

# JAMES ALAN MURRAY, PH.D.

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## EDUCATION:

Ph.D., Department of Zoology, University of Washington, Seattle, WA June 1994  
Concentrations in Physiology, Neurobiology, Behavior, Invertebrate Biology  
Bachelor of Science (B.S.) in Biological Sciences with High Honors for research,  
Concentration in Neurobiology and Behavior, Cornell University, Ithaca, NY May 1988

## PROFESSIONAL APPOINTMENTS:

Associate Professor, Graduate Faculty, Department of Biology, University of Central Arkansas, Conway, AR 2006 – present  
Visiting Lecturer, Friday Harbor Laboratories, University of Washington, Friday Harbor, WA Spring 2005, 2006, Summer 2007  
Assistant Professor, Graduate Faculty, Department of Biology, University of Central Arkansas, Conway, AR 1999 – 2006  
Visiting Assistant Professor, Colby College, Department of Biology, Waterville, ME September 1998 – June 1999  
Postdoc/Lecturer, University of California, San Diego, Department of Biology, La Jolla, CA October 1995 – August 1998  
Postdoctoral fellow, Scripps Institution of Oceanography, La Jolla, CA June 1994 – September 1995

## COURSES TAUGHT: (NEW COURSES DEVELOPED ARE UNDERLINED)

<u>Neuroethology</u> (BIO 533A; co-taught with Dr. Shaun Cain)	U. Washington, Seattle	Summer 2007
Marine Biology (BIOL 3360)	U. Central Arkansas	Fall 2005 – 07
Alternative & Complementary Therapies (NURS 4325/5325; Guest lect.)	U. Central Arkansas	Fall 2005 – Spring 2006
<u>The Neuroethology of Orientation Behavior</u> (BIO 499; co-taught)	U. Washington, Seattle	Spring 2005, 2006
<u>Graduate Seminar in Biology, Mind &amp; Brain</u> (BIOL 6102)	U. Central Arkansas	Spring 2005
Introductory Biology Seminar (BIOL 1120; organizer in 2004)	U. Central Arkansas	1999 – 2005
Oxford Honors Tutorial (Guest speaker, interdisciplinary science)	U. Central Arkansas	Spring 2004
Scanning Electron Microscopy (BIOL 4/5250; lecture, supervised projects)	U. Central Arkansas	Spring 2003 – 07
<u>Graduate Seminar in Biology, Academic Skills</u> (BIOL 6102)	U. Central Arkansas	Spring 2003
<u>Experimental Neurobiology</u> (BIOL 4425/5425)	U. Central Arkansas	Fall 2001 – 04, 2006 – 07
Principles of Biology I (BIOL 1440)	U. Central Arkansas	Spring 2001, Fall 2002 – 04
Writing Seminar on religion (Guest speaker of Profs. Deering, Bradford)	U. Central Arkansas	Spring 2001 – 2002
Honors Seminar on memory (Guest speaker of Prof. Margaret Morgan)	U. Central Arkansas	Spring 2001
Special Problems (student research) in Biology (BIOL 3X50)	U. Central Arkansas	Fall 2000 – 2004
Introduction to Neuroscience (BIOL 3370)	U. Central Arkansas	Fall 2000, Summer 2001, 03
<u>Graduate Seminar in Biology, Skeptical Inquiry</u> (BIOL 6102)	U. Central Arkansas	Spring 2000
Structure and Function I & II (BIOL 2406, 2407)	U. Central Arkansas	Fall 1999 – Spring 2002
<u>Animal Senses</u> (BI398, Visiting Asst. Prof.)	Colby College, Maine	Spring 1999
Neurobiology (BI274L, Visiting Asst. Prof.)	Colby College, Maine	Spring 1999
Comparative Animal Physiology (BI375L, Visiting Asst. Prof.)	Colby College, Maine	Fall 1998
Systems Neurobiology (BIPN 142, Lecturer)	U. California, San Diego	Winter 1998
Laboratory Neurobiology (BIPN 145, Lecturer)	U. California, San Diego	Fall 1997
Animal Diversity (Zoology 220, Guest Lecturer)	U. Washington, Seattle	Winter 1994
Molecular Neurobiology (Zoology 538b, T.A./Guest Lecturer)	U. Washington, Seattle	Spring 1990 – 1994
Animal Physiology (Zoo 488, T.A.)	U. Washington, Seattle	Winter 1990
Natural History of Marine Invertebrates (Zoo 330, T.A.)	U. Washington, Seattle	Spring 1989
Introductory Biology (Bio 210, T.A.)	U. Washington, Seattle	Fall 1988

