG headband (Dreem) to characterize the pharmacodynamics of Xywav in regards to sleep architecture and identify biomarkers of treatment response in patients initiating Xywav therapy		

### Prior:

Society of Infectious Diseases Pharmacist	ND Beyda (PI)	10/2017 – 10/2020
“Uncovering novel mechanisms of non-FKS mediated echinocandin resistance in <i>C. glabrata</i> ”		
In this study, novel mechanisms governing non-FKS mediated echinocandin resistance will be identify through comparative genomic analysis of serial isolates which developed echinocandin resistance (FKS and non-FKS mediated) during therapy. Target genes identified through comparative genomic analysis will then be assessed by creating genetic mutant strains.		

Astellas Inc. (Investigator initiated)	ND Beyda (PI)	2/2016 – 4/2017
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“Adaptive cell wall responses to caspofungin and micafungin among echinocandin susceptible and resistant *C. glabrata*: Characterization and implications on virulence and host immune responses”

The purpose of this study is to characterize the immunopharmacologic activity of echinocandins against susceptible and resistant isolates of *C. glabrata* and determine how resistance impacts specific innate immune responses and virulence characteristics.

Astellas Inc. (Investigator initiated) DR Bowers; DM Jacobs (Co-PIs) 7/2015 – 11/2016  
“A multicenter characterization of the treatment of candiduria”

The overall goal of this study was to characterize the treatment of candiduria and determine whether patients are receiving treatment according to IDSA guidelines. Clinical and microbiological outcomes were also be assessed.

MacDonald Fund at Baylor-St. Luke’s ND Beyda (PI) 10/2014 – 6/2016  
“Rapid diagnostic for systemic candidiasis including antifungal susceptibility”

The purpose of this study was to optimize and validate a lysis-filtration method that will allow *Candida* speciation by MALDI-TOF and antifungal susceptibility testing by YeastOne to be performed directly from positive blood cultures. Once implemented into routine clinical practice its’ impact on improving the treatment of candidemia at Baylor-St. Luke’s Medical Center will be evaluated.

T2 Biosystems (Investigator initiated) ND Beyda (PI) 7/2014 – 7/2015  
“Effect of antifungals on the performance of the T2Candida assay vs. automated blood culture”

The primary objective of this project was to assess whether concomitant antifungals may impact the performance of the T2Candida assay compared to automated blood culture.

Astellas Inc. (Investigator initiated) ND Beyda; KW Garey (Co-PIs) 8/2013 – 8/2014  
“Innate inflammatory response and immunopharmacologic activity of micafungin, caspofungin, and voriconazole against *Candida glabrata*”

The goal of this study was to determine whether *FKS* gene mutations conferring echinocandin resistance diminish the innate immune response or immunopharmacologic activity of antifungals among clinical bloodstream isolates of *Candida glabrata*.

Astellas Inc. (Investigator initiated) ND Beyda (Co-I); KW Garey (PI) 8/2012 – 8/2013  
“Incidence, risk factors and outcomes associated with *FKS* mutations in patients with *C. glabrata* candidemia”

Role: Co-I. I developed the study question, methods, and submitted the grant in conjunction with KW Garey. I collected clinical bloodstream isolates of *C. glabrata* from the clinical microbiology laboratory, performed DNA extraction, *FKS* gene sequencing, and sequence analysis. I also collected clinical information from the chart, analyzed the data, and wrote the manuscript. The goal of this study was to evaluate the risk factors for *FKS* mutant *C. glabrata* and assess treatment outcomes among hospitalized patients receiving micafungin for candidemia.

T2 Biosystems ND Beyda (Co-I); KW Garey (PI) 6/2012 – 6/2013  
“Prospective collection and testing of un-spiked and *Candida*-spiked fresh whole blood specimens from patients who have been referred for a diagnostic blood culture”

The objective of this project was to provide T2Biosystems with clinical blood samples from patients with suspected candidiasis for their internal development and validation of a prototype T2Candida assay.

T2 Biosystems (Investigator initiated) ND Beyda(Co-I); KW Garey (PI) 5/2012 – 5/2013

“Comparison of the T2Candida assay and automated blood culture in the detection of *Candida* species using simulated blood samples”

The goal of this study was to independently validate the sensitivity and specificity of a prototype diagnostic to detect *Candida* species directly from whole blood using simulated blood samples.

## **SELECTED PRESENTATIONS**

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### **National presentations**

Antifungal susceptibility testing and therapeutic drug monitoring to maximize therapy in difficult to treat fungal infections October 2013

Invited speaker: American College of Clinical Pharmacy Annual Meeting  
ACPE# 0217-0000-13-117-L01-P

Update on managing invasive fungal infections in the era of new diagnostics, emerging resistance, and limited treatment options October 2016

American College of Clinical Pharmacy; Clinical Reasoning Series in Pharmacotherapy  
BCPS Specialty Recertification Credit; ACPE# 0217-0000-16-109-L01-P

### **Regional and local presentations**

Community Associated Methicillin Resistant *Staphylococcus aureus* October 2009

Louisiana Society of Health Systems Pharmacists 2009 Mid Year Meeting  
ACPE# 179-000-09-037-L01-P/T

Fungal prophylaxis: Incidence of invasive fungal infections in acute myelogenous leukemia and myelodysplastic syndrome April 2010  
ALCALDE Southwest Leadership Conference

Therapeutic drug monitoring of voriconazole and posaconazole: May 2010

A review of supporting evidence  
Louisiana State University Health Sciences Center – Shreveport Seminar

Impact of rapid microbiological testing on patient outcomes October 2010

Infectious Diseases Morning Report  
St. Luke’s Episcopal Hospital

Overview of Antifungals January 2011

Infectious Diseases Morning Report  
St. Luke’s Episcopal Hospital ID Morning Report

Optimizing fluconazole and echinocandin pharmacokinetics and May 2011

pharmacodynamics: Improving outcomes in mice then men  
Pharmacy seminar  
St. Luke’s Episcopal Hospital

Newly revised azole and echinocandin clinical breakpoints for *Candida* species April 2013

Advisory board meeting: Center for Antimicrobial Stewardship and Epidemiology  
Baylor-St. Luke’s Medical Center

Preventing antifungal resistance: Host, pathogen, drug February 2014

Faculty Seminar Series

University of Houston College of Pharmacy

Handy tools for approaching clinical infectious diseases questions  
Texas Society of Health Systems Pharmacists 2015 Annual Seminar  
ACPE# 0156-0000-15-145-L01-P

April 2015

Nipping antifungal resistance in the bud  
Seminar Series; Invited Speaker  
University of Kentucky School of Pharmacy

March 2016