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EDUCATION

Undergraduate:	**Drury University**, Springfield, Missouri
1995-2000	**B.A., Biology and Chemistry**
Graduate:	**The University of Kansas Medical Center**, Kansas City, Kansas
2003-2008	**Ph.D., Department of Pharmacology, Toxicology and Therapeutics**
May 2005	**University of Minnesota**, Minneapolis, Minnesota Pain Mechanisms: From Molecules to Treatment.

PROFESSIONAL EXPERIENCE

2019-present	Director, In Vivo and Behavioral Pharmacology, Vanderbilt Center for Neuroscience Drug Discovery, Vanderbilt University, Nashville, Tennessee
2018-present	Biology Team Lead, mGlu1 positive allosteric modulator drug discovery team, Vanderbilt Center for Neuroscience Drug Discovery, Vanderbilt University, Nashville, Tennessee
2014-present	Assistant Professor, Department of Pharmacology, Vanderbilt Center for Neuroscience Drug Discovery, Vanderbilt University, Nashville, Tennessee
2013-present	in vivo Pharmacology Team Lead, M1 positive allosteric modulator drug discovery team, Vanderbilt Center for Neuroscience Drug Discovery, Vanderbilt University Medical Center, Nashville, Tennessee
2012-2014	Research Instructor, Department of Pharmacology, Vanderbilt Center for Neuroscience Drug Discovery, Vanderbilt University Medical Center, Nashville, Tennessee
2008-2012	Postdoctoral Research Fellow, Department of Pharmacology, Vanderbilt Center for Neuroscience Drug Discovery, Vanderbilt University Medical Center, Nashville, Tennessee

2003-2008	Graduate Research Assistant, Department of Pharmacology, Toxicology and Therapeutics, The University of Kansas Medical Center, Kansas City, Kansas

HONORS AND AWARDS

1998-2000	Syntex Award in Chemistry
1999-2000	Research Award in Chemistry
2004-2007	KUMC Graduate Student Travel Award
2006	1st place medal Graduate Student Basic Sciences, School of Medicine, KUMC Student Research Forum Award
2006	1st place presenter in Neuroscience, KUMC Student Research Forum Award
2006-2007	KUMC Biomedical Research Training Program Award
2012	Society for Neuroscience Postdoctoral Fellow Travel Award
2013	ASPET Training in Neurotherapeutics Discovery and Development for Academic Scientists, National Institute of Neurological Disorders and Stroke and National Institutes of Health Blueprint for Neuroscience Research
2014	Butler-Williams Scholars Program, National Institute on Aging
2015	Alzheimer's Drug Discovery Foundation Harrington Discovery Institute Scholar Award
2016	Vanderbilt Faculty Research Scholar Award
2016	Alzheimer's Association International Conference Travel Award

INTRAMURAL ACTIVITIES

Vanderbilt Center for Small Animal Imaging Faculty Advisory Board (2018 - present)
Director, In Vivo and Behavioral Pharmacology, Vanderbilt Center for Neuroscience Drug Discovery (2019 – present)
Director, Rat Neurobehavioral Facilities (2019 – present)

EXTRAMURAL ACTIVITIES AND REVIEW POSITIONS

Vanderbilt Brain Institute (2012 - present)
Journal of Nuclear Medicine Reviewer (2014 – present)
ACS Chemical Neuroscience Reviewer (2014 – present)
Alzheimer's Drug Discovery Foundation Scientific Advisory Board (2015 - present)
Neuropharmacology Reviewer (2015 – present)
Pharmacology & Therapeutics Reviewer (2015 - present)
Neurochemistry International Reviewer (2015 – present)
Frontiers Pharmacology Review Editor (2016 – present)
Advances in Pharmacology and Clinical Trials Associate Editor (2016 - present)
Journal of Neuroscience and Neurological Disorders Reviewer Editor (2016 - present)
ACS Chemical Neuroscience Guest Editor 2017-2018
Journal of Affective Disorders Reviewer (2017 – present)
PLOS One Reviewer (2017 – present)
Biological Psychiatry Reviewer (2017 – present)

Chronic Dysfunction and Integrative Neurodegeneration Study Section Ad hoc Reviewer (2017 - 2018)
Australian National Health and Medical Research Council External Reviewer (2017)
United Kingdom Research and Innovation Medical Research Council Reviewer (2018)

RESEARCH GRANTS

Active

1R01AG051626-01 Rook (PI) 05/15/2016 – 04/30/2021
National Institute on Aging $1,250,000
mGlu Allosteric Modulation in Neurodegenerative Diseases

