CURRICULUM VITAE

Joseph M. Casto, Ph.D.

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Professional Experience

Associate Professor of Behavioral Biology, School of Biological Sciences, Illinois State University Normal, IL, 2015 - present.

Assistant Professor of Behavioral Biology, School of Biological Sciences, Illinois State University Normal, IL, 2009 - 2015.

Assistant Director, Research Ethics and Compliance, Illinois State University, Normal, IL, 2006 - 2009.

Management Consultant, Central Illinois Neuroscience Foundation, Bloomington, IL, 2006 - 2007.

Executive Director, Central Illinois Neuroscience Foundation, Bloomington, IL, 2004 - 2006.

Director of Research and Education, Central Illinois Neuroscience Foundation, Bloomington, IL, 2003 - 2006.

Adjunct Assistant Professor of Behavioral Biology, School of Biological Sciences, Illinois State University, Normal, IL, 2003 - 2009.

Research Associate, Department of Biology, Indiana University, Bloomington, IN, 1997 - 2001.

Education and Training

Postdoctoral Fellow. Indiana University, Bloomington, IN, 2001 - 2003.

Ph.D. Johns Hopkins University, Baltimore, MD, 2001. Dissertation: Development and hormonal regulation of sex differences in the song system of European starlings (*Sturnus vulgaris*).

M.S. Villanova University, Villanova, PA, 1991. Thesis: Effects of prenatal flutamide exposure on juvenile play, saccharin preference, and male sexual behavior in rats.

B.A. College of the Holy Cross, Worcester, MA, 1987.

Grants, Fellowships, Awards and Honors

Federal Grants and Initiatives

National Science Foundation, IOS preliminary proposal (01/19/2017): Do 5-beta reduced steroids alter embryonic development in oviparous vertebrates? (PI: Casto, in review).

National Science Foundation, IOS preliminary proposal (01/19/2016): Is incentive value encoded via mesolimbic dopamine? (PI: Casto, not invited)

National Science Foundation, REU Site (08/2015): Organismal responses to human dominated environments. (PI: R. Gougis, R., Co-PI: R. Bowden, Senior Personnel: Casto. & others; in review).

National Institutes of Health, R15 (10/25/2015): A role for striatal dopamine in encoding incentive value of acoustic social stimuli. (PI: Casto, not invited)

National Science Foundation, REU Site (08/2015): Research in the Anthropocene: preparing the next generation of biologists. (PI: R. Gougis, R., Co-PI: R. Bowden, Senior Personnel: Casto. & others; declined).

National Science Foundation, IOS preliminary proposal (01/16/2015): Function and thermal modulation of yolk steroid metabolism during embryonic development. (PI: Casto, declined).

National Science Foundation, IOS preliminary proposal (01/16/2015): Prioritizing social signals: Is incentive value encoded via mesolimbic dopamine? (PI: Casto, declined).

National Institutes of Health, R15 (06/25/2014): Phasic dopamine signaling in the songbird nucleus accumbens: Influence of internal endocrine state and conspecific vocal signals. (PI: Casto, declined).

National Science Foundation, IOS preliminary proposal (01/17/2014): Function and thermal modulation of yolk steroid metabolism during embryonic development. (PI: Casto, not invited).

National Science Foundation, IOS preliminary proposal (01/17/2014): Prioritizing social signals: Is incentive value encoded via mesolimbic dopamine? (PI: Casto, not invited).

National Institutes of Health, R15 (11/18/2013): Phasic dopamine signaling in the songbird nucleus accumbens: Influence of internal endocrine state and conspecific vocal signals. (PI: Casto, declined).

National Science Foundation, IOS full grant proposal (08/02/2013): Regulation and function of embryonic metabolism of maternally derived yolk steroids in birds. (PI: Casto, declined).

National Science Foundation, IOS preliminary proposal (01/18/2013): Regulation and function of embryonic metabolism of maternally derived yolk steroids in birds. (PI: Casto, invited).

National Science Foundation, IOS full grant proposal (08/02/2012): Do incubation temperature and embryonic yolk steroid metabolism interact to influence trade-offs in developing songbirds? (PI: Casto, declined).

National Science Foundation, IOS preliminary proposal (01/12/2012): Do ectoparasites, incubation temperature and embryonic yolk steroid metabolism interact to influence trade-offs in developing songbirds? (PI: Casto, invited).

Health Resources and Services Administration, Department of Health and Human Services. Interdisciplinary Neuroscience Graduate and Undergraduate Sequences at Illinois State University. 2010 to 2011. $495,000 (PI: C. Gatto, Senior Personnel: Casto & others, funded D1 DHP 20062).

National Science Foundation. ARI-R2: Animal Facility Modernization. (PI: L. Vogel, Senior Personnel: Casto & others, declined).

National Science Foundation, REU Site: Integrating Field and Laboratory Research on the Evolution of Animal Reproductive Strategies, 2009 (PI: S. Sakaluk, Senior Personnel: Casto & others, declined).

National Institutes of Health, R21: Microsensor development for monitoring dopamine, oxygen and pH during ischemia, 2005 (PI: Casto, declined).

Other Grants:

Whitehall Foundation Inc., Letter of Proposal Intent (01/21/2014): Prioritizing social signals: Is salience coded via dopamine? (PI: Casto, not invited).

Illinois State University, College of Arts and Sciences, Pre-tenure Faculty Initiative Grant (2012) (PI: Casto, funded).

Whitehall Foundation Inc., Letter of Proposal Intent (04/14/2011): Encoding incentive salience of acoustic signals: the role of dopamine. (PI: Casto, not invited).

Illinois State University, College of Arts and Sciences, New Faculty Initiative Grant 2010 (PI: Casto, funded).

Illinois State University, CeMaST Professional Innovation Grant Fall 2009 (PI: Casto, funded).

