

FACULTY APPOINTMENTS:

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| 07/03 – present | Louis Boyarsky Professor Department of Physiology University of Kentucky |
| 07/07 – 06/08 | Vice-Chair Department of Physiology University of Kentucky |
| 07/03 – 08/04 | Visiting Professor The Rockefeller University |
| 01/00 - present | Faculty Associate Spinal Cord and Brain Injury Research Center University of Kentucky |
| 07/00 – 06/03 | Thomas Skinner Professor Department of Physiology University of Kentucky |
| 07/04 - present | Professor Department of Physiology University of Kentucky |
| 07/99 - 2004 | Associate Professor Department of Physiology University of Kentucky |
| 01/94 - 06/99 | Assistant Professor Department of Physiology University of Kentucky |

SCHOLARSHIPS AND FELLOWSHIPS:

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| 06/96 - 08/96 | Lucy B. Lemann Fellow at the Marine Biological Laboratory |
| 07/89 - 06/92: | NIH postdoctoral National Research Service Award |
| 06/88 - 09/88: | Grass Fellowship in Neurophysiology at the Marine Biological Laboratory |
| 01/86 - 12/88: | NIMH predoctoral National Research Service Award |
| 08/82 - 07/84: | Florida State University Psychobiology Fellow |
| 01/84 - 12/84: | M. Johnson Scholarship, Ohio Council of Skin and Scuba Divers, Inc. |

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| 01/82 - 06/82: | Michigan State University Honors College Undergraduate Research Grant |
| 06/81 - 07/81: | Exxon Corporation Scholarship for study at the Bermuda Biological Station |
| 06/81 - 07/81: | Ryder Scholarship for Overseas Study, Department of Humanities, Michigan State University |
| 09/78 - 06/79: | Michigan State University Department of Zoology Undergraduate Fellow |
| 09/78 - 06/82: | National Merit Scholar |

AWARDS AND HONORS:

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| 2007: | Holsinger Award, Univ. of Kentucky (teaching) |
| 2002: | University of Kentucky Research Professor |
| 2000-04, 06: | Charles T. Wethington Research Award, University of Kentucky College of Medicine |
| 2000: | Takasago Award for Research in Olfaction, Association for Chemoreception Sciences |
| 1996: | University of Kentucky nominee to NSF Presidential Faculty Fellows Program |
| 1995: | University of Kentucky nominee to Searle Scholars Program |
| 1982: | Phi Beta Kappa |
| 1982: | Candidate for Rhodes Scholarship |
| 1982: | Varsity letterman, lacrosse, Michigan State University |
| 1981: | Phi Kappa Phi |
| 1981: | Varsity letterman, lacrosse, Michigan State University |

RESEARCH INTERESTS:

1. The molecular physiology of information processing in the olfactory system. The olfactory receptors and the G-protein dependent signal transduction pathways activated by these receptors. The regulation of trafficking of olfactory receptors by accessory proteins specific to olfactory sensory neurons.
2. The cell biology of cells in the olfactory system, especially the sensory neurons.
3. Physiological genomics of gene expression in cells of the olfactory epithelium. Determining the expression patterns of all genes across the intrinsic cell types of the olfactory epithelium.
4. Functional genomics and transcriptional control of adult neurogenesis and neural replacement in the olfactory system.

RESEARCH FUNDING:

A. CURRENT FUNDING:

- 07/06 - 06/11 National Institutes of Health
"Functional Domains and Expression of Olfactory Receptors" (R01 DC 002736, yrs 9-13)
(Principal Investigator)
- 03/06 - 02/11 National Institutes of Health
"Genomics of Olfactory Regeneration" (R01 DC DC007194-01
(Principal Investigator)
- 12/02 - 11/07 National Institutes of Health
"Olfactory Development: Cell Proliferation and Maturation"
(Co-Principal Investigator) (2 R01 DC000312, PI- Charles Derby, Georgia State Univ.)

B. PENDING/SUBMITTED:

- 10/07 NIH, "Olfactory support cells", R21
06/07 NIH, "S100A5 identifies active olfactory sensory neurons", R21
02/07 NIH, "Novel cilia genes in olfactory sensory neurons", R21

C. PRIOR RESEARCH FUNDING:

- 07/01 - 06/06 National Institutes of Health
"Cellular and Molecular Neuroscience of Sensory Systems"
(Training Faculty) (1 T32 DC 00065-01, PI: T.V. Getchell)
- 02/02 - 01/06 Kentucky Spinal Cord and Head Injury Research Trust
"SCIgenes, a spinal cord injury-related gene database"
(Principal Investigator)

04/99 - 06/05 National Institutes of Health
"Molecular Mechanisms of Olfactory Integration"
(Principal Investigator) (R01 DC02366, yrs 6-10)

10/99 - 06/03 National Institutes of Health
"mRNA and Protein Dynamics in Identified
Neurons"
(Principal Investigator) (R01 AG18229)

08/00 - 07/03 National Institutes of Health
"Differentially Expressed Genes in Olfactory
Neurogenesis"
(Principal Investigator) (R21 DC04507)