VUMC Rook (Co-Investigator) 04/01/2018 – 03/31/2020
METAvivor $200,000
A Novel Self-Reporting Paclitaxel Prodrug without Systemic Neurotoxicity: Preclinical Assessment for Targeted Treatment of Metastatic Breast Cancer

1R01EB026991-01 Rook (Co-Investigator) 9/30/2018 – 7/31/2020
National Institute of Biomedical Imaging and Bioengineering $879,318
Enabling Multi-Tracer SPECT Studies of the Human Brain

VUMC Rook (PI) 01/01/2019 – 12/31/2020
Appello Pharmaceuticals, Inc. $82,774
mGlu4 PAMs in Parkinson's Disease

Completed

5T32ES007079 Rook (PI) 06/30/2004 – 06/29/2006
NIH/NIEHS NRSA Pre-doctoral Fellowship
Training Program in Environmental Toxicology

University of Kansas Medical Center Rook (PI) 08/01/2006 - 07/31/2007
KUMC Biomedical Research Training Program Award
Mechanisms of Cutaneous Wound Healing are Mediated via Peripheral Neuropeptide Activity

1F32MH088234 Rook (PI) 10/01/2009 - 09/30/2012
NIH/NIMH NRSA Post-doctoral Fellowship
In Vivo Characterization of mGluR5 Positive Allosteric Modulators

VUMC20111209 Rook (PI) 02/01/2012 – 12/01/2014
Alzheimer's Drug Discovery Foundation $275,000
In Vivo Characterization of Novel mGlu5 PAMs in Aged Rats

VUMC20121107 Rook (Co-investigator) 03/31/2013 – 03/30/2015
Edward N. & Della L. Thome Memorial Foundation $200,000
In Vivo Characterization of Metabotropic Glutamate Receptor Subtype 5 Positive Allosteric Modulators in a Mouse Model of Alzheimer's Disease

VUMC Rook (PI) 02/01/2016 – 05/14/2016
Vanderbilt Faculty Research Scholars Award $300,000
mGlu Allosteric Modulation in Neurodegenerative Diseases
*forfeited upon receipt of R01AG051626

VUMC20160501 Rook (PI) 05/01/2016 – 04/30/2017
Harrington Discovery Institute $189,500
Preclinical Development of novel M1 PAMs for the treatment of Alzheimer's disease

VUMC20140501 Rook (PI) 07/15/2014 – 08/31/2017
Alzheimer's Drug Discovery Foundation $300,000
Preclinical Development of novel M1 PAMs for the treatment of Alzheimer's disease

VUMC2015 Rook (PI) 09/01/2015 – 08/31/2017
Alzheimer's Drug Discovery Foundation $150,000
mGlu5 PAMs for the treatment of Alzheimer's disease

NARSAD Rook (PI) 01/15/2016 – 01/14/2018
Brain & Behavior Research Foundation Young Investigator Award $70,000
Efficacy of M1 muscarinic receptor PAMs in schizophrenia

PATENTS

PCT/US2017/047183. Positive Allosteric Modulators of the Muscarinic Acetylcholine Receptor M1. Vanderbilt University. Filed 8/16/2017

UNDERGRADUATE STUDENTS

Qiuwei Huan, Honor's Thesis Mentor (2012 – 2014), Daniel Salazar (2015 – 2016), Jacob Strimaitis (2015 – 2016), Caroline Thompson (2017), Deepa Rajan, Honor's Thesis Mentor (2015 – 2018), Ryan Hanson, Honor's Thesis Mentor (2016 – 2018), Lillian Wen (2018), Haley Dotter (2018), Emily Vega (2018 – present)

TEACHING EXPERIENCE

Graduate

University of Kansas Medical Center
- Molecular Mechanisms of Neurological Disorders
  - Fragile X, class lecture (2004)
  - Krabbe Disease and Metachromatic Leukodystrophy, class lecture (2004)
- Disposition of Xenobiotics
  - Arsenic Toxicity, class lecture (2006)

Undergraduate

University of Kansas Medical Center
- ASPET Summer Internship Program
  - Choosing the Right Lab For You, class lecture (2005)
  - How to Give a Scientific Presentation, class lecture (2006)

Vanderbilt University
Biological Basis of Mental Disorders
Alzheimer's Disease, guest lecture (2016 - 2019)

AFFILIATIONS

Society for Neuroscience
American Society for Pharmacology and Experimental Therapeutics (ASPET)
Vanderbilt Brain Institute
Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment (ISTAART)

PUBLICATIONS *(1032 total citations; h-index 20)*

Book Chapters

Sheffler DJ, Gregory KJ, **Rook JM**, Conn PJ. 2011. Allosteric modulation of metabotropic glutamate receptors in Advances in Pharmacology. Volume 62. Elsevier. PMID: 21907906