## PROFESSIONAL DEVELOPMENT:

Society for Neuroscience Undergraduate Neuroscience Teaching workshop	2006
UCA Instructional Development Center seminar on anti-plagiarism software	2006
Strategies for Success workshop on teaching science, Chattanooga, TN	2005
UCA Instructional Development Center Discussion Groups	2000 – 2002
Creating an Active Learning Environment in the Life Science Classroom, NSF Chautauqua Short Course	2000
Society for Neuroscience Teaching Workshops – Hands-on Neuroscience Activities	1999 – 2004, 2006

UCA Instructional Development Center Workshops	1999 – 2002
Workshop on writing National Institutes of Health grant proposals	1999
University of California, San Diego – Preparing Professional Faculty at the Center for Teaching Development	1997
Society for Neuroscience Seminar – How to Bring Neuroscience into the Schools	1995
Society for Neuroscience Seminar – How to Talk to Children in Schools	1991, 1993

## **PUBLICATIONS:** (STUDENT CO-AUTHORS ARE UNDERLINED)

- (1) **Murray JA**, Cain SD, Estep JD (2006) Advances in the neural bases of orientation and navigation, Integrative and Comparative Biology 46(6):871-879 ([advanced online](#); doi:10.1093/icb/icl037)
- (2) Blackwell JS, **Murray JA** (2005) Neuronal responses to water flow in the marine slug *Tritonia diomedea*, Impulse [[Online](#) at <http://impulse.schc.sc.edu/>]
- (3) Redondo RL, **Murray JA** (2005) A single neuron serves a significant role in effecting turning while crawling in the marine slug *Tritonia diomedea* (Bergh), Journal of Comparative Physiology A 191:435-444 [[Online](#); [PubMed 15778839](#)]
- (4) **Murray JA**, Links AC, Willows AOD (accepted) Orientation of the nudibranch *Tritonia diomedea* to tidal water flow in nature (Marine and Freshwater Behavior and Physiology)
- (5) **Murray JA** (2004) Distributing digital video to multiple computers, The Journal of Undergraduate Neuroscience Education (JUNE), Spring, 2(2): A62-A64 [[Online](#) at <http://www.funjournal.org/>]
- (6) Beck JC, **Murray JA**, Willows AOD, Cooper MS (2000) Computer-assisted visualizations of neural networks: expanding the field of view using seamless confocal montaging, J Neurosci Methods 98:155-163 [[PubMed 10880829](#)]
- (7) Kristan, WB Jr, Skalak R, Wilson RJA, Skierczynski BA, **Murray JA**, Eisenhart FJ, Cacciatore TW (1996) Biomechanics of hydroskeletons: lessons learned from studies of crawling in the medicinal leech. In, Biomechanics and Neural Control of Movement—9th Engineering Foundation Conference, June 1-6, 1996, Mt. Sterling, OH, USA
- (8) **Murray JA**, Willows AOD (1996) Function of identified nerves in orientation to water flow in *Tritonia diomedea*. J Comp Physiol A 178:201-209 [[PubMed 8592304](#)]
- (9) **Murray, JA** (1994) Neural correlates of orientation to water-flow in *Tritonia diomedea*. Doctoral dissertation, University of Washington [[UW library](#) | [Download](#)]
- (10) Libersat F, **Murray JA**, Hoy RR (1994) Frequency as a releaser in the courtship song of two crickets *Gryllus bimaculatus* (De Geer) and *Teleogryllus oceanicus*: a neuroethological analysis. J Comp Physiol A 174:485-494 [[PubMed 8182564](#)]
- (11) **Murray JA**, Hewes RS, Willows AOD (1992) Water-flow sensitive pedal neurons in *Tritonia*: role in rheotaxis. J Comp Physiol A 171:373-385 [[PubMed 1447725](#)]