01/97 - 01/99 National Institutes of Health
Minority supplement to: "Molecular Mechanisms of
Olfactory Integration" (R29 DC02366)
(Principal Investigator)

07/95 - 06/96 UK Medical Center Major Equipment Competition "High
speed centrifuge rotors"
(Principal Investigator)

07/94 - 06/95 UK Medical Center Research Fund
"Functional expression of olfactory receptors"
(Principal Investigator)

07/94 - 06/95 UK Medical Center Major Equipment Competition
"Functional expression of olfactory receptors"
(Principal Investigator)

INTELLECTUAL PROPERTY:

1999 Submitted Intellectual Disclosure: "Immuno-Radio-Hybridization." Status:
Dropped by PI.

TEACHING EXPERIENCE:

A. UNIVERSITY OF KENTUCKY:

Fall, 2007:

PGY617 Physiological Genomics (**Course Director**; 2 credits)

IBS 605 Experimental Genetics (3 credits)

Spring, 2007:

IBS 604 Cell Signaling (**Course Director**; 3 credits)

Fall, 2006:

PGY617 Physiological Genomics (**Course Director**; 2 credits)

IBS 605 Experimental Genetics (3 credits)

Spring, 2006:

IBS 604 Cell Signaling (**Course Director**; 3 credits)

PGY 630 Sensory Neurobiology (2 credits)

Fall, 2005:

PGY617 Physiological Genomics (**Course Director**; 2 credits)

IBS 605 Experimental Genetics (3 credits)

Spring, 2005:

IBS 604 Cell Signaling (3 credits)

PGY 630 Sensory Neurobiology (2 credits)

Fall, 2004:

PGY617 Physiological Genomics (**Course Director**; 2 credits)

Spring, 2004:

PGY 630 Sensory Neurobiology (2 credits)

Fall, 2003:

ABT 101 Biotechnology (guest lecture)

Spring, 2003:

IBS 604 Cell Signaling (3 credits)

PGY 630 Sensory Neurobiology (2 credits)

Spring, 2002:

IBS 604 Cell Signaling (**Course Director**; 3 credits)

PGY 630 Sensory Neurobiology (2 credits)

Fall, 2001:

PGY 618 Molecular Neurobiology (guest lecture)

Spring, 2001:

IBS 604 Cell Signaling (**Founding Course Director**; 3 credits)

PGY 630 Sensory Neurobiology (2 credits)

Spring, 2000:

PGY 590 Cellular and Molecular Physiology (**Course Director**; 4 credit hr.)

PGY 690 Readings in Cellular and Molecular Physiology

Fall, 1999:

PGY 774 Graduate Pro-Seminar

Spring, 1999:

PGY 590 Cellular and Molecular Physiology (**Course Director**; 4 credit hr.)

PGY 690 Readings in Cellular and Molecular Physiology

PGY 618 Molecular Neurobiology

Spring, 1998:

PGY 590 Cellular and Molecular Physiology (**Course Director**; 4 credit hr.)

PGY 690 Readings in Cellular and Molecular Physiology

PGY 618 Molecular Neurobiology

PGY 613 Behavioral Ecology and Comparative Neurobiology

Fall, 1997:

BIO 550 Comparative Animal Physiology

Spring, 1997:

PGY 774 Graduate Pro-Seminar (**Course Director**; 1 credit hr.)

PGY 590 Cellular and Molecular Physiology

PGY 690 Readings in Cellular and Molecular Physiology

PGY 618 Molecular Neurobiology

Fall, 1996:

PGY 774 Graduate Pro-Seminar (**Course Director**; 1 credit hr.)

Spring, 1996:

PGY 590 Cellular and Molecular Physiology

Fall, 1995:

PGY 560 Pathophysiology

PGY 607 Advanced Neurophysiology

Spring, 1995:

PGY 590 Cellular and Molecular Physiology

PGY 774 Graduate Pro-Seminar

B. OTHER INSTITUTIONS:

Summer, 2004:

Chemosensory Neurobiology in the Marine Environment, Bermuda Biological Station.

Spring, 1985:

BIO 110 Cells, Organisms, and Genetics, University of Florida.

Fall, 1984:

BIO 108 Introductory Biology Laboratory, University of Florida.

Spring, 1984:

BIO 420 Comparative Physiology Laboratory, Florida State University.

C. ADDITIONAL TEACHING EXPERIENCE:

1998 Neurophysiology REU program, Dept. of Anatomy & Neurobiology

D. NEW COURSE DEVELOPMENT:

2004 PGY 617 Physiological Genomics (Founding Course Director)

2000 IBS 604 Cell Signaling (Founding Course Director)

2000 IBS 603 Cell Biology course committee

1997 PGY 690 Readings in Cellular and Molecular Physiology

1995 PGY 590 Cellular and Molecular Physiology

POSTDOCTORAL FELLOW SUPERVISION:

01/96 - 07/00 Alexander A. Gimelbrant, Ph.D. (Moscow State Univ.)
currently Research Associate, Harvard University

10/96 - 12/01 Bettye Hollins, Ph.D. (Medical College of Georgia)
currently Research Assistant Prof., Medical College of Georgia

02/00 - 2005 Ruben Stepanyan, Ph.D. (Armenian Acad. of Science)
currently postdoctoral fellow, UK

09/00 - 08/01 Parul Lakhani, Ph.D. (Baylor Univ.)
currently medical resident, Univ. of Maryland Hospital

12/01 - present Neeraja Sammeta, Ph.D. (Hyderabad Univ.)