Peer-reviewed Publications

Engers JL, Childress ES, Long MF, Capstick RA, Luscombe VB, Cho HP, Dickerson JW, **Rook JM**, Blobaum AL, Niswender CM, Engers DW, Conn PJ, Lindsley CW. VU6007477, a Novel M1 PAM Based on a Pyrrolo[2,3-b]pyridine Carboxamide Core Devoid of Cholinergic Adverse Events. *ACS Med Chem Lett.* 2018 Sep 4;9(9):917-922. PMID: 30258541

Engers JL, Bender AM, Kalbfleisch JJ, Cho HP, Lingenfelter KS, Luscombe VB, Han C, Melancon BJ, Blobaum AL, Dickerson JW, **Rook JM**, Niswender CM, Emmitte KA, Conn PJ, Lindsley CW. Discovery of Tricyclic Triazolo- and Imidazopyridine Lactams as M1 Positive Allosteric Modulators. *ACS Chem Neurosci.* 2018 Aug 9. Epub ahead of print. PMID: 30086237

Cieślik P, Woźniak M, **Rook JM**, Tantawy MN, Conn PJ, Acher F, Tokarski K, Kusek M, Pilc A, Wierońska JM. Mutual activation of glutamatergic mGlu4 and muscarinic M4 receptors reverses schizophrenia-related changes in rodents. *Psychopharmacology*. 2018 Jul 27. 2018 Oct;235(10):2897-2913. PMID: 30054675

Bertron JL, Cho HP, Garcia-Barrantes PM, Panarese JD, Salovich JM, Nance KD, Engers DW, **Rook JM**, Blobaum AL, Niswender CM, Stauffer SR, Conn PJ, Lindsley CW. The discovery of VU0486846: Steep SAR from a series of M1 PAMs based on a benzomorpholine core. *Bioorganic & Medicinal Chemistry Letters*. 2018 Jul 1;28(12):2175-2179. PMID: 29754948

Rook JM, Bertron JL, Cho HP, Garcia-Barrantes PM, Moran SP, Maksymetz J, Nance KD, Dickerson JW, Remke DH, Chang S, Harp J, Blobaum AL, Niswender CM, Jones CK, Stauffer SR, Conn PJ, Lindsley CW. A novel M1 PAM VU0486846 exerts efficacy in

cognition models without displaying agonist activity or cholinergic toxicity. *ACS Chem Neurosci.* 2018 Sep 19;9(9):2274-2285. PMID: 29701957

Moran SP, Cho HP, Maksymetz J, Remke DH, Hanson RM, Niswender CM, Lindsley CW, **Rook JM**, Conn PJ. PF-06827443 Displays Robust Allosteric Agonist and Positive Allosteric Modulator Activity in High Receptor Reserve and Native Systems. *ACS Chem Neurosci.* 2018 Apr 25. 2018 Sep 19;9(9):2218-2224. PMID: 29683646

Turner BD, **Rook JM**, Lindsley CW, Conn PJ, Grueter BA. mGlu1 and mGlu5 modulate distinct excitatory inputs to the nucleus accumbens shell. *Neuropsychopharmacology.* 2018 Sep;43(10):2075-2082. PMID: 29654259

Moran SP, Dickerson JW, Plumley HC, Xiang Z, Maksymetz J, Remke DH, Rajan DH, Doyle CA, Niswender CM, Engers DW, Lindsley CW, **Rook JM**, Conn PJ. M1 positive allosteric modulators lacking agonist activity provide the optimal profile for enhancing cognition. *Neuropsychopharmacology.* 2018 Jul;43(8):1763-1771. PMID: 29581537

Reed C, McGowan K, Spearing P, Stansley B, Roenfanz H, Engers D, Rodriguez A, Engelberg E, Luscombe V, Loch M, Remke D, **Rook JM**, Blobaum A, Conn PJ, Niswender C, Lindsley C. VU6010608, a Novel mGlu7 NAM from a Series of N-(2-(1H-1,2,4-trizol-1-yl)-5-(trifluoromethoxy)phenyl)benzamides. *ACS Med Chem Letters*. 2017. Nov 8;8(12):1326-1330. PMID: 29259756

Moehle MS, Pancani T, Byun N, Wilson III GH, Dickerson JW, Remke RH, Xiang Z, Wess J, Niswender CM, Jones CK, Lindsley CW, **Rook JM**, Conn PJ. Cholinergic projections to the SNr inhibit dopamine modulation of basal ganglia motor function through activation of the M4 muscarinic receptor. *Neuron.* 2017 Dec 20;96(6):1358-1372. PMID 29268098