## **GRANTS AND FELLOWSHIPS:** (STUDENT CO-PIs & EXTRAMURAL GRANTS ARE UNDERLINED)

- (1) UCA Instructional Development travel grant for neuroscience education workshops (\$500) Fall 2006
- (2) UCA Research Council, "The functional morphology of the ciliated sensory epithelium of the sea slug *Tritonia diomedea*", (\$4,650) 2006 – 2007
- (3) UCA Instructional Development travel grant for Strategies for Success teaching workshops (\$405) Spring 2005
- (4) UCA Instructional Development travel grant for neuroscience education workshops (\$500) Fall 2004
- (5) Arkansas Space Grant Consortium Student & Faculty Grants, "Encoding of flow direction by a simple nervous network", (co-PI with student Brandon Kersh, \$5,490) 2004 – 2005
- (6) State Undergraduate Research Fellowship, "The control of turning in a marine slug", (co-PI with student Josh Morrison, \$3900) Spring 2004
- (7) UCA Foundation, "Brain Awareness Week: public lecture by UCA neuroscience profs." (PI, \$1000) Spring 2004
- (8) UCA Research Council, "Motor control by multiple brain cells ", (\$5,475) 2003 – 2004
- (9) UCA Instructional Development travel grant for neuroscience education workshops (\$450) Fall 2003
- (10) NSF-Major Research Instrumentation grant, "Acquisition of a Laser Confocal Microscope for Natural Science Research and Teaching— an MRI/RUI Proposal." (co-PI, \$242,737) 2002 – 2005
- (11) UCA Foundation grant, "Evolution or intelligent design: who decides what should be taught in the science classroom? Part Two of Challenge Week 2003." (co-PI, \$3000) 2002 – 2003
- (12) UCA Research Council, "Selective ablation of brain cells involved in navigation", (\$7,667) 2002 – 2003
- (13) UCA Summer Stipend, "Selective ablation of brain cells involved in navigation", (\$2,600) Summer 2002
- (14) Neural Mechanisms of Orientation & Navigation Symposium, Nation Science Foundation (PI, \$8,270) 2001 – 2002
- (15) UCA Instructional Development travel grant for neuroscience education workshops (\$540) Fall 2001

(16) Arkansas Science and Technology Authority, "Neural mechanisms of navigation", (PI, <u>\$28,305</u> )	2001 – 2002
(17) UCA Research Council, "Role of a motor neuron in crawling and turning", (PI, \$5,310)	2001 – 2002
(18) NSF-Course, Curriculum, and Laboratory Improvement grant, "Neurophysiology laboratory experience for biology majors and other advanced students." (co-PI, <u>\$118,122</u> )	2001 – 2003
(19) UCA Instructional Development travel grant for neuroscience education workshops (\$500)	Fall 2000
(20) UCA Research Council, "Recording neuronal signals during movement", (PI, \$13,345)	Summer 2000
(21) Arkansas Space Grant Consortium Student & Faculty Grants, "Directional flow receptors", (co-PI with student <u>Jay Vacca, \$4,619</u> )	Spring 2000
(22) UCA Summer Stipend, "Water flow receptors in a marine slug", (\$2,220)	Summer 2000
(23) UCA Instructional Development travel grant for neuroscience education workshops (\$571)	Fall 1999
