11/08

CURRICULUM VITAE: MILES ORCHINIK

PERSONAL

Current Position:	Associate Professor
Work Address:	School of Life Sciences, Arizona State University
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EDUCATION

1985	B.A., San Francisco State University (History)
1992	Ph.D., Oregon State University, Zoology. (Advisor, Frank L. Moore)
1992-95	Postdoctoral Research, Rockefeller University, NY (Advisor, Bruce McEwen)

POSITIONS HELD

2008-	Research Associate Professor, Barrow Neurological Institute
2001-pres	Associate Professor, Arizona State University, School of Life Sciences
1995-01	Assistant Professor, Arizona State University, Department of Biology
1994	Visiting Faculty, University of Hawaii
1992-95	Postdoctoral Fellow, Rockefeller University, New York
1987-90	NSF Graduate Fellow, Oregon State University

OVERVIEW OF RESEARCH INTERESTS

We are working towards an integrated understanding of how stress alters brain function, with particular emphasis on behavioral and neuroendocrine processes. In all vertebrates, exposure to adverse conditions stimulates a common neuroendocrine response – the release of corticosteroid hormones. A major target for corticosteroids is the brain, where these hormones produce context-specific changes in neuronal function leading to changes in behavior and/or physiology that are critical for dealing with immediate threats. Paradoxically, when this adaptive neuroendocrine response is persistently activated, or when regulation of this neuroendocrine response is abnormal, problems in brain function and systemic physiology may result. We have study the cellular, molecular and neural mechanisms mediating a range of corticosteroid actions in a variety of species. Current projects in the lab include: 1) Investigations of rapid, non-genomic, actions of corticosteroids in the rat brain. Corticosteroids appear to directly inhibit the activity of a novel monoamine transporter (organic cation transporter), thereby decreasing serotonin clearance and enhancing serotonin signaling in major monoamine projection areas. This novel mechanism may help explain rapid behavioral responses to corticosteroids, the regulation of the neuroendocrine stress axis, and potential links between stress and depression. 2) Investigations into the regulation and functional significance of adult neurogenesis in vertebrate brains. Stress is a potent regulator of adult brain cell proliferation, differentiation and survival. We are using an amphibian model (bullfrog) to study the regulation of these processes by corticosteroids and brain-derived neurotrophic factor (BDNF), and the potential role that newborn cells in the adult hypothalamus play in seasonal neuroendocrine regulation.

HONORS AND AWARDS

2003	Leverhulme Visiting Fellow, Institute for Advanced Studies, University of Bristol, UK.
2000	Outstanding Professor 2000, Disability Resources for Students, ASU
1999	Nominated, Distinguished Teacher Award for Faculty, College of Liberal Arts and Sciences, ASU
1997	Frank A. Beach Award in Behavioral Neuroendocrinology

1994-95	Pharmaceutical Manufacturers Association Foundation Fellowship
1992-94	National Research Service Award Postdoctoral Fellowship
1985	All-University Achievement Award for Outstanding Academic Excellence, San Francisco State University
1989	Best Graduate Student Research Presentation, Sigma Xi, OSU
1986	Pauley Foundation Award for Workshop on Endocrinology of Tropical Marine Vertebrates, University of Hawaii
1987-90	National Science Foundation Graduate Fellowship
1987	Scholarship for *Neural Systems and Behavior* Course, Marine Biological Lab, Woods Hole, MA.
1986-87	Oregon State University Graduate School Fellowship

GRANTS AND FELLOWSHIPS

1989-91	NSF, Grant for Improvement of Doctoral Dissertation Research, "Novel Mechanism for Steroid Regulation of Behavior". (BNS-8901500; $10,000)
1992-94	National Research Service Award for Postdoctoral Research, "The Role of Glucocorticoids in Hippocampal Plasticity." (1 F32 NS09129-01) Sponsor: B. S. McEwen, Rockefeller University.
1994-95	Pharmaceutical Manufacturers Association Foundation, Inc., Postdoctoral Fellowship, "Role of the $GABA_A$ System in Stress-induced Atrophy of Hippocampal Neurons."
1996	Faculty Grant-In-Aid, ASU, "Rapid Actions of Adrenal Steroids," ($6,000)
1997	New Investigator Incentive Award, ASU ($5,856)
1997	Hughes Program for Enriching Undergraduate Education at ASU, Aids for improving students' critical thinking skills, with David Capco ($9,000)
1997-00	NSF, Principal Investigator, "Rapid Signaling Pathways for Corticosteroids" (IBN-9604200; $353,000)
1997-98	NSF Research Experience for Undergraduates Supplement for Monja Dishman ($5,000)
1998-00	NSF Postdoctoral Fellowship, Sponsor for Creagh Breuner, Biosciences Related to the Environment, "Neuroendocrine Mechanisms for Responding to Stress," ($90,000)
1998-99	Sponsor, ASU Scholar-Citizen Award for Brian Stillwell, Jimmy Saade, Heather Lewis, Roger Adair ($1,500)
1999-01	National Institutes of Health, NIMH, Cross-Disciplinary Research Networks, "HPA Regulation in Stress: the Dorsomedial Hypothalamus," Co-Investigator. Joe DiMicco PI, collaborators at University of Bristol Medical School, Tulane and Indiana University School of Medicine ($102,516; $22,300 direct to ASU)
2000-01	No cost extension, NSF, IBN-9604200
2002-05	NSF, Neuroendocrinology, Principal Investigator, "Cellular Mechanisms Mediating Acute Stress Hormone Action in Brain," (IBN-0220473; $364,860). Co-PI: Alan Rawls, ASU.
2003	NSF, Neuroendocrinology, Symposium/Workshop on "Contemporary Approaches to Endocrine Signaling," Annual Meeting of Society for Integrative and Comparative Biology, Toronto ($11,000). Co-PI with Drs. Sunny Boyd (Notre Dame) and Juli Wade (Michigan State)
2003-04	Arizona State University, Barrett Honor's College Thesis Grant, "Hypothalamic Neurogenesis in Adult Tiger Salamanders." Sponsor for Micah Porter, $1,925.
2004-05	Leverhulme Visiting Fellowship, Institute for Advanced Studies and Henry Wellcome Laboratories in Integrative Neuroscience and Endocrinology, University of Bristol, UK.
2004-07	NSF, Neuroendocrinology, Principal Investigator, "Adult Neurogenesis, Its Regulation and Potential Significance," ($402,489), 5/15/04-5/14/07.