01/02 - 06/05 Ranjit Shetty, Ph.D. (University of Kentucky)
currently postdoctoral fellow, Harvard University

05/02 - 05/04 Tun-Tzu Yu, Ph.D. (University of Kansas)
currently postdoctoral fellow, NIH

07/04 - 06/07 Daniel Bergman, Ph.D. (Bowling Green State University)
currently Assistant Professor, Grand Valley State University

Yi Zhang, Ph.D. Graduated 1999

F. ADVISORY COMMITTEE MEMBERSHIP (OTHER DEPARTMENTS):

Michael Mienatowski, Vet. Sciences (Ph.D. student)

James Monaghan, Biology (Ph.D. student)

Swatee Day, Clinical Sciences (PhD awarded, 2006)

Sihui Long, Dept. of Chemistry (PhD awarded, 2006)

Greg Graf, Animal Science, M.S. (Graduated 1995, Animal Science)

G. ADVISORY COMMITTEE MEMBERSHIP (OTHER INSTITUTIONS):

Tizeta Tadesse, Georgia State University (Ph.D. student)

H. DISSERTATION EXAMINER:

Jessica L. MacDonald, Ph.D., 2007, Neuroscience, Univ. of British Columbia

R. Daniel Johnson, Ph. D., 2002, Dept. of Chemistry, University of Kentucky

J. Mark Quillan, Ph.D., 1995, Dept. of Pharmacology, Yale University

I. UNDERGRADUATE TRAINEES:

2006-07 Chad Glasser, University of Kentucky

2006-07 Adrian M. Fischl, University of Kentucky

2006-07 Vinay Srinivasan, University of Kentucky

2006 Luke Fife, Transylvania University

2005 Lauren Hampton, University of Kentucky (Medical student, UK)

2002-2003 Michael Owen, University of Kentucky

2002: Laurie Meszaros, University of Kentucky

2002: Stephanie Erin Brock, Univ. of Kentucky (Ph.D. student, Univ. Louisville)

2002: Jessica Menk, University of Kentucky

2001- 2002 Megan Flynn, University of Kentucky

2001: Justin Nickel, Berea College (Postdoctoral Fellow, UK)

2001: Amanda G. Schell, Berea College (Nursing, Vanderbilt)

2000: Melissa Cobb, Salem International Univ. (Ph. D student, UK)

1999 - 2000: Michael Sparks, University of Kentucky

1997: Raj Mankad, Northwestern Univ. (Medical student)

1995: Shantie D. Harkisoon, Transylvania Univ. (M.D., UK)

J. HIGH SCHOOL TRAINEES:

2002: Anisa Chen, Paul Lawrence Dunbar H.S., Lexington, KY

1995: Ryan Adkins, Tates Creek High School, Lexington, KY.

1993: Joshua P. Rising, Choate Academy, Wallingford, Connecticut

K. TRAINING GRANT AND PROGRAM FACULTY MEMBERSHIP:

07/01 - present Cellular and Molecular Neuroscience of Sensory Systems

07/00 - present Spinal Cord and Brain Injury Research Center

06/98 - present Center for Ecology and Evolutionary Biology
01/96 – 07/00 Interdepartmental Neuroscience Program
08/95 - 07/99 Behavioral Ecology and Neurobiology (BEACON) Training Program

SOCIETY MEMBERSHIPS:

Association for Chemoreception Sciences
Society for Neuroscience
American Association for the Advancement of Science
American Physiological Society

NATIONAL and INTERNATIONAL SERVICE:

A. Elected or Appointed Positions

2007 – 10 Long Range Planning Committee, Association for Chemoreception Sciences
2007 -08 Membership Enhancement and Planning Survey Committee, Society for Neuroscience (ad hoc)
2007 – 08 Chairman, Membership and Chapters Committee, Society for Neuroscience
2006 Co-Chairman, Membership and Chapters Committee, Society for Neuroscience
2005 – 08 Government and Public Affairs Committee, Society for Neuroscience (ex officio)
2005 Chairman, Chapters Committee, Society for Neuroscience
2004 Program Chair, 26th meeting of the Association for Chemoreception Sciences
2003 - 05 Chapters Committee, Society for Neuroscience
2003 - 05 Program Committee, the Association for Chemoreception Sciences
2003 - 04 Executive Committee, Association for Chemoreception Sciences
2003 - 05 Program Committee, CNS section, American Physiological Society