(24) NIH National Research Service Award/Postdoctoral Fellowship, "Social communication and reproduction in electric fish" 1 F32 MH10705-01/Priority Score 121	1994 – 1997
(25) NIH training grant in neurobiology, "Neural basis of rheotaxis" (PHS 5T32GM07108-19)	1992 – 1994

### STUDENT COLLABORATORS AND AWARDS: (GRADUATE STUDENT\*\*)

(1) <u>Hakim Hammoudi**</u> – Neural control of turning behavior Jewell Moore Summer Research award 2007 (\$1000)	2005 – present
(2) <u>Krishnapraveen Yadlapalli**</u> – Sensory detection and processing of water flow information Awards: Jewell Moore Summer Research award 2006 (\$500); Alan and Marian Kohn Fellowship 2007 (\$2000)	2005 – present
(3) <u>Benedict Igwe</u> – Water flow receptor structure and distribution Awards: Undergraduate Research Grant for Education 2006 (\$2000); Blinks Summer Research Fellowship 2006 (\$1300 stipend plus ~\$2000 in-kind room, board, lab fees); \$500 FHL travel award	2005 – present
(4) <u>Andy Wiles</u> – Biomechanics and hydrodynamics of turbulence and flow around the sea slug Awards: Undergraduate Research Grant for Education 2006 (\$2000)	2005 – present
(5) <u>Emma Peters</u> – Structure and function of water flow receptors Awards: Undergraduate Research Grant for Education 2005 (URGE) (\$3451); URGE 2006 (\$2000) M.D. candidate: University of Arkansas for Medical Sciences	2003 – 2006
(6) <u>Matthew Johnson</u> – Computer modeling of a neural network for navigation Awards: Blinks Summer Research Fellowship 2004 (\$1500 stipend plus ~\$2000 in-kind room, board, lab fees)	2003 – 2004
(7) <u>Brandon Kersh</u> – Scanning electron microscopy of ciliated receptors on <i>Tritonia</i> skin Awards: Arkansas Space Grant (\$5490); Jewell Moore Summer Research award 2004 (unable to accept for personal reasons)	2003 – 2005
(8) <u>Clint Smith</u> – Activity of flow receptors in identified nerves	2003
(9) <u>Joshua Morrison</u> – Single neuron involvement in crawling Awards: Jewell Moore Summer Research award (\$700); Faculty for Undergraduate Neuroscience travel award (honorable mention); Undergraduate Research Grant for Education (\$2000); Summer Undergraduate Research Fellowship (\$3900) M.D. candidate: University of Arkansas for Medical Sciences	2002 – 2005
(10) <u>Martin Erwin</u> – Genetic analysis of populations of <i>Tritonia diomedea</i> Awards: Jewell Moore Summer Research award (\$600) Ph.D candidate–U. Nevada Las Vegas	2001 – 2003
(11) <u>Jeffry Blackwell</u> – Honors College thesis "Neuronal Responses To Water Flow In The Marine Slug <i>Tritonia diomedea</i> ", Awards: Undergraduate Research Grant for Education (\$3000) M.D. candidate 2007: University of Arkansas for Medical Sciences	2001 – 2003
(12) <u>Jessica Alexander</u> – Biology Department Honors thesis "Mechanisms and Kinematics of Turning While Crawling in the Marine Gastropod <i>Tritonia diomedea</i> " Ph. D. candidate– U. Southern Mississippi	2002 – 2003

