

## GRETA A. BUSHNELL, PhD, MSPH

Center for Pharmacoepidemiology and Treatment Science  
Rutgers Institute for Health, Health Care Policy and Aging Research  
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### EDUCATION

Doctor of Philosophy: Epidemiology	2013 - 2017
University of North Carolina at Chapel Hill, Gillings School of Global Public Health, Department of Epidemiology; Chapel Hill, NC	
Dissertation: <i>Pediatric Anxiety: Initial Pharmacotherapy, Adherence Prediction, and Burden of Events</i>	
Advisor: Til Stürmer, PhD, MD	
Master of Science in Public Health: Epidemiology	2011 - 2013
University of North Carolina at Chapel Hill, Gillings School of Global Public Health, Department of Epidemiology; Chapel Hill, NC	
Thesis: <i>Predicting Persistence to Antidepressant Treatment</i>	
Advisor: Til Stürmer, PhD, MD	
Bachelor of Science: Health Science, Health Promotion and Education; Psychology Minor	2007 - 2011
Clemson University, College of Behavioral, Social and Health Sciences; Clemson, SC	
Summa cum laude	
Semester at Sea study abroad program; University of Virginia; Charlottesville, VA	Spring 2010

### PROFESSIONAL EXPERIENCE

#### *Academic Appointments*

Assistant Professor of Epidemiology	2020 -
Rutgers University School of Public Health, Department of Biostatistics and Epidemiology	
Core Faculty, Center for Pharmacoepidemiology and Treatment Science	2020 -
Rutgers Institute for Health, Health Care Policy and Aging Research	
Postdoctoral Research Fellow, Psychiatric Epidemiology Training Program	2017 - 2020
Columbia University Mailman School of Public Health, Department of Epidemiology	

#### *Other Appointments*

Predoctoral (F31) Fellow, Ruth L. Kirschstein National Research Service Award	2016 - 2017
National Institutes of Health, National Institute of Mental Health	
Graduate Research Assistant, Pharmacoepidemiology	2012 - 2017
Predoctoral Merck Fellow, Center for Pharmacoepidemiology (2014 – 2015)	
University of North Carolina at Chapel Hill, Department of Epidemiology	

Doctoral Research Practicum	2015 - 2017
University of North Carolina School of Medicine, SUDDEN (SUDDen DEath in North Carolina)	
Graduate Research Assistant	2012 - 2015
GlaxoSmithKline, Worldwide Epidemiology; Research Triangle Park, NC	
Health Research Training Program Summer Intern	2013
New York City Department of Health and Mental Hygiene, Division of Disease Control	
Epi Scholar Summer Intern	2012
New York City Department of Health and Mental Hygiene, Division of Disease Control	
Student Research Intern	2011
Greenville Hospital System, Fertility Center of the Carolinas; Greenville, SC	
Epidemiology Summer Intern	2009, 2010, 2011
GlaxoSmithKline, Worldwide Epidemiology; Upper Providence, PA	

### **GRANT SUPPORT**

1K01DA050769 PI: Greta Bushnell 3/15/2021 – 2/28/2026

**National Institutes of Health, National Institute on Drug Abuse**

Benzodiazepine-related harms in young people: Informing policy, interventions, and prescribing

T32MH013043 PI: Ezra Susser 9/1/2017 – 6/30/2020

**National Institutes of Health, National Institute on Mental Health**

Psychiatric Epidemiology T32 Training Grant

Sponsored by the Department of Epidemiology at Columbia University Mailman School of Public Health

Role: Postdoctoral Research Fellow in Psychiatric Epidemiology

F31MH107085 PI: Greta Bushnell 1/1/2016 - 8/8/2017

**National Institutes of Health, National Institute on Mental Health**

Project: “Pediatric anxiety: Pharmacotherapy and psychotherapy utilization and serious adverse outcomes”

Role: Predoctoral Research Trainee

Fellowship sponsors: Drs. Til Stürmer (primary), Scott N Compton, Stacie B Dusetzina, Bradley N Gaynes

Pharmacoepidemiology Fellowship PI: Til Stürmer 8/1/2014 – 12/31/2015

**Center for Pharmacoepidemiology, University of North Carolina at Chapel Hill**

Training grant from the Center for Pharmacoepidemiology, a partnership between the Department of Epidemiology at the University of North Carolina at Chapel Hill and notable non-academic stakeholders

Role: Predoctoral Trainee in Pharmacoepidemiology

### **HONORS & AWARDS**

Acknowledgement of ranking among best peer reviewers 2014 - 2018  
*Pharmacoepidemiology and Drug Safety*