B. Editorial Boards

2001 – 2007 *Chemical Senses*
2001 - 2003 *Physiological Genomics*

C. Editorships

2008 – 2010 *Chemical Senses*

D. Grant Review Panels

02/08 Reviewer, NIH ZRG1 IFCN-K (02) M Member Conflict Panel
06/07 Reviewer, NIH Molecular Neuropharmacology and Signaling Panel
03/07 Reviewer, ZRG1 IFCN-F (03) (M) Member Conflict Panel
11/06 Reviewer, NIH ZRG1 IFCN-K (02) Special Emphases Panel
10/06 Reviewer, NIH Molecular Neuropharmacology and Signaling Panel
6/02 – 6/06 Member, NIH SCS (formerly IFCN-4) panel
5/06 *Ad hoc* reviewer, Canadian Institutes of Health Research
04/05 Reviewer, NINDS PPG Special Emphases Panel
11/03 Reviewer NIDCD ZDC1 SRB-0 (28) Special Emphases Panel
2/00 - 2/02 Temporary Member, NIH IFCN-4 panel
11/01 Reviewer NIDCD ZDC1 SRB-0 (28) Special Emphases Panel
10/01 *Ad hoc* reviewer, NIDCD CDRC panel
06/01 *Ad hoc* reviewer, NIDCD CDRC panel
08/00 Reviewer, NIDCD ZDC1 SRB-0 (26) Special Emphases Panel
07/00 Reviewer, NIMH ZMH1 BRB-P (02) Study Section
03/00 *Ad hoc* reviewer, National Science Foundation
01/99 Reviewer, NIH IFCN-6 SBIR panel
05/98 Reviewer, NIH Hearing Research Special Emphases Panel
04/97 *Ad hoc* reviewer, National Science Foundation
02/96 *Ad hoc* reviewer, NIH CMS study section
10/95 *Ad hoc* reviewer, National Science Foundation
04/95 *Ad hoc* reviewer, National Science Foundation
03/92 Reviewer, Grass Foundation Technical Review Committee

E. Consulting

2006 American Association for the Advancement of Science Research Competitiveness Program Expert Panel. Oklahoma INBRE site review.

2003 American Association for the Advancement of Science Research Competitiveness Program Expert Panel. Oklahoma Biomedical Research Infrastructure Network site review.

2001 American Association for the Advancement of Science Research Competitiveness Program Expert Panel. University of Vermont, Vermont Genetics Network site review.

F. Manuscript Review

01/94 - present *Ad hoc* Journal reviewer for:
Journal of Neuroscience
Journal of Neurochemistry
Journal of Comparative Neurology

Journal of Neurobiology
Journal of Neuroscience Research
Comparative Biochemistry and Physiology
Journal of Membrane Biology
Chemical Senses
Neuroscience
Journal of Neurotrauma
Hydrobiologia
Neuroscience Letters
Experimental Neurology
Experimental Brain Research
Biochimica et Biophysica Acta
Journal of Experimental Biology
Journal of the Assoc. for Res. in Otolaryngology
Archives of General Psychiatry
Microscopy Research and Technique
Genomics
Genome Biology
Cellular and Molecular Life Sciences
Journal of Cell Biology
Nature Protocols
PNAS, USA

G. Organization of Symposia and Conferences

- 02/06 "Neurogenomics", University of Kentucky, Lexington, KY.
- 04/05 "Chemosensory Receptors", Sarasota, FL. Peter Mombaerts and Leslie Vosshall, co-organizers.
- 12/04 "Neurogenomics", University of Kentucky, Lexington, KY.
- 04/04 "Chemosensory Receptors", Sarasota, FL. Peter Mombaerts, co-organizer.
- 04/04 "Receptors: Choosing Genes, Targeting Axons and Detecting Chemicals" at the Association for Chemoreception Sciences meeting, Sarasota, Fl. Leslie Vosshall, co-organizer.
- 12/03 "Neurogenomics", University of Kentucky, Lexington, KY.
- 04/03 "Hanging by a Thread, Protein Scaffolds and Cell Signaling" at the Association for Chemoreception Sciences meeting, Sarasota, Fl. Judith Van Houten, co-organizer.

12/02 "Aquatic and Invertebrate Systems" at the Australian Association for ChemoSensory Science meeting, Heron Island, Queensland.

12/01 "Neurogenomics", University of Kentucky, Lexington, KY.

04/01 "Functional Genomics in Neural Systems" at the Association for Chemoreception Sciences meeting, Sarasota, Fl.

UNIVERSITY SERVICE:

A. DEPARTMENT OF PHYSIOLOGY:

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| 07/99 - 06/03 | Director of Graduate Studies |
| 01/94 - 05/99 | Faculty Search Committee |
| 01/96 - present | Graduate Affairs Committee |
| 01/95 - 07/99 | Computing Resources Coordinator |
| 06/96 - 05/97 | Seminar Program Coordinator |

B. MEDICAL CENTER:

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| 08/01 - 05/02 | Physiology Department Chair Search Committee |
| 08/00 - 06/03 | Integrated Biomedical Sciences Graduate Committee |
| 07/99 - 06/02 | Research and Graduate Education Committee |
| 06/99 - 07/00 | Integrated Biomedical Sciences Development Committee |
| 01/97 - 06/02 | Molecular Structure and Analysis Facility Users Committee |