- (13) Roger Redondo\*\* – Masters Degree with thesis "A Single Neuron Serves A Significant Role in Effecting Turning While Crawling in the Marine Slug *Tritonia diomedea* (Bergh)", 2001 – 2003  
Awards: Libbie Hyman Summer Research Fellowship (\$650); Biology Department 2001 Summer Research Assistantship (\$2500); Walter Morris Award for Best Student Poster 2002 Arkansas Society for Neuroscience meeting (\$100); 1<sup>st</sup> place Life Sciences oral presentation Arkansas Academy of Sciences (\$100)  
Ph. D. candidate– U. Edinburgh
- (14) JC Dorsey– Differences in radula microstructure between populations 2001
- (15) Cameron Good– Control of the foot by an identified motor neuron in *Tritonia diomedea* 2000 – 2002  
Awards: Faculty for Undergraduate Neuroscience (\$400) and UCLA (\$100) travel award (1<sup>st</sup> place); 3<sup>rd</sup> place for Life Sciences oral presentation at the 2001 Arkansas Academy of Sciences meeting  
Post-doctoral scientist– National Institute of Drug Abuse
- (16) Jay Vacca– Directional flow receptors: role in reducing drag 2000  
Awards: Arkansas Space Grant (\$4500)
- (17) Annie Links (U Washington)– Orientation into water flow reduces hydrodynamic drag in *Tritonia diomedea* 2004  
M.D. 1995

### MEETING PRESENTATIONS: (STUDENT COLLABORATORS ARE UNDERLINED)

- (1) Eighth International Congress of Neuroethology [Vancouver, BC; July 2007]. Structure and distribution of putative ciliated receptors on the oral veil of *Tritonia diomedea*. Yadlapalli K, **Murray JA** (Poster)
- (2) Society for Integrative and Comparative Biology meeting [Phoenix, AZ; January 2007]. Sensory cells are denser in the lateral portion of the oral veil of *Tritonia diomedea*. Igwe OB, Shaun D. Cain, **Murray JA** (Poster)
- (3) Society for Neuroscience 36th Annual Meeting [Atlanta, GA; Oct 2006]. Research apprenticeship teams in neuroethology of orientation and navigation: An intensive research training program for undergraduates/post-baccalaureates at the Friday Harbor Labs. **Murray JA**, SD Cain, AOD Willows (Poster)
- (4) American Academy for the Advancement of Science symposium: Anti-Evolutionism in America: What's Ahead? [St. Louis, MO; February 2006]. Is Neuroscience the Next Target?, **MURRAY JA**, Tinkler GP (Talk)
- (5) Society for Integrative and Comparative Biology Symposium: Recent Developments in Neurobiology [Orlando, FL; January 2006]. Advances in the neural bases of orientation & navigation, **MURRAY JA** (Talk)
- (6) Society for Integrative and Comparative Biology meeting [Orlando, FL; January 2006]. Neuronal control of mucociliary interactions in *Tritonia diomedea*, McDole TS, **MURRAY JA**, (Poster)
- (7) UCA- College of Natural Sciences and Mathematics, 11th Annual Student Research Symposium, [Conway, AR; April 2005]. A single neuron causes foot contractions that lead to turning in the marine slug *Tritonia diomedea*, Morrison J, **Murray JA** (Poster)
- (8) 13th Annual Arkansas Space Grant Consortium Symposium [Fayetteville, AR: April 2005]. Microscopic flow sensors in the sea slug *Tritonia diomedea* could be imitated for use in aero-elastic wings. Kersh BD, **Murray JA** (Poster)
- (9) Society for Neuroscience 34th Annual Meeting [San Diego, CA; Oct 2004]. The roles of single neurons in turning while crawling during orientation to water flow in the marine slug *Tritonia diomedea*. Morrison J, Redondo R, **Murray JA** (Poster)
- (10) Seventh International Congress of Neuroethology [Nyborg, Denmark; Aug 2004]. The roles of single neurons in turning while crawling during orientation to water flow in the marine slug *Tritonia diomedea*. **Murray JA**, Redondo R, Morrison J, Alexander J (Poster)
- (11) Arkansas Undergraduate Research Conference [Arkadelphia, AR; April 2004]. Role of pedal three neuron in turning of *Tritonia diomedea*, Morrison J, **Murray JA** (Poster)
- (12) UCA- College of Natural Sciences and Mathematics, 10th Annual Student Research Symposium, [Conway, AR; April 2004]. Role of pedal three neuron in turning of *Tritonia diomedea*, Morrison J, **Murray JA** (Poster)
- (13) Society for Neuroscience 33rd Annual Meeting [New Orleans, LA; Nov 2003]. Contribution of a single neuron to control of orientation in the nudibranch gastropod *Tritonia diomedea*, **Murray JA**, Redondo R, Alexander J (Poster)
- (14) Society for Neuroscience 33rd Annual Meeting [New Orleans, LA; Nov 2003]. Adaptation and implementation of an NSF-sponsored project (Crawdad Project) at a medium-size southern public university, **Murray JA** (Poster)