Ghoshal A, Moran SP, Dickerson JW, Joffe ME, Grueter BA, Xiang Z, Lindsley CW, **Rook JM**, Conn PJ. Role of mGlu5 receptors and inhibitory neurotransmission in M1 dependent muscarinic LTD in the prefrontal cortex: implications in schizophrenia. *ACS Chem Neurosci*. 2017. Oct 18;8(10):2254-2265. PMID: 28679049

Walker A, Sheffler D, Lewis A, Dickerson J, Foster D, Senter R, Moehle M, Lv X, Stansley B, Xiang Z, **Rook JM**, Emmitte K, Lindsley C, Conn PJ. Co-activation of metabotropic glutamate receptor 3 and beta-adrenergic receptors modulates cyclic-AMP, long-term potentiation, and disrupts memory reconsolidation. *Neuropsychopharmacology.* 2017. Dec;42(13):2553-2566. PMID: 28664928

Felts AS, Rodriguez AL, Blobaum AL, Morrison RD, Bates BS, Thompson Gray A, **Rook JM**, Tantawy MN, Byers FW, Chang S, Venable DF, Luscombe VB, Tamagnan GD, Niswender CM, Daniels JS, Jones CK, Conn PJ, Lindsley CW, Emmitte KA. Discovery of N-(5-Fluoropyridin-2-yl)-6-methyl-4-(pyrimidin-5-yloxy)picolinamide (VU0424238): A Novel Negative Allosteric Modulator of Metabotropic Glutamate Receptor Subtype 5 Selected for Clinical Evaluation. *J Med Chem.* 2017 Jun 22;60(12):5072-5085. PMID: 28530802

Lv X, Dickerson JW, **Rook JM**, Lindsley CW, Conn PJ, Xiang Z. M1 muscarinic activation induces long-lasting increase in intrinsic excitability of striatal projection neurons. *Neuropharm.* 2017 May 15;118:209-222. PMID: 28336323

Rook JM, Abe M, Cho HP, Nance KD, Luscombe VB, Adams JJ, Dickerson JW, Remke DH, Garcia-Barrantes PM, Engers DW, Engers JL, Chang S, Foster JJ, Blobaum AL, Niswender CM, Jones CK, Conn PJ, Lindsley CW. Diverse Effects on M1 Signaling and Adverse Effect Liability within a Series of M1 Ago-PAMs. *ACS Chem Neurosci*. 2017 Apr 19;8(4):866-883. PMID: 28001356

Foster DJ, Wilson JM, Remke DH, Mahmood MS, Uddin MJ, Wess J, Patel S, Marnett LJ, Niswender CM, Jones CK, Xiang Z, Lindsley CW, **Rook JM**, Conn PJ. Antipsychotic-like Effects of M4 Positive Allosteric Modulators Are Mediated by CB2 Receptor-Dependent Inhibition of Dopamine Release. *Neuron.* 2016 Sep 21;91(6):1244-52. PMID: 27618677

Bertron JL, Ennis EA, Tarr CJ, Wright J, Dickerson JW, Locuson CW, Blobaum AL, Rook JM, Blakely RD, Lindsley CW. Optimization of the choline transporter (CHT) inhibitor ML352: Development of VU6001221, an improved in vivo tool compound. *Bioorg Med Chem Lett*. 2016 Oct 1;26(19):4637-40. PMID: 27575469

Gogliotti RG, Senter RK, **Rook JM**, Ghoshal A, Zamorano R, Malosh C, Stauffer SR, Bridges TM, Bartolome JM, Daniels JS, Jones CK, Lindsley CW, Conn PJ, Niswender CM. mGlu5 positive allosteric modulation normalizes synaptic plasticity defects and motor phenotypes in a mouse model of Rett syndrome. *Hum Mol Genet.* 2016 May 15;25(10):1990-2004. PMID: 26936821

Gould RW, Amato RJ, Bubser M, Joffe ME, Nedelcovych MT, Thompson AD, Nickols HH, Yuh JP, Zhan X, Felts AS, Rodriguez AL, Morrison RD, Byers FW, **Rook JM**, Daniels JS, Niswender CM, Conn PJ, Emmitte KA, Lindsley CW, Jones CK. Partial mGlu5 Negative Allosteric Modulators Attenuate Cocaine-Mediated Behaviors and Lack Psychotomimetic-Like Effects. *Neuropsychopharmacology.* 2016 Mar;41(4):1166-78. PMID: 26315507

Balu DT, Li Y, Takagi S, Presti KT, Ramikie TS, **Rook JM**, Jones CK, Lindsley CW, Conn PJ, Bolshakov VY, Coyle JT. An mGlu5 Positive Allosteric Modulator Rescues the Neuroplasticity Deficits in a Genetic Model of NMDA Receptor Hypofunction in Schizophrenia. *Neuropsychopharmacology.* 2016 Jul;41(8):2052-61. PMID: 26741285