2006-07 NSF Research Experience for Undergraduates Supplement ($7,500)
2007-08 No cost extension, NSF, IBN-9604200
2007-08 SoLS, Research and Training Initiatives Office, Bioimaging Funds ($2,500)
2008-09 Subcontractor and Consultant, NIH Phase II Small Business Innovative Research grant to Science Approach, LLC, "NeuroVisions: Teaching neuroscience with neuroimaging data

Pending:
2009-2013 NSF, Collaborative Research: "Novel Corticosteroid Actions on Neurotransmitter Function ($559,565 to ASU)

INVITED TALKS AT SCIENTIFIC MEETINGS, SYMPOSIA, DEPARTMENTAL SEMINARS

2006 Joint ASU / Barrow Neurological Institute Neuroscience Symposium, Phoenix, AZ**.** Invited talk: *Corticosteroid-sensitive monoamine transporters in rat brains: implications for 5-HT signaling during stress.*
2006 Western Regional Conference on Comparative Endocrinology, Newport, OR. Invited talk: *A highly conserved component of the vertebrate response to stressors?*
2005 Max Plank Institute for Ornithology, Seewiesen, Germany. Institute seminar series: *Mechanisms of Rapid Stress Hormone Action in Vertebrate Brains.*
2005 Institute of Neuroscience, University of Newcastle, Newcastle Upon Tyne, UK. Institute seminar series: *Mechanism mediating rapid stress hormone action in vertebrate brains.*
2004 Henry Wellcome Laboratories in Integrative Neuroscience and Endocrinology, University of Bristol, UK. Brambell seminar series: *Mechanism of rapid corticosteroid action in the brain.*
2002 Joint Forum on Research. Mayo Clinic, Scottsdale, AZ. *Insights into mechanisms of stress using non-traditional model systems*.
2002 Opening Remarks, Graduate Research in Earth and Life Sciences Symposium, ASU, *"Why multidisciplinary research?"*
2001 Workshop on Steroid Hormones and Brain Function, Breckenridge, CO. *Recent Advances in Corticosterone Receptor Function in the Brain: A Comparative Perspective.*
2001 Special Symposium, 2001 Meeting of Society for Integrative and Comparative Biology. Chicago. *Stress - Is it more than a disease? A comparative look at stress and adaptation*.
2001 College of Nursing, Arizona State University, Tempe, AZ. Invited talk: *Multidisciplinary approaches to studying stress and depression.*
2000 National Institutes of Mental Health Research Networks, Regulation of the HPA Axis: Role of the dorsomedial hypothalamus, University of Bristol, U.K.
2000 Winter Neuropeptides Conference, Biology of the Vertebrate Neuroendocrine Stress System, Breckenridge, CO. Invited talk: *Neurobehavioral actions of corticosteroids during a stress response*
1999 Binational Workshop on Reproductive and Behavioral Neuroendocrinology, Queretaro, Mexico.
1999 Indiana University School of Medicine, Dept. Pharmacology, Indianapolis
1997 Frank A. Beach Award Lecture, Society for Neuroscience Annual Meeting, New Orleans.
1996 University of Colorado, Dept. Psychology, Bolder, CO.
1996 Arizona State University West, Dept. Life Sciences, Phoenix, AZ.
1995 Brooklyn College, Dept. Biology, New York, NY
1995 Arizona State University, Dept. Zoology, Tempe, AZ.
1994 Temple University, School of Pharmacology, Philadelphia, PA.

1994 University of California at Berkeley, Dept. Integrative Biology, Berkeley
1993 University of Hawaii, Hawaii Institute of Marine Biology, Kanoehe, HI.
1993 National Institutes of Health, Neurophysiology group, Poolesville, MD.
1993 Workshop on Steroid Hormones and Brain Function, Breckenridge, CO.
1992 University of Oregon, Neuroscience Institute, Eugene, OR.
1992 Oregon Health Sciences University, Dept. Physiology, Portland, OR
1992 Northern Arizona University, Dept. Biology, Flagstaff, AZ.
1991 Walla Walla College, Dept. Biology, Walla Walla WA.
1991 Fidia Research Foundation Symposium, Neurosteroids and Brain Function, New Orleans.

PUBLICATIONS

1. Orchinik, M., Licht, P. and Crews, D. (1988) Plasma steroid concentrations change in response to sexual behavior in *Bufo marinus*. *Horm.Behav.* 22: 338-350.
2. Moore, F.L. and Orchinik, M. (1991) Multiple molecular mechanisms of steroid action regulate reproductive behaviors. *Sem.Neurosci.* 3:489-496.
3. Orchinik, M., Murray, T.F. and Moore, F.L. (1991) A corticosteroid receptor in neuronal membranes. *Science* 252:1848-1851.
4. Orchinik, M., Murray, T.F., Franklin, P.H. and Moore, F.L. (1992) Guanyl nucleotides modulate binding to steroid receptors in neuronal membranes. *Proc.Natl.Acad.Sci.USA* 89:3830-3834.
5. Orchinik, M. and McEwen, B.S. (1993) Novel and classical actions of neuroactive steroids. *Neurotransmissions* 9:1-6.
6. Moore, F.L. and Orchinik, M. (1994) Membrane receptors for corticosterone: a mechanism for rapid behavioral responses in an amphibian. *Horm.Behav.* 28: 512-519.
7. Rose, J.D., Moore, F.L., and Orchinik, M. (1993) Rapid neurophysiological effects of corticosterone on medullary neurons: relationship to stress-induced suppression of courtship clasping in an amphibian. *Neuroendocrinology* 57:815-824.
8. Orchinik, M., Moore, F.L. and Rose, J.D. (1994) Mechanistic and functional studies of rapid corticosteroid action. In: E.R. de Kloet, E.C. Azmitia, and P.W. Landfield (Eds.) *Brain Corticosteroid Receptors.* Annals of the New York Academy of Sciences, vol. 746, pp. 101-114.
9. Orchinik, M., Murray, T.F. and Moore F.L. (1994) Steroid modulation of $GABA_A$ receptors in an amphibian brain. *Brain Res.* 646:258-266.
10. Orchinik, M., Weiland, N.G., and McEwen, B.S. (1994) Adrenalectomy selectively alters $GABA_A$ receptor subunit mRNA levels in rat hippocampus. *Mol.Cell.Neurosci.* 5: 451-458.
11. Moore, F.L., Orchinik, M. and Lowry, C. (1995) Functional studies of corticosterone receptors in neuronal membranes. *Receptor* 5: 21-28.
12. Orchinik, M., Weiland, N.G., and McEwen, B.S. (1995) Chronic exposure to stress levels of corticosterone alters $GABA_A$ receptor subunit mRNA levels in rat hippocampus. *Brain Res.Mol.Brain Res*. 34: 29-37.
13. Weiland, N.G. and Orchinik, M. (1995) Specific subunits of the $GABA_A$ receptor are regulated by progesterone in select subfields of the hippocampus. *Brain Res.Mol.Brain Res*. 32:271-278.
14. Orchinik, M., Hastings, N., Witt, D.M. and McEwen, B.S. (1997) High-affinity binding of corticosterone to mammalian neuronal membranes: possible role of plasma binding proteins. *J.Ster.Biochem.Mol.Biol*. 60:229-236.
15. Weiland, N.G., Orchinik, M. and Tanapat, P. (1997) Chronic corticosterone causes parallel changes in NMDA receptor subunit mRNA levels and competitive antagonist binding sites. *Neuroscience* 78:653-662.
16. Magariños, A.M., Orchinik, M. and McEwen, B.S. (1998) Morphological changes in the hippocampal CA3 region induced by non-invasive glucocorticoid administration: A paradox. *Brain Res.* 809: 314-318