- (15) University of Central Arkansas TechFest, [Conway, AR; April 2003]. Digital video: How to record, upload, analyze, and distribute digital video, **Murray JA** (Talk)
- (16) UCA- College of Natural Sciences and Mathematics, 9th Annual Student Research Symposium, [Conway, AR; April 2003]. Single neuron contribution to turning while crawling in the marine slug *Tritonia diomedea*, Redondo R, **Murray JA** (Poster)
- (17) Society for Neuroscience 32nd Annual Meeting [Orlando, FL; Nov 2002]. Evolution under attack: how neuroscientists can address the creationist movement, Tinkler GP, Branch G, **Murray JA** (Poster)
- (18) Society for Neuroscience 32nd Annual Meeting [Orlando, FL; Nov 2002]. Single neuron contribution to turning while crawling in the marine slug *Tritonia diomedea*, Redondo R, **Murray JA** (Poster)
- (19) Friday Harbor Laboratories Seminar [Friday Harbor, WA; June 2002]. Role of a single neuron in turning while crawling in the marine slug *Tritonia diomedea*, Redondo R, **Murray JA** (Talk)
- (20) University of Central Arkansas TechFest, [Conway, AR, April 2002]. Lab reports on the web: Sharing data, and peer review with students at other universities., **Murray JA** (Talk)
- (21) Arkansas Academy of Sciences [Little Rock, AR; April 2002]. Mechanisms of turning while crawling in the marine slug *Tritonia diomedea*, Alexander JD, **Murray JA** (Talk)
- (22) Arkansas Academy of Sciences [Little Rock, AR; April 2002]. Role of a single neuron in turning while crawling in the marine slug *Tritonia diomedea*, Redondo R, **Murray JA** (Talk)
- (23) UCA- College of Natural Sciences and Mathematics, 8th Annual Student Research Symposium, [Conway, AR; April 2002]. Water flow receptors in a marine slug, Blackwell J, **Murray JA** (Poster)
- (24) UCA- College of Natural Sciences and Mathematics, 8th Annual Student Research Symposium, [Conway, AR; April 2002]. Role of a single neuron in turning while crawling in the marine slug *Tritonia diomedea*, Redondo R, **Murray JA** (Poster)
- (25) Society for Integrative and Comparative Biology [Anaheim, CA; Jan 2002]. Fine-wire recording of motor neuron activity during free, oriented locomotion in *Tritonia diomedea*, Redondo R, **Murray JA** (Talk)
- (26) Society for Neuroscience 31st Annual Meeting [San Diego, CA; Nov 2001]. Role of pedal 3 neurons in turning while crawling in the marine slug *Tritonia diomedea*, Good CH, Redondo R, Alexander J, **Murray JA** (Poster)
- (27) Arkansas Chapter of the Society for Neuroscience [Little Rock, AR; Nov 2001]. Role of pedal 3 neurons in turning while crawling in the marine slug *Tritonia diomedea*, Good CH, Redondo RL, Alexander J, **Murray JA** (Poster)
- (28) Sixth International Congress of Neuroethology [Bonn, Germany; Aug 2001]. Orientation of the nudibranch sea slug *Tritonia diomedea* to tidal water flow and the geomagnetic field in nature, **Murray JA**, Willows AOD. (Poster)
- (29) Ninth Annual Arkansas Space Grant Consortium Symposium [Searcy, AR: April 2001]. Directional flow receptors: role in reducing drag, **Murray JA**, Vacca JA, Walton E, Redondo R (Talk)
- (30) Arkansas Academy of Sciences [Conway, AR; April 2001]. Role of individual neurons in turning while crawling in the marine slug *Tritonia diomedea*, Good CH, Redondo R, Alexander J, **Murray JA** (Talk)
- (31) Society for Neuroscience 29th Annual Meeting [Miami Beach, FL; Oct 1999]. Dynamic forces in swim muscles of medicinal leeches, **Murray JA** and Kristan WB Jr (Poster 364.5)
- (32) Fifth International Congress of Neuroethology [San Diego, CA; Aug 1998]. Dynamic forces in swim muscles of medicinal leeches, **Murray JA** and Kristan WB Jr (Poster 174)
- (33) Society for Neuroscience 26th Annual Meeting [Washington, DC; Nov 1996]. Motor neuron activity in freely swimming medicinal leeches, **Murray JA**, Wilson RJA, and Kristan WB Jr (Poster 428.17)
- (34) Western Nerve Net [Bamfield, BC; April 1996]. Motor neuron activity in freely swimming medicinal leeches, **Murray JA**, Wilson RJA, and Kristan WB Jr
- (35) Fourth International Congress of Neuroethology [Cambridge, UK; Sept 1995]. Spectral and temporal analysis of male and female courtship signals in the gymnotiform electric fish *Apteronotus leptorhynchus*, **Murray JA** (Poster 412)
- (36) Marine Biology Seminar, Scripps Institution of Oceanography [La Jolla, CA; July 1994]. Neural correlates of orientation to water flow in *Tritonia diomedea*, **Murray JA**
- (37) Society for Neuroscience 23rd Annual Meeting [Washington, DC; Nov 1993]. Orientation to water-flow in *Tritonia*: Roles of single identified neurons, **Murray JA** and Willows AOD (Poster 70.12)
- (38) Society for Neuroscience 23rd Annual Meeting [Washington, DC; Nov 1993]. Neurosciences hall of fame. Watson III WH, Brown G, and **Murray JA** (Poster)
- (39) Third International Congress of Neuroethology [Montreal, Canada; Aug 1992]. Orientation to water-flow in *Tritonia*: Brain structures associated with rheotaxis, **Murray JA**, Brown G, and Willows AOD (Poster 191)

