

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
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NAME Carnahan, Ryan M.	POSITION TITLE Associate Professor		
eRA COMMONS USER NAME (credential, e.g., agency login) RCARNAHAN			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
University of Iowa, Iowa City, IA	Pharm.D.	2001	Pharmacy
University of Iowa, Iowa City, IA	M.S.	2004	Epidemiology
University of Iowa, Iowa City, IA	Fellowship	2001-2004	Psychopharmacology

Positions and Honors

Positions and Employment

2001-2004	Fellow in Clinical Psychopharmacology, University of Iowa College of Pharmacy
2004-2008	Assistant Professor, University of Oklahoma College of Pharmacy
2004-2008	Pharmacy Consultant, OU-IMPACT, assertive community treatment team OU-Tulsa College of Medicine, Department of Psychiatry
2006-2008	Director of PACT Research, OU-Tulsa College of Medicine, Department of Psychiatry
2008-2013	Assistant Professor (Clinical) University of Iowa College of Public Health, Department of Epidemiology
2008-present	Associate Director, University of Iowa Health Effectiveness Research Center
2008-2012	Assistant Director and Educational Consortium Representative University of Iowa Older Adult Center for Education and Research on Therapeutics
2013-2014	Associate Professor (Clinical) University of Iowa College of Public Health, Department of Epidemiology
2014-current	Associate Professor University of Iowa College of Public Health, Department of Epidemiology

Other Professional Activities

1998-1999	Member of the Iowa Pharmacy Association House of Delegates
1998-2000	Co-Chairperson of the Operation Immunization Committee, Academy of Students of Pharmacy
1999	Member, Iowa Pharmacy Association Professional Affairs Policy Committee
1999	Member, Academy of Students of Pharmacy—American Pharmaceutical Association National House of Delegates
1999-2000	Internship with Pharmacy Care Associates/Omni Care, long-term care pharmacy
1999-2004	Member, Iowa Pharmacy Association Political Action Network
2004	Board Certification in Psychiatric Pharmacy from the Board of Pharmaceutical Specialties
2005-2006	University of Oklahoma Health Sciences Center Faculty Leadership Fellow
2006-2014	Member, the College of Psychiatric and Neurologic Pharmacists Research Committee
2008-2012	Member, Veterans Affairs VISN 23 Mental Health Pharmacoepidemiology Consulting Board
2009-2011	Member, CHAIN Editorial Board, CERTs national education website
2010-2012	Vice Chair, the College of Psychiatric and Neurologic Pharmacists Research Committee
2010-present	Member, Protocol Core, FDA's Mini-Sentinel surveillance program
2010-present	Co-Director, Iowa Geriatric Education Center
2011	Expert Panel Member, Treatment of Neuropsychiatric Symptoms in Dementia, University of Michigan Program for Positive Aging
2012-2013	Ad Hoc Member, NIA-S review panel
2012-2014	Chair, the College of Psychiatric and Neurologic Pharmacists Research Committee
2014	Committee Member, National Quality Forum, Prioritizing Measure Gaps Project, Alzheimer's Disease and Related Dementias
2014-2015	Co-Lead, the College of Psychiatric and Neurologic Pharmacists Research Community

Awards and Honors

1999	Inducted into Rho Chi—Delta Chapter, National Pharmacy Honor Society
2001	Department of Psychiatry Award for excellence in psychiatric pharmacy practice and research
2001	Bristol Meyers Squibb Patient Care Award, University of Iowa
2002	American College of Clinical Pharmacists Wyeth Psychopharmacology Research Fellowship
2003-2005	NIH Clinical Researcher Loan Repayment Program award
2004	Inducted into the Delta Omega—Alpha Phi Chapter, Honorary Society in Public Health
2007	The College of Psychiatric and Neurologic Pharmacists New Investigator Award
2008	University of Iowa College of Public Health/College of Medicine New Investigator Award