17. Orchinik, M. (1998) Glucocorticoids, stress and behavior: shifting the timeframe. *Horm.Behav.* 34:320-327.
18. Hastings N.B., Orchinik M., Aubourg M.V. and McEwen, B.S. (1999) Pharmacological characterization of central and peripheral type I and type II adrenal steroid receptors in the prairie vole, a glucocorticoid resistant rodent. *Endocrinology* 140: 4459-4469.
19. Breuner, C.W., Jennings, D.H., Moore, M.C. and Orchinik, M. (2000) Pharmacological adrenalectomy with mitotane. *Gen.Comp.Endocrinol*.120: 27-34.
20. Jennings, D.H., Moore, M.C., Knapp, R., Matthews, L. and Orchinik, M. (2000) Plasma steroid-binding globulin mediation of differences in stress reactivity in alternative male phenotypes in tree lizards, *Urosaurus ornatus. Gen.Comp.Endocrinol.* 120: 289-299.
21. Orchinik, M., Matthews, L. and Gasser, P.J. (2000) Distinct intracellular, membrane-bound, and plasma binding sites for glucocorticoids in an amphibian. *Gen.Comp.Endocrinol*. 118: 284-301. http://dx.doi.org/10.1006/gcen.2000.7462
22. Breuner, C.W. and Orchinik, M. (2001) Seasonal regulation of membrane and intracellular corticosteroid receptors in the House Sparrow brain. *J.Neuroendocrinol*. 13: 412-420. doi:10.1046/j.1365-2826.2001.00646.x
23. Deviche, P., Breuner, C. and Orchinik, M. (2001) Testosterone, corticosterone, and photoperiod interact to regulate plasma levels of binding globulin and of free steroid hormone in Dark-eyed Juncos, *Junco hyemalis Gen.Comp.Endocrinol* 122: 67-77.
24. Lowry, C.A., Kedzie, K.A., Renner, K.J., Moore, F.L. and Orchinik, M. (2001) Rapid changes in monoamine levels following administration of corticotropin-releasing factor or corticosterone are localized in dorsomedial hypothalamus. *Horm.Behav*. 39: 195-205. http://dx.doi.org/10.1006/hbeh.2001.1646
25. Orchinik, M., Carroll, S.S., Li, Y.-H., McEwen, B.S. and Weiland, N.G. (2001) Heterogeneity of hippocampal $GABA_A$ receptors: regulation by corticosterone. *J.Neurosci*. 21: 330-339. http://www.jneurosci.org/cgi/reprint/21/1/330
26. Breuner, C.W. and Orchinik, M. (2002) Plasma binding proteins as mediators of corticosteroid action in vertebrates. *J. Endocrinol*. 175: 99-112. http://joe.endocrinology-journals.org/cgi/reprint/175/1/99
27. Breuner, C.W., Orchinik, M., Hahn, T.P., Meddle, S.L., Moore, I.T., Owen-Ashley, N.T., Sperry, T.S., and Wingfield, J.C. (2003) Differential mechanisms for plasticity of the stress response across latitudinal gradients. *American Journal of Physiology: Regulatory, Integrative, and Comparative Physiology* 285(3): R594-600. doi:10.1152/ajpregu.00748.20020363-6119/03
28. Steiner, A.A., Dogan, D., Ivanov, A.I., Patel, S., Rudaya, A.Y., Jennings, D.H., Orchinik, M., Pace, T.W.W., O'Connor, K.A., Watkins, L.R., and Romanovsky, A.A. (2004) A new function of the leptin receptor: mediation of the recovery from lipopolysaccharide hypothermia. *FASEB.J.* 18(15):1949-61.
29. Feng,N., Mo,B., Johnson,J.L., Orchinik,M., Lowry,C.A., Renner,K.J. (2005) Local inhibition of organic cation transporters increases extracellular serotonin in the medial hypothalamus. Brain Research 1063: 69-76. http://dx.doi.org/10.1016/j.brainres.2005.09.016
30. Gasser, P., Lowry, C.A. and Orchinik, M. (2006) Corticosterone-sensitive monoamine transport in the rat dorsomedial hypothalamus: potential role for organic cation transporter 3 in stress-induced modulation of monoaminergic neurotransmission. *Journal of Neuroscience* 26(34): 8758-8766. doi:10.1523/JNEUROSCI.0570-06.2006
31. Gasser, P. and Orchinik, M. (2007) Vasopressin-Induced Translocation and Proteolysis of Protein Kinase Cα in an Amphibian Brain: Modulation by Corticosterone. *Brain Research* 1134(1): 18-26. doi:10.1016/j.brainres.2006.11.071
32. Gasser, P., Orchinik, M., and Lowry, C.A. (2009) Distribution of organic cation transporter 3, a corticosterone-sensitive monoamine transporter, in the rat brain. *Journal of Comparative Neurology* 512(4): 529-555.

33. Fokidis, B.K. Orchinik, M., and Deviche, P. Corticosterone and corticosteroid binding globulin in birds: Relation to urbanization in a desert city. *General and Comparative Endocrinology (in press).*
34. Breuner, C.W. and Orchinik, M. Pharmacological characterization of intracellular, membrane, and plasma binding sites for corticosterone in house sparrows *(submitted).*

Book Chapters

35. Orchinik, M. Murray, T.F. and Moore, F.L. (1991) Corticosteroid receptor in neuronal membranes associated with rapid suppression of sexual behavior. In: E. Costa and S.M. Paul (Eds.) ***Neurosteroids and Brain Function***, Fidia Research Foundation Symposium Series, vol 8, pp 125-132. Thieme Medical Publishers, New York.
36. Orchinik, M. and McEwen, B.S. (1994) Rapid steroid actions in the brain: A critique of genomic and nongenomic mechanisms. In: M. Wehling (Ed.) ***Genomic and Non-Genomic Effects of Aldosterone***. CRC Press, Boca Raton, FL., pp. 77-108.
37. Orchinik, M. and Murray, T.F. (1994) Steroid hormone binding to membrane receptors. In: E.R. de Kloet and W. Sutanto (Eds.) ***Neurobiology of Steroids***, Methods in Neurosciences, vol. 22, pp. 96-115.
38. McEwen, B.S., Albeck, D., Cameron, H., Chao, H.M., Gould, E., Hastings, N., Kuroda, Y., Luine,V., Magariños, A.M., McKittrick, C.R., Orchinik, M., Pavilides, C., Vaher, P., Watanabe, Y., and Weiland, N.G. (1995) Stress and the brain: a paradoxical role for adrenal steroids. In: G. Litwack (Ed.) ***Vitamins and Hormones***, 51, pp. 371-402.
39. McEwen, B.S., Gould, E., Orchinik, M., Weiland, N.G. and Woolley, C.S. (1995) Estrogens and the structural and functional plasticity of neurons: implications for memory, aging and neurodegenerative processes. In: ***CIBA Foundation Symposium,*** vol. 191.
40. Gasser, P.J. and Orchinik, M. (2000) Membrane receptors for glucocorticoids. In: G. Fink (Ed), ***Encyclopedia of Stress,*** Academic Press, New York. pp 713-721.
41. Breuner, C.W. and Orchinik, M. (2001) Downstream from corticosterone: seasonality of binding globulins, receptors, and behavior in the avian stress response. In A. Dawson (Ed.), ***Avian Endocrinology***, Narosa Publishing, New Delhi and London.
42. Orchinik, M., Gasser, P., and Breuner, C. (2002) Rapid Corticosteroid Actions on Behavior: Cellular Mechanisms and Organismal Consequences. In: D.W. Pfaff, A.A. Arnold, A.E. Etgen, S.E. Fahrback, R.T. Rubin (Eds), ***Hormones, Brain and Behavior***, Vol 3, Academic Press, New York. pp. 567-600.
43. Orchinik, M. and Propper, C.R. (2006) Hormone Action on Receptors. In: D.O. Norris and J.A. Carr (Eds.), ***Endocrine Disruption: Biological Basis for Health Effects in Wildlife and Humans.*** Oxford University Press, New York, pp. 28-57.
44. Gasser, P.J., Lowry, C.A., and Orchinik, M. (in press) Rapid Corticosteroid Actions on Behavior: Mechanisms and Implications. In: D.W. Pfaff et al. (Eds), ***Hormones, Brain and Behavior***, **2nd Edition**, Academic Press.