- (40) Western Nerve Net [La Jolla, CA; April 1992]. Motor neurons causing turning into water flow, **Murray JA** and Willows AOD (Talk)
- (41) Society for Neuroscience 21st Annual Meeting [New Orleans, LA; Nov 1991] Orientation to water-flow in *Tritonia*: Brain structures associated with rheotaxis, **Murray JA** and Willows AOD (Poster 559.5)
- (42) Society for Neuroscience 20th Annual Meeting [St. Louis, MO; Oct 1990]. Orientation to water-flow in *Tritonia*: Neural basis of rheotaxis, **Murray JA** and Willows AOD (Poster 313.3)
- (43) Society for Neuroscience 18th Annual Meeting [Toronto, Canada; Nov 1988]. Courtship success in the cricket *Gryllus bimaculatus*: Differential contribution of carrier frequency and harmonics in courtship song, **Murray JA** and Hoy RR (Talk 128.4)

## PROFESSIONAL SERVICE:

Webmaster, Arkansas Chapter of the Society for Neuroscience,	2006 – present
Judge, student posters presentations at the meeting of the Arkansas Chapter of the Society for Neuroscience	2003, 2006
Interview with The Wall Street Journal, about neuroscience and intelligent design	2006
Interview with The Los Angeles Times, about neuroscience and intelligent design	2006
Interview with science editor of The New York Times, about neuroscience and intelligent design	2006
Interview with The Chronicle of Higher Education, about neuroscience and intelligent design	2006
Interview with Stanford Medicine magazine, about opposition to evolution in biomedicine	2006
Panelist on academic freedom, American Association of University Professors, Arkansas Chapter meeting	2005
Reviewer, McGraw-Hill Biology textbook and electronic materials	2005 – 2006
NSF panelist reviewing Sensation & Movement grant proposals, Div. Integrative Organismal Biology	2005 – 2006
Ad hoc reviewer (anonymous), Murdock College Research Program for Life Sciences (grant proposal)	2004
Ad hoc reviewer (anonymous), Journal of Undergraduate Neuroscience Education	2004 – 2006
NSF panelist reviewing Course, Curriculum, & Laboratory Improvement grant proposals, Div. Undergrad Education	2004
Beta tester for literature reference visualization program	2004
Beta tester for PsyCog virtual biophysical/cognitive experiment software [NSF project]	2004
Ad hoc reviewer (anonymous), Journal of the Arkansas Academy of Sciences	2003
Ad hoc reviewer (anonymous), National Science Foundation, Division of Integrative Biology & Neuroscience	2002 – 2006
Ad hoc reviewer (anonymous), Journal of Experimental Biology	2002
Symposium Organizer, Society for Integrative and Comparative Biology, Division of Neurobiology	2001 – 2002
Reviewer, McGraw-Hill text publication in human physiology	2001
Local arrangements committee, Arkansas Academy of Sciences annual meeting	2001
Ad hoc reviewer (anonymous), Journal of Neurophysiology	2000
Member, Education Outreach Committee, International Society for Neuroethology	2000 – 2001
Reviewer, Introduction to Neuroscience, by Gary G. Matthews, Blackwell Science, 2000	1999
Ad hoc reviewer (anonymous), Comparative Biochemistry & Physiology	1994

## COMMUNITY SERVICE:

Brain Awareness Week activities at the Discovery Museum (Little Rock, AR)	2007
Society for Neuroscience Neuroscientist/Teacher Partner	2004 – present
Brain Awareness Week Public Lectures on Neuroscience Research at UCA (speaker and organizer)	2004
Summer SEM Workshop for Students (pairs of K-12 & UCA students)	2004 – present
Science Night at St. Joseph's School, brain-related activities for K-12 students	2002 – 2007
Brain Awareness Week activities, in Conway K-12 classes (participant & organizer)	2002
High School Science Workshops at UCA (participant)	2001 – 2002
Director, Intel Science Talent Search for Arkansas	2000 – 2004
Judge, Annual State Science Fair, Arkansas Society for Neuroscience & In Vitro Biology prizes	2000 – 2005
Judge, Central Arkansas Regional Science Fair	2000 – 2001
Judge, Arkansas Junior Academy of Sciences	2000
Member, Brain Awareness Week Committee, Arkansas Chapter of the Society for Neuroscience	2000 – 2004
Moderator, state listserv on evolution education	2000 – present
Organizer, Annual Conference of Undergraduate Research in Biology, Colby College	1999

## UNIVERSITY & COLLEGE SERVICE:

Committee to create Masters of Science Education	Fall 2006 – present
Faculty mentor to two CNSM faculty	2006 – present
Joint Graduate Council (UCA, UALR, UAMS)	2006
Graduate Council member	2005 – 2009
Faculty Senate (CNSM representative)	2005 – 2008
Founder and organizer of the UCA–Macintosh User Group	2005 – present
University Research Committee, at-large member (chair of CNSM committee 2004 – 2005)	2004 – 2006
Interdisciplinary masters degree program committee	2003 – 2005
Faculty teaching excellence award committee	2006 – 2007
Scanning Electron Microscopy committee	2002 – present
Oral & demonstrations at UCA TechFest	2002 – 2003
Challenge Week 2003 committee– Organizing invited talks on subject of evolution and intelligent design	2002 – 2003
Faculty research awards committee	2002 – 2003
Academic computing advisory committee	2000 – 2003
Sponsored programs advisory committee	2000 – 2003
College Research (URC) committee (Chairperson, 2004 – 2005)	2000 – 2001, 2003 – 2006
Mentor for Honors College interdisciplinary theses:	
Andy Wiles, "Biomechanics of orientation to water flow"	2006 – 2007
Jim Coghlan, "Comparative sociology of humans and dolphins"	2006 – 2007
Jeffrey Blackwell, "Neuronal Responses to Water Flow in the Marine Slug <i>Tritonia diomedea</i> "	2003
Jennifer Gardner, "The Genesis and Enigma of Aggression"	2002
Sarah Abbott, "Drawing the Line Between Real and False Memory"	2001
Coordinator of the Major Field Tests in sciences	2001 – 2002
College graphics room & computer consultant (digital video, scanning, slide making, wide-carriage printing)	2000 – 2004
Proctor for the Major Field Tests in sciences	2000 – 2003