C. UNIVERSITY:

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| 01/01 - present | DNA Array Core Facility Advisory Committee |
| 07/99 - 06/02 | University Appeals Board |
| 08/97 - 99 | Behavioral Ecology and Comparative Neurobiology (BEACON) Program Recruiting Committee |
| 01/96 - 01/00 | Integrated Neuroscience Program Executive Committee |
| 07/96 - 08/98 | UK Chapter of the Society for Neuroscience, Member-at-Large |
| 05/97 | UK Graduate Student Research Day Lecture, "Essential Elements of Grant Proposals" (with Dr. Wendy Katz) |

COMMUNITY SERVICE:

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| 2005 | Brain Awareness Week workshop, "Fluorescent mice", Woodford County Middle School |
| 2005 | "Sense of Smell" State of Affairs, public radio, WPFL, Louisville. |
| 2002 | Career Day, Huntertown Elementary, Woodford County |
| 2000 | Brain Awareness Week workshop, Northside Elementary, Woodford County |

- 1997 - 1998 UK coordinator for Brain Awareness Week
- 1995 Workshop instructor, "Grant Writing for Middle and High School teachers", UK Outreach Center.
- 1994 Kentucky Science Teachers Association meeting lecture "Recombinant DNA Technology"

INVITED PRESENTATIONS:

- 05/06 University of Kentucky, KBRIN Program, "Olfactory Genomics"
- 03/06 Georgia State University, Dept. of Biology, "Olfactory Genomics"
- 01/06 Society for Integrative and Comparative Biology Symposium on Genomic and Proteomic Approaches in Crustacean Biology, "Lobster Olfactory Genomics"
- 10/05 Monell Center for Chemical Senses, "Olfactory Genomics"
- 04/05 Centre College, Biochemistry and Molecular Biology Program. "Olfactory Genomics"
- 01/05 Indiana University School of Medicine, Department of Pharmacology and Toxicology. "Olfactory Genomics"
- 12/03 Northwestern University, Institute for Neuroscience. "The Privileged Lives of Olfactory Receptors"
- 12/02 Australasian Association for Chemosensory Science, Heron Island, Queensland. "Olfactory receptor trafficking and olfactory-specific genes"
- 12/02 Australasian Association for Chemosensory Science, Heron Island, Queensland. "Olfactory specific genes mark specific cell types in mature and proliferation zones of the lobster olfactory organ"
- 11/02 Department of Physiology, Lexington, KY. "Olfactory receptor trafficking and olfactory-specific transcripts"
- 06/02 Kentucky Spinal Cord and Head Injury Research Symposium, Lexington, KY. "Data Mining in SCIgenes, the database of spinal cord injury-related genes"
- 02/02 Department of Molecular and Biomedical Pharmacology, University of Kentucky. "Olfactory Receptors and Other Olfactory-specific Genes"
- 09/01 Department of Anatomy and Neurobiology, University of Maryland School of Medicine. "Olfactory Receptors and Other Olfactory-specific Genes"

- 06/01 Kentucky Spinal Cord Injury Research Center, University of Louisville School of Medicine. "High-throughput Analysis of mRNA Abundance"
- 04/01 Symposium on "Functional Genomics in Neural Systems" at the Association for Chemoreception Sciences meeting, Sarasota, Fl. "High throughput Analysis of mRNA Abundance"
- 03/01 Banbury Conference, 'Molecular Biology of Chemosensory Receptors: The First Decade'. Cold Spring Harbor, NY. "Intracellular Trafficking of Olfactory Receptors"
- 02/01 Senomyx Corporation, San Diego, CA. "Intracellular Trafficking of Olfactory Receptors"
- 02/01 Genomics Lunch Bunch, College of Agriculture, University of Kentucky. "Techniques for High-throughput Analysis of mRNA Abundance"
- 12/00 Center for Neuroscience, Mind & Behavior and Department of Biological Sciences, Bowling Green State University, Bowling Green, OH. "Olfactory-Enriched mRNAs and the Molecular Physiology of Olfactory Coding"
- 11/00 Division of Nephrology, Bone, and Mineral Metabolism, Department of Internal Medicine, University of Kentucky. "Techniques for High-throughput Analysis of mRNA Abundance"
- 06/00 Kentucky Spinal Cord and Head Injury Research Trust Symposium, Lexington, KY. "Gene expression changes in dorsal root ganglion neurons following inhibition of growth cone migration by proteoglycans"
- 06/00 Kentucky Spinal Cord and Head Injury Research Trust Symposium, Lexington, KY. "Spinal Cord Injury-Related Gene Database"
- 04/00 The Takasago Award Lecture, Association for Chemoreception Sciences Meeting, Sarasota, FL. "Receptors, Dual Transduction Pathways, and Olfactory-specific Genes"
- 03/00 Integrated Graduate Education and Research Training Program, The University of Kentucky. "Molecular Biotechnology and Olfactory Transduction"
- 07/99 Frontiers in Crustacean Neurobiology meeting; Hamburg, Germany. "Molecular physiology of signal transduction in the lobster olfactory system."