Books and Collections

1. Cooper, K., Harrison, J., Orchinik, M., Satterlie, R., ***Human Anatomy and Physiology Laboratory Manual.*** Kendall/Hunt Publishers, Dubuque, Iowa, 1997, 1999
2. Cooper, K., Garlick, B., Harrison, J., Orchinik, M., Satterlie, R., ***Human Anatomy and Physiology with Histology Color Atlas.*** McGraw-Hill, New York, 2000
3. Orchinik, M. (Guest Editor) Stress Hormones and Behavior. Special issue of Hormones and Behavior 43 (1), 263 pp. 2003.

Contributed Papers, Published Abstracts

1. Orchinik, M., Licht, P. and Crews, D. (1987) Changes in plasma steroid concentrations in response to mating behaviors in *Bufo marinus*. Western Regional Conference Comparative Endocrinology. Hayward, CA.

2. Orchinik, M. and Moore, F.L. (1988) Distribution of $GABA_A$ receptors in an amphibian brain. Am.Zool. 28:118A.
3. Orchinik, M. and Moore, F.L. (1989) Steroid modulation of $GABA_A$ receptors: Novel mechanism for regulation of sexual behavior. Soc.Neurosci.Abstr. 15:759.
4. Orchinik, M. and Moore, F.L. (1989) Corticosteroid modulation of amphibian $GABA_A$ receptors: A novel mechanism for steroid regulation of sexual behavior. Western Regional Conference Comparative Endocrinology. Seattle, WA.
5. Orchinik, M. and Moore, F.L. (1990) Novel steroid hormone binding sites in amphibian brain membranes. Western Regional Conference Comparative Endocrinology. Boulder, CO.
6. Orchinik, M., Murray, T.F. and Moore, F.L. (1990) Novel steroid-binding site on synaptic membranes may mediate stress-induced inhibition of sexual behavior. Soc.Neurosci.Abstr. 16:765.
7. Orchinik, M., Murray, T.F. and Moore, F.L. (1991) Membrane-bound corticosteroid receptor is coupled to a G-protein. Soc.Neurosci.Abstr. 17:1408.
8. Rose, J.D., Moore, F.L. and Orchinik, M. (1991) Rapid neurophysiological actions of corticosterone related to stress-induced inhibition of sexual behavior in an amphibian. Soc.Neurosci.Abstr. 17:1057.
9. Moore, F.L. and Orchinik, M. (1992) Steroid hormones with multiple mechanisms of action regulate amphibian reproductive behaviors. International Symposium on Amphibian Endocrinology. Tokyo, Japan.
10. Moore, F.L., Bradford, C.S., and Orchinik, M. (1992) Distinct high-affinity binding sites for aldosterone and corticosterone on neuronal membranes. Soc.Neurosci.Abstr.: 18:895.
11. Orchinik, M., Murray, T.F., Franklin, P.H. and Moore, F.L. (1992) Guanyl nucleotides modulate binding to steroid receptors in neuronal membranes. Western Regional Conference Comparative Endocrinology. Newport, OR.
12. Orchinik, M., Witt, D.M. and McEwen, B.S. (1993) High-affinity binding sites for corticosteroids in mammalian brain membranes. Soc.Neurosci.Abstr. 18:821.
13. Weiland, N.G., Orchinik, M., Brooks, P.J. and McEwen, B.S. (1993) Allopregnanolone mimics the action of progesterone on glutamate decarboxylase gene expression in the hippocampus. Soc.Neurosci.Abstr. 18:1191.
14. Moore, F.L., Orchinik, M., and Rose, J.D. (1994) Membrane receptors for corticosterone. New York Academy of Sciences Symposium: Brain Corticosteroid Receptors. New York.
15. Lowry, C.A., Orchinik, M., Burke, K.A., Renner, K.J. and Moore, F.L. (1995) Accumulation of serotonin and dopamine in the dorsomedial hypothalamus following corticotropin-releasing factor or corticosterone administration. Western Regional Conference Comparative Endocrinology. Seattle, WA.
16. Magariños, A.M., Orchinik, M. and McEwen, B.S. (1995) Oral administration of corticosterone mimics effects of stress on hippocampal CA3c dendritic structure. Soc.Neurosci.Abstr. 21:1948.
17. Orchinik, M., Weiland, N.G. and McEwen, B.S. (1995) Chronic corticosterone alters pharmacological properties of hippocampal GABAA receptors. Soc.Neurosci.Abstr. 21:502.
18. Weiland, N.G., Orchinik, M. and McEwen, B.S. (1995) Corticosterone regulates mRNA levels of specific subunits of the NMDA receptor in the hippocampus but not in the cortex of rats. Soc.Neurosci.Abstr. 21:502.
19. Orchinik, M., Weiland, N.G. and McEwen, B.S. (1996) Chronic exposure to stress levels of corticosterone increases GAD_{65} mRNA levels in hippocampal neurons. Soc.Neurosci.Abstr. 22:2061.
20. Breuner, C.W., Orchinik, M. and Wingfield, J.C. (1997) Behavioral and pharmacological evidence for a membrane glucocorticoid receptor in an avian brain. Soc.Neurosci.Abstr. 23:1076.
21. Lowry, C.A., Orchinik, M., Kedzie, K.A., Renner, K.J. and Moore, F.L. (1997) Evidence for a selective role of the paraventricular organ (PVO) region in mediating stress-related

neurochemical responses in a urodele amphibian. Annual Meeting of J.B. Johnston Club, New Orleans, LA.