## DEPARTMENTAL SERVICE:

Self-evaluation of Biology Department Report (1995-2005), committee member, wrote outreach section	2007
Presentation on pre-medical and pre-optometry studies for Bear Facts Day	2005 – 2006
Presentation on summer field opportunities for UCA biology students	2006
Tenure & Promotion committee, (Chairperson Fall 2006)	2005 – 2006
Space committee (Chairperson 2004 – 2005)	2004 – 2005
Search committee (Chairperson 2004 – 2005): Developmental biology faculty member (hired J.D. Swanson)	2004 – 2006
Search committee: Vertebrate physiology faculty member (hired Steve Dinkelacker)	2003 – 2004
Alpha Phi Omega (service fraternity/sorority) faculty advisor	2002 – 2005
Search committee: Human biology faculty member (hired Brent Hill)	2002 – 2003
Search committee: Neurobiology faculty member (hired Barbara Clancy)	2000 – 2001
Biology Club faculty advisor	2001 – 2006
Chairperson's Advisory committee (three semesters)	2001 – 2004
Ad-hoc Lecturer's advancement committee (Dr. Hirrel promoted)	2001
Pre-optometry & pre-med student academic advisor (30-40 advisees/year)	2000 – 2005
Graduate committee (recruiting activities, curriculum development; Chairperson 2005-2006)	2000 – present
Aquatic Room coordinator	2000 – present
Web committee (creating and being tutor for making web pages)	2000 – 2004
Master's degree committee for ten students (chair of three)	2000 – 2005
Seminar committee chair (13 speakers, 4 from UCA Biology)	2000 – 2002, Fall 2006

## INVITED TALKS:

Life is upstream: The mechanisms of navigation of the Pacific sea slug <i>Tritonia</i> ,	
California State University- East Bay	February 2007
California State University- Channel Islands	February 2007
California Polytechnic University	January 2007
Harding University	January 2007
Giant orange slugs, flying devils, and coral forests, People for Puget Sound Speaker Series	May 2006
Brain and Mind: The Final Frontier, Lyon College convocation	March 2006
Is Neuroscience the Next Target?, AAAS Symposium on Anti-Evolutionism in America: What's Ahead?	February 2006

Advances in the neural bases of orientation & navigation, Recent Developments in Neurobiology symposium	January 2006
Life is upstream: The mechanisms of navigation of the local sea slug <i>Tritonia</i> , Western Washington University	June 2005
The neural substrates of orientation to tidal flow in the marine snail <i>Tritonia diomedea</i> , U Edinburgh	August 2004
How to adapt and implement a model for scientific education, Society for Neuroscience NSF workshop	November 2003
Control of direction of locomotion by single neurons using fine-wire implanted electrodes, U Ark Med Sciences	April 2003
Neuroscience research at UCA, annual meeting of the Arkansas Chapter of the Society for Neuroscience	October 2002
Brain and Mind: The Final Frontier, College of Natural Sciences and Mathematics, UCA Public Lecture	November 2000
Neural correlates of rheotaxis in a marine slug	
U. Arkansas, Department of Biology	January 2001
U. Oklahoma, Department of Zoology	December 2000
Ten Ways to Die in Australia, UCA Biology Club	September 1999
Life is upstream: Physiology of flow sensitivity in a marine snail	
U. Central Arkansas, Department of Biology	February 1999
Pacific Lutheran University, Department of Biology	February 1999
Monmouth College, Department of Biology	February 1999
Neural analysis of orientation to water flow in a marine snail	
Drew University, Department of Biology	April 1998
California State University, San Marcos, Department of Biology	April 1997
Truman State University, Department of Biology	March 1997
Colby College, Department of Biology	December 1996
University of Oregon, Institute of Neuroscience	March 1994
Divine justice, sea slugs, and Greek mythology, Friday Harbor Laboratories	June 1993

## HONORS AND AWARDS:

Finalist, UCA Research, Scholarship, & Creative Activity Award	AY 2006 – 2007
Grass Foundation Fellowship in Neuroscience, Friday Harbor Laboratories	Summer 1997
Distinguished Service Key, Alpha Phi Omega	May 1988
High Honors for Independent Research, The relative contributions of the courtship song carrier frequency and its harmonics to courtship success in <i>Gryllus bimaculatus</i> (De Geer)	May 1988
Graduated with Distinction for Grade Point Average (3.74)	May 1988
Cornell Tradition Summer Fellowship	1987
Cornell Tradition Academic Fellowship	1985 – 1988

## MEMBERSHIPS:

American Association of University Professors	2004 – present
American Institute of Biological Sciences	2002 – present
Arkansas Academy of Science	2001 – 2004
Council on Undergraduate Research	2000 – 2003
Society for Integrative and Comparative Biology, Divisions of Neurobiology & Animal Behavior	1999 – present
Faculty for Undergraduate Neuroscience	1994 – present
National Center for Science Education	1994 – present
International Society for Neuroethology	1993 – present
Society for Neuroscience	1988 – present

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