

# Kenneth E. McCarson, Ph.D.

## *Curriculum Vitae*

August, 2008

**Title:** Associate Professor *with Tenure*

**Office Address:** Department of Pharmacology, Toxicology, and Therapeutics  
The University of Kansas Medical Center  
3901 Rainbow Boulevard, MSN 1018  
2069 KLSIC  
Kansas City, KS 66160

**Office Telephone:** (913) 588-7519 (2069 KLSIC)  
**Laboratory phone:** (913) 588-7595 (2054 KLSIC)  
**Telephone FAX:** (913) 588-7501  
**Home Telephone:** (816) 523-0664  
**E-mail:** [kmccarso@kumc.edu](mailto:kmccarso@kumc.edu)  
**Website:** <http://www.kumc.edu/pharmacology/facstaff/mccarson.html>

### EDUCATION & TRAINING

Primary/High School: **The Westminster Schools**, Atlanta, Georgia; 9/67 - 6/80

Undergraduate: **Georgia Institute of Technology**, Atlanta, Georgia; 6/80-6/84  
**Bachelor of Chemical Engineering** (B.Ch.E.) awarded 6/84  
Major: Chemical Engineering  
Minor: Biopsychology (Program certification awarded 6/84)

Graduate: **Medical College of Georgia**, Augusta, Georgia; 9/85-5/91  
**Ph.D. in Pharmacology** awarded *with distinction* 5/91  
(Major Advisor: Barry D. Goldstein, Ph.D.)  
Dissertation Title: Regulation of Substance P Levels and Release  
in the Dorsal Horn During Nociception

### PROFESSIONAL EXPERIENCE

Current: **Associate Professor of Pharmacology with tenure**  
Department of Pharmacology, Toxicology, and Therapeutics  
The University of Kansas Medical Center  
Kansas City, Kansas, 6/01-Present

**Director, Rodent Behavior Facility**  
Biobehavioral Measurement Core (BMC) of the R. L. Smith Intellectual and  
Developmental Disabilities Research Center (MRRC).  
The University of Kansas Medical Center  
Kansas City, Kansas, 6/03-Present

**Associate Scientist**  
Kansas Intellectual and Developmental Disabilities Research Center  
The University of Kansas Medical Center  
Kansas City, Kansas, 5/00-Present

6/95 – 5/01 **Assistant Professor of Pharmacology**  
Department of Pharmacology, Toxicology, and Therapeutics  
The University of Kansas Medical Center  
Kansas City, Kansas

**Assistant Scientist**

Mental Retardation and Developmental Disabilities Research Center  
The University of Kansas Medical Center  
Kansas City, Kansas (5/00 – 5/01)

Postdoctoral: **Research Associate in Neurobiology**  
(Supervisor: **James E. Krause, Ph.D.**; Professor of Neurobiology)  
**Washington University School of Medicine**  
St. Louis, Missouri, 5/91-6/95

**GRANT AWARDS (Research, Equipment and Teaching)**

2008-2009: NIH NINDS 2 R56 NS045954-06A1 (Bradley K. Taylor, P.I.)  
Title: Neuropeptidergic Inhibition of Spinal Pain Transmission  
Technical support salary, supply, and indirect costs for subcontract totaling \$37,500  
as collaborating Co-Investigator

2007 - 2008: UNMC Foundation; Pilot Research Grant  
Title: Antinociceptive Properties of Alpha2-Adrenoceptor Agonists (S.J. Enna, P.I.)  
Technical support salary, supply, and indirect costs grant totaling \$36,850

2006-2009: NARSAD Independent Investigator Award 09/06-08/09  
Title: Chronic Pain Activates Mechanisms of Depression  
Salary, equipment, supply and indirect costs grant totaling \$100,000

2007: Kansas IDeA Network of Biomedical Research Excellence (K-INBRE)  
Bridging Grant Award (\$35,000 - direct costs) 06/07-05/08  
Title: CNS Sites Where Estrogen Modulates Hyperalgesia  
Salary, supply and indirect costs grant totaling \$45,500

