

CURRICULUM VITAE

Gregory F. Ball, Ph.D.

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Major Research Interests

Neuroethology of Vocal Production and Perception
Biological Basis of Reproductive Behavior
Environmental and Neuroendocrine Regulation of Seasonal Changes in the Brain and Behavior
Comparative Neuroanatomy and Neuroendocrinology

Education

Columbia College, Columbia University, New York, N.Y.
B.A., Psychology 1977

Institute of Animal Behavior, Rutgers University, Newark, N.J.
Ph.D., Psychobiology 1983
Thesis advisor: Prof. Colin G. Beer

Rockefeller University, New York, N.Y.
Postdoctoral Fellow, Comparative Neuroendocrinology & Ethology 1983-86
Post-doctoral advisors: Prof. John C. Wingfield; Prof. Peter R. Marler

Continuing Education: Professional Development

Fellow, Executive Leadership Academy, Center for Studies in Higher Education,
Goldman School of Public Policy, University of California, Berkeley CA July, 2019

Positions Held and Professional Experience (1977 to present)

Current position

Professor, Department of Psychology, University of Maryland, College Park, MD (10/1/2014 to present)

Affiliated Professor, Department of Biology, University of Maryland, College Park, MD (10/1/2014 to present)

Secondary appointment, Professor, Department of Neurobiology University of Maryland School of Medicine, Baltimore, MD (April 1, 2026 to present).

Faculty, Program in Neuroscience and Cognitive Science (NACS), University of Maryland, College Park, MD 10/1/2014 to present

Professor Emeritus, Department of Psychological and Brain Sciences, Johns Hopkins University, Baltimore, MD (10/1/2014 to present)

Past Experience

Vice President for Research, University of Maryland, College Park; University of Maryland, Baltimore (2/1/22 to July 1, 2025)

Dean, College of Behavioral and Social Sciences, University of Maryland, College Park, MD (10/1/2014 to 1/30/22)

Professor, Department of Psychological & Brain Sciences, Johns Hopkins University, 7/1/98 to 9/30/2014
(formerly called Department of Psychology)

Vice-Dean for Science and Research Infrastructure, Krieger School of Arts and Sciences, Johns Hopkins University 8/1/2010 to 9/30/2014

Director, Undergraduate Neuroscience Program Committee, Krieger School of Arts and Sciences, Johns Hopkins University 9/1/2000 to 9/30/2014

Joint appointment: Professor, Department of Biochemistry and Molecular Biology, Division of Reproductive Biology, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD 11/1/98 to 10/1/2014

Joint appointment: Professor, Department of Neuroscience, School of Medicine, Johns Hopkins University, Baltimore, MD 1/15/2000 to 10/1/2014

Dean of Research and Graduate Education, Krieger School of Arts and Sciences, Johns Hopkins University 7/1/2008 to August 1, 2010

Co-Director, Undergraduate Behavioral Biology Program, Krieger School of Arts and Sciences, Johns Hopkins University (1994 to 2010)

Special Assistant to the Dean of Research and Graduate Studies, Krieger School of Arts and Sciences 7/1/2007 to 6/30/2008

Acting Chair, Department of Psychological and Brain Sciences, Johns Hopkins University 9/1/2003 to 8/31/2004

Associate Professor, Department of Psychology, Johns Hopkins University, Baltimore, MD 7/1/94 to 6/30/98

Visiting Scientist, Laboratoire de Biochimie, Unité de Recherches en Neuroendocrinologie du Comportement, Université de Liège, Liège, Belgium Feb-April, 1997

Joint appointment: Assistant/Associate Professor, Division of Reproductive Biology, Department of Population Dynamics, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, MD 1/1/94 to 11/1/98

Assistant Professor, Department of Psychology, Johns Hopkins University, Baltimore, MD 7/1/91 to 6/30/94

Assistant Professor, Department of Psychology, Boston College, Chestnut Hill, MA 9/1/88 - 7/1/91

Adjunct Assistant Professor, Rockefeller University, New York, NY 1/1/89-12/31/89

Visiting Scientist, AFRC Research Group on Photoperiodism and Reproduction, Department of Zoology, University of Bristol, Bristol, U.K. 2/1-4/1/1988; 6/1-7/1/1991