C. Publications (2012-present, in chronological order)

1. Tannenbaum C, Paquette A, Hilmer S, Holroyd-Leduc J, Carnahan RM. (2012) A systematic review of cognitive deficits induced by anticholinergic, antihistamine, GABAergic, and opioid drugs in healthy individuals. *Drugs and Aging*, 29(8), 639-658. PMID: 22812538
2. Jensen P, Johnson K, Floyd J, Heckbert S, Carnahan RM, Dublin S. (2012) A systematic review of validated methods for identifying atrial fibrillation using administrative data. *Pharmacoepidemiology and Drug Safety*, 21(S1), 141-147.
3. Carnahan RM, Moores KG, Perencevich EN. (2012) A systematic review of validated methods for identifying infection related to blood products, tissue grafts, or organ transplants using administrative data. *Pharmacoepidemiology and Drug Safety*, 21(S1), 213-221.
4. Herman R, Gilchrist B, Link B, Carnahan RM. (2012) A systematic review of validated methods for identifying lymphoma using administrative data. *Pharmacoepidemiology and Drug Safety*, 21(S1), 203-212.
5. Moores K, Gilchrist B, Carnahan RM, Abrams T. (2012) A systematic review of validated methods for identifying pancreatitis using administrative data. *Pharmacoepidemiology and Drug Safety*, 21(S1), 194-202.
6. Kee VR, Gilchrist B, Granner MA, Sarrazin NR, Carnahan RM. (2012) A systematic review of validated methods for identifying seizures, convulsions, or epilepsy using administrative and claims data. *Pharmacoepidemiology and Drug Safety*, 21(S1), 183-193.
7. Carnahan RM, Herman R, Moores K. (2012) A systematic review of validated methods for identifying transfusion-related sepsis using administrative and claims data. *Pharmacoepidemiology and Drug Safety*, 21(S1), 222-229.
8. Carnahan RM, Moores KG. (2012) Mini-Sentinel's systematic reviews of validated methods for identifying health outcomes using administrative and claims data: methods and lessons learned. *Pharmacoepidemiology and Drug Safety*, 21(S1), 82-89.
9. Carnahan RM. (2012) Mini-Sentinel's systematic reviews of validated methods for identifying health outcomes using administrative data: summary of findings and suggestions for future research. *Pharmacoepidemiology and Drug Safety*, 21(S1), 90-99.
10. Robertson J, Farris KB, Schultz SK, Carnahan RM, Gryzlak B, Chrischilles EA. (2012) Older adults' views about "Managing Your Medications" booklet. *Journal of Applied Gerontology*, 32(3), 370-382.
11. Platt R, Carnahan RM, Brown JS, Chrischilles EA, Curtis LH, Hennessy S, Nelson JC, Racoosin JA, Robb M, Schneeweiss S, Toh S, Weiner MG. (2012) The U.S. Food and Drug Administration's Mini-Sentinel program: status and direction. *Pharmacoepidemiology and Drug Safety*, 21(S1), 1-8.