2007: Kansas IDeA Network of Biomedical Research Excellence (K-INBRE)  
Administrative Core Facility Support Award (\$17,500 - direct costs) 06/07-05/08  
Title: Rodent Behavior Facility Research Staff Support (KMcC, P.I.)  
RBF Staff Salary support grant totaling \$17,500

2007: KUEA - Ernst N. Lied Foundation; Pilot Research Grant  
Title: Chronic Pain Activates Mechanisms of Depression  
Technical support salary, equipment and supply grant totaling \$35,000

2006-2010: NIH NICHD 1R01HD049615 (Peter G. Smith, P.I.)  
Title: Female Pelvic Pain, Hormones, and Neuroplasticity  
Salary, equipment, supply and indirect costs grant totaling \$1,317,710  
5% Salary Support as Co-Investigator

2000-2007: NIH NIDA 1R01DA12505-01A1 (McCarson, Kenneth E., Ph.D.)  
Title: Nociceptive Sensory Regulation of Neurokinin Receptor Function  
Salary, equipment, supply and indirect costs grant totaling \$1,150,000  
(no-cost extension through 03/07)

2001-2009: American Society for Pharmacology and Experimental Therapeutics  
Institutional Fellowship Program Grant (Program Director, K.E. McCarson, Ph.D.)  
Summer Undergraduate Research Fellowship Program  
This grant provides \$9,000 in salary support for undergraduate summer fellows.

2004: Kansas IDeA Network of Biomedical Research Excellence (K-INBRE)  
Administrative Core Facility Support Award (\$35,000 - direct costs) 12/04-5/05  
Title: Rodent Behavior Facility Research Staff Support  
(KMcC and Peter G. Smith, Co-P.I.s)  
RBF Staff Salary support grant totaling \$35,000

2001-2009: 5 P30 HD0285-37 (NICHD) Peter G. Smith, Director  
Title Kansas Mental Retardation Research Center (KMcC 7% as RBF Director)  
This is a center grant that provides core services to mental retardation/developmental disabilities projects. KMcC acts as Director of the KUMC Rodent Behavior Facility.

2004-2009: NIH NIGMS R-25 GM074089 (co-instructor; David B. Bylund, Ph.D., P.I.)  
Title: Short Course: Integrative and Organ Systems Pharmacology  
KMcC instructor for "Fundamentals of somatic sensation, Pharmacological regulation of pain sensation; Evaluation of analgesic drugs: Spontaneous behaviors (laboratory)"

2004-2007: National Institutes of Health 1 R01 MH071599-01 (Beth Levant, PI)  
Title: Brain LC-PUFA's & Maternal Mental Health  
10% Salary support as Co-Investigator in year 3

2003-2005: KUEA - Ernst N. Lied Foundation; Pilot Research Grant  
Title: Pharmacology of Neuropathic Pain (Co-Investigator; S.J. Enna, P.I.)  
Technical support salary, equipment and supply grant totaling \$70,000

2003: University of Kansas Medical Center Research Institute  
Shared Research Equipment Award (\$25,000 - direct costs)  
Title: Multi-User Rodent Behavioral Test System (KMcC and Peter G. Smith, Co-P.I.s)  
RBF Equipment (Colburn activity monitors and Rota-Rod) grant totaling \$25,000

2001- 2004: KUEA - Ernst N. Lied Foundation; Pilot Research Grant  
Title: Effect of Topical Morphine Analgesia on Cutaneous Wound Healing  
Technical support salary, equipment and supply grant totaling \$70,000

2000-2002: National Inst. of Health 1 R01 AR45506-01A2 (Long, Teresa D., M.D.)  
Title: Morphine Gel for Pressure Ulcer Analgesia  
5% Salary support as Co-Investigator

1998: University of Kansas Medical Center Research Institute, Inc.; Bridging Grant  
Title: Neurokinin Receptor Function During Nociception  
Technical support salary, equipment and supply grant totaling \$25,000

1998-1999: KUEA - Ernst N. Lied Foundation; Pilot Research Grant  
Title: Molecular mechanisms underlying sex differences in chronic pain  
Technical support salary, equipment, supply and indirect cost grant totaling \$77,000

1997: Kansas Affiliate, American Heart Association; Beginning Grant-In-Aid  
Title: Tachykinin Plasticity During Chronic Inflammation and Cardiac Pain  
Technical support salary, equipment, supply and indirect cost grant totaling \$52,000

1996: Whitehall Foundation; Grant-In-Aid #FA96-06  
Title: Neurokinin Receptor Function During Nociception

Technical support salary, equipment and supply grant totaling \$15,000

1992-94: National Institute of Dental Research; Individual Postdoctoral Training Award  
F32-NIDR 54782 (Sponsor: James E. Krause, Ph.D.)