Society for the Scientific Study of Sexuality, Research Grant 2001 (PI: Casto, funded).

Indiana Academy of Science, Research Grant 2000 (PI: Casto, funded).

Center for the Integrative Study of Animal Behavior, Research Grant 2000 (PI: Casto, funded).

Fellowships, Awards and Honors:

Illinois State University, College of Arts and Sciences, Kenneth A. and Mary Ann Shaw Teaching Fellowship, December 2020.

Illinois State University, Research and Sponsored Programs grant writing mentorship award, Spring 2010

Illinois State University, Research and Sponsored Programs, Grant Writing Initiative Award, 2005

Center for the Integrative Study of Animal Behavior, Travel Award 2003

Society for Behavioral Neuroendocrinology, Second Place Poster Competition 1999

National Science Foundation, Conference Travel Award 1996

Johns Hopkins University, Graduate Fellowship 1991-1996

Boston College, Graduate Fellowship 1990-1991

Villanova University, Graduate Fellowship 1987-1989

Psi Chi Membership (psychology honor society) 1988

Eagle Scout, 1980

Peer Reviewed Publications (* denotes undergraduate co-author)

Campbell, N., Angles*, R., Bowden, R. M., Casto, J. M., Paitz, R. (2020). Characterizing the timing of yolk testosterone metabolism and the effects of metabolites on development in avian eggs. Journal of Experimental Biology, 223, jeb210427.

Pryor, L.J.E., and Casto, J.M. (2017). Ectoparasites as developmental stressors: Effects on somatic and physiological development. Journal of Experimental Zoology, 327, 311-321.

Pryor, L.J.E., Casto, J.M. (2015). Blood-feeding ectoparasites as developmental stressors: Does corticosterone mediate effects of infestation on nestling growth, immunity and energy availability? Journal of Experimental Zoology A, 323, 466–477.

Smith, A.R., Garris, P.A., Casto, J.M. (2015). Real-time monitoring of electrically evoked catecholamine signals in the songbird striatum using in vivo fast-scan cyclic voltammetry, Journal of Chemical Neuroanatomy, 66-67, 28-39.

Smith, A. R., Novak*, A., Wagner*, P., Yates*, R., Janci*, E., Bernales*, R., Dietz*, T., Earhart*, A., Fogle*, A., Fullerton*, N., Gromer*, K., Kliver*, B., Larson*, W., Ludwikowski*, J., Martini*, T., McGrath*, J., Polino*, A., Schumacher*, M., Weick*, S., Casto, J. M., Whitman, D. W. (2013). Daily temperature cycle induces daily hatching rhythm in Eastern Lubber Grasshoppers, Romalea microptera. *Journal of Orthoptera Research, 22*, 51-55.

Paitz, R.T., Casto, J.M. (2012). The decline in yolk progesterone concentrations during development is dependent on embryonic development in the European starling. *General and Comparative*

Endocrinology,176, 415-419.

Paitz, R.T., Bowden, R.M., Casto, J.M. (2011). Embryonic modulation of maternal steroids in European starlings (Sturnus vulgaris). *Proceedings of the Royal Society of London, B, 278*, 99-106.

Wang, C.X., Stroink, A., Casto, J.M., Kattner, K. (2009). Hyperthermia exacerbates ischaemic brain injury. *International Journal of Stroke, 4,* 274-284.

McGlothlin, J.W., Jawor, J.M., Greives, T.J., Casto, J.M., Phillips, J.L., Ketterson, E.D. (2008). Hormones and honest signals: males with larger ornaments elevate testosterone more when challenged. *Journal of Evolutionary Biology, 21,* 39-48.

Jawor, J.M., McGlothlin, J.W., Casto, J.M., Greives, T.J., Snajdr, E.A., Bentley, G., Ketterson, E.D. (2007). Testosterone response to GnRH in a female songbird varies with stage of reproduction: implications for adult behaviour and maternal effects. *Functional Ecology, 21,* 767–775.

Greives*, T. J., Casto, J.M., Ketterson, E.D. (2007). Consequences of a male bias during the breeding season on behavior, condition and immune function in captive dark-eyed juncos, *Junco hyemalis. Journal of Avian Biology, 38*, 255-260.

Jawor, J.M., McGlothlin, J.W., Casto, J.M., Greives, T.J., Snajdr, E.A., Bentley, G., Ketterson, E.D. (2006). Seasonal and individual variation in response to GnRH challenge in male dark-eyed juncos (*Junco hyemalis*). *General and Comparative Endocrinology, 149,* 182-189.

Zysling, D.A., Greives, T.J., Breuner, C.W., Casto, J.M., Demas, G.E., Ketterson, E.D. (2006). Behavioral and physiological responses to experimentally elevated testosterone in female dark-eyed juncos (*Junco hyemalis carolinensis*). *Hormones and Behavior 50,* 200-207.

Vallejo, R., Benyamin, R., Floyd, B., Casto, J.M., Joseph, N.J. Mekhail, N. (2006). Percutaneous cement injection into a created cavity for the treatment of vertebral body fracture: preliminary results of a new vertebroplasty technique. *Clinical Journal of Pain 22,* 182-189.

Clotfelter, E.D., O'Neal*, D.O., Gaudioso*, J.M., Casto, J.M., Parker-Renga*, I.M., Snajdr, E.A., Duffy, D.L., Nolan, V., Jr, Ketterson, E.D. (2004). Consequences of elevating plasma testosterone in females of a socially monogamous songbird: evidence of constraints on male evolution. *Hormones and Behavior 46,* 171-178.

McGlothlin*, J.W., Neudorf, D.L.H. Casto, J.M., Nolan, V., Jr, Ketterson, E.D. (2004). Elevated testosterone reduces choosiness in female dark-eyed juncos (*Junco hyemalis*): evidence for a hormonal constraint on sexual selection? *Proceedings of the Royal Society of London B. 271,* 1377-1384.