Nancy A. Dreyer Endowed Scholarship in Epidemiology 2016 - 2017  
 University of North Carolina Gillings School of Global Public Health

New Investigator Award	2016
American Society of Clinical Psychopharmacology 2016 Annual Meeting	
Best Student Poster Award	2016
Tenth Annual Chapel Hill Pharmaceutical Science Conference	
Graduate Student Transportation Grant Award	2016
University of North Carolina Graduate School	
Fred and Pearle McCall Scholarship	2015 - 2016
University of North Carolina Gillings School of Global Public Health	
Student Travel Scholarship for Meeting Attendance	2013 - 2016
International Society for Pharmacoepidemiology	
Publication of one of the most highly cited papers	2014 - 2015
<i>International Journal of Infectious Diseases</i>	
Spotlight Poster in Adherence	2013
International Conference on Pharmacoepidemiology; Montreal, Canada	
Faculty Scholarship Award	2011
Clemson University, College of Behavioral, Social and Health Sciences	
Certificate of Recognition for Excellence in Public Health Sciences	2011
Clemson University, College of Behavioral, Social and Health Sciences	
Clemson University President's List	2007 - 2011

## BIBLIOGRAPHY

### Published Research Papers

1. **Bushnell GA**, Olfson M, Martins SM. Sex differences in US emergency department non-fatal visits for benzodiazepine poisonings in adolescents and young adults. *Drug and Alcohol Dependence*. 2021. *Online ahead of print*.
2. Ford J, **Bushnell G**, Griffith AM, Joodi G, Ashoka A, Patel N, Husain M, Pursell IW, Sears SF, Mounsey JP, Simpson RJ. Mental Disorders, Substance Use Disorders, and Psychotropic Medication Use Among Sudden-Death Victims. *Psychiatric Services*. 2021. *Online ahead of print*. doi:10.1176/appi.ps.201900389. PMID: 33593102
3. **Bushnell GA**, Crystal S, Olfson M. Trends in antipsychotic treatment of young, privately insured children. *Journal of American Academy of Child and Adolescent Psychiatry*. *Online ahead of print*. doi:10.1016/j.jaac.2020.09.023. PMID: 33091567
4. **Bushnell GA**, Gerhard T, Crystal S, Olfson M. Benzodiazepine treatment and fracture risk in young persons with anxiety disorders. *Pediatrics*. 2020;146(1):e20193478. PMC7329250
5. **Bushnell GA**, Talati A, Wickramaratne P, Gamaroff MJ, Weissman MM. Trajectories of childhood anxiety disorders in two generations at high risk. *Depression and Anxiety*. 2020;37(6):521-531. PMC7292740
6. **Bushnell GA**, Crystal S, Olfson M. Prescription benzodiazepine use in privately insured US children and adolescents. *American Journal of Preventative Medicine*. 2019;57(6):775-785. PMC6935869