Title: Nociceptive Regulation of Tachykinin Receptor Function  
Salary and supply grant totaling approximately \$52,000

1991-1992: NIH Cellular and Molecular Neurobiology Departmental  
Training Award 5-T32-NS07071, Department of Anatomy and Neurobiology,  
Washington University School of Medicine  
Salary and supply grant totaling approximately \$20,000

## INVITED SEMINARS / SYMPOSIA PRESENTATIONS

University of Kansas Medical Center

Molecular and Integrative Physiology, October 2007

American Pain Society Annual Meeting

Washington, D.C., May 2007

Symposium Chairman and presenter, *"Persistent Pain, the Hippocampus,  
and Depression – Mechanistic Links?"*

Rockhurst University, Kansas City, MO

Pre-Med Student Association, April 2007

Cold Spring Harbor Laboratory - Banbury Center Conference

*"Molecular Approaches to Pain: Translational Potential and Challenges"*

Cold Spring Harbor, NY, April 2007.

Spring Pain Research Conference

Grand Cayman, BWI, April 2006

Co-Chairman (With Richard Traub) of *"Sex Differences and Pain"* symposium

University of Kansas, Lawrence, KS

American Institute of Chemical Engineering, Student Chapter, April 2006

University of Texas Health Sciences Center, San Antonio TX

Department of Endodontics, April 2005

University of Kansas Medical Center

Smith MRRC and Women in Medicine and Neuroscience Mini-Symposium

*"Female Pain Syndromes: Basic Science Perspectives"*, January 2005

Society for Neuroscience Annual Meeting

New Orleans, LA, November 2003

Chairman of plenary (slide) session #657 *"Nociception"*

Spring Pain Research Conference

Grand Cayman, BWI, May 2004

University of Kansas Medical Center

Molecular and Integrative Physiology, February 2004

Northeastern Ohio Universities College of Medicine, Rootstown OH

Department of Neurobiology, December 2003

University of Kansas Medical Center Neuroscience Program

Mental Retardation and Developmental Disabilities Research Center, May 2003

Benedictine University, Atchison, Kansas

Department of Biological Sciences, October 2001

21<sup>st</sup> Winter Neuropeptide Conference

Breckenridge, Colorado, U.S.A. January 2000

Millennium Pharmaceuticals, Inc.

Cambridge, MS, June 1999  
University of Kansas Medical Center  
Center on Aging, May 1999  
University of Missouri, Kansas City  
School of Pharmacy, Pharmacology Division, May 1999  
Spring Pain Research Conference  
Grand Cayman, BWI, May 1998  
University of Kansas Medical Center  
Department of Physiology, 1997  
University of Missouri, Kansas City  
School of Pharmacy, Pharmacology Division, 1996  
University of Kansas Medical Center  
Sigma Xi Local Chapter, 1996  
Mercer University School of Medicine  
Division of Basic Medical Sciences, 1995  
University of Kansas Medical Center  
Department of Pharmacology, Toxicology, and Therapeutics, 1995  
University of North Carolina at Chapel Hill  
Department of Physiology, Chapel Hill, North Carolina, 1990.  
Washington University School of Medicine  
Department of Anatomy and Neurobiology, St. Louis, Missouri, 1990.  
Uniformed Services University of the Health Sciences  
Department of Pharmacology, Bethesda, Maryland, 1990.