- 07/99 Frontiers in Crustacean Neurobiology meeting; Hamburg, Germany. "Molecular neurobiology and biotechnology: Unique opportunities in the crustacean nervous system."
- 06/99 Frontiers in Spinal Cord Regeneration, the Kentucky Spinal Cord and Head Injury Research Trust Symposium, Louisville, KY. "Gene expression changes during inhibition of growth cone migration by proteoglycans and myelin."
- 03/99 Dept. of Biology and the Center for Neural Communication and Computation, Georgia State University. "Transduction, trafficking, and biotechnophilia in the olfactory system."
- 12/98 School of Biological Sciences, University of Kentucky. "Molecular regulation of information processing in the lobster olfactory system."
- 09/98 Dept. of Physiology, University of Kentucky. "Ex osmiophilia, lux. Olfactory receptors shine at the cell surface"
- 05/98 Dept. of Neuroscience, Tufts University. "Molecular physiology of olfactory receptors and olfactory transduction."
- 02/97 Dept. of Anatomy and Neurobiology, University of Kentucky. "Molecular information processing in the olfactory system."
- 06/96 Gordon Research Conference on the Chemical Senses. "Functional expression of olfactory-adrenergic receptor chimeras and intracellular retention of heterologously expressed olfactory receptors."
- 04/95 Dept. of Anatomical Sciences and Neurobiology, University of Louisville. "Functional expression of olfactory receptor chimeras in a video assay system."
- 03/95 Neuroscience Program, University of Cincinnati. "Chimeric olfactory receptors assayed by imaging of pigment movement in melanophores."
- 12/94 Dept. of Cell Biology and Anatomy, Louisiana State University School of Medicine. "Expression of olfactory receptor chimeras in a novel optical assay system."
- 11/94 Dept. of Surgery, University of Kentucky. "Expression of olfactory receptor chimeras in a novel optical assay system."
- 04/93 Dept. of Biology, University of South Florida. "Functional expression of receptors in a novel digital optical assay."

- 03/93 Dept. of Physiology, University of Kentucky. Signal integration in olfactory receptor neurons and the functional expression of recombinant receptors.
- 03/93 Signal integration in olfactory receptor neurons and the functional expression of recombinant receptors. Dept. of Biology, Wayne State University.
- 02/93 Dept. of Pharmacology and Physiological Sciences, Saint Louis University. Signal integration in olfactory receptor neurons and the functional expression of recombinant receptors.
- 02/93 Dept. of Biology, Notre Dame University. Signal integration in olfactory receptor neurons and the functional expression of recombinant receptors.
- 02/93 Dept. of Physiology, University of North Carolina. Signal integration in olfactory receptor neurons and the functional expression of recombinant receptors.
- 02/93 Signal integration in olfactory receptor neurons and the functional expression of recombinant receptors. Dept. of Biology, University of Illinois, Chicago.
- 01/93 Dept. of Anatomy and Neurobiology, University of Tennessee College of Medicine. Signal integration in olfactory receptor neurons and the functional expression of recombinant receptors.
- 01/93 Dept. of Physiology, University of Massachusetts College of Medicine. Signal integration in olfactory receptor neurons and the functional expression of recombinant receptors.
- 12/89 Dept. of Biochemistry, Brandeis University. Hyperpolarizing receptor potentials and ion channels in lobster olfactory receptor neurons.
- 12/89 Dept. of Neurobiology, Harvard University. Hyperpolarizing receptor potentials and ion channels in lobster olfactory receptor neurons.

MEETING PRESENTATIONS (past two years):

04/06 Association for Chemoreception Science Meeting, Sarasota, FL; "Mycn is required for olfactory system development" MD Nickell, D Hardin, TS McClintock.

04/06 Association for Chemoreception Science Meeting, Sarasota, FL; "Growth factors and receptors in the olfactory epithelium" DA Bergman, N Sammeta, TS McClintock.

04/06 Association for Chemoreception Science Meeting, Sarasota, FL; "Expression of transcriptional regulators in olfactory sensory neurons" N Sammeta, TS McClintock.

04/06 Association for Chemoreception Science Meeting, Sarasota, FL; "Expression of axon growth and guidance genes in immature OSNs" JC McIntyre, TS McClintock.

10/06 Society for Neuroscience Meeting, Atlanta, GA; "Mouse olfactory sensory neurons express 10,000 genes" N Sammeta, T-T Yu, TS McClintock.

01/07 Keystone Symposium, Chemical Senses, Snowbird, UT; "Mouse olfactory sensory neurons express 10,000 genes" TS McClintock, N Sammeta, T-T Yu.

11/07 Society for Neuroscience meeting, San Diego, CA; "Tissue expression patterns identify mouse cilia genes" TS McClintock, CE Glasser, SC Bose, DA Bergman.