7. **Bushnell GA**, Gaynes BN, Compton SN, Dusetzina SB, Olfson M, Stürmer T. Incident substance use disorder following anxiety disorder in privately insured youth. *Journal of Adolescent Health*. 2019;65(4):536-542. PMC6755043
8. **Bushnell GA**, Dusetzina SB, Compton SN, Gaynes BN, Brookhart MA, Stürmer T. Psychotherapy claims surrounding pharmacotherapy initiation in children and adolescents with anxiety disorders. *Journal of Child and Adolescent Psychopharmacology*. 2019;29(2):100-106. PMC6442239.
9. **Bushnell GA**, Gaynes BN, Compton SN, Dusetzina SB, Brookhart MA, Stürmer T. Incidence of mental health hospitalizations, treated self-harm, and emergency room visits following new anxiety disorder diagnoses in privately insured U.S. children. *Depression and Anxiety*. 2019;36(2):179-189. PMC6488302.
10. **Bushnell GA**, Stürmer T, Mack C, Pate V, Miller M. Who diagnosed and prescribed what? Using provider details to inform observational research. *Pharmacoepidemiology and Drug Safety*. 2018;27(12):1422-1426. PMC6407693.
11. Raman SR, Man KKC, Bahmanyar S, Berard A, Bilder S, Boukhris T, **Bushnell G**, Crystal S, Furu K, KaoYang YH, Karlstad Ø, Kieler H, Kubota K, Lai EC, Martikainen JE, Maura G, Moore N, Montero D, Nakamura H, Neumann A, Pate V, Pottegård A, Pratt NL, Roughead EE, Saint-Gerons DM, Stürmer T, Su C, Zoega H, Sturkenbroom M, Chan EW, Coghill D, Ip P, Wong ICK. Trends in attention-deficit hyperactivity disorder medication use: a retrospective observational study using population-based databases. *Lancet Psychiatry*. 2018;5(10):824-835. PMID: 30220514.
12. **Bushnell GA**, Brookhart MA, Gaynes BN, Compton SN, Dusetzina SB, Stürmer T. Examining parental medication adherence as a predictor of child SSRI adherence in pediatric anxiety. *Medical Care*. 2018;56(6):510-519. PMC5945329.
13. **Bushnell GA**, Compton SN, Dusetzina SB, Gaynes BN, Brookhart MA, Walkup JT, Rynn MA, Stürmer T. Treating pediatric anxiety: The use of SSRIs and other prescription medications. *Journal of Clinical Psychiatry*. 2018;79(1). PMC6468981.
14. **Bushnell GA**, Stürmer T, Gaynes BN, Pate V, Miller M. Simultaneous antidepressant and benzodiazepine new use and subsequent long-term benzodiazepine use in adults with depression, United States, 2001-2014. *JAMA Psychiatry*. 2017;74(7):747-755. PMC5710248.
15. **Bushnell GA**, Stürmer T, White AD, Pate V, Swanson S, Azrael D, Miller M. Predicting persistence to antidepressant treatment in administrative claims data: Considering the influence of refill delays and prior persistence on other medications. *Journal of Affective Disorders* 2016;9:138-147. PMC5033109.
16. **Bushnell GA**, Stürmer T, Pate V, White AD, Swanson S, Azrael D, Miller M. Dosing of selective serotonin reuptake inhibitors in children and adults before and after the FDA black-box warnings. *Psychiatric Services*. 2016;67(3):302-9. PMC5033112.
17. Wurst KE, Kelly-Reif K, **Bushnell GA**, Pascoe S, Barnes N. Understanding asthma-chronic obstructive pulmonary disease overlap syndrome. *Respiratory Medicine*. 2016;110:1-11. PMID: 26525374.
18. **Bushnell GA**, Stennis LN, Drobnik AM, Proops SD, Ahuja SD, Bornschlegel K, and Fuld J. Characteristics and TB treatment outcomes in TB patients with viral hepatitis, New York City, 2000–2010. *Epidemiology & Infection*. 2015;143(9):1972-81. PMID: 25387450.

19. Drobnik A, Pinchoff J, **Bushnell GA**, Ly S, Yuan J, Varma JK, Fuld J. Matching HIV, tuberculosis, viral hepatitis and STD surveillance data, 2000-2010: Identification of infectious disease syndemics in New York City. *Journal of Public Health Management and Practice*. 2014;20(5):506-512. PMID: 24335712  
Additional publicly available report: Drobnik A, Pinchoff J, **Bushnell GA**, Terranova E, Fuld J. Matching New York City viral hepatitis, tuberculosis, sexually transmitted diseases and HIV surveillance data, 2000-2010. New York City Department of Health and Mental Hygiene: Epi Research Report, October 2013;1-12.
20. **Bushnell GA**, Mitrani-Gold F, Mundy, L. Emergence of NDM-1 producing Enterobacteriaceae and non-Enterobacteriaceae: Global case detection and bacterial surveillance. *International Journal of Infectious Diseases* 2013;17(5):e325-333. PMID: 23332300.  
Additional supplement: Mitrani-Gold F, **Bushnell GA**, Mundy, L. World Biomedical Frontiers. May 3, 2014. <http://biomedfrontiers.org/infection-2014-5-21/>
21. Miller P, Parnell B, **Bushnell GA**, Tallman N, Forstein D, Higdon L, Kitawaki J, Lessey B. Endometrial receptivity defects during in vitro fertilization cycles with and without Letrozole. *Human Reproduction*. 2012;27(3):881-888. PMC3279128.

Manuscript Under Review.

1. **Bushnell GA**, Rynn MA, Crystal S, Gerhard T, Olfson M. Simultaneous benzodiazepine and SSRI initiation in adolescents and young adults with anxiety disorders. *In revision*.