Ghoshal A*, **Rook JM***, Dickerson JW, Roop GN, Morrison RD, Jalan-Sakrikar N, Lamsal A, Noetzel MJ, Poslusney MS, Wood MR, Melancon BJ, Stauffer SR, Xiang Z, Daniel JS, Niswender CM, Jones CK, Lindsley CW, Conn PJ. Potentiation of M1 muscarinic receptor reverses plasticity deficits and negative and cognitive symptoms in a schizophrenia mouse model. *Neuropsychopharmacology.* 2016 Jan;41(2):598-610. PMID: 26108886
***authors contributed equally to this work**

Pancani T, Foster DJ, Moehle MS, Bichell TJ, Bradley E, Bridges TM, Klar R, Poslusney M, **Rook JM**, Daniels JS, Niswender CM, Jones CK, Wood MR, Bowman AB, Lindsley CW, Xiang Z, Conn PJ. Allosteric activation of M4 muscarinic receptors improve behavioral and

physiological alterations in early symptomatic YAC128 mice. *PNAS.* 2015 Nov 10;112(45):14078-83. PMID: 26508634

Malosh C, Turlington M, Bridges TM, **Rook JM**, Noetzel MJ, Vinson PN, Steckler T, Lavreysen H, Mackie C, Bartolomé-Nebreda JM, Conde-Ceide S, Martínez-Viturro CM, Piedrafita M, Sánchez-Casado MR, Macdonald GJ, Daniels JS, Jones CK, Niswender CM, Conn PJ, Lindsley CW, Stauffer SR. Acyl dihydropyrazolo[1,5-a]pyrimidinones as metabotropic glutamate receptor 5 positive allosteric modulators. *Bioorganic & Medicinal Chemistry Letters*. 2015 Nov 15;25(22):5115-20. PMID: 26475522

Garcia-Barrantes PM, Cho HP, Niswender CM, Byers FW, Locuson CW, Blobaum AL, Xiang Z, **Rook JM**, Conn PJ, Lindsley CW. Development of novel, CNS penetrant positive allosteric modulators for the metabotropic glutamate receptor subtype 1 (mGlu1), based on an N-(3-chloro-4-(1,3-dioxoisoindolin-2-yl)phenyl)-3-methylfuran-2-carboxamide scaffold, that potentiate both wild type and mutant mGlu1 receptors found in schizophrenics. *Journal of Medicinal Chemistry.* 2015 Oct 22;58(20):7959-71. PMID: 26426481

Rook JM, Xiang Z, Lv X, Ghoshal A, Dickerson JW, Bridges TM, Johnson KA, Foster DJ, Gregory KJ, Vinson PN, Thompson AD, Byun N, Collier RL, Bubser M, Nedelcovych MT, Gould RW, Stauffer SR, Daniels JS, Niswender CM, Lavreysen H, Mackie C, Conde-Ceide S, Alcazar J, Bartolomé JM, Macdonald GJ, Talpos JC, Steckler T, Jones CK, Lindsley CW, Conn PJ. Biased mGlu5 positive allosteric modulators provide in vivo efficacy without potentiating mGlu5 modulation of NMDAR currents. *Neuron.* 2015 May 20;86(4):1029-40. PMID: 25937172

Conde-Ceide S, Martínez-Viturro CM, Alcázar J, Garcia-Barrantes PM, Lavreysen H, Mackie C, Vinson PN, **Rook JM**, Bridges TM, Daniels JS, Megens A, Langlois X, Drinkenburg WH, Ahnaou A, Niswender CM, Jones CK, Macdonald GJ, Steckler T, Conn PJ, Stauffer SR, Bartolomé-Nebreda JM, Lindsley CW. Discovery of VU0409551/JNJ-46778212: An mGlu5 Positive Allosteric Modulator Clinical Candidate Targeting Schizophrenia. *ACS Medicinal Chemistry Letters*. 2015 May 20;6(6):716-20. PMID: 26157544

Burket JA, Benson AD, **Rook JM**, Conn PJ, Deutsch SI. Effects of VU0410120, a Novel GlyT1 Inhibitor, on Measures of Sociability, Cognition and Stereotypic Behaviors in a Mouse Model of Autism. *Neuro-Psychopharmacology & Biological Psychiatry*. 2015 Mar 14;61:10-17. PMID: 25784602

Rook JM, Tantawy MN, Ansari MS, Felts AS, Stauffer SR, Emmitte KA, Kessler RM, Niswender CM, Daniels JS, Jones CK, Lindsley CW, Conn PJ. Relationship between in vivo receptor occupancy and efficacy of metabotropic glutamate receptor subtype 5 allosteric modulators with different in vitro binding profiles. *Neuropsychopharmacology*. 2015 Feb;40(3):755-65. PMID: 25241804.