## **TEACHING RESPONSIBILITIES AND EXPERIENCE**

### **Medical:**

#### **KUMC:**

Pharmacological Basis of Therapeutics PHCL 888/PHRM 850 (Year 2)  
Autonomic nervous system; cholinergic and adrenergic drugs  
Narcotics; opioid drugs and analgesia  
Class lectures (1997 - 2007) and small group discussions (1996 - 2007)

Medical Neuroscience ANAT/PHSL 840 (Year 1)  
Somatic sensation and pain (1997 - 2006)

Medical Core Curriculum "Brain and Behavior" (Core 840) Year 2  
Lectures entitled "Somatic sensation" and "Pain 1" (2007 - 2008)

Medical Core Curriculum "Integration and Consolidation" (Core 841) Year 2  
Lectures entitled "Autonomic Nervous System Principles"; "Cholinergic Receptor Agonists", "Cholinergic Receptor Antagonists", "Adrenergic Receptor Agonists", "Adrenergic Receptor Antagonists", and "Vasoactive Peptides" (2008); Small Group discussion facilitator: "ANS and Smooth Muscles", "Cardiovascular", "Endocrine", "CNS", "Adverse Drug Effects" exercises (2008)

Pain & Its Management, PSY 838 (Rehab. Med. Residents)  
Physiological mechanisms of Pain (2002 - 2005)

#### **MCG:**

Medical Pharmacology Phase II Laboratory Demonstrations:  
Autonomic and CNS Drugs (1987 - 1990)

**Undergraduate:**

MCG:

School of Allied Health; Introduction to Pharmacology  
Drug Therapy of Parkinsonism & Other Basal Ganglia Disorders (1988 - 1991)

**Graduate:**

KUMC (Departmental):

Molecular and Cellular Pharmacology and Toxicology PHCL/PTOX 841  
**Course Block Captain** (Lecture & test organization)  
Quantitation of receptor occupation and response lectures (1996 - 1999)

Molecular and Cellular Pharmacology and Toxicology PHCL/PTOX 742  
**Course Block Captain** (Independent Study leadership)  
Autonomic Pharmacology (2000)

Essentials of Pharmacology PHCL/PTOX 880 (Lecture & test organization)  
Autonomic Pharmacology (2000 - 2006)  
Neuropharmacology Principles, Analgesics & Local Anesthetics (2004 - 2006)

Neuropharmacology PHCL 912  
Transcription factors, receptor cloning, peptide neuropharmacology. (2000)

Neuropharmacology PHCL 941  
Peptide neuropharmacology (1998)

Advanced Neuroscience ANAT/PHSL/PHCL 842  
Somatic sensation, pain, and peptide neurotransmitters (1997-1998)  
Neuropharmacology laboratory sessions (1998 - 2006)

KUMC Interdisciplinary Graduate Program in the Biomedical Sciences (IGPBS):

Module 1: Thermodynamics, Protein Structure, and Analysis of Reaction/  
Binding kinetics IGPBS 891  
Characterization of receptor binding I & II (1997 - 2000)

Module 4: Cell & Developmental Biology IGPBS 894  
(**Course Co-Director**, 2005 – 2007;  
**Director, Signal Transduction section**, 2007 - )  
Graphical methods quantifying receptor function and cellular, system, or  
organismal responsiveness (2002-2008)

Module 6: Molecular and Physiological Basis of Disease I IGPBS 896  
Somatosensory pathways and multiple sclerosis (1998)

**External/Professional Training:**

NIGMS Short Course: Integrative and Organ Systems Pharmacology  
<http://www.unmc.edu/dept/iosp/>

Course Co-Instructor (2004 - 2008)

Fundamentals of somatic sensation (2004 - 2008)

Pharmacological regulation of pain sensation (2004 - 2008)

Evaluation of analgesic drugs: Spontaneous behaviors:  
*Laboratory Exercise* (2004 - 2008)