Published & Accepted Abstracts

1. **Bushnell GA**, Gerhard T, Crystal S, Olfson M. Benzodiazepine treatment and fracture risk: Gender differences in children with anxiety disorders. American Academy of Child and Adolescent Psychiatry 66<sup>th</sup> Annual Meeting, Chicago, IL. October 14-19, 2019. Poster presentation.
2. **Bushnell GA**, Gerhard T, Crystal S, Olfson M. Benzodiazepines and risk of fractures in young people. International Society for Pharmacoepidemiology 35<sup>th</sup> International Conference, Philadelphia, PA. August 24-28, 2019. Podium presentation.
3. **Bushnell GA**, Brookhart MA, Gaynes BN, Compton SN, Dusetzina SB, Stürmer T. Examining parental adherence as a predictor of child SSRI adherence in pediatric anxiety. International Society for Pharmacoepidemiology 33<sup>rd</sup> International Conference, Montreal, Canada. August 26-30, 2017. Podium presentation.
4. **Bushnell GA**, Stürmer T, Mack C, Pate V, Miller M. Provider details are smarter than you think: An example of antidepressant initiators within claims data. International Society for Pharmacoepidemiology 33<sup>rd</sup> International Conference, Montreal, Canada. August 26-30, 2017. Poster presentation.
5. Husain M, **Bushnell GA**, Conover M, Ford J, Deyo Z, Ross Simpson R. Psychotropic medication use in sudden unexpected death victims. International Society for Pharmacoepidemiology 33<sup>rd</sup> International Conference, Montreal, Canada. August 26-30, 2017. Poster presentation.
6. Raman SR, Man KKC, Bahmanyar S, **Bushnell GA**, et al.. Utilization of attention deficit hyperactivity (ADHD) disorder medications by adults in 13 countries. International Society for

Pharmacoepidemiology 33<sup>rd</sup> International Conference, Montreal, Canada. August 26-30, 2017. Podium presentation.

7. **Bushnell GA**, Gaynes BN, Compton SN, Dusetzina SB, Brookhart MA, Stürmer T. Use of recommended therapies following a new anxiety diagnosis in children and adolescents. American Society of Clinical Psychopharmacology 2017 Annual Meeting, Miami, FL. May 30-June 2, 2017. Poster presentation.
8. Ashoka A, **Bushnell GA**, Joodi G, Meltzer-Brody S, Devlin C, Patel NP, Pursell IW, Simpson RJ. High prevalence of mental and substance use disorders among out-of-hospital sudden unexpected death victims. American Heart Association's Scientific Sessions 2016, New Orleans, LA. November 13-15, 2016. Poster presentation.
9. **Bushnell GA**, Compton SN, Gaynes BN, Dusetzina SB, Brookhart MA, Stürmer T. Treatment patterns in pediatric anxiety after pharmacotherapy initiation. American Academy of Child and Adolescent Psychiatry 63<sup>rd</sup> Annual Meeting, New York, NY. October 25-29, 2016. Poster presentation.
10. **Bushnell GA**, Stürmer T, Gaynes BN, Pate V, Miller M. Antidepressant and benzodiazepine co-initiation and subsequent long-term benzodiazepine use in adults with depression, United States 2001-2014. International Society for Pharmacoepidemiology 32<sup>nd</sup> International Conference, Dublin, Ireland. August 25-28, 2016. Podium presentation.
11. **Bushnell GA**, Dusetzina SB, Gaynes BN, Compton SN, Brookhart MA, Stürmer T. Treating pediatric anxiety: The use of SSRIs and other prescription medications. American Society of Clinical Psychopharmacology 2016 Annual Meeting, Scottsdale, AZ. May 30-June 3, 2016. Poster presentation.
12. **Bushnell GA**, Dusetzina SB, Gaynes BN, Compton SN, White AD, Stürmer T. Initial prescription medication for children with anxiety: Concordance with evidence. International Society for Pharmacoepidemiology 31<sup>st</sup> International Conference, Boston, MA. August 24-26, 2015. Poster presentation.
13. Wurst KE, Ephross SA, Wier P, **Bushnell GA**, White AD. A multidisciplinary structured approach for interpreting and integrating medication exposure and pregnancy outcomes information. International Society for Pharmacoepidemiology 31<sup>st</sup> International Conference, Boston, MA. August 24-26, 2015. Poster presentation.
14. **Bushnell GA**, White A, Stürmer T, Gaynes B, Pate V, Azrael D, Miller M. Characteristics of patients with depression who initiate antidepressant and benzodiazepine therapy simultaneously, compared with antidepressant monotherapy. International Society for Pharmacoepidemiology 30<sup>th</sup> International Conference, Taipei, Taiwan October 24-27, 2014. Poster presentation.
15. **Bushnell GA**, Stürmer T, Pate V, White AD, Swanson S, Azrael D, Miller M. Predicting persistence with antidepressant treatment at 6 months. International Society for Pharmacoepidemiology 29<sup>th</sup> International Conference, Montreal, Canada August 25-28, 2013. Poster spotlight.
16. **Bushnell GA**, White AD, Stürmer T, Pate V, Swanson S, Azrael D, Miller M. Characteristics of Selective Serotonin Re-Uptake Inhibitor initiators 1999-2009. International Society for Pharmacoepidemiology 29<sup>th</sup> International Conference, Montreal, Canada. August 25-28, 2013. Poster presentation.