Walker AG, Wenthur CJ, Xiang Z, **Rook JM**, Emmitte KA, Niswender CM, Lindsley CW, Conn PJ. Metabotropic glutamate receptor 3 activation is required for long-term depression in medial prefrontal cortex and fear extinction. *PNAS.* 2015 Jan 27;112(4):1196-201. PMID: 25583490.

Gregory KJ, Nguyen ED, Malosh C, Mendenhall JL, Zic JZ, Bates BS, Noetzel MJ, Squire1 EF, Turner EM, **Rook JM**, Emmitte KA, Stauffer SR, Lindsley CW, Meiler J and Conn PJ. Identification of specific ligand-receptor interactions that govern binding and cooperativity of diverse modulators to a common metabotropic glutamate receptor 5 allosteric site. *ACS Chem Neurosc*. 2014 Apr 16;5(4):282-95. PMID: 24528109.

Foster DJ, Choi DL, Conn PJ, **Rook JM**. 2014. Activation of M1 and M4 muscarinic receptors as a potential treatment for Alzheimer's disease and schizophrenia. *J Neuropsychiatric Disease and Treatment.* 2014 Jan 28;10:183-191. PMID: 24511233.

Bridges TM, **Rook JM**, Noetzel MJ, Morrison RD, Zhou Y, Gogliotti RD, Vinson PN, Xiang Z, Jones CK, Niswender CM, Lindsley CW, Stauffer SR, Conn PJ, Daniels JS. Biotransformation of a Novel Positive Allosteric Modulator of Metabotropic Glutamate Receptor Subtype 5 Contributes to Seizures in Rats Involving a Receptor Agonism-Dependent Mechanism. *Drug Metabolism and Disposition*. 2013 Sep;41(9):1703-14. PMID: 23821185

Turlington M, Noetzel MJ, Chun A, Zhou Y, Gogliotti RD, Nguyen ED, Gregory KJ, Vinson PN, **Rook JM**, Gogi KK, Xiang Z, Bridges TM, Daniels JS, Jones CK, Niswender CM, Meilera J, Conn PJ, Lindsley CW, Stauffer SR. Exploration of Allosteric Agonism Structure-Activity Relationships within an Acetylene Series of Metabotropic Glutamate Receptor 5 (mGlu5) Positive Allosteric Modulators (PAMs). *J Med Chem.* 2013 Oct 24;56(20):7976-96. PMID: 24050755

Rook JM, Noetzel MJ, Pouliot WA, Bridges TM, Vinson PN, Cho HP, Zhou Y, Gogliotti RD, Manka JT, Gregory KJ, Stauffer SR, Dudek FE, Xiang Z, Niswender CM, Daniels JS, Jones CK, Lindsley CW, Conn PJ. Unique signaling profiles of positive allosteric modulators of mGlu5 determine differences in *in vivo* activity. *Biological Psychiatry*. 2013 Mar 15;73(6):501-9. PMID: 23140665

Zhou Y, Chun A, Gogliotti RD, Dawson ES, Vinson PN, Niswender CM, Noetzel MJ, **Rook JM**, Bridges TM, Daniels JS, Jones C, Conn PJ, Lindsley CW, Stauffer SR. 2013. Pure Positive Allosteric Modulators (PAMs) of mGlu5 with Competitive MPEP-Site Interaction. Probe Reports from the NIH Molecular Libraries Program. PMID: 23762950

Manka J, Zhou Y, Chun A, Gogliotti RD, Dawson ES, Vinson PN, Niswender CM, Noetzel MJ, **Rook JM**, Bridges TM, Daniels JS, Jones C, Conn PJ, Lindsley CW, Stauffer SR. 2013. Identification of a Selective Allosteric Agonist of mGlu5. Probe Reports from the NIH Molecular Libraries Program. PMID: 23762929

Gregory KJ, Noetzel MJ, **Rook JM**, Vinson PN, Stauffer SR, Rodriguez AL, Emmitte KA, Zhou Y, Chun AC, Felts AS, Chauder BA, Lindsley CW, Niswender CM, Conn PJ. Investigating mGlu5 Allosteric Modulator Cooperativity, Affinity and Agonism: Enriching Structure-function Studies and Structure-activity Relationships. *Molecular Pharmacology*. 2012 Nov;82(5):860-75. PMID: 22863693