**STUDENT TRAINEES**

Erica Greene, ASPET summer intern from Humbolt University, summer 1996

Project: Quantitation of cardiovascular responses to inflammatory pain

Eric Harstad, departmental graduate student rotation, spring 1997

- Project: Analgesic and sedative effects of novel GABAB receptor agonists  
Nancy Deisher, KUMC summer medical student intern, summer 1997;  
part-time undergraduate research assistant, 9/96 - 6/97
- Project: Effects of NK-1 receptor antagonists on NK-1 receptor gene expression  
Heather Amthauer, IGPBS student rotation, spring 1998; graduate trainee 1998-1999
- Project: Regulation of neurokinin receptor expression during nociception by baclofen  
Christopher Graeber, ASPET summer intern from Bethel College, summer 1998
- Project: Regulation of neurokinin receptor expression during nociception by morphine  
Julie Carlsten, IGPBS student rotation, fall 1998
- Project: Regulation of GABA<sub>B</sub> receptor expression during nociception  
Rebecca Cohen, ASPET summer intern from Colorado College, summer 1999
- Project: Regulation of NK-2 receptor gene expression in a rat incisional pain model  
Jason Moran, ASPET summer intern from Rockhurst College, summer 1999;  
part-time undergraduate research assistant, 9/99 - 6/00
- Project: Pharmacological and nociceptive regulation of GABA<sub>B</sub> receptor function  
Jenny Lang, ASPET summer intern from Baker University, summer 2000
- Project: Indomethacin "rescue" of inflammatory neurokinin receptor gene expression  
Do Park, summer volunteer intern from Pembroke Hill High School, summer 2000
- Project: Pharmacological regulation of GABA<sub>B</sub> receptor function  
**Amy Allen**, IGPBS student rotation, fall 2000; **graduate trainee** 2000-2005;  
Projects: Regulation of NK-1 receptor expression in mouse; Gender influences on pain  
Ph.D. Dissertation title: "Estrogen Modulates Brain-Derived Neurotrophic Factor  
and the Neurokinin-1 Receptor During Inflammatory Nociception"  
Defended *with honors*, 4/14/05
- Christina Kaiser, IGPBS student rotation, spring 2001  
Project: Hippocampal BDNF gene expression
- Vanja Duric**, IGPBS student rotation, spring 2001; **graduate trainee** 2000-2005;  
Projects: Regulation of G-protein function by substance P 1-7; Effects of chronic pain  
on hippocampal morphology and function  
Supported by KUMC Biomedical Research Training Program, 2003-2005  
Ph.D. Dissertation title: "Spinal and Limbic Plasticity in the Rat During Inflammatory  
Nociception and Immobilization Stress"  
Defended *with honors*, 12/23/05
- Amy Spears, IGPBS student rotation, spring 2001  
Project: Hippocampal NK-1 receptor gene expression
- Jon Maher, IGPBS student rotation, spring 2001  
Project: Regulation of G-protein function by substance P[1-7]
- Janie Benoit, ASPET summer intern from Park University, summer 2001  
Project: Effects of chronic pain on hippocampal morphology and function
- Martin Simon, Ph.D., visiting Professor from Benedictine University, summer 2001  
Project: Vanilloid receptor expression and function in amphibians
- Rohan Gandhi, IGPBS student rotation, fall 2001  
Project: Regulation of BDNF gene expression in rat hippocampus
- Anna Nunn, IGPBS student rotation, spring 2002  
Project: Stimulation of G-protein function by neurokinin-1 receptors
- Salvador Iloreta, ASPET summer intern from Tulane University, summer 2002  
Project: Neurokinin-1 receptor regulated G-protein function in spinal cord
- Stephanie Ihnow, ASPET summer intern from University of Pennsylvania, summer 2003  
Project: Behavioral correlates of pain-evoked Neurokinin-1 receptor activation
- Jerri Rook**, IGPBS student rotation, fall 2003; **graduate trainee** 2004 - 2008

*Overall Winner (as chosen by Local Sigma Xi Chapter Officers), Winner, School of Graduate Studies Section, KUMC Student Research Forum, 2006*

Supported by KUMC Biomedical Research Training Program, 2006-2007

Ph.D. Dissertation title: Mechanisms of Cutaneous Wound Healing are Mediated by Peripheral Neuropeptide Activity”  
Defended successfully, 05/05/08

Samantha Gordon, ASPET summer intern from Northwestern University, 2004 & 2005  
Projects: Effects of intrathecal paclitaxel on formalin-induced nociception,  
Central versus peripheral effects of Faslodex on nociception

Scott Reisman, IGPBS student rotation, fall 2004

Project: Regulation of GABA<sub>B</sub> receptor expression and function in neuropathic pain

**Andy Ralya**, IGPBS student rotation, spring 2005, **Graduate trainee** 2005 - present

Ph.D. Candidate as of 01/22/07

Dissertation Proposal title: Estrogen Enhances Inflammatory Nociception at Peripheral, Spinal and Supraspinal Sites