17. Wurst KE, **Bushnell GA**, Shukla A, Muellerova H, Davis KJ. Factors associated with time to triple therapy in newly diagnosed COPD patients in the UK General Practice Research Database. International Society for Pharmacoepidemiology 29<sup>th</sup> International Conference, Montreal, Canada. August 25-28, 2013. Podium presentation.
18. Lessey BA, **Bushnell GA**, Miller SE. Letrozole use in frozen embryo transfer (FET) cycles: Clinical pregnancy outcomes in patients with and without endometriosis. American Society for Reproductive Medicine 67<sup>th</sup> Annual Meeting, Orlando, FL. October 15-19, 2011. Poster presentation.
19. Lessey BA, **Bushnell GA**, Miller SE, Price TA. Intraoperative methylene blue dye staining detects peritoneal defects associated with endometriosis and pelvic pain. 27<sup>th</sup> Annual Meeting of ESHRE, Stockholm, Sweden. July 3-6, 2011. Podium presentation.

## **TEACHING RECORD**

Teaching Assistant: “Clinical Measurement and Evaluation” (EPID 711)	2014
University of North Carolina at Chapel Hill, Gillings School of Global Public Health	
Course Instructor: Dr. William C. Miller	
American Psychopathological Association (APPA): Training Program Workshop; Presenter	2020
Benzodiazepine prescribing and safety concerns in young people	
Psychiatric Epidemiology Seminar, Columbia University; Presenter	
Benzodiazepine prescribing in young people and risk of overdose and substance use	2019
Prescription benzodiazepine use in privately insured children and adolescents	2018
Injury Center Works-In-Progress Seminar, Columbia University; Presenter	
Benzodiazepines and risk of fractures in young people	2019
Pharmacoepidemiology Seminar, University of North Carolina; Presenter	
Examining parental medication adherence as a predictor of child adherence	2017
Initial treatment type and serious adverse outcomes in pediatric anxiety, a work in progress	2016
Antidepressant and benzodiazepine co-initiation and subsequent long-term benzodiazepine use	2016
Initial prescription medication for children with anxiety: Concordance with evidence	2015
Predicting antidepressant persistence: Influence of prior persistence and refill delays	2015
Dosing of SSRIs in children and adults before and after the FDA black-box warnings	2015
Epidemiologic Workshop; Presenter	2014
University of North Carolina, Merck, and GlaxoSmithKline collaborative workshop	
North Wales, PA	

## **SERVICE**

### **Professional society membership and participation.**

International Society for Pharmacoepidemiology	2012 - present
Pediatric Special Interest Group	
Member (2016 – present)	

Secretary (2020 – present)

Adherence Special Interest Group, Member (2013 – present)

Invited conference abstract reviewer (2015 – 2021)

American Society of Clinical Psychopharmacology

2016 - 2018

## Journal reviews.

Pharmacoepidemiology and Drug Safety	2014 - 2021
JAMA Pediatrics	2020
Pediatrics	2019
Acta Psychiatrica Scandinavica	2019
Journal of Affective Disorders	2019
Journal of Clinical Epidemiology	2016
JAMA	2015
American Journal of Epidemiology	2014

## University service.

Admissions Committee Member, Doctoral Program, Epidemiology Concentration	
School of Public Health, Rutgers University	2020
Co-Chair; UNC Pharmacoepidemiology Seminar	2014 - 2015
Treasurer; UNC Student Chapter, International Society for Pharmacoepidemiology	2012 - 2013

## Community service.

WIN (Women in Need), Afterschool Program Volunteer; New York, NY	2018 -
North Carolina Children's Hospital, Pediatric Playroom Volunteer; Chapel Hill, NC	2014 - 2015
Peer Health Education Club, Member; Semester at Sea, University of Virginia	2010
Paoli Memorial Hospital, Volunteer; Paoli, PA	2006 - 2007