Noetzel MJ*****, **Rook JM***, Vinson PN, Cho HP, Days E, Zhou Y, Rodriguez AL, Lavreysen H, Stauffer SR, Niswender CM, Xiang Z, Daniels JS, Jones CK, Lindsley CW, Weaver CD, Conn PJ. Functional impact of allosteric agonist activity of selective positive allosteric modulators of metabotropic glutamate receptor subtype 5 in regulating central nervous system function. *Molecular Pharmacology*. 2012 Feb;81(2):120-33. PMID: 22021324
***authors contributed equally to this work**

Tantawy MN, Peterson TE, Jones CK, Johnson K, **Rook JM**, Conn PJ, Baldwin RM, Ansari MS, Kessler RM. Impact of isoflurane anesthesia on D2 receptor occupancy by [^{18}F]fallypride measured by microPET with a modified Logan plot. *Synapse*. 2011. 65(11):1173-80. PMID: 21584868

Rodriguez AL, Grier MD, Jones CK, Herman EJ, Kane AS, Smith RL, Williams R, Zhou Y, Marlo JE, Days EL, Blatt TN, Jadhav S, Menon UN, Vinson PN, **Rook JM**, Stauffer SR, Niswender CM, Lindsley CW, Weaver CD, Conn PJ. 2010. Discovery of novel allosteric modulators of metabotropic glutamate receptor subtype 5 reveals chemical and functional diversity and in vivo activity in rat behavioral models of anxiolytic and antipsychotic activity. *Molecular Pharmacology*. 78:1105-1123. PMID: 20923853

Sharma S, Kedrowski J, **Rook JM**, Barrett RS, Jones CK, Rodriguez AL, Conn PJ, Lindsley CW. 2009. Discovery of molecular switches that modulate modes of mGluR5 pharmacology in vitro and in vivo within a series of functionalized, regioisomeric 2- or 5-(phenylethynyl) pyrimidines. *Journal of Medicinal Chemistry.* 23;52(14):4103-6. PMID: 19537763

Rook JM, Hasan W, McCarson KE. 2009. Morphine-induced early delays in wound closure: involvement of sensory neuropeptides and modification of neurokinin receptor expression. *Biochemical Pharmacology*. 77(11):1747-55. PMID: 19428329

Rook JM, Hasan W, McCarson KE. 2008. Temporal effects of topical morphine application on cutaneous wound healing. *Anesthesiology.* 109(1):130-6. PMID: 18580183

Rook JM, McCarson, KE. 2007. Delay of cutaneous wound closure by morphine via local blockade of peripheral tachykinin release. *Biochemical Pharmacology* 74(5):752-7. PMID: 17632084

Roy RN, Carlsten JA, Niederschmidt J, Good WS, **Rook JM**, Brewe C, Kilker AJ, Roy LN, Kuhler KM. 1997. Buffers for the physiological pH range: thermodynamic constants of substituted aminopropanesulfonic acids from 5 to 55ºC. J*ournal of Solution Chemistry*. 26; (3) 309-17

Roy RN, Moore CP, Carlsten JA, Good WS, Harris P, **Rook JM**, Roy LN, Kuhler KM. 1997. Second dissociation constant of two substituted aminomethanesulfonic acids in water from 5 to 55ºC. *Journal of Solution Chemistry.* 26; (12) 1209-16

SCIENTIFIC RESEARCH PRESENTATIONS

"Cutaneous Wound Healing In The Rat Is Delayed By Local Blockade Of Neurokinin-1 Receptor Activation", KUMC Student Research Forum; April 7, 2005.

"Wound Healing or Wound Feeling", KUMC Pharmacology, Toxicology and Therapeutics Departmental Seminar; April 26, 2005.

"Cutaneous Wound Healing In The Rat Is Delayed By Local Blockade Of Neurokinin-1 Receptor Activation", Midwest Pain Interest Group Meeting, University of Minnesota, Minneapolis; May, 2005.

"Morphine Inhibition of Cutaneous Wound Healing", **Invited Presentation**, Drury University; October 18, 2005.

"Role of Peripheral Neuropeptide Activity in Cutaneous Wound Healing", KUMC Pharmacology, Toxicology and Therapeutics Departmental Seminar; March 28, 2006.

"Mechanisms of Cutaneous Wound Healing are Mediated via Peripheral Neuropeptide Activity", KUMC Student Research Forum; April 6, 2006.

"Mechanisms of Cutaneous Wound Healing are Mediated via Peripheral Neuropeptide Activity", Sigma Xi, KUMC; April 20, 2006.

"Hemokinin-1: A Novel Tachykinin", Anything Goes Seminar Series, KUMC Department of Pharmacology, Toxicology and Therapeutics; June 28, 2006.

"Topical Morphine Application: Treatment or Trouble?", KUMC Pharmacology, Toxicology and Therapeutics Departmental Seminar; December 19, 2006.