Jacqueline Petzold, ASPET summer intern from Grand Valley State University, summer 2006

Project: Central versus peripheral effects of Faslodex on nociception

Michelle Sparks, ASPET summer intern from Arizona State University, summer 2007

Project: Regulation of nociception-evoked spinal ERK activation by estrogen

Nicholas Stucky, Anatomy MD/PhD student, 2007 - present

(*Co-Major Advisor with Nancy Berman, Ph.D.*)

Project: Estrogen regulation of migraine-like pain in the rat

## **APPOINTMENTS AND COMMITTEES**

### **University:**

KUMC Pain Management Resource Committee (PMRC) 1996-2000

KUMC PMRC Physician Education Subcommittee 1996-1997

KUMC Radiation Safety Committee 1996 - present

KUMC Institutional Research Safety Committee (IRSC) 1999 - present

KUMC School of Graduate Studies Travel Committee 1999-present

(**Chair**, 2004 - present)

KUMC Graduate Council 2002 - 2008

KUMC IGPBS Steering Committee 2002 - 2008

University of Kansas Standing Committee on New Degrees  
and Degree Program Changes, 2003–2005

University of Kansas Standing Committee for Graduate Faculty  
Appointments and Authorizations, 2005-2006

University of Kansas Standing Committee for Program Review, 2006-2008

Neuroscience Program (Physiology) Faculty Recruitment Committee, 2004-2005

KIDDRC/MRRC Rodent Behavior Facility Advisory Committee, 2004 - present

### **Departmental:**

Departmental Graduate Committee, 2000 – 2008 (**Chair**, 2002 - 2008)

Departmental Office Staff Ad Hoc Committee, 2004

Director, Departmental Seminar Series, 2001 - 2003

Director, Departmental ASPET SURF program, 2001 - 2008

Faculty Search Committee, 1996 - 1998

Doctoral dissertation committee, Jeff Moehlenkamp, 1997 - 1999

Doctoral dissertation committee, Mitchell Emerson, 1999  
Doctoral dissertation committee, Lesley Rausch, 1997 - 2000  
Doctoral dissertation committee, Amy Mize, 1998 - 2000  
Doctoral dissertation committee, Eric Harstad, 1999 - 2001  
Doctoral dissertation committee, Gulshan Begum, 1999 - 2000  
Doctoral dissertation committee, Grace Guo, 1999 - 2001  
Doctoral dissertation committee, Julie Carlsten Christiansen (Anatomy), 2000 - 2003  
Doctoral dissertation committee, Ning Li, 2000 - 2003  
Doctoral dissertation committee, Susan Buist, 2000 - 2003  
Doctoral dissertation committee, Michael Van Saun (Anatomy), 2002 - 2003  
Doctoral dissertation committee, Amy Allen (*Major Advisor*), 2002 - 2005  
Ph.D. Degree defended *with honors*, 04/14/05  
Doctoral dissertation committee, Vanja Duric (*Major Advisor*), 2002 - 2005  
Ph.D. Degree defended *with honors*, 12/23/05  
Doctoral dissertation committee, Toni Carpenter, 2002 - 2006  
Doctoral dissertation committee, Jon Maher, 2002 - 2005  
Doctoral dissertation committee, Xing Guo Cheng, 2002 - 2005  
Doctoral dissertation committee, Rohan Gandhi (Neuroscience), 2003 - 2006  
Doctoral dissertation committee, Jagan Muppiddi (MD/PhD), 2002 - 2006  
Master's Thesis committee, Joni Persson (Anatomy), 2004 - 2005  
Doctoral dissertation committee, Alexandra Knudson (Anatomy MD/PhD), 2004 -  
Doctoral dissertation committee, Jerri Rook (*Major Advisor*), 2005 - 2008  
Ph.D. Degree defended 05/05/08  
Doctoral dissertation committee, Marcio Santos (Rehabilitation Science), 2005 - 2006  
Doctoral dissertation committee, Megan Johnson (Anatomy), 2005 - 2008  
Doctoral dissertation committee, Andrew Ralya (*Major Advisor*), 2006 -  
Doctoral dissertation committee, Christopher Liverman (Anat. MD/PhD), 2006 - 2008  
Doctoral dissertation committee, Argenia Doss (Physiology), 2007 -  
Doctoral dissertation committee, Sarah Tague (Physiology), 2007 -  
Doctoral dissertation committee, Nicholas Stucky (Anatomy MD/PhD; (*Co-Major  
Advisor with Nancy Berman, Ph.D.*), 2006 -  
Doctoral dissertation committee, Hyuongwoo Bai, 2007 -  
Doctoral dissertation committee, Aritra Bhattacharjee (Physiology), 2008 -