22. Jennings, D.H., Moore, M.C., Knapp, R., Matthews, L. and Orchinik, M. (1998) Plasma steroid-binding globulins may mediate stress reactivity in the tree lizard. Society for Behavioral Neuroendocrinology Annual Meeting. Atlanta, GA.
23. Matthews, L.H. and Orchinik, M. (1998) Characterization of multiple corticosteroid binding sites in an amphibian. Western and Southwestern Regional Conference on Comparative Endocrinology. Flagstaff, AZ.
24. Breuner, C. and Orchinik, M. (1999) Intracellular and membrane corticosteroid receptors in the house sparrow. Soc.Neurosci.Abstr. 25:246.5.
25. Breuner, C. and Orchinik, M. (1999) Pharmacological adrenalectomy with mitotane assists with characterization of corticosteroid receptors in a non-mammalian vertebrate. Society for Behavioral Neuroendocrinology Annual Meeting. Charlottesville, VA..
26. Deviche, P., Breuner, C. and Orchinik, M. (1999) Partial characterization and regulation by androgen and photoperiod of avian plasma corticosterone binding globulin. Society for Behavioral Neuroendocrinology Annual Meeting. Charlottesville.
27. Gasser, P. and Orchinik, M. (1999) Corticosterone alters arginine vasopressin-mediated activation of protein kinase Cα in an amphibian forebrain. Soc.Neurosci.Abstr. 25: 246.6
28. Breuner, C.W. and Orchinik, M. (2000) Membrane and intracellular glucocorticoid receptors are differentially regulated on a seasonal basis in the avian brain. International Symposium on Avian Endocrinology, Varanasi, India.
29. Gasser, P.J. and Orchinik, M. (2000) Corticosterone alters arginine vasopressin-induced protein kinase C signaling in an amphibian brain. Western and Southwestern Regional Conference Comparative Endocrinology. Corvallis, OR.
30. Breuner, C.W. and Orchinik, M. (2000) Membrane and intracellular glucocorticoid receptors are differentially regulated on a seasonal basis in the avian brain. Western and Southwestern Regional Conference Comparative Endocrinology. Corvallis, OR.
31. Breuner, C.W., Orchinik, M., Hahn, T.P., and Wingfield, J.C. (2001) Mechanisms of plasticity in the stress response in three subspecies of white-crowned sparrows. Society for Neuroscience Annual Meeting 31:412.8, San Diego, CA:
32. Gasser, P.J. and Orchinik, M. (2001) Corticosterone modulates proteolysis of Protein Kinase Ca in an amphibian brain: potential mechanism for rapid effects. Society for Neuroscience Annual Meeting 31: 739:11, San Diego, CA.
33. Gasser, P.J. and Orchinik, M. (2001) Corticosterone and vasopressin regulate protein kinase C signal transduction in an amphibian brain. Society for Behavioral Neuroendocrinology Annual Meeting, Scottsdale, AZ. Selected for contributed talk.
45. Jennings, DH; Ruys, JD; Moore, MC; Orchinik, M: (2001) Corticosterone regulation of plasma steroid-binding globulin levels and free steroid hormone levels in tree lizards, (Urosaurus ornatus). American Zoologist, 41, 57.
34. Weiss, A. E., Orchinik, M., and Matt, K. S. (2001) Glucocorticoid receptor levels in the separation stress syndrome of male Siberian dwarf hamsters (*Phodopus sungorus*). Society for Behavioral Neuroendocrinology Annual Meeting, Scottsdale, AZ.
35. Martin, R.K., Orchinik, M., Deviche, P., Donaghy-Fonseca, B.A., Sharp, P.A. (2002) Testosterone treatment of a male songbird inhibits hypothalamo-pituitary gonadotropic activity while inducing gonadal development. Society for Neuroscience Annual Meeting 32:572.4, Orlando, FL.
36. Johnson, P.L., Gasser, P., Orchinik, M., Lightman, S.L., Lowry, C.A. (2002) Corticosterone induces serotonin accumulation in 3rd ventricular ependyma expressing a novel monoamine transporter. Society for Neuroscience Annual Meeting 32:670.5, Orlando, FL.

37. Gasser, P. and Orchinik, M. (2003) Corticosterone and vasopressin modulate protein kinase C signaling in the amphibian brain. Society for Behavioral Neuroendocrinology Annual Meeting, Cincinnati, OH. Winner, Graduate Student Poster Competition.
38. Lowry, C.A., Johnson, P.L., Gasser, P.J., Moore, F.L., Lightman, S.L. and Orchinik, M. (2003) The role of serotonergic systems in emotional behaviour. Winter Meeting of the Association for the Study of Animal Behaviour, London.
39. Saijo, E., Lowry, C.L. and Orchinik, M. (2003) Characterization of ependymal cells in primary culture from amphibian brain dorsomedial hypothalamus. Society for Neuroscience Annual Meeting, New Orleans, LA.
40. Feng,N., Johnson,J.L., Orchinik,M., Lowry,C.A., Renner,K.J. (2004) Local inhibition of organic cation transporters increases extracellular serotonin in the dorsomedial hypothalamus. Society for Neuroscience Annual Meeting, San Diego, CA.
41. Gasser, P., Lowry, C.A., Renner, K.J. and Orchinik, M. (2004) Organic cation transporter-mediated uptake of MPP+ in the rat dorsomedial hypothalamus. Society for Neuroscience Annual Meeting, San Diego, CA.
42. Gasser, P., Lowry, C.A. and Orchinik, M. (2005) Corticosterone-sensitive monoamine transport in the rat dorsomedial hypothalamus: role for organic cation transporter 3 in stress-induced serotonin accumulation. Society for Neuroscience Annual Meeting, Washington, DC.
43. Saijo, E., Jennings, DH. and Orchinik, M. (2005) Widespread distribution of proliferating cells in an adult amphibian brain. Society for Neuroscience Annual Meeting, Washington, DC.
44. Saijo, E., Jennings, DH. and Orchinik, M. (2006) Distribution and survival of proliferating cells in adult amphibian brains. Western Regional Conference on Comparative Endocrinology, Newport, OR.
45. Saijo, E., Jennings, DH. and Orchinik, M. (2006) Region-dependent Pattern of Newborn Cell Proliferation and Survival in an Adult Amphibian Brain. Society for Neuroscience Annual Meeting, San Diego, CA.
46. Gasser, P., Orchinik, M. and Lowry, C.A. (2006) Organic cation transporter 3, a corticosterone-sensitive monoamine transporter, is highly expressed in the medial hypothalamic defensive system. Society for Neuroscience Annual Meeting, San Diego, CA.
47. Saijo, E. and Orchinik, M. (2007) Proliferation, differentiation and survival of newborn cells in adult amphibian brains. Society for Integrative and Comparative Biology Annual Meeting, Phoenix, AZ.
48. Bina, R.W., Lowry, C.A., Gasser, P.J. and Orchinik, M. (2007) Visualization of organic cation transporter 3 binding and activity in hypothalamic ependymal cells. Society for Neuroscience Annual Meeting, San Diego, CA.
49. J. Burmeister, J., Mumaw, L., Trettel, A. and Orchinik, M. (2007) Differential effects of stress on brain-derived neurotrophic factor and cell proliferation in adult amphibian brains. Society for Neuroscience Annual Meeting, San Diego, CA
50. Fokidis, B.H., Orchinik, M. and Deviche P. (2007) Species and life-stage specific variation in avian corticosterone responses associated with urbanization in a desert city. Society for Integrative and Comparative Biology Annual Meeting, Phoenix, AZ.
51. Fokidis, B.H., Orchinik, M. and Deviche P. (2007) Pharmacological characterization of avian corticosteroid binding globulins (CBG) in desert songbirds: phylogenetic comparisons reveal conserved binding kinematics. Society for Integrative and Comparative Biology Annual Meeting, Phoenix, AZ.
52. Gasser, P., Orchinik, M. and Lowry, C.A. (2007) Expression of organic cation transporter 3, a corticosterone-sensitive monoamine transporter, in the amygdala: potential role in stress-induced modulation of amygdala function. Society for Neuroscience Annual Meeting, San Diego, CA.