12. Lee C, Carnahan RM, McPheeters M. (2013) A Systematic Review of Validated Methods for Identifying Bell's Palsy Using Administrative or Claims Data *Vaccine*, 31(Supp 10), K7-K11.
13. Williams SE, Carnahan RM, Krishnaswami S, McPheeters M. (2013) A Systematic Review of Validated Methods for Identifying Transverse Myelitis Using Administrative or Claims Data *Vaccine*, 31(Supp 10), K83-K87.
14. Williams SE, Carnahan RM, McPheeters ML. (2013) A Systematic Review of Validated Methods for Identifying Uveitis Using Administrative or Claims Data *Vaccine*, 31(Supp 10), K88-K97.
15. Idowu RT, Carnahan RM, Sathe NA, McPheeters ML. (2013) A Systematic Review of Validated Methods to Capture Myopericarditis Using Administrative or Claims Data *Vaccine*, 31(Supp 10), K34-K40.
16. Likis FE, Sathe NA, Carnahan RM, McPheeters ML. (2013) A Systematic Review of Validated Methods to Capture Stillbirth and Spontaneous Abortion Using Administrative or Claims Data *Vaccine*, 31(Supp 10), K74-K82.
17. Smith M, Schultz SK, Seydel LL, Reist J, Kelly M, Weckmann M, Gryzlak B, Carnahan RM. (2013) Improving antipsychotic agent use in nursing homes: development of an algorithm for treating problem behaviors in dementia *Journal of Gerontological Nursing*, 39(5), 24-35. PMID: 23506127
18. Haring B, Pettinger M, Bea JW, Wactawski-Wende J, Carnahan RM, Ockene JK, Wyler von Ballmoos M, Wallace RB, Wassertheil-Smoller S. (2013) Laxative use and incident falls, fractures and change in bone mineral density in postmenopausal women: results from the Women's Health Initiative *BMC Geriatrics*, 13(38), 1-10 (online open access). PMID: 23635086
19. McPheeters ML, Sathe NA, Jerome RN, Carnahan RM. (2013) Methods for Systematic Reviews of Administrative Database Studies Capturing Health Outcomes of Interest *Vaccine*, 31(Supp 10), K2-K6.
20. Ammann EM, Pottala JV, Harris WS, Espeland MA, Wallace RB, Denburg NL, Carnahan RM, Robinson JG. (2013) Omega-3 Fatty Acids and Domain-Specific Cognitive Aging: Secondary Analyses of Data from WHISCA *Neurology*, 81(17), 1484-91. PMID: 24068783
21. Sura SD, Carnahan RM, Chen H, Aparasu RR. (2013) Prevalence and Determinants of Anticholinergic Medications Use in Elderly Dementia Patients *Drugs and Aging*, 30(10), 837-44. PMID: 23881698
22. Moga DC, Carnahan RM, Lund BC, Pendergast JF, Wallace RB, Torner JC, Li Y, Chrischilles EA. (2013) Risks and Benefits of Bladder Antimuscarinics Among Elderly Residents of Veterans Affairs Community Living Centers *Journal of the American Medical Directors Association*, Published online in advance, Apr. 29, 2013.. PMID: 23639715
23. Metti AL, Yaffe K, Boudreau RM, Simonsick EM, Carnahan RM, Satterfield S, Harris TB, Ayonayon HN, Rosano C, Cauley JA, for the Health ABC Study. (2014) Trajectories of inflammatory markers and cognitive decline over 10 years *Neurobiol Aging* 2014;35(12):2785-90. PMID: 24997674
24. Kachru N, Carnahan RM, Johnson ML, Aparasu RR. Potentially inappropriate anticholinergic medication use in community-dwelling older adults: a national cross-sectional study. *Drugs Aging* 2015;32(5):379-89. PMID: 25832970
25. Sura SD, Carnahan RM, Chen H, Aparasu RR. Anticholinergic drugs and health-related quality of life in older adults with dementia. *J Am Pharm Assoc* 2015;55(3):282-7. PMID: 25909488.
26. Albertson J, McDanel JS, Carnahan R, Chrischilles E, Perencevich EN, Goto M, Jiang L, Alexander B, Schweizer ML. Determination of risk factors for recurrent methicillin-resistant staphylococcus aureus

bacteremia in a Veterans Affairs healthcare system population. *Infect Control Hosp Epidemiol* 2015;36(5):543-9. PMID: 25682861

27. Daly J, Bay CP, Levy BT, Carnahan RM. Caring for people with dementia and challenging behaviors in nursing homes: a needs assessment geriatric nursing. *Geriatric Nursing* 2015;36(3):182-91. PMID: 25676166
28. Urick BY, Kaskie BP, Carnahan RM. Improving antipsychotic prescribing practices in nursing facilities: the role of surveyor methods and surveying agencies in upholding the Nursing Home Reform Act. *Res Soc Adm Pharm* 2015 Apr 28 pii: S1551-7411(15)00078-9. doi: 10.1016/j.sapharm.2015.04.006. [Epub ahead of print] PMID: 25990258
29. Bali V, Chatterjee S, Carnahan RM, Chen H, Johnson ML, Aparasu RR. Risk of dementia among elderly nursing home patients using paroxetine and other selective serotonin reuptake inhibitors. *Psychiatr Serv* 2015 Aug 3:appips201500011 [Epub ahead of print] PMID: 26234334.