**Editorial:**

Editorial Advisory Board Member (5/00 - 6/03)  
*Current Drug Targets - CNS and Neurological Disorders*

Reviewer for *Doody Publishing's Online Reviews*, 2002-2008

*Ad Hoc* Reviewer for:

*Anesthesia and Analgesia*  
*Biochemical Pharmacology*  
*Brain, Behavior, and Immunity*  
*Brain Research*  
*British Journal of Pharmacology*  
*DNA and Cell Biology*  
*European Journal of Neuroscience*  
*European Journal of Pain*  
*European Journal of Pharmacology*  
*Experimental Biology and Medicine*

*Journal of Neuroscience*  
*Journal of Neurochemistry*  
*Journal of Pain*  
*Journal of Pharmacology and Experimental Therapeutics*  
*Life Sciences*  
*Molecular and Cellular Neuroscience*  
*Molecular Pain*  
*Molecular Pharmacology*  
*Neuropeptides*  
*Neuropsychopharmacology*  
*Neuroscience*  
*Neuroscience Letters*  
*Pain*  
*Peptides*  
*PLoS Genetics*  
*Progress in Neuro-Psychopharmacology and Biological Psychiatry*

#### **Grant Review:**

Reviewer, NIH NCCAM Centers for Excellence in Research Special Emphasis Panel (ZAT1 SM 11), June 2008  
Reviewer, NIH NIDCR Special Emphasis Panel (RFA DE-07-006), March 2007  
Reviewer, NIMH Minority Research Infrastructure Support Program (M-RISP) Special Emphasis Panel (ZMH1 ERB-N), 10/2006.  
*Ad Hoc* Grant Reviewer for The Wellcome Trust, London, UK; 2002, 2006  
*Ad Hoc* Reviewer, Israel Science Foundation, 2006  
*Ad Hoc* Reviewer, Biotechnology and Biological Sciences Research Council (UK), 2005  
Reviewer, NIH NIDA-K Training and Career Development Review Committee; 2003-2008  
Reviewer, NIH NIDA-K Conflicts of Interest Special Emphasis Panel; 2003-2008  
*Ad Hoc* Reviewer, NHS Grampian Trust Research Projects (University of Aberdeen, UK); 2004  
*Ad Hoc* Reviewer, NIH Chronic Fatigue Syndrome/Fibromyalgia Syndrome / Temporomandibular Dysfunction Special Emphasis Panel, 12/2004.  
*Ad Hoc* Grant Reviewer for the Division on Earth and Life Studies The National Academy of Sciences on behalf of the State of Ohio BRTT Partnership Award Program, May 2003  
*Ad Hoc* Grant Reviewer for John Sealy Foundation, Univ. of Texas Medical Branch, Galveston, TX; 2001-2002

#### **PROFESSIONAL SOCIETY AND ORGANIZATION MEMBERSHIPS**

Sigma Xi (*Secretary, KUMC Chapter, 2001 – 2005*)  
Society for Neuroscience (*Secretary/Treasurer, KUMC Chapter, 2004 - 2007*)  
American Association for the Advancement of Science  
American Society for Pharmacology and Experimental Therapeutics  
American Pain Society  
Midwest Pain Society