53. Deviche P., Orchinik, M., and Fokidis, B.H. (2008) Seasonal dynamics of free and plasma binding globulin-bound corticosterone and testosterone in a free-ranging adult male desert passerine. International Society for Avian Endocrinology
54. Fokidis, B.H., Orchinik, M. and Deviche P. (2008) Species and reproductive stage-specific variation in avian acute stress response associated with urbanization in a desert environment. Society for Integrative and Comparative Biology Annual Meeting

PROFESSIONAL ACTIVITIES

Memberships In Scientific Societies:

1991-present American Association for the Advancement of Science
1993-present Society for Neuroscience
1998-present Society for Behavioral Neuroendocrinology
2000-present Society for Integrative and Comparative Biology

Workshops And Symposia Organized:

2001 Organized and co-chaired workshop on ***Stress, Brain Plasticity and Depression*** for Center for the Study of Stress and Adaptation, June 25, 2001

2002 Organized and co-chaired workshop on ***Stress and the Environment*** for Center for the Study of Stress and Adaptation, January, 2001

2003 Co-organizer of symposium on ***Contemporary Approaches to Comparative Endocrinology,*** Society for Integrative and Comparative Biology,

2007 Co-organizer and co-chair of ASU / Barrow Neurological Institute Faculty Retreat to help create an interdisciplinary graduate degree program in Neuroscience and Behavior, Jan 07.

Service To Scientific Societies:

1996 Assessment of National Research Council handbook and video "Science Teaching Reconsidered"

2000-01 Local organizing committee for Society for Behavioral Neuroendocrinology Annual Meeting in Tempe, AZ.

2001-03 Program Officer, Division of Comparative Endocrinology, Society for Integrative and Comparative Biology

2001-02 Guest Editor, *Hormones and Behavior*, Special Issue on "Stress Hormones and Behavior" (published Jan. 2003)

2001-2007 Editorial Board, *Hormones and Behavior*

2002-2005 Advisory Board, Neuroendocrinology Panel, National Science Foundation

2006 Advisory Board, Behavioral Systems Cluster, Behavioral Neuroscience and Neuroendocrinology Panel, National Science Foundation

2008 Advisory Board, Neural Systems Cluster, Modulation Panel, National Science Foundation

Ad hoc Manuscript Reviews:

Brain Research; Developmental Neuroscience; Endocrinology; European Journal of Neuroscience; European Neuropsychopharmacology; General and Comparative Endocrinology; Hormones and Behavior; Integrative and Comparative Biology; Journal of Neurochemistry; Journal of Neuroscience; Life Sciences; Molecular Brain Research; Molecular Pharmacology; NeuroSignals; Physiology and Behavior; Proceedings of the National Academy of Sciences, USA; Psychopharmacology; Stress; Trends in Comparative Endocrinology and Neurobiology

Ad hoc Reviews for Granting Agencies:

Allegheny-Singer Research Institute; Indo-US Science & Technology Forum; Israel Science Foundation; National Science Foundation, EPSCoR; NSF, Integrative Animal Biology Panel; NSF, Neuroendocrinology Panel; NSF, Physiology and Behavior Panel; Netherlands Organisation for Scientific Research

Service To University, College And Department

1996-97	Coordinator of Department Seminar Series
	Molecular Genetics Search Committee
1996	Assessment of National Research Council handbook and video "Science Teaching Reconsidered"
1997	Mediated Classroom Workshop
1997-98	Biology Chair's Advisory Committee (elected position)
1998-99	Faculty Sponsor for CLAS-sponsored ASU Scholar-Citizen Team
	Biology Chair's Advisory Committee (elected position)
	Molecular Physiology Search Committee
1999	University representative to Organization of Tropical Studies Board of Directors Meeting, Liberia, Costa Rica.
1999-00	Stress Research Center/Bruce McEwen Recruitment Committee
2000	Organized ASU Neuroendocrinology Poster Session for Center for the Study of Stress and Adaptation
2000-02	Center for the Study of Stress and Adaptation Advisory Committee
2001	Maytag Postdoctoral Search Committee, Biology
2001-02	Molecular Neuroscience Search Committee, Biology
2001-03	Personnel Committee, Biology (elected position)
	Graduate Studies Committee, Molecular and Cellular Biology Program
	Faculty Mentor, Undergraduate Mentoring in Environmental Biology (NSF)
2002-03	Graduate Programs Committee, Biology
	Graduate Student Research Award Committee, Biology
	College of Liberal Arts and Sciences Curriculum Committee
2003-04	Personnel Committee, Chair (elected position)
	Systems Biology Search Committee
	College of Liberal Arts and Sciences Curriculum Committee
2004-05	on sabbatical leave
2005-06	Combined Neuroscience Search Committee, SoLS
	Bioimaging / Neuroscience Search Committee, SoLS
	Graduate Programs Representative from OISB, SoLS (elected position)
	Animal Users Committee (AUAC), University
	Mentor, ASU Faculty Development Program, University
	Chair, Physiology Curriculum Committee, SoLS
2006	Interim Associate Director of Graduate Programs, SoLS
2006-07	Physiology Curriculum Committee, Chair, SoLS
	Graduate Programs Representative from OISB, SoLS (elected position)
	Associate Director, Graduate Program Initiatives, SoLS
	Neuroscience PhD Program Working Committee, University
2007-08	Physiology Curriculum Committee, Chair, SoLS
	Graduate Programs Representative for OISB, SoLS
	Associate Director, Graduate Program Initiatives, SoLS
	Executive Committee, ad hoc member, SoLS

Animal User's Committee, University
Probationary Review Committee for Graham Boorse, ASU West, Department of Integrated Natural Sciences, University

2008-09 Graduate Programs Representative for OISB, SoLS, (elected position)
U of A College of Medicine, Phoenix, Strategic Planning Committee, Center for Excellence in Translational Neuroscience

Community Outreach:

1996-99 Broadmor Elementary School Science Fair Judge, Tempe, AZ
1997 Presentations to Broadmor Elementary School 4th grade classes
1998 Faculty Sponsor for ASU Scholar-Citizen Team at Osborne Middle School, Phoenix, AZ
1999-03 Host for Osborne School 7th-8th grade science class visits to ASU
1999-pres Ad-hoc contributor to ASU Life Sciences "Ask a Biologist" web site
2001-04 Awakening Seed School, "What does the brain do?" Phoenix, AZ
2003 Flinn Foundation/Batelle Retreat: Neurological Sciences in Arizona
2006 Waggoner Elementary School, Tempe, AZ. "Using microscopes in the classroom."
2007 Waggoner Elementary School, Tempe, AZ. "What is Science?" presentation to seven 4th and 5th grade classes as part of 1st Annual Science Fair
2007 Brown Bag presentation at SOLS-Learning Resource Center. "Applying to Graduate Schools."
2007 SoLS Ask a Biologist Podcast "Stressed Out" http://askabiologist.asu.edu/podcasts/index.html
2008 Waggoner Elementary School, Tempe, AZ. "What is Science?" presentation to seven 4th and 5th grade classes as part of 2nd Annual Science Fair

Consulting:

2007 Consultant/science advisor for Science Approach, Tucson, AZ. NeuroVisions module.

TEACHING

Courses at ASU:

BIO 188 General Biology, Guest lecturer, F 00
BIO 202 Human Anatomy and Physiology, 4 credits, (F 95, F 96, Sp 97, F 97, Sp 98, F 98, Sp 99, Sp 00, Sp 01, Sp 02, Su 02, Sp 03, Sp 04, F 07, F08). Lecture and labs; 140–300 students/semester; 3-7 TAs/semester. Helped create all new labs (with funding from Howard Hughes Foundation), principal author of new BIO 202 lab manual and course web site.
BIO 360 Basic Physiology, 4 credits, (Sp 98, F 00, F 02, F 05, Sp 06, Sp 07) Lecture and labs prior to 2002 lecture only 2002-present; 100 -180 students.
BIO 361 Animal Physiology Labs, 2 credits, (F 02, F 05, Sp 06, Sp 07), 4 TAs, 24-48 students.
BIO 494 Advanced Anatomy and Physiology / Advanced Study Practicum, 2 credits, (F 95, F 96, Sp 97, F 97, Sp 98, F 98, Sp 99, Sp 00, Sp 01, Sp 02, Su 02, Sp 03, F 07); Oversee students in training program; 2-10 students/semester.;
BIO 494/591 Neuroscience: Molecules to Behavior, 3 credits (F 06), 14 students, co-taught with Jamie Tyler. Now BIO 467, Neurobiology.
BIO 467 Neurobiology, guest lecturer, F 07
BIO 591 Graduate Seminar, Special Topics: Animal Form and Function, 1 credit, (participated Sp 98, Sp 99, Sp 00)
BIO 591 Graduate Seminar, Special Topics: Neuroendocrinology, 1-2 credits, (listed F 98, S 99, F 99, F00, Sp 01, F 02, F 03, Sp 04, F 05, Sp 06, F 06). Initiated this

interdepartmental seminar/ reading group in F 95, and have organized or participated every semester since. Also listed as ST: Endocrine Reading Group BIO 494/591

BIO 591 Graduate Seminar, Special Topics: Neuroscience, 1 credit, (Sp 07, Sp 08). Initiated this interdepartmental seminar for Neuroscience PhD program. Also listed as BIO 494.

BIO 591 Graduate Seminar, Special Topics: Signal Transduction, 1-2 credits, (F 96, Sp 97, F 97). Initiated this seminar on "integrative" approaches to signal transduction.

BIO 591 Graduate Course, Special Topics: Adult Neurogenesis, 3 credits (Sp 06)

BIO 598 Special Topics: Behavioral Endocrinology, 3 credits (F 97). Graduate Lecture Course co-taught with M. Moore, 10 students.

BIO 598 Special Topics: Endocrine Disruptors (F 02) ITV course co-taught with Pierre Deviche and faculty at Northern Arizona University and University of Arizona, 15 students total from ASU, NAU and U of A

BIO 598 Special Topics: Stress. 3 credits, Graduate Lecture Course, 10-12 students. Developed this multidisciplinary course. 1) Sp 00: "Cellular and Organismal Responses to Stress" co-taught it with Drs. Deviche and Harrison (Biology). 2) F 01: "Stress and Limbic Function" co-taught with Drs. Conrad and Neisewander (Psychology). 3) Sp 08: "Stress and Brain Plasticity" (co-listed as BIO 494)

BME 598 Neuroscience, Guest lecturer, Sp 02

MCB 556 Advanced Molecular and Cellular Biology II, Guest Lecturer, Sp 08

Elsewhere:

1993 Hunter College, City University of New York, Dept. Psychology, Physiological Psychology, Guest lecturer, series on "Hormone Effects on Brain and Behavior"

1993 University of Hawaii/Hawaii Institute of Marine Biology. Developed summer lecture/lab course on "Receptor Theory and Methodology"

2004-05 University of Bristol, Laboratories in Integrative Neuroscience and Endocrinology, "Seminal Literature in Stress Research"

2005 University of Bristol, Neuroscience Training Program. "Introduction to Neuroendocrinology"

STUDENTS TRAINED

Postdocs

1. Creagh Breuner, 1998 - 01, NSF Postdoctoral Fellow in Biosciences Related to the Environment; Asst. Professor, University of Texas at Austin, Division of Integrative Biology; Assoc. Professor, University of Montana.
2. David Jennings, 2002-05. Currently: Asst. Professor, McKendree College, Dept. Biology
3. Graham Boorse, 2004-05, Currently: Asst. Professor, Arizona State University, West Campus, Dept. of Integrative Natural Sciences

Graduate Students (Committee Chair Or Co-Chair)

PhD. programs

1. Paul Gasser, 1997-2005, Ph.D. in Biology. Dissertation: Cellular Mechanisms of Rapid Corticosteroid Action in the Vertebrate Brain. Currently: Assistant Professor, Dept. Biomedical Sciences, Marquette University.
2. Steve Presgraves, 2002-04, Ph.D. in MCB. Co-chair with Jeff Joyce, Sun Health Research Institute. Dissertation: Neuroprotective effects of dopamine agonists in terminally differentiated SH-SY5Y human neuroblastoma cells.

3. Elizabeth Donarum, 2003-05, Ph.D. in Biology. Co-chair with Vinodh Narayanan, M.D. Barrow Neurological Institute. Dissertation: Modeling central nervous system development and dysfunction with the use of microarray technology. Currently, NRSA post-doc.
4. T.C. Derr, 2002-present, Ph.D. program in MCB. Co-chair with Jeff Joyce, now Diane Lorton (Sun Health Research Institute). Research: Role of 5-HT system in Parkinson's disease.
5. Robert Bina, 2006 – present, Ph.D. program in Biology

MS. program

1. Anne Weiss, 1998-01, MS. in Biology Thesis: Separation Stress Effects on Brain Glucocorticoid Receptor Levels in Male Siberian Dwarf Hamsters (*Phodopus sungorus)*. Co-chair with K. Matt, Exercise Science, ASU. Currently: biology teacher.
2. Claire Oshatz, F 04-Sp 06, MS. student. On leave of absence for for personal reasons
3. Eri Saijo, 2004-07, Thesis: neurogenesis and gliogenesis in adult bullfrog brains. Currently: PhD program University of Kentucky, Neuroscience.

Undergraduate Researchers

Participant, Workshop on Mentoring Undergraduates in Research, ASU, May 2007

1. Evans, Lawrence, 1996, Minority Access to Research Careers (MARC). Research project: membrane receptors for corticosteroids. Graduate school.
2. Shakaut, Amina, 1996. Research project: *in situ* hybridization for $GABA_A$ receptor subunits in amphibian brains.
3. Dishmon, Monja, 1996, NSF Research Experience for Undergraduates (REU). Research project: c-fos immunohistochemistry in cannibalistic salamanders. Graduate school.
4. Schlechter, John, 1997-98. Research project: Ca^{2+} channel visualization using immunohistochemistry. Medical school.
5. Lewis, Heather, 1998. Research project: neuroanatomical techniques. Secondary science education.
6. Wilson, Glade, 1998. Research project: thyroid hormone receptor immunohistochemistry.
7. Zuniga, Claudia, 1998. Research project: stress effects on salamander behavior. Graduate school.
8. Jones, Jen, Su98 (UC, Berkeley): Research project: c-fos immunoreactivity in amphibian brain. Medical school.
9. Eisele, Cassandra, Su98 (Willamette U.). Research project: stress effects on salamander pheromone preference.
10. Stillwell, J. Brian, 1998-99, Biology Research Experience for Undergraduates (BREU). Research projects: stress effects on behavioral orientation to light/dark, neurogenesis in adult amphibian brains. Poster presentation: *Neurogenesis in the brain of the juvenile and adult Tiger Salamander revealed by PCNA and BrdU*, Sixth Annual Undergraduate Research Poster Symposium, ASU, 1999. Histopathology technician, TGEN.
11. Saade, Jimmy, F 98 – Sp02, Honor's College, pre-Minority Access to Research Careers (MARC), Undergraduate Biology Enrichment Program (UBEP), Goldwater Scholar. Research projects: distribution and translocation of glucocorticoid receptors in amphibian brain, relation to adult neurogenesis. Poster presentations: *Glucocorticoid receptor localization in Ambystoma tigrinum,* Seventh Annual Undergraduate Research Poster Symposium, ASU, 2000:, b) *Characterization of Proliferating Cells in the Adult Rana pipiens Brain,* Eighth Annual Undergraduate Research Poster Symposium, ASU, 2001. Medical school
12. Trinkle, Andreas, F 99 – S 00. Research projects: development of TUNEL technique to quantify cell death in amphibian brain, relation to adult neurogenesis. Graduate school, Germany.