Assistant Director, Rockefeller University Field Research Center, Millbrook, New York, 9/1/86 - 1/1/89

Assistant Professor, Rockefeller University, New York, N.Y. 4/15/86 - 1/1/89

U.S.P.H.S. Post-doctoral fellow, Rockefeller University, New York, 1983-86

Graduate assistant and coadjutant, Institute of Animal Behavior, Rutgers University, Newark, N.J. 1977-1983

Research assistant, Department of Psychology, Barnard College, Columbia University, New York, 1977

Summary of Administrative Experience and Accomplishments at Johns Hopkins

I Administrative duties and responsibilities as a faculty member

Starting as a junior faculty member at Johns Hopkins and throughout my career there, I sequentially served as coordinator of three undergraduate majors: Psychology, Behavioral Biology and Neuroscience. I was part of the committee that first organized the undergraduate neuroscience major in the mid-1990s. I first became involved in administration at the campus level when I was elected to the Academic Council of the Homewood Schools at Johns Hopkins shortly after my appointment as a tenured full professor in 1998. The Academic Council is a committee of 12 professors that is advisory to the president, the provost and the deans and decides on academic policy and all appointments and promotions in the Krieger School of Arts and Sciences (KSAS) and the Whiting School of Engineering (the two schools on the Homewood Campus at Hopkins).

II Administrative responsibilities in the Dean's Office, Krieger School of Arts and Sciences

Shortly after the end of my term on the Council, Adam Falk then the dean of KSAS, asked if I would consider serving as dean of research and graduate education in the Krieger School. He asked me to serve as special assistant to the dean in 2007 to facilitate the transition and then I became the full-time dean of research and graduate education in 2008. I served in this position until 2010 when Falk left Hopkins to become president of Williams College. Katherine Newman from Princeton was then named dean of the Krieger School of Arts and Sciences and she re-organized the Dean's Office and asked me to serve as vice dean for science and research infrastructure. I had this position from 2010 until I left for the University of Maryland in 2014.

III Notable achievements while working the Dean's Office, Krieger School of Arts and Sciences

One of my major accomplishments as vice dean at Hopkins was to shepherd through the financing and construction of a major new \$64 million, science education and research building (105,000 sq ft) that was completed on time and on budget. This building, dedicated primarily to undergraduate laboratory science education, was completed in the fall of 2013 and opened for business early in 2014. I also gained extensive experience with development while at Hopkins. I have been involved in soliciting major gifts since I started in the KSAS Dean's Office. My experience in this regard was diverse including development trips both here in the US and abroad. For example, I participated in a trip with a small leadership group that worked toward developing a Hopkins alumni network in Seoul and Singapore.

Johns Hopkins is a highly de-centralized university, so many responsibilities that, at other universities are held centrally, are managed at the division level at Hopkins. The School of Arts and Sciences at Hopkins had, during my time there, approximately 3,400 undergraduate students and about 1,000 full-time graduate students, 22 departments and approximately 290 tenure track faculty. The overall budget was approximately \$250 million. During my entire career in the Dean's Office from 2005 to 2014 I was involved in most of the major decisions made by the dean, both financial and academic. I have experience from that time with faculty recruiting and retention, graduate program administration and reform, undergraduate program development and reform and a variety of administrative policies including those related to conflict of interest and human subject protections. I worked closely with the other divisions of the university, routinely organizing joint efforts with the School of Engineering, School of Medicine and the School of Public Health at Hopkins.

Summary of Administrative Experience and Accomplishments at the University of Maryland, College Park

I Dean of the College of Behavioral and Social Sciences (BSOS)

Responsibilities as Dean of BSOS

I arrived at the University of Maryland, College Park to take the position of dean of the College of Behavioral and Social Sciences (BSOS) as of October 1, 2014. I assumed responsibility for one of the largest colleges at the University of Maryland. During my time of leadership BSOS had ten departmental units and four centers that report to the dean. The college has approximately 5,000 undergraduate majors and more than 800 masters and doctoral students. It is also home to four of the university's most popular undergraduate majors: criminology and criminal justice, psychology, government and politics, and economics. Approximately 1600 undergraduates graduate with BSOS degrees each year. Based on majors, BSOS is the second largest college at UMD; based on graduates, it is number one. The student placement rate post-graduation is about 93%. At present there are 742 faculty and staff that implement the mission of BSOS. This includes 191 tenure track faculty, 88 teaching professional track faculty, 94 research professional track faculty, 218 other professional track faculty and 151 staff. The College has an overall research budget based on outside federal grants and contracts of approximately \$50 million. The total budget of the college is approximately \$105 million.

Select accomplishments as Dean of BSOS

I, as dean, with my college administrative team managed appointments, promotions and retentions of all faculty and staff. We worked with the departmental leadership to ensure excellence in undergraduate and graduate education and to support and promote research. In terms of undergraduate programs, while I was dean, we developed a new joint undergraduate major in neuroscience with CMNS that launched in the fall of 2020. We integrated modern data science methods into the methods courses of three of our four largest majors and developed a new major proposal in social data science (joint with the iSchool) that is going through the approval process now. Two new BS programs have been developed during my term (one in anthropology and one in economics). In the fall of 2020, we launched the Feller Center for Academic Advising and Career Planning based on a \$4 million gift from alumni Joel and Kim Feller. This center will transform our ability to guide and support students as they search for career opportunities.

Developments in graduate education include our redoubled efforts to help our graduate students win NSF graduate fellowships. The associate deans for research and graduate education (Jeff Lucas and now Jean McGloin) have organized workshops in grant writing for NSF fellowships. BSOS graduate students have received 34 NSF Graduate Research Fellowships in the last six years. We offer a summer methods program to prepare students for graduate level statistics and programming. We have developed a series of professional master's programs and 4+1 programs. These include masters in geospatial information sciences and geospatial intelligence. A GIS joint master's program was established with Nanjing Normal University in China.

Progress in research can be measured in several ways. One straightforward way is research activity based on funds awarded. UMD as a whole is, based on the most recent NSF analyses, ranked 7th nationally in the dollar amount of research awards in the social sciences. Although

not all this funding at College Park is based on work in BSOS most of it is. If one looks at specific funding sources, total awards from HHS and NASA to BSOS have increased 95% and 60% respectively since 2014. We have also established new research centers including a GIS center; a remote sensing center, the Maryland Cochlear Implant Center of Excellence, the Center for Democracy and Civic Engagement, the Social Data Science Center (SODA) as well as being one of the lead colleges in establishing the Brain and Behavior Institute. I have also been supporting enhancing facilities related to our college mission such as the new site on River Road for Department of Geographical Sciences that has just opened and the new Feller Center for Advising and Career Development that is in enlarged and newly renovated space on the second floor of Tydings Hall.

Another important responsibility, I took on, is managing a development team. BSOS has a very active Board of Visitors that provides strong support for the College. We met our fundraising goal every year since I arrived as Dean in 2014. In the last fiscal year, when I was Dean, we attained our campaign goal of \$56 million well before the scheduled end of the campaign in December 2021.

Summary of Administrative Experience and Accomplishments at the University of Maryland, College Park:

II Vice President for Research at the University of Maryland, College Park and the University of Maryland, Baltimore

As my second 5-year term as Dean of BSOS was winding down the position of Vice President for Research which is joint at the University of Maryland, College Park and UM Baltimore became available due to the recruitment of Laurie Locasio to be Director of NIST. I was appointed to the VPR position as of February 1, 2022 for a 3 year term that has now ended. When I was VPR I served two campuses, I served as Vice President for Research (VPR) at the University of Maryland, College Park (2/3rd time) and the University of Maryland, Baltimore (1/3rd time). As VPR I manage research administration (pre and post award as well as all aspects of compliance), research development (e.g., provide project managers for large grant proposals) and innovation (intellectual property, the research park and spin off companies) at the College Park campus of UMD. My duties at Baltimore especially focused on promoting collaborations between the two campuses by supporting large joint grant proposals and fostering collaborations between the campuses via seed grant programs such as those sponsored by the Mpower program, a state funded program designed to support the strategic partnership we have between the two universities of a more translational and clinical nature. I had a successful term as VPR. I list below some of the highlights of the achievements attained by the Division of Research during my term.

VPR ACHIEVEMENT HIGHLIGHTS:

- Achieved record high total research awards for the University of Maryland College Park (\$834M in FY23)
- Secured highest research contract in the history of the University of Maryland College Park: \$500M IDIQ Department of Defense contract for the Applied Research Laboratory for Intelligence & Security (ARLIS)

- Attained highest ranking ever for innovation & entrepreneurship for the University of Maryland College Park, Top 5 Colleges for Entrepreneurship by Entrepreneur Magazine and Princeton Review in 2024
- Finalized a 5-year, \$388M cooperative agreement from the National Oceanic & Atmospheric Administration (NOAA), awarded to the Cooperative Institute for Satellite Earth System Studies (CISESS) in 2024
- Secured a 5-year, \$78.2M cooperative agreement with the Army Research Lab to spearhead the Data Driven Engineering Research (DataDrivER) program in 2023
- Signed a \$95M NASA cooperative agreement to support Earth system science & global sustainability in 2022
- Fostered and facilitated collaborator status to the JHU-UMB Clinical Translational Science Award and UMB's Institute for Clinical & Translational Research (ICTR) environment to provide funding opportunities to College Park faculty that better position and prepare them for future NIH funding
- Provided support for the establishment of the Office of Research Security at UMB
- Launched Research Security Office and new inTERP software system for research compliance at UMCP
- Merging the REDCap software system to support clinical research at both UMB and UMCP
- Partnered with Provost on successful launch of \$30M Grand Challenges Grants program, and have already secured \$25M+ in external research awards to further support 50 cross-disciplinary projects

VPR Achievements: By the Numbers:

- 18% increase in research expenditures as reported to the NSF HERD survey for University of Maryland Baltimore + College Park (\$1.1B to \$1.4B)
- 23% increase in research awards for University of Maryland College Park from FY22 - FY23 (\$677M to \$834M)
- 29% increase in patents for University of Maryland College Park (52 in FY22 to 67 in FY24)
- 93% increase in licenses/options for University of Maryland College Park (14 in FY22 to 27 in FY24)
- 233% increase in startups for University of Maryland College Park (3 in FY22 to 10 in FY24)
- 60% increase in patent reimbursements for University of Maryland College Park (\$538K to \$858K)
- 315% increase in total income including stock sale for University of Maryland College Park (\$1.4M to \$5.9M)
- 180% increase in Maryland Innovation Initiative Awards for UMCP (\$890K to \$2.5M)

Awards & Honors

Graduate Student Government Award for Graduate Research Excellence, Rutgers University, 1982
Elective Member, American Ornithologists' Union, 1992
David S. Olton Award for Excellence in the Sponsorship of Undergraduate Research, Johns Hopkins 1994
Johns Hopkins Alumni Association Award for Excellence in Teaching, 1995
Raymond D. Fowler Award of the American Psychological Association of Graduate Students for excellence in student mentoring. 1995
George E. Owen Teaching Award. Presented by the senior class at Johns Hopkins in recognition of outstanding teaching and devotion to undergraduates. 1999
Fellow, American Psychological Association (Division 6, Behavioral Neuroscience & Animal Behavior), 2002
Fellow, American Ornithologists' Union, 2005
National Academic Advising Association (NACADA) Region 2 (Mid-Atlantic) Outstanding Academic Advising Award Winner, 2006
President-Elect, Society for Behavioral Neuroendocrinology, 2006-2008
Fellow, American Psychological Society, 2009
President, Society for Behavioral Neuroendocrinology, 2009-2011
Past-President, Society for Behavioral Neuroendocrinology, 2011-2013
Commencement Speaker, Rutgers-Newark, Graduate graduation ceremony 2013
Fellow, American Association for the Advancement of Science, 2014
Higher Education Power List, 2023 The Daily Record, Baltimore MD
American Ornithological Society, Elliott Coues Award (with Jacques Balthazart) for outstanding contributions to Ornithological Research 2023 (see *Ornithology*, Volume 140, Issue 4, 5 Oct 2023)
Society of Behavioral Neuroendocrinology Daniel S Lehrman award for lifetime achievement in Behavioral Neuroendocrinology 2023
Donald S. Farner Medal for Excellence in Research in the Field of Avian Endocrinology 2024
Awarded at the International Symposium on Avian Endocrinology, Meerut, India (see Journal of Neuroendocrinology 2024 <https://doi.org/10.1111/jne.13436>)

Past Fellowship/Grant Support

Research Grant from the Frank M. Chapman Fund of the American Museum of Natural History, NY, 1981
U.S.P.H.S. Postdoctoral Research Fellowship 1983-1986
Charles H. Revson Foundation Fellowship in Biomedical Research 1986-88
Whitehall Foundation Grant-in-Aid, 1986-87
National Geographic Grant, Co-PI 1987
NATO Collaborative Research Grant (with Jacques Balthazart, University of Liège, Belgium), 1991-1993
NATO Collaborative Research Grant (with Jacques Balthazart, University of Liège, Belgium), 1993-1997
NATO Collaborative Research Grant (with Jacques Balthazart, University of Liège, Belgium), 1997 to 1999. These grants supported travel only.

PI for Grant from the National Science Foundation to cover travel costs for US participants to the International Symposium on Avian Endocrinology, Edinburgh UK 1992

Research Grant from the National Science Foundation, Program in Neuroendocrinology. Title: Neuroendocrine Integration of Environmental Information Role: PI; Award Period 6/1/1994 to 5/31/1996.

Research Grant from the National Science Foundation. Title: Neuroendocrine integration of environmental information. Role: PI; Award Period: 6/1/96 to 5/31/99

Research Grant from the National Institute of Mental Health (R01 MH 50388). Title: Steroid-catecholamine interactions and behavior (later titled Genomic and non-Genomic effects of steroid hormones on social behavior). Role: PI; Award Period: 7/1/93 to 6/30/98; 7/1/98 to 6/30/03; 7/1/03 to 6/30/08; 7/1/08 to 6/30/2013

Research Grant from the National Institute of Neurological Disorders and Stroke. Title: Seasonal plasticity in steroid-sensitive neural circuits. Role: PI; Award Period: 8/8/97 to 6/30/02

Research Grant from the National Science Foundation. Title: Melatonin and the neuroendocrine regulation of birdsong. Role: PI; Award Period: 8/1/99 to 7/30/03

Research Grant (R01) from the National Institute of Neurological Disorders and Stroke. Title: Seasonal plasticity in steroid-sensitive neural circuits. Role: PI Award Period: 7/1/03 to 6/30/13

Research Grant (IUAP program) from the Belgian Science Policy Office, Belgium; Title: Hormones and neuroplasticity: image guided discoveries of molecular mechanisms in neuroplasticity. Role: Collaborator. Award Period: 10/1/2012-12/30/17

Research Grant (R01 MH 50388) from the National Institute of Mental Health. Title: Genomic and non-genomic effects of steroid hormones on social behavior. Role: PI Award Period: 7/15/13 to 03/30/20.

Research grant (R01 NS 104008) from the National Institute of Neurological Disorders and Stroke. Title: Steroid Hormone Regulation of Brain Plasticity and Vocal Behavior. Role: PI Proposed budget period: 6/01/2018 – 3/30/23.

Publications

Books

Balthazart, J. and Ball, G.F. (eds) (2012) Brain Aromatase, Estrogens, and Behavior, New York: Oxford University Press, 560 pages.

Special Issues of Journals Edited

Journal of Chemical Neuroanatomy: Chemical Neuroanatomy of Birdsong. Edited by Gregory F. Ball and Jacques Balthazart Volume 39, Issue 2, Pages 67-150 (March 2010)

Frontiers in Neuroendocrinology: Seasonal Changes in the Neuroendocrine System Edited by Gregory F. Ball; Volume 37, Pages 1-168 (April 2015)

Journal articles and review chapters; (Total number of publications 335; H Index = 88; i10 index 297 total citations 30,000+ Google scholar)

1. Cheng, M.-F., M. Porter, and G. Ball (1981) Do ring doves copulate more than necessary for fertilization? Physiology and Behavior 27: 659-662

2. Ball, G.F. (1982) Barn swallow fledgling successfully elicits feeding at a non-parental nest. Wilson Bulletin 94:362-363
3. Ball, G.F. and R. Silver (1983) Timing of incubation bouts by ring doves (*Streptopelia risoria*). Journal of Comparative Psychology 97: 213-225
4. Ball, G. F. (1983) Functional incubation in male barn swallows. Auk 100,: 998-1000
5. Silver, R., H. Andrews, and G.F. Ball (1985) Parental care in an ecological perspective:a quantitative analysis of avian subfamilies. American Zoologist 25: 823-840
6. Ball, G.F. and J.C. Wingfield (1987) Changes in plasma levels of luteinizing hormone and sex steroid hormones in relation to multiple-broodedness and nest site density in male starlings. Physiological Zoology 60:191-197
7. Sims, E., G.F. Ball, and M.-F. Cheng (1987) Sperm competition after sequential mating in the ring dove. Condor 89: 112-116
8. Wingfield, J.C., G.F. Ball, A.M. Duffy, and R.E. Hegner & M. Ramenofsky (1987) Testosterone and aggression in birds; tests of the "challenge" hypothesis. American Scientist, 75:602-608.
9. Ball, G.F., P.L. Faris, B.K. Hartman, & J.C. Wingfield (1988) Immunohistochemical localization of neuropeptides in the vocal control regions of two songbird species, Journal of Comparative Neurology, 268:171-180.
10. Marler, P., S. Peters, G.F. Ball, A.M. Duffy, and J. C. Wingfield (1988) The role of sex steroids in the acquisition and production of birdsong, Nature, 336:770-773.
11. Sherwood, N.M., J.C. Wingfield, G.F. Ball, and A.M. Duffy (1988) Identity of GnRH in passerine birds: Comparison of GnRH in song sparrow (*Melospiza melodia*) and starling (*Sturnus vulgaris*) with 5 vertebrate GnRHs, General and Comparative Endocrinology, 69:341-351.
12. Ball, G.F., P. L. Faris, and J.C. Wingfield, (1989) Immunohistochemical localization of Corticotropin-releasing factor in selected brain areas of the European starling (*Sturnus vulgaris*) and the song sparrow (*Melospiza melodia*), Cell and Tissue Research 257:155-161.
13. Ball, G.F., A. Foidart, and J. Balthazart (1989) A dorsomedial subdivision within the nucleus intercollicularis is identified in the Japanese quail (*Coturnix coturnix japonica*) by α_2 -adrenergic receptor autoradiography and estrogen receptor immunohistochemistry. Cell and Tissue Research 257:123-128.

14. Ball, G.F., B. Nock, B.S. McEwen, and J. Balthazart (1989) Distribution of α_2 - Adrenergic receptors in the brain of the Japanese Quail as determined by quantitative autoradiography: Implications for the control of sexually dimorphic reproductive processes. Brain Research, 491:68-79.
15. Balthazart, J. and G. F. Ball (1989) Effects of the noradrenergic neurotoxin DSP-4 on luteinizing hormone levels, catecholamine concentrations, α_2 -adrenergic receptor binding, and aromatase activity in the brain of the Japanese quail, Brain Research 492:163-175.
16. Balthazart, J, G.F. Ball, and B.S. McEwen (1989) An autoradiographic study of α_1 adrenergic receptors in the brain of the Japanese quail. Cell and Tissue Research 258: 563-568.
17. Johnson, A.E., H. Coirini, G.F. Ball, and B.S. McEwen (1989) Anatomical localization of the effects of estradiol-17 β on oxytocin receptor binding in the ventromedial hypothalamic nucleus. Endocrinology 124:207-211.
18. Johnson, A.E., G.F. Ball, H. Coirini, C.R. Harbaugh, B.S. McEwen, and T. R. Insel (1989) Time-course of the estradiol-dependent induction of oxytocin receptor binding in the ventromedial hypothalamic nucleus of the rat. Endocrinology 125:1414-1419.
19. Nowicki, S. and G.F. Ball (1989) Testosterone induction of song in photosensitive and photorefractory male sparrows. Hormones and Behavior 23: 514-525.
20. Silver, R. and G.F. Ball (1989) Brain, hormone, and behavior interactions in avian reproduction: status and prospectus. Condor 91:966-978.
21. Ball, G.F. (1990) Chemical neuroanatomical studies of the steroid sensitive songbird vocal control system: A comparative approach. In: Comparative Physiology, vol 8 Hormones, Brain, and Behaviour in Vertebrates 1: Sexual Differentiation, Neuroanatomical Aspects, Neurotransmitters and Neuropeptides., Karger, Basel Jacques Balthazart (ed). pp. 148-167.
22. Ball, G.F. and J. Balthazart (1990) Steroid modulation of muscarinic cholinergic and α_2 - adrenergic receptor density in the nucleus intercollicularis of the Japanese quail. European Journal of Neuroscience, 2: 828-835.
23. Ball, G.F., B. Nock, J.C. Wingfield, B.S. McEwen, and J. Balthazart (1990) Muscarinic cholinergic receptors in the songbird and quail brain: a quantitative autoradiographic study. Journal of Comparative Neurology. 298: 431-442.
24. Ball, G.F. and S. Nowicki (1990) Differences in song quality in photorefractory and photosensitive song sparrows. Animal Behaviour. 40:986-987.
25. Böhner, J., M. Chaiken, G.F. Ball, and P. Marler (1990) Song acquisition in photosensitive and photorefractory male European starlings. Hormones and Behavior, 24:582-594.

26. Wingfield, J.C., R.E. Hegner, A.M. Dufty, Jr. and G.F. Ball (1990) The "challenge hypothesis": theoretical implications for patterns of testosterone secretion, mating systems, and breeding strategies of birds. American Naturalist, 136:829-846.
27. Ball, G.F. (1991) Endocrine Mechanisms and the Evolution of Avian Parental Care Acta XX Congressus Internationalis Ornithologici: 984-997.
28. Balthazart, J., P. Sante, and G. F. Ball (1991) Testosterone effects on staining density and autoradiographic investigations of the α_2 -Adrenergic Receptor in the Medial Preoptic Nucleus of the Japanese Quail: Relationship to the Activation of Reproductive Behavior, Archives Internationales de Physiologie et de Biochimie. 99: 385-392.
29. Ketterson, E.D., V. Nolan Jr., L. Wolf, C. Ziegenfus, A.M. Dufty Jr. G.F. Ball and T. S. Johnsen (1991) Testosterone and avian mating systems: The effect of experimentally elevated testosterone on corticosterone, body mass, and annual survivorship of dark-eyed juncos, Hormones and Behavior, 25: 489-503.
30. Wieraszko, Andrzej and G.F. Ball (1991) Long-term enhancement of synaptic responses in the songbird hippocampus, Brain Research, 538:102-106.
31. Balthazart, J., A. Foidart, E. M. Wilson and G. F. Ball (1992) Immunocytochemical localization of androgen receptors in the male songbird and quail brain. Journal of Comparative Neurology, 317: 407-420.
32. Balthazart, J. and G.F. Ball (1992) Is dopamine interacting with aromatase to control sexual behavior in male quail? Poultry Science Reviews, 4: 217-233
33. Balthazart, J., and G.F. Ball (1993) Neurochemical differences in two steroid sensitive areas mediating reproductive behaviors. Advances in Comparative and Environmental Physiology. 15: 133-161 R. Gilles (Ed), Springer-Verlag, Berlin
34. Wieraszko, A. and G.F. Ball (1993) Long-term potentiation in the avian hippocampus does not require activation of the N-methyl-D-aspartate (NMDA) receptor. Synapse 13: 173-178.
35. Ball, G.F. (1993) The neural integration of environmental information by seasonally breeding birds. American Zoologist, 33: 185-199.
36. Bernard, D.J., J.M. Casto and G.F. Ball (1993) Sexual dimorphism in the volume of song control nuclei in European starlings: Assessment by a Nissl stain and autoradiography for muscarinic cholinergic receptors. Journal of Comparative Neurology, 334: 559-570.
37. Ball, G.F., D.J. Bernard and J.M. Casto (1993) Neurochemistry of the avian vocal control circuit: Hormonal modulation and sex differences. Poultry Science Reviews, 5: 15-27

38. Ball, G.F., J.M. Casto, and D.J. Bernard (1994) Sex differences in the volume of avian song control nuclei: Comparative studies and the issue of brain nucleus delineation. Psychoneuroendocrinology, 19: 485-504.
39. Casto, J.M, and G.F. Ball (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.
40. Ball, G.F. (1994) Neurochemical specializations associated with vocal learning and production in songbirds and budgerigars. Brain, Behavior and Evolution. 44: 234-246.
41. Balthazart, J., P. Absil, V. Fiasse and G.F. Ball (1994) Effects of the aromatase inhibitor R76713 on sexual differentiation of brain and behavior in zebra finches. Behaviour 131:225-260.
42. Balthazart, J. and G.F. Ball, (1995) Sexual differentiation of brain and behavior in birds. Trends in Endocrinology and Metabolism 6: 21-29.
43. Moffatt, C.A., G.F. Ball, and R. J. Nelson (1995) The effects of photoperiod on olfactory c-fos expression in prairie voles, *Microtus ochrogaster*. Brain Research, 677: 82-88.
44. Ball, G.F., P. Absil, and J. Balthazart (1995) Peptidergic delineations of nucleus interface reveal a sex difference in volume. Neuroreport, 6: 957-960
45. Balthazart, J., J. Reid, P. Absil, A. Foidart and G.F. Ball (1995) Appetitive as well as consummatory aspects of male sexual behavior in quail are activated by androgens and estrogens. Behavioral Neuroscience, 109:485-501
46. Hahn, T.P. and G.F. Ball (1995) Changes in brain GnRH associated with photorefractoriness in house sparrows (*Passer domesticus*). General and Comparative Endocrinology, 99: 349-363.
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366. Ball, G.F. and Balthazart, J. (2021) Evolutionary neuroscience: Are the brains of birds and mammals really so different? Current Biology 31:R840-R842

Doctoral Dissertation

Evolutionary and Ecological Aspects of the Sexual Division of Parental Care in Barn Swallows. 1983, Institute of Animal Behavior, Rutgers University, Newark, N.J.

Conference Presentations & Published Abstracts (Total number over 300; they are not listed here)

Teaching Experience

Teaching Experience, Department of Psychology, Rutgers University, Newark, N.J. (1978-1981)

Introductory Psychology 1978, 1980 (full responsibility)

Physiological Psychology 1981 (assistant)

Teaching Experience, Department of Psychology, Boston College, Chestnut Hill, MA (1989-1991)

Introductory Psychology I (Experimental Psychology and Behavioral Neuroscience)
Evolution of Behavior (Advanced undergraduate)
Psychobiology of Reproduction (Graduate level)
Introduction to Neuroscience (Advanced undergraduate taught jointly with the biology department)

Teaching Experience, Department of Psychology, Johns Hopkins University, Baltimore, MD (1991 to 2014)

Undergraduate

Brain, Communication & Evolution (Upper level course)
Introduction to Psychology
Mechanisms of Animal Behavior
Comparative Animal Behavior
Animal Learning & Cognition
Approaches to
Neuroscience III: Systems Neuroscience
Behavioral Endocrinology (Upper level course)
Psychology
Animal Behavior
Senior Capstone Seminar in Behavioral Biology (Upper level course)

Graduate

Biopsychology Proseminar
Behavioral Ecology
Neural Circuits and Behavior
Biological Rhythms and Behavior
Birds and Words: Comparative
Vocal Learning
Fundamentals of Experimental
PBS Core Topics A

Teaching Experience at University of Maryland College Park 2014 to present

As Dean and then Vice President I had no formal teaching requirements at the University of Maryland however I regularly give 1 or 2 guest lectures per semester in classes I had experience with teaching at Johns Hopkins such as Behavioral Endocrinology and Animal Behavior

Other Teaching Activities (1995 to 2013)

Endocrinology Section for 1st year medical students at the JHU School of Medicine - 1 lecture on the sexual differentiation of the brain (1997-2000)
Human Sexuality Course for 1st year medical students at the JHU School of Medicine - 1 lecture