PUBLICATIONS

Review Articles and Book Chapters

2008. **McClintock, TS** and N. Sammeta. Olfactory insights from transcriptional profiling. In: *Encyclopedia of Neuroscience*, L Squire, ed, Academic Press, Oxford.
2006. **McClintock, TS**, CD Derby, and BW Ache. Lobster Olfactory Genomics. *Integrative and Comparative Biology*, 46:940-947.
2006. **McClintock, TS**, and CD Derby. Shelling Out for Genomics. *Genome Biology*, 7:312.
2003. **McClintock, TS** and N. Sammeta. Trafficking prerogatives of olfactory receptors. *Neuroreport* 14:1547-1552.
2002. **McClintock, TS**. High throughput mRNA Analysis Techniques. *Chemical Senses* 27:289-291.
2002. **McClintock, TS** and F Xu. Molecular physiology of G-proteins in olfactory transduction and CNS neurotransmission. In: *Frontiers in Crustacean Neurobiology.*, Vol. II. K Weise, WD Krenz, J Tautz, H Reichert and B Mulloney, eds., pp. 359-366.
2002. **McClintock, TS**, AA Gimelbrant, and DJ Baro. Molecular biology of crustacea: Unique opportunities in the crustacean nervous system. In: *Frontiers in Crustacean Neurobiology.*, Vol. II. K Weise, WD Krenz, J Tautz, H Reichert and B Mulloney, eds., pp. 232-235.
2000. **McClintock, TS**. Molecular Biology of Olfaction. In: *Neurobiology of taste and smell, 2nd edition*. TE Finger, WL Silver, and D Restrepo, eds. Wiley, Chichester, UK. pp. 179-199.
2000. Gimelbrant AA and **McClintock, TS**. The intracellular trafficking of olfactory receptors. In: *Recent Research Developments in Neurochemistry*, Vol 3, part I. Research Signpost, Kerala, India. pp. 39-45.
1996. Lerner, MR, L Golovyan, GF Graminski, K. Harris, L. Huang, CK Jayawickreme, S Karne, **TS McClintock**, MN Potenza, A. Roby-Shemkovitz and M. Quillan. Tools for Investigating Functional Interactions Between Lipid-Derived Autacoids and their Receptors. In: *Am. J. Ther.* 3:280-286.
1993. Lerner, MR, MN Potenza, GF Graminski, **TS McClintock**, CK Jayawickreme and S Karne. A new tool for investigating G protein coupled receptors. In: *The molecular basis of smell and taste transduction*. Wiley, Chichester, UK. pp. 76-87.

1990. Ache, BW and **TS McClintock**. The lobster olfactory receptor cell as a neurobiological model: the action of histamine. In: *Frontiers in Crustacean Neurobiology*. K Weise, WD Krenz, J Tautz, H Reichert and B Mulloney, eds. Birkhäuser Verlag, Basel. pp. 33-39.

1989. Ache, BW, I Schmeidel, **TS McClintock** and PAV Anderson. Activation of lobster olfactory receptor cells by complex stimuli: evidence for multiple conductance pathways. In: *Receptor events and transduction in taste and olfaction*. J Brand, J Teeter, R Cagan and M Kare, eds. Marcel Dekker, NY. pp. 389-403.

Primary Publications

2008. **McClintock, TS, CE Glasser, SC Bose, and DA Bergman**. Tissue expression patterns identify mouse cilia genes. *Physiol. Genomics*, 32:198-206.

2007. Sammeta, N, T-T Yu,, SC Bose and **TS McClintock**. Mouse olfactory sensory neurons express 10,000 genes. *J. Comp. Neurol.* 502:1138-1156.

2006. Stepanyan, R, K Day, J Urban, DH Hardin, RS Shetty, CD Derby, BW Ache and **TS McClintock**. Gene expression and specificity in the mature zone of the lobster olfactory organ. *Physiol Genomics*, 25:224-233.

2005. Shetty, R., SC Bose, MD Nickell, JC McIntyre, D Hardin, AM Harris, and **TS McClintock**. Transcriptional changes during neuronal death and replacement in the adult olfactory epithelium. *Mol. Cell. Neurosci.* 30:90-107.

2005. Stepanyan, R, S. Haley and **TS McClintock**. Olfactory specific chymotrypsin-like serine protease from the aesthetasc tegumental gland of the lobster, *Homarus americanus*. *Cell Tiss. Res.* 27:1-10.

2005. Yu, T-T, J McIntyre, SC Bose, D Hardin, MC Owen and **TS McClintock**. Differentially expressed transcripts from phenotypically identified olfactory sensory neurons. *J. Comp. Neurol.* 483:251-262.

2004. Stoss, T, MD Nickell, D Hardin, and **TS McClintock**. A novel epithelial-specific transcript upregulated during neural regeneration in the lobster olfactory organ. *J. Neurobiol.*, 58:355-368.

2004. Stepanyan, R, B Hollins, SE Brock, and **TS McClintock**. Primary culture of lobster (*Homarus americanus*) olfactory sensory neurons. *Chem. Senses*, 29:179-187.

2003. Hollins, B, D Schweder, AA Gimelbrant, and **TS McClintock**. Olfactory enriched transcripts are cell type specific markers in the lobster olfactory organ. *J. Comp. Neurol.* 455:125-138.
2001. Gimelbrant, AA, S Haley, and **TS McClintock**. Olfactory receptor trafficking involves conserved regulatory steps. *J. Biol. Chem.* 276:7285-7290.
2000. **McClintock, TS**, F Xu, and SC Bose. Distribution of G-protein α subunits and neurotransmitter activation of $G_{\alpha i}$ and $G_{\alpha q}$ in the brain of the lobster, *Homarus americanus*. *J. Comp. Neurol.* 422: 402-414.
2000. Hollins, B and **TS McClintock**. A lobster GABA receptor subunit expressed in neural tissues. *J. Neurosci. Res.* 59: 534-541.
1999. Xu, F, SC Bose and **TS McClintock**. A lobster G-protein coupled receptor kinase that associates with membranes and G-proteins in response to odorants and neurotransmitters. *J. Comp. Neurol.* 415: 449-459.
1999. Xu, F and **TS McClintock**. A lobster phospholipase C- β that associates with G-proteins in response to odorants. *J. Neurosci.*, 19: 4881-4888.
1999. Gimelbrant, AA, TD Stoss, TM Landers and **TS McClintock**. Truncation releases olfactory receptors from the endoplasmic reticulum of heterologous cells. *J. Neurochem.*, 72: 2301-2311.
1998. Mankad, R, AA Gimelbrant and **TS McClintock**. Consensus Translational Initiation Sites of Marine Invertebrate Phyla. *Biol. Bull.*, 195: 251-254.
1998. Xu, F, B Hollins, TM Landers and **TS McClintock**. Molecular cloning of a lobster G_{β} -subunit and G_{β} expression in olfactory receptor neuron dendrites and brain neuropil. *J. Neurobiol.* 36: 525-536.
1997. **McClintock, TS** and MR Lerner. Functional analysis by imaging of melanophore pigment dispersion of chimeric receptors constructed by recombinant polymerase chain reaction. *Brain Res. Prot.* 2:59-68.
1997. Gimelbrant, AA and **TS McClintock**. A nuclear matrix attachment region is highly homologous to a conserved domain of olfactory receptors. *J. Mol. Neurosci.*, 9:1-3.
1997. Xu, F, B Hollins, AM Gress, TM Landers and **TS McClintock**. Molecular cloning and characterization of a lobster $G_{\alpha s}$ -protein expressed in neurons of olfactory organ and brain. *J. Neurochem.*, 69: 1793-1800.

1997. **McClintock, TS**, TM Landers, AA Gimelbrant, CK Jayawickreme, LZ Fuller, BA Jackson and MR Lerner. Functional expression of olfactory-adrenergic receptor chimeras and intracellular retention of heterologously expressed olfactory receptors. *Mol. Brain Res.* 48:270-278.
1997. **McClintock, TS**, F Xu, J Quintero, AM Gress and TM Landers. Molecular cloning of a lobster $G\alpha_q$ -protein expressed in neurons of olfactory organ and brain. *J. Neurochem.*, 68:2248-2254.
1996. **McClintock, TS**, J Rising and MR Lerner. Melanophore pigment dispersion responses to agonists show two patterns of sensitivity to inhibitors of cAMP-dependent protein kinase and protein kinase C. *J Cell. Physiol.* 167:1-7.
1993. **McClintock, TS**, GF Graminski, MN Potenza, CK Jayawickreme, A Roby-Shemkovitz, and MR Lerner. Functional expression of recombinant G-protein coupled receptors monitored by video imaging of pigment movement in melanophores. *Anal. Biochem.* 209:298-305.
1993. Pongracz, F, **TS McClintock**, BW Ache, and GM Shepherd. Signal transmission in lobster olfactory receptor cells: significance of electrotonic structure revealed by a compartmental model. *Neuroscience* 55:325-338.
1992. **McClintock, TS**, AP Byrnes and MR Lerner. Molecular cloning of a G-protein α_i subunit from the lobster olfactory organ. *Mol. Brain Res.* 14:273-276.
1991. Michel, WC, **TS McClintock**, and BW Ache. Inhibition of lobster olfactory receptor cells by an odor-activated potassium conductance. *J. Neurophysiol.* 65:446-453.
1990. **McClintock, TS** and BW Ache. A nonselective cation channel activated by patch excision from lobster olfactory receptor neurons. *J. Membrane Biol.* 113:115-121.
1989. **McClintock, TS**, and BW Ache. Histamine directly gates a chloride channel in lobster olfactory receptor neurons. *Proc. Natl. Acad. Sci., USA* 86:8137-8141.
1989. **McClintock, TS**, K Schütte and BW Ache. Failure to implicate cyclic-AMP in transduction in lobster olfactory receptor cells. *Chem. Senses* 14:817-827.
1989. **McClintock, TS** and BW Ache. Ionic currents and ion channels of lobster olfactory receptor neurons. *J. Gen. Physiol.* 94:1085-1099.
1989. **McClintock, TS** and BW Ache. Hyperpolarizing receptor potentials in lobster olfactory receptor cells: implications for transduction and mixture suppression. *Chem. Senses* 14:637-647.

1989. Bayer, TA, **TS McClintock**, U Grünert and BW Ache. Histamine induced modulation of olfactory receptor neurones in two species of lobster, P. argus and H. americanus. *J. exp. Biol.* 145:133-146.

1985. **McClintock, TS**. Effects of shell condition and size upon the shell choice behavior of a hermit crab. *J. Exp. Mar. Biol. Ecol.* 88:271-285.

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