"Capsaicin-induced Cutaneous Sensory Denervation Produces Morphine-like Delays in Wound Closure", KUMC Student Research Forum; April 12, 2007.

"Healing Without Pain: Mechanistic Challenges in Cutaneous Wound Healing", **Invited Presentation**, Vanderbilt University; April 18, 2008.

"In Vivo Characterization of Metabotropic Glutamate Receptor Subtype 5 Positive Allosteric Modulators in Aged Rats", **Invited Presentation**, 13th International Conference on Alzheimer's Drug Discovery; September 10th, 2012.

"In Vivo Characterization of Metabotropic Glutamate Receptor Subtype 5 Positive Allosteric Modulators in Preclinical Models of Alzheimer's Disease", ASPET Training in Neurotherapeutics Discovery and Development for Academic Scientists; March 2nd, 2013.

"Optimization of Metabotropic Glutamate Receptor Subtype 5 Positive Allosteric Modulators for the Treatment of Schizophrenia and Alzheimer's Disease", **Invited Presentation**, International Society of Neurochemistry/American Society of Neurochemistry 24th Biennial Meeting; April 23th, 2013.

"Positive Allosteric Modulators Of Muscarinic Acetylcholine Receptors Subtype 1 and 4 For Treatment Of Central Nervous System Disorders", **Invited Presentation**, International Conference on Psychology, Autism and Alzheimer's Disease; September 30th, 2013.

"In Vivo Receptor Occupancy/Efficacy Relationship of Metabotropic Glutamate Receptor Subtype 5 Positive Allosteric Modulators for the Treatment of Schizophrenia and Alzheimer's Disease", **Invited Presentation**, Vanderbilt University Institute of Imaging Science, February 10th, 2014.

"Preclinical Evaluation of Metabotropic Glutamate Receptor Subtype 5 Positive Allosteric Modulators for the Treatment of Cognitive Deficits in Alzheimer's Disease, **Invited Presentation**, Alzheimer's Drug Discovery Foundation 15th International Conference, September 8th, 2014.

"Muscarinic Acetylcholine Receptor Subtype 1 Positive Allosteric Modulators for the Treatment of Schizophrenia", **Invited Presentation**, 8th Neurodegenerative Conditions Research & Development Conference, September 19th, 2014.

"Potential Utility of Full and Partial mGlu5 NAMs in Major Depression/Anxiety and Addictive Disorders", **Invited Presentation**, 8th International Meeting on Metabotropic Glutamate Receptors, October 1st, 2014.

"Muscarinic Acetylcholine Receptor Subtype 1 Positive Allosteric Modulators for the Treatment of Cognitive Impairments Associated with Neurological Disorders", **Invited Presentation,** 4th Harrington Discovery Institute Annual Scientific Symposium, May 26th, 2016.

"Selective potentiation of muscarinic acetylcholine receptor subtype 1 demonstrates efficacy and safety in preclinical models of Alzheimer's disease", Alzheimer's Association International Conference, July 24th, 2016.

"Advancing Development of Novel M1 PAMs toward Clinical Testing", 17th International Conference on Alzheimer's Drug Discovery, September 13th, 2016.

"Unique Challenges For Phase 0 Clinical Trials In CNS Diseases", Implementing Phase 0 Clinical Trials for Neurodegenerative Diseases Advisory Panel, September 7th, 2017.

"Development of Novel Muscarinic Acetylcholine Receptor Subtype 1 Positive Allosteric Modulators for the Treatment of Alzheimer's Disease", 18th International Conference on Alzheimer's Drug Discovery, September 12th, 2017.

"Targeting mGlu5 for the treatment of Alzheimer's disease", **Invited Presentation**, 9th International Meeting on Metabotropic Glutamate Receptors, October 4st, 2017.

"Advancing VU319 to First in Human Clinical Trials for the Treatment of Alzheimer's Disease", Alzheimer's Drug Discovery Foundation Fall Symposium "Spotlight on Alzheimer's Clinical Trials", October 27th, 2017.

"mGlu5 PAMs for the Treatment of Alzheimer's Disease", 19th International Conference on Alzheimer's Drug Discovery, September 17th, 2018.

"Targeting Metabotropic Glutamate Receptor Subtype 5 for the Treatment of Alzheimer's Disease", Vanderbilt Memory and Alzheimer's Center Works in Progress, November 5th, 2018.

"Walking the Line Between Cognition Enhancing Efficacy and Adverse Effect Liability of Muscarinic Acetylcholine Receptor Subtype 1 Positive Allosteric Modulators:, ASPET Annual Meeting at Experimental Biology, April 6th, 2019.