#### **HONORS AND AWARDS**

Faculty Travel Scholarship Award, KUMC School of Graduate Studies, 2006

Marquis Who's Who in Science and Engineering, 2005-2006 (8<sup>th</sup> Edition)  
Faculty Travel Scholarship Award, KUMC School of Graduate Studies, 1998  
Faculty International Travel Award, KUMC School of Graduate Studies, 1998  
Faculty Travel Scholarship Award, KUMC School of Graduate Studies, 1997  
Faculty Travel Scholarship Award, KUMC School of Graduate Studies, 1996  
Sigma Xi Student Research Paper Award, Honorable Mention, 1990  
Who's Who Among Students in American Universities and Colleges, 1989  
IMHOTEP Leadership Honorary Society, 1989  
Medical College of Georgia Faculty Wives Scholarship, 1989  
Medical College of Georgia GSRD Award for Excellence in Research, 1988  
United States Achievement Academy Scholastic All-American, 1987  
National Merit Scholarship, 1980-1984

## BIBLIOGRAPHY

### Refereed Journal Publications:

1. **McCarson, K.E.**, and Goldstein, B.D. Naloxone blocks the formalin-induced increase of substance P in the dorsal horn. *Pain*, 38 (1989) 339-345.
2. **McCarson, K.E.**, and Goldstein, B.D. Timecourse of the alteration in substance P levels in the dorsal horn following formalin: blockade by naloxone. *Pain*, 41 (1990) 95-100.
3. **McCarson, K.E.**, and Goldstein, B.D. Release of substance P into the superficial dorsal horn following nociceptive activation of the hindpaw of the rat. *Brain Research*, 568 (1991) 109-115.
4. Krause, J.E., Bu, J.-Y., Takeda, Y., Blount, P., Raddatz, R., Sachais, B.S., Chou, K.B., Takeda, J., **McCarson, K.**, and DiMaggio, D. Structure, expression and second-messenger-mediated regulation of the human and rat substance P receptors and their genes. *Regulatory Peptides*, 46 (1993) 59-66.
5. **McCarson, K.E.**, and Krause, J.E. NK-1 and NK-3 type tachykinin receptor mRNA expression in the rat spinal cord dorsal horn is increased during adjuvant or formalin-induced nociception. *Journal of Neuroscience*, 14 (1994) 712-720.
6. Ludlam, W.H., Zang, Z., **McCarson, K.E.**, Krause, J.E., Spray, D.C., and Kessler, J.A. mRNAs encoding muscarinic and substance P receptors in cultured sympathetic neurons are differentially regulated by LIF or CNTF. *Developmental Biology*, 164 (1994) 528-539.
7. Röder, C., Bellman, R., **McCarson, K.E.**, Krause, J.E., and Sperk, G. Kainic acid-induced seizures cause a marked increase in the expression of neurokinin-3 receptor mRNA in the rat cerebellum. *Neuroscience Letters*, 181 (1994) 158-160.
8. **McCarson, K.E.**, and Krause, J.E. The formalin-induced expression of tachykinin peptide and neurokinin receptor messenger RNAs in rat sensory ganglia and spinal cord is modulated by opiate preadministration. *Neuroscience*, 64 (1995) 729-739.
9. Thompson, S.W.N., Dray, A., **McCarson, K.E.**, Krause, J.E., and Urban, L. Nerve growth factor induces mechanical allodynia associated with neurokinin-1 receptor activation and novel A fibre-evoked spinal reflex activity in the rat. *Pain*, 62 (1995) 219-231.

10. Krause, J.E., DiMaggio, D.D., and **McCarson, K.E.** Alterations in neurokinin-1 receptor gene expression in models of pain and inflammation. *Canadian Journal of Physiology and Pharmacology*, 73 (1995) 854-859.
11. **McCarson, K.E.**, and Krause, J.E. The neurokinin-1 receptor antagonist LY306,740 blocks nociception-induced increases in dorsal horn neurokinin-1 receptor gene expression. *Molecular Pharmacology*, 50 (1996) 1189-1199.
12. **McCarson, K.E.**, and Enna, S.J. Relationship between GABA<sub>B</sub> receptor activation and neurokinin receptor expression in spinal cord. *Pharmacology Reviews and Communications*, 8 (1996) 191-194.
13. Enna, S.J., Harstad, E.B., and **McCarson, K.E.** Regulation of neurokinin-1 receptor expression by GABA<sub>B</sub> receptor agonists. *Life Science*, 62 (1998) 1525-1530.
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#### **Book Chapters:**

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