13. Story, Julie, Sp 00, Honor's College, Undergraduate Mentoring in Environmental Biology (UMEB). Research project: effects of stressors on rates of neurogenesis in adult amphibian brains. M.D., Ph.D. program.
14. Buenau, Kate, F 00 – Sp 01, Honor's College, UBEP. Research project: Characterization of cells undergoing proliferation in adult amphibian brains. Poster presentations: a) *Double-Labeling of Proliferating Brain Cells in Adult Amphibians,* Eighth Annual Undergraduate Research Poster Symposium, ASU, 2001. b) *Primary Cultures of the Ependymal Layer in Adult Tiger Salamanders,* Ninth Annual Undergraduate Research Poster Symposium, ASU, 2002. Graduate school.
15. Zainab Rashiv, Sp 01, Immunohistochemical techniques in neuroscience. Currently: medical school.
16. Myers, Timothy Sp 02, UBEP. Poster presentation: *Double Immunohistochemical Techniques for Determining Sites of Neurogenesis in the Adult Amphibian Brain,* Ninth Annual Undergraduate Research Poster Symposium, ASU, 2002.
17. Brian Colby, Su 02, UBEP. Research project: characterization of cells undergoing proliferation in adult amphibian brains. Medical school.
18. Zachary Baumbardner, Su 02- Sp03. Research project: primary culture of ependymal cells from rat hypothalamus. Osteopathic school.
19. Micah Porter, Su 02-S 04, Honor's College, UBEP. Research project: migration and survival of proliferating cells in adult amphibian brains; dorsomedial hypothalamus as site of rapid corticosteroid action. Poster presentation: *Immunohistochemical characterization of proliferating cells in the hypothalamus of adult tiger salamanders*, Tenth Annual Undergraduate Research Poster Symposium, ASU, 2003. Dental School.
20. Eri Saijo, Su 02-04, Molecular Biology and Biotechnology Internship, UBEP, Research project: primary culture of amphibian hypothalamic neurons and ependymal cells; rapid corticosteroid action. Poster presentation: *Primary culture and characterization of ependymal cells and neurons from amphibian brain dorsomedial hypothalamus,* Tenth Annual Undergraduate Research Poster Symposium, ASU, 2003. Currently: MS program in Biology, ASU.
21. Sara Hartman, Su 02-4, UBEP. Research project: effects of environmental contaminants on neuropeptide gene expression. Poster presentations: *Low dose pesticide disruption of hypothalamic-pituitary-adrenal axis,* Tenth Annual Undergraduate Research Poster Symposium, ASU, 2003. Physician Assistant degree.
22. Lee Richardson, S 03-S04, UBEP. Research project: use of primary culture of amphibian brain cells and laser confocal microscopy to visualize corticosteroid receptors in brain cell membranes. Currently: Medical School
23. Samuel Stevens, F 03-W05, UBEP. Research project: effects of environmental contaminants on neuropeptide gene expression. Applying to Medical School
24. Andrea Levitt, Sp05 – F05. Research project: BDNF immunohistochemistry in relation to adult neurogenesis in amphibian brain. Currently: Medical School
25. Laura Muhammad, Sp 06 – S 06. NSF REU Supplement. Research project: primary culture of bullfrog hypothalamic cells.
26. Andrea Trettle, Sp 06 - 07. Honor's student, Barrett Honor's College. Thesis: *Distribution of brain-derived neurotrophic factor in bullfrog brain.* Currently lab technician, applying to graduate programs in Public Health.
27. Elena Abarinov, Su 06, from Cornell University, Presidential Scholar, funded by NSF REU Supplement. Research project: Double labeling of newborn cells in adult brains.
28. Luke Mumaw, S 07-present, SOLUR Apprentice, SOLUR Researcher. Research project: Characterization of progenitor cells in ependyma of 3rd ventricle of amphibian brain.
29. Anthony Lacagnina, Sp 08 -
30. Kristin Penunuri, Sp 08 -

Graduate Student Supervisory Committees (Not Dissertation Chair Or Co-Chair)

1. Alleweireldt, Andrea (Psychology)
2. Armstrong, Christopher (Biology)
3. Black, Michael (ASU West, Biology)
4. Bosch, Pam (Exercise Science)
5. Christel, Carolyn (SoLS, Biology)
6. Coombs, Katie (Psychology)
7. Czikar, Elizabeth (SoLS, Biology)
8. Fokidis, Haralambos (Biology)
9. Gary, Lee (Microbiology)
10. Grote, Katherine (Psychology)
11. Hahn, Katherine (Molecular and Cellular Biology)
12. Ihle, Kate (SoLS, Biology)
13. Jarman, Rick (Molecular and Cellular Biology)
14. Johnston, Gwynne (SoLS, Biology)
15. Kabelik, David (Biology)
16. Lacy, Eva (Biology)
17. Lubhan, Cheri (Molecular and Cellular Biology)
18. McIntyre, Kelly (ASU West; Biology)
19. Mauldin, Melissa (Psychology)
20. Painter, Danika (Biology)
21. Perry, Adam (ASU West, Biology)
22. Pirtle, Tom (Biology)
23. Restrepo, Lucas (Molecular and Cellular Biology)
24. Sharon Carlisle (Hernandez) (ASU West, Biology)
25. Small, Tom (Biology)
26. Szymik, Brett (Biology)
27. Strand, Christine (Biology)
28. Traustadottir, Tinna (Exercise Science)
29. Wang, Junshi (Neuroscience)
30. Williams, Stephanie (Molecular and Cellular Biology)
31. Woodley, Sarah (Biology)
32. Zavala, Art (Psychology)
33. Zehmer, John (Biology)

Undergraduate Student Honors Thesis (Barrett Honor's College) Committees

1. Megan Herron, Psychology, 2000
2. Luis Cortez, Biology, 2003
3. Amber Nakazawa, Biology, 2003
4. Micah Porter, SoLS, chair, 2004
5. Elizabeth Engler, Psychology, 2006
6. Andrea Trettel, SoLS, chair, 2006-07
7. Rachel Smith, SoLS, 2007
8. Anthony Lacagnina, SoLS, chair, 2008-09

9. Kristin Penunuri, SoLS, chair, 2008-09
10. Cushman, Taylor, SoLS, 2008-09

Footnote 18: Honor's credit coursework

1. Heather Koser, BIO 202, S04
2. Nathan Miller, BIO 202, S04
3. Jodi Baugh, BIO 360, F05
4. Katherine Kitchen, BIO 360, F05
5. Tiffanie Kitchen, BIO 360, F05
6. Ramin Sadeghi, BIO 360, F05
7. Eric Anderson, BIO 360, S07
8. Scott Santoro, BIO 360, S07
9. Angie Rosselli, BIO 202, F07
10. Meghan Mills, BIO 202, F08