Wolf*, W., Casto, J.M., Nolan, V., Jr., Ketterson, E.D. (2004). Female ornamentation and male mate choice in dark-eyed juncos. *Animal Behaviour 67,* 93-102.

Casto, J.M., Ward, O.B., Bartke, A. (2003). Play, copulation, anatomy, and testosterone in gonadally intact male rats prenatally exposed to flutamide. *Physiology & Behavior 79,* 633-641.

Casto, J.M., Nolan, V., Jr, Ketterson, E.D. (2001). Steroid hormones and immune function: experimental studies in wild and captive dark-eyed juncos (*Junco hyemalis*). *American Naturalist, 157,* 408-420.

Grindstaff, J.L., Buerkle, C.A., Casto, J.M., Nolan, V. Jr., Ketterson, E.D. (2001). Male attractiveness and offspring sex ratio in Dark-eyed Juncos (*Junco hyemalis*). *Behavioral Ecology and Sociobiology 50,* 312-316.

Smulders, T.V., Casto, J.M., Ketterson, E.D., Nolan, V., Jr, DeVoogd, T. (2000). Effects of captivity and testosterone on the volumes of four brain regions in the dark-eyed junco (*Junco hyemalis*). *Journal of Neurobiology, 43,* 244-253.

Lipar, J.L., Ketterson, E.D., Nolan, V., Jr., Casto, J.M. (1999). Egg yolk layers vary in the concentration of

steroid hormones in two avian species. *General and Comparative Endocrinology, 115,* 220-227.

Casto, J.M., Ball, G.F. (1996). Early administration of 17b-estradiol partially masculinizes song control regions and a2-adrenergic receptor distribution in European starlings (*Sturnus vulgaris*). *Hormones and Behavior, 30,* 387-406.

Ball, G.F., Casto, J.M., Balthazart, J. (1995). Autoradiographic localization of D1-like dopamine receptors in the forebrain of male and female Japanese quail and their relationship with immunoreactive tyrosine hydroxylase. *Journal of Chemical Neuroanatomy, 9,* 121-133.

Casto, J.M., Ball, G.F. (1994). Localization of D1 dopamine receptors in the sexually dimorphic vocal control nucleus, area X, and the basal ganglia of European starlings. *Journal of Neurobiology, 25,* 767-780.

Ball, G.F., Casto, J.M., Bernard, D.J. (1994). Sex differences in the volume of avian song control nuclei: Comparative studies and the issue of brain nucleus delineation. *Psychoneuroendocrinology, 19,* 485-504.

Bernard, D.J., Casto, J.M., Ball, G.F. (1993). Sexual dimorphism in the volume of song control nuclei of European starlings: Assessment by a Nissl stain and autoradiography for muscarinic cholinergic receptors. *Journal of Comparative Neurology, 334,* 559-570.

Ball, G.F., Bernard, D.J., Casto, J.M. (1993). Neurochemistry of the avian vocal control circuit: Hormonal modulation and sex differences. *Poultry Science Reviews, 5,* 15-27.

Grisham, W., Casto, J.M., Kashon, M.L., Ward, I.L., Ward, O.B. (1992). Prenatal flutamide alters sexually dimorphic nuclei in the spinal cord of male rats. *Brain Research 578,* 69-74.

Contributions to Edited Volumes (* denotes undergraduate co-author)

Garris, P.A., Greco, P.G., Sandberg, S.G., Howes, G., Pongmaytegul, S., Heidenreich, B.A., Casto, J.M., Ensman, R., Poehlman, J. Alexander, A., Rebec, G.V. (2006) Chapter 12: In vivo voltammetry with telemetry. In L.M. Borland and A.C.Michael (Eds) *Electrochemical Methods for Neuroscience,* CRC Press, London, England, pp. 233-259.

Ketterson, E.D., Nolan, V. Jr., Casto, J.M., Buerkle, C.A., Clotfelter, E., Grindstaff, J.L., Jones, K.J., Lipar, J.L., McNabb, F.M.A., Neudorf, D.L., Parker-Renga*, I., Snajdr, E., Schoech, S.J. (2001). Testosterone, phenotype, and fitness: a research program in evolutionary behavioral endocrinology. In A. Dawson and C.M. Chaturvedi (Eds) *Avian Endocrinology,* Narosa Publishing House, New Dehli, India, pp. 19-40.

Invited Presentations

Paitz, R.T., Casto, J.M. (2011). The decline in yolk progesterone concentrations during development is dependent on the presence of a developing embryo in the European starling. Presented at the inaugural meeting of the North American Society for Comparative Endocrinology, University of Michigan, Ann Arbor, July 13-16, 2011.

Casto J.M. (2011). Hormones and behavior in birds. Department of Physics, Illinois State University, Normal, Illinois.

Casto, J.M. (2003). Interactions among environment, behavior, and physiology: Using hormones to study complex phenotypes. Department of Biological Sciences, Illinois State University, Normal, Illinois.

Casto, J.M. (2003). Interactions among environment, behavior, and physiology: Using hormones to study complex phenotypes. Department of Zoology, Oklahoma State University, Stillwater, Oklahoma.

Casto, J.M. (2003). Sex differences in brain and behavior: Hormonal mechanisms and their implications. Department of Psychology, Saint Anselm College, Manchester, New Hampshire.

Casto, J.M. (2002). Interactions among brain, behavior, and physiology: Using hormones to study complex phenotypes. Department of Psychology, McMaster University, Hamilton, Ontario.

Casto, J.M. (2001). Symposium: Neuroendocrine-Immune Interactions. Contributed paper: Testosterone and immune function in a songbird: Direct and indirect effects. Presented at the annual meeting of the Society for Behavioral Neuroendocrinology, Scottsdale, AZ.

Casto, J.M. (2001). Testosterone and immune function in a songbird. Ecology, Evolution, and Behavior Seminar Series. Indiana University, Department of Biology.

Ketterson, E.D., Nolan, V., Jr., Neudorf, D.L. Grindstaff, J.L., Parker-Renga, I.M. (2001). Using hormones to explore adaptation and constraint in a songbird. Presented at the annual meeting of the Society for Integrative and Comparative Biology.

Ketterson, E.D., Nolan, V., Jr., Casto, J. M., Lipar, J.L, Buerkle, C.A., Grindstaff, J. (2000). Phenotypic and extended phenotypic effects of testosterone and consequences for fitness in dark-eyed juncos. Presented at the Seventh International Symposium on Avian Endocrinology, Varanasi, India.

Published Abstracts and Conference Presentations (* denotes undergraduate co-author)

Lusk, E. P., Witek, T. A.R., Casto, J. M. (2020). Effects of *in ovo* treatment with etiocholanolone on nestling development. Presented at the Annual ISU Research Symposium, Illinois State University, Normal, IL.

Lusk, E. P., Witek, T. A.R., Casto, J. M. (2020). Effects of *in ovo* treatment with etiocholanolone on nestling development. Presented at the Annual Meeting of the Society for Integrative and Comparative Biology, Society for Integrative and Comparative Biology, Austin, TX.

Campbell, N., Bowden, R., Casto, J. M., Paitz, R. (2019). Deciphering the consequences of yolk testosterone metabolism in birds: Inactivation or modification of an active signal? Presented at the annual meeting of the Society for Integrative & Comparative Biology, Tampa, FL.

McDonald, J., Lusk*, E., Savici*, S., Casto, J. M. (2019). Ectoparasites, developmental trade-offs, and inflammation. Presented at the annual meeting of the Society for Integrative & Comparative Biology, Tampa, FL.

Paitz, R., Campbell, N., Angles*, R., Bowden, R. M., Casto, J. M. (2018). Does mother really call the shots? Rapid *in ovo* and in vitro metabolism of testosterone in bird eggs. Presented at the annual meeting of the Society for Integrative & Comparative Biology, San Francisco, CA.

McDonald, J., Lusk*, E., Quinn*, C., Hanrahan*, D., Casto, J. M. (2018). (2018). This mite be a little bit easier: Immediate Thermal Sampling, a field-friendly quantification method of ectoparasite infestation in bird nests. Presented at the Phi Sigma Research Symposium, Illinois State University, Normal, IL.

McDonald, J., Lusk*, E., Quinn*, C., Hanrahan*, D., Casto, J. M. (2018). Keeping the blood-sucking parasites at bay: Effects of pesticides with different modes of action on nest infestation and nestling development in European Starlings. Presented at the Phi Sigma Research Symposium, Illinois State University, Normal, IL.

McDonald, J., Lusk*, E., Quinn*, C., Hanrahan*, D., Casto, J. M. (2018).). This mite be a little bit easier: Immediate Thermal Sampling, a field-friendly quantification method of ectoparasite infestation in bird nests. Presented at the ISU Research Symposium, Illinois State University, Normal, IL.

McDonald, J., Lusk*, E., Quinn*, C., Hanrahan*, D., Casto, J. M. (2018). Keeping the blood-sucking parasites at bay: Effects of pesticides with different modes of action on nest infestation and nestling development in European Starlings. Presented at the ISU Research Symposium, Illinois State University, Normal, IL.

Scholtens, C., Smith, A., Garris, P., Casto, J. M. (2017). Striatal dopamine release in response to conspecific vocalizations in European Starlings. Presented at the annual Phi Sigma Research Symposium, Phi Sigma Beta Lambda Chapter, Normal, IL.

Odetunde, A.O., Casto J.M. (2017). Quit buggin' me: The effects of ectoparasite control methods on mite load and nestling phenotypes. Presented at the annual meeting of the Society for Integrative & Comparative Biology, New Orleans, LA.

Casto, J. M., Odetunde, A. (2016). Does blood loss explain ectoparasite-induced changes in nestling development? Presented at the Annual Meeting of the Canadian Society of Zoologists, Canadian Society of Zoologists, London, Ontario, Canada.

Odetunde, A.O., Casto J.M. (2016). Does blood loss explain ectoparasite-induced changes in nestling development? Presented at the annual meeting of the Society for Integrative & Comparative Biology, Portland, OR.

Hanser, J. T., Casto, J. M. (2015). The effect of ambient temperature on avian incubation behavior prior to clutch completion. Presented at the annual meeting of the Society for Integrative & Comparative Biology, West Palm Beach, FL.

Smith, A. R., Garris, P. A., Casto, J. M. (2014). Sub-second monitoring of electrically, pharmacologically and acoustically evoked phasic dopamine signals in the striatum of an anesthetized songbird. Annual Meeting of the Society for Neuroscience, Washington, D.C.

Hanser, J. T., Casto, J. M. (2014). Mitigation of Costs Associated with Laying Order in a Cavity Nesting Songbird. Presented at the annual meeting of the Society for Integrative & Comparative Biology, Austin, TX.

Casto, J. M., Smith, A. R., DeBiasio*, D. (2014). Within-clutch Patterns of Yolk Steroids: Does Egg Collection Method Matter? Presented at the annual meeting of the Society for Integrative & Comparative Biology, Austin, TX.

Smith, A. R., Casto, J. M. (2013). Neurochemical characterization of the nucleus accumbens in the European starling. Presented at the Phi Sigma Research Symposium, Illinois State University, Normal, IL.

Smith, A.R., Casto, J. M. (2012). Neurochemical characterization of the nucleus accumbens in the European starling. Presented at the annual meeting of the Society for Behavioral Neuroendocrinology, Madison, WI.

Eisner Pryor, L., Casto, J. M. (2012). Chronic mite infestation and its effects on nest success, immunity and development in European starling nestlings. Presented at the Illinois State University Graduate Research Symposium, Illinois State University, Normal, IL.

Smith, A.R., Casto, J. M. (2012). Neurochemical characterization of the nucleus accumbens in the European starling. Presented at the Illinois State University Graduate Research Symposium, Illinois State University, Normal, IL.

DeBiasio*, D., Eisner Pryor, L., Casto, J. M. (2012). What's cold got to do with it? Temperature effects on plasma complement activity in European Starlings. Presented at the Illinois State University Undergraduate Research Symposium, Illinois State University, Normal, IL.

Eisner Pryor, L., Casto, J. M. (2012). Chronic mite infestation and its effects on nest success, immunity and development in European starling nestlings. Presented at the Phi Sigma Research Symposium, Illinois

State University, Normal, IL.

Smith, A. R., Casto, J. M. (2012). Neurochemical characterization of the nucleus accumbens in the European starling. Presented at the Phi Sigma Research Symposium, Illinois State University, Normal, IL.

Eisner Pryor, L. J. Casto, J.M. (2012). Chronic Mite Infestation and its Effects on Nest Success, Immunity and Development in European Starling Nestlings. Presented at the Annual Meeting of the Society for Integrative & Comparative Biology, Charleston, SC.

Paitz, R.T., Casto, J.M. (2011). The decline in yolk progesterone concentrations during development is dependent on the presence of a developing embryo in the European starling. Presented at the inaugural meeting of the North American Society for Comparative Endocrinology, University of Michigan, Ann Arbor.

Eisner Pryor, L. J. Casto, J.M. (2011). Ectoparasites, immune function and development in the European starling. Presented at the Annual Meeting of the Society for Integrative & Comparative Biology, Salt Lake City, UT.

Smith*, R. Manthey*, M., Weddle, C. Casto, J.M. (2011). Don't talk to strangers: female association preference between novel and familiar males in the Madagascar hissing cockroach. Presented at the annual Undergraduate Research Symposium, Illinois State University, Normal, IL.

Smith*, R. Manthey*, M., Weddle, C. Casto, J.M. (2011). Don't talk to strangers: female association preference between novel and familiar males in the Madagascar hissing cockroach. Presented at the Phi Sigma Research Symposium, Illinois State University, Normal, IL.

Paitz, R.T., Bowden, R.M., Casto, J.M. (2010). Embryonic modulation of yolk steroids in European starlings (*Sturnus vulgaris*). Presented at the Annual Meeting of the Society for Behavioral Neuroendocrinology, Toronto, Canada.

Paitz, R.T., Bowden, R.M., Casto, J.M. (2009). Embryonic modulation of yolk steroids in European starlings (*Sturnus vulgaris*). Presented at the Annual Meeting of the Society for Integrative and Comparative Biology, Boston, MA.

McKinney, K. Creasey, G., Jarvis, P., Casto, J.M. (2008). Ethical Issues and IRB Policies for SoTL and Action Research. Presented at the 8th Annual University-Wide Symposium on Teaching and Learning. Bloomington, IL.

Wise, L.M., Farmer-Dougan, V.A, Garris, P.A., Casto, J.M. (2007). Reduced sensitivity to the locomotor effects of amphetamine in hamsters compared to rats. *Society for Neuroscience Abstracts 33.*

Casto, J.M., Greco, P.G., Pongmayteegul, S.; Howes, G.A., Kattner, K.A., Garris, P.A. (2005). Rapid increases in extracellular dopamine following ischemia/hypoxia as measured by fast-scan cyclic voltammetry. *Society for Neuroscience Abstracts 31.*

Jawor, J., Ketterson, E.D., Casto, J.M., McGlothlin, J., Snajdr, E., Greives, T., Bentley, G., Nolan, V. Jr. (2005). Seasonal and individual variation in testosterone response to GnRH in free-living male dark-eyed juncos. *Hormones and Behavior 48:* 107.

Ketterson, E.D., Jawor, J., Casto, J.M., McGlothlin, J., Snajdr, E., Greives, T., Bentley, G., Nolan, V. Jr. (2005). Testosterone response to GnRH challenge according to season and stage of reproduction in free-living female dark-eyed juncos. *Hormones and Behavior 48:* 109.

McGlothlin, J.W., Jawor, J., Casto, J.M., Greives, T., Ketterson, E.D., (2005). Attractive male dark-eyed juncos can produce higher levels of testosterone. Presented at the Annual Meeting of the Animal Behavior Society. Snowbird, UT.

Jensen*, S., Ekhomu*, O., Hall*, H., Kattner, K.A., Casto, J.M. (2004). The relationship between blood pressure and the extent and location of infarct following occlusion of cerebral blood flow. Presented at the Illinois State University Undergraduate Research Symposium, Normal, IL.

Ketterson, E.D., Jawor, J., Casto, J.M., Snajdr, E.S., McGlothlin, J.W. Nolan, V. Jr. (2004) Sexual, seasonal, and individual variation in response to a GnRH challenge in free-living Dark-eyed juncos (Junco hyemalis). Presented at the International Symposium on Avian Endocrinology, Phoenix, AZ.

Osterling, D.J., Desai*, B.S., Garris, P.A., Farner, S.M., Kattner, K.A., Casto, J.M. (2004). Tempol as a neuroprotective agent in a rat model of intermittent transient focal cerebral ischemia. *Society for Neuroscience Abstracts 30.*

Vallejo, R., Benyamin, R., Casto, J.M., Floyd, B. New technique for treatment of vertebral body fracture: Initial experience with the cavity creation system. Presented at the 20th Annual meeting of the American Academy of Pain Medicine, Orlando, FL.

Greives*, T. J., Casto, J.M., Ketterson, E.D. (2003). Behavioral and physiological consequences of biased sex ratios in dark-eyed juncos. *Hormones and Behavior 44:* 52.

Casto, J.M., Parker-Renga*, I.M., Ketterson, E.D., Nolan, V., Jr. (2002). Indirect effects of elevated testosterone on immunity in dark-eyed juncos. Presented at the Annual Meeting of the Animal Behavior Society, Bloomington, IN.

Casto, J.M., Smulders, T.V., DeVoogd, T.J., Nolan, V., Jr, Ketterson, E.D. (2002). Singing in the rain: Studying the effects of testosterone on the song system in the field. Presented at Behavioral Neurobiology of Bird Song: 16th Annual Symposium of the Center for Study of Gene Structure and Function, Hunter College, CUNY, New York, NY.

McGlothlin*, J.W., Neudorf, D.L., Casto, J.M., Nolan, V., Jr., Ketterson, E.D. (2002). Elevated testosterone alters mate preference in female dark-eyed juncos (Junco hyemalis); Evidence for a hormonal constraint on sexual selection. Presented at the Annual Meeting of the Animal Behavior Society, Bloomington, IN.

Casto, J.M. (2001) Testosterone and immune function in a songbird: direct and indirect effects. *Hormones and Behavior 39:* 314.

Casto, J.M., Smulders, T.V., DeVoogd, T.J., Nolan, V., Jr, Ketterson, E.D. (2001). Experimental manipulation of testosterone during the breeding season influences the song system of male dark-eyed juncos. *Society for Neuroscience Abstracts 27.*

Casto, J.M., Parker-Renga*, I.M., Ketterson, E.D., Nolan, V., Jr. (2001). Experimentally Elevated Testosterone in male dark-eyed juncos suppresses cell-mediated immune function of social mates and offspring. *American Zoologist 40:* 967.

Ketterson, E.D., Nolan, V., Jr., Casto, J.M., Neudorf, D.L. Grindstaff, J.L., Parker-Renga*, I.M. (2001). Using Hormones to Explore Adaptation and Constraint in a Songbird. *American Zoologist 40:* 1084.

Neudorf, D.L., McGlothlin*, J.W., Casto, J.M., Nolan, V., Jr., Ketterson, E.D. (2001). The effect of elevated testosterone on female mate choice in Dark-eyed Juncos. Presented at the 119th Meeting of the American Ornithologists' Union, Seattle, WA.

Casto, J.M., Ketterson, E.D., Nolan, V., Jr. (2000). Elevated testosterone suppresses cell-mediated and humoral immunity in captive and free-living male dark-eyed juncos (*Junco hyemalis*). Presented at the Seventh International Symposium on Avian Endocrinology, Varanasi, India.

Casto, J.M., Lipar, J.L., Buerkle, C.A., Grindstaff, J., Ketterson, E.D., Nolan, V., Jr. (2000). Extended phenotypic effects of elevated testosterone in male dark-eyed juncos. *Trabajos del Instituto Cajal 77*: 208-209.

Casto, J.M., Lipar, J.L., Buerkle, C.A., Grindstaff, J., Ketterson, E.D., Nolan, V., Jr. (2000). Extended phenotypic effects of elevated testosterone in male Dark-eyed juncos: female mates produce smaller eggs, but do not alter yolk steroid concentrations or primary sex ratios. *American Zoologist 39*: 63A.

Ketterson, E.D., Casto, J.M., Nolan, V., Jr. (2000). Elevated testosterone suppresses humoral and cell-

mediated immunity in male dark-eyed juncos. *American Zoologist 39:* 29A.

Smulders, T.V., Casto, J.M., Ketterson, E.D., Nolan, V., Jr, DeVoogd, T. (1998). Testosterone and captivity affect telencephalic and hippocampal volume in dark-eyed juncos (*Junco hyemalis*). *Society for Neuroscience Abstracts 24*: 683.

Casto, J.M., Ball, G.F. (1997). Early exposure to both 17β-estradiol and 5a-dihydrotestosterone reduces testosterone-induced song output and IMAN volume in yearling female European starlings. *Society for Neuroscience Abstracts 23:* 1329.

Casto, J.M., Ball, G.F. (1996). Development and hormonal control of sex differences in the vocal control system of European starlings. *Italian Journal of Anatomy and Embryology 101 - suppl. 1*, 37-39.

Casto, J.M., Palawahnian*, A. Ball, G.F. (1996). The song system of European starlings exhibits developmental changes in the distribution of NMDA receptors during the first year of life. *Society for Neuroscience Abstracts 22:* 692.

Casto, J.M., Ball, G.F. (1995). Early Administration of 17β-estradiol increases the volume of the vocal control nuclei, HVC, and area X in male but not female European Starlings. *Society for Neuroscience Abstracts 21:* 39.

Ottinger, M.A, Thompson, N.E., Bernard, D.J., Casto, J.M., Ball, G.F. (1995). b-adrenergic receptors in quail: Distribution and age-related change. *Society for Neuroscience Abstracts 21:* 472.

Perlman*, W.R., Casto, J.M., Bernard, D.J., Ball, G.F. (1995). Testosterone modulation of GABAA receptor density in the zebra finch vocal control system. *Society for Neuroscience Abstracts 21:* 961.

Casto, J.M., Ball, G.F. (1994). Developmental changes in a2-adrenergic receptor density, cell density, and the volume of nucleus robustus archistriatalis in European starlings. *Society for Neuroscience Abstracts 20:* 163.

Casto, J.M., Bernard, D.J., Ball, G.F. (1993). European starlings show developmental changes in receptor density and volume of song control nuclei as defined by autoradiography for muscarinic cholinergic receptors and α2-adrenergic receptors. *Society for Neuroscience Abstracts 19:* 1075.

Casto, J.M., Absil, P., Balthazart, J., Ball, G.F. (1992). Autoradiographic localization of beta-adrenergic receptors in the songbird vocal control system. *Society for Neuroscience Abstracts 18:* 459.

Absil, P., Das, S., Ball, G.F., Casto, J.M., Balthazart, J. (1992). Dopaminergic control of male copulatory behavior in quail: Autoradiography and pharmacological studies. *Society for Neuroscience Abstracts 18:* 1071.

Bernard, D.J., Casto, J.M., Ball, G.F. (1992). Sexual dimorphism in the volume of song control nuclei of European starlings: Assessment by a Nissl stain and autoradiography for muscarinic cholinergic receptors. *Society for Neuroscience Abstracts 18:* 529.

Casto, J.M., Ball, G.F., Balthazart, J. (1991). Dopamine receptors in the song control system: Area X is defined by the D2 but not the D1 dopamine receptor subtype. *Society for Neuroscience Abstracts 17:* 1053.

Ball, G.F., Casto, J.M. (1991). Autoradiographic localization of NMDA receptors in the avian song control system using [3H] MK-801. *Society for Neuroscience Abstracts 17:* 1053.

Grisham, W., Casto, J.M., Kashon, M.L., Ward, I.L., Ward, O.B. (1991). Prenatal flutamide alters sexually dimorphic spinal nuclei. *Society for Neuroscience Abstracts 17:* 1319.

Areas of Research Focus

School of Biological Sciences Illinois State University Normal, Il 2009 - present. Head a laboratory studying

physiological mechanisms of avian reproduction, maternal effects on offspring development, developmental stress and its influences on phenotypic plasticity, and endocrine modulation of the neural substrates of vertebrate social behavior. Conduct and publish course-related research with undergraduates studying proximate mechanisms of animal behavior.

Central Illinois Neuroscience Foundation Laboratory at Illinois State University Normal, Il 2003 - 2006. Directed a preclinical research laboratory that investigated the basic neurobiology underlying focal ischemia and experimental stroke in rats. Provided site administration of over a dozen multi-center clinical trials at local hospitals and several single-center clinical trials at local clinics in Bloomington/Normal, IL.

Indiana University, Bloomington, IN 1997 - 2003. Field research and laboratory administrator. Primary research focus: avian endocrine-immune interactions. Other research topics included: the study of brain and behavior in free-living birds, patterns and effects of steroid hormone deposition in avian eggs, the role of plumage coloration in mate choice, and female control of offspring sex ratio.

The Johns Hopkins University, Baltimore, MD 1991- 1997. Hormonal control of sex differences in vocal behavior and associated brain regions of starlings.

Boston College, Chestnut Hill, MA 1990 - 1991. Chemical neuroanatomy and sexual dimorphisms in the vocal control system of songbirds.

Villanova University, Villanova, PA 1987 - 1989. The role of prenatal androgen in the sexual differentiation of behavior and the nervous system in rats.

College of the Holy Cross, Worcester, MA 1985 - 1987. Effects of exercise and stress on the reproductive system of female rats.

New England Regional Primate Research Center, Harvard University, Southborough, MA 1983 - 1988. Research support in a BSL-III biocontainment facility at a regional primate research center.

Teaching

School of Biological Sciences, Illinois State University, Normal, IL

BSC 204.01 Biological Investigations (lecture) 2015-2016; 2019
BSC 286.01 Animal Behavior (lecture) 2014 – 2015; 2017 – 2019
BSC 327.01 Hormones and Behavior (lecture) 2011 – 2016; 2018 – 2019
BSC 420.04 Graduate seminar in Animal Behavior: Proximate Mechanisms 2009, 2010, 2015, 2017, 2019
BSC 420.34 Graduate Seminar in Neurobiology: Genes, Brains, and Behavior 2015
BSC 290.01 Research in Biological Sciences (undergraduate research mentor) 2010 – 2018
BSC 420.04 Graduate seminar in Animal Behavior: Biology of Bird Song 2012
BSC 286.01 Animal Behavior (lecture & lab) 2010 – 2012

Office of Research Ethics & Compliance, Illinois State University, Normal, IL

SOTL-IRB Workshop 2008 (presenter)
Sports Medicine 2008 (guest lecturer)
Qualitative Research in Educational Settings 2008 (guest lecturer)
Research Methodology and Statistics in Education I2007, 2008 (guest lecturer)
Research Design In Education: Issues and Standard Practices 2007, 2008 (guest lecturer)
College of Education, Faculty Orientation, Basics of IRB & Human Subjects Research 2007, 2008
ISU Grant Writing Workshop*:* Research Compliance for Grant Writers 2007, 2008 (instructor)
Teaching Financial Literacy & Social Justice 2007 (guest lecturer)

University of Virginia's Mountain Lake Biological Station, Pembroke, VA

Parasites and Infectious Diseases in Animal Systems 2000 (guest lecturer)

Department of Biology, Indiana University, Bloomington, IN
Endocrinology 1998 (guest lecturer)

Department of Psychology, Johns Hopkins University, Baltimore, MD

Functional Human Neuroanatomy 1996 (Lab instructor)
Animal Behavior 1995 (Teaching assistant)
Brain, Communication, and Evolution 1994 (Teaching assistant)
Behavioral Endocrinology 1993, 1994 (Teaching assistant)
Psychopharmacology 1992, 1993 (Teaching assistant)
Introductory Psychology 1991, 1992 (Instructor), 1995 (Teaching assistant)

Department of Psychology, Villanova University, Villanova, PA
Physiological Psychology 1988, 1989 (Teaching assistant)
Graduate Physiological Psychology 1988 (Lab Instructor)
Introductory Psychology 1987, 1988 (Teaching assistant)

Marlborough High School, Marlborough, MA
Substitute Public High School Teacher 1985-1986

Supervision of Graduate Students as Major Advisor

School of Biological Sciences, Illinois State University, Normal, IL

Elliot Lusk M.S. (in progress). Ectoparasitism and its effects on nestling brain development.

Jocelyn McDonald M.S. (in progress). Ectoparasites, developmental trade-offs, and inflammation.

Cody Scholtens (2015 – 2017). Endocrine mediated neuromodulation of mesolimbic dopamine responses to acoustic social signals.

Aderinsola Odetunde M.S. (2017). Ectoparasitism, incubation, and nestling development in song birds.

Amanda Smith. M.S. (2017). Brain mechanisms of female choice for male song in European starlings.

Jason Hanser M.S. (2015). Factors influencing hatching asynchrony in European starlings.

Leah Eisner-Pryor M.S. (2012). Ectoparasites and developmental stress in nestling birds.

Agnieszka Stadnik M.S. (2009). Permanent, focal, cerebral ischemia and early hypothermia: Relation of behavioral deficits to histological and MRI analyses of neurodegeneration at intermediate time horizons.

Sirinun Pongmayteegul Ph.D. (2009). The role of striatal dopamine in transient, focal, cerebral ischemia-induced neurodegeneration.

Donald Osterling M.S. (2006). Tempol as a neuroprotectant in a model of transient focal cerebral ischemia.

Service

Departmental and University Service

Illinois State University, Biological Sciences, School Faculty Status Committee (SFSC), 2018-present
Illinois State University, Biological Sciences, Graduate Studies Committee, 2019- present
Illinois State University, Biological Sciences, Budget and Finance Committee, 2017-2019
Illinois State University, Biological Sciences, BSC Biosafety Committee 2017-2019
Illinois State University, Biological Sciences Scheduling Committee, member, 2015-2016
Illinois State University, Biological Sciences Space Committee, member, 2015-2016
Illinois State University, Institutional Animal Care & Use Committee, member, 2009-present

Illinois State University, Biological Sciences Seminar Committee, member, 2013-2015
Illinois State University, Phi Sigma, chapter advisor, 2011-2014
Illinois State University, departmental University Research Grant, reviewer, 2009, 2018
Illinois State University, Graduate Research Symposium, judge, 2007
Illinois State University, Undergraduate Research Symposium, judge, 2007
Illinois State University, Radiation Safety Committee, member, 2006-2009
Illinois State University, Institutional Biosafety Committee, member, 2006-2009
Illinois State University, Neuroscience and Behavior Seminar Series, coordinator, 2005-2006
Indiana University, Annual Animal Behavior Society meeting, volunteer, 2002
Indiana University, N.S.F. Research Experiences for Undergraduates, mentor 2001
Indiana University, CISAB internal grant proposal, reviewer, 1998, 2000
Indiana University, CISAB Aviary Oversight Committee, member, 1998-2000
Indiana University, Department of Biology, Graduate admissions reviewer and interviewer 1998, 2000
Mountain Lake Biological Station, N.S.F. Research Experiences for Undergraduates, mentor, 1999, 2000
Mountain Lake Biological Station, Liaison to AmeriCorps and the Mt. Lake Wilderness Conservancy, 2000
Johns Hopkins University, Psychology Graduate Program Steering Committee, member, 1991-1997

Professional Service

Judge: Best Student Presentation in the Division of Comparative Endocrinology, Annual SICB meeting (2010 – 2014; 2016 – 2019)

Organizer: Best Student Presentation Judging in the Division of Comparative Endocrinology, Annual SICB meeting (2011 - 2012)

Guest Editor: Perspectives in Neuroscience, a quarterly publication for continuing medical education. Spinal manipulation. (Spring 2005)

Committee Member: Neurosurgical Residency Program Admissions Committee, BroMenn Medical Center (2004 - 2007)

Guest Editor: Perspectives in Neuroscience, a quarterly publication for continuing medical education. Image-guided robotic radiosurgery: The cyberknife. (Fall 2003)

Chairperson: Central Illinois Neuroscience Foundation Research Committee (2003 - 2008)

Peer Review of Manuscripts for: Acta Ornithologica; American Naturalist; Auk; Behavioral Ecology; Behavioral Ecology and Sociobiology; Behavioural Brain Research; Biological Reviews; Biology Letters; Current Zoology; Evolution; Frontiers in Zoology; Functional Ecology; General and Comparative Endocrinology; Hormones and Behavior; Journal of Animal Ecology; Journal of Avian Biology; Journal of Ethology; Journal of Experimental Biology; Journal of Evolutionary Biology; Journal of Field Ornithology; Journal of Ornithology, Neuroscience; Oecologia, Peer J, Physiology & Behavior; Proceedings of the National Academy of Science, USA; Proceedings of the Royal Society of London B.

Public Outreach

Volunteer Surveyor, John Wesley Powell Audubon Society 2018 Christmas Bird Count, McLean County, Illinois. (December 15, 2018).

Host-garden participant, 20th Annual Glorious Garden Festival (a.k.a. David Davis Mansion Garden walk), Bloomington/Normal, IL. (June 2016).

Guest Speaker, Cub Scout Pack 93, Normal, IL, *Biology and Conservation of Birds* 11 Mar. 2014.

Guest Expert, *Uncommon Knowledge*, a public radio program that explains everyday scientific concepts with a light but rooted-in-science approach.

Snot: 13 Aug. 2007.

Ice Cream Headache: 29 Oct. 2007

Professional Society Affiliations

American Ornithologists Union
Association of Field Ornithologists
Faculty for Undergraduate Neuroscience
Society for Behavioral Neuroendocrinology
Society for Neuroscience
Animal Behavior Society
Cooper Ornithological Society
Illinois State Academy of Sciences
Society for Integrative & Comparative Biology
Wilson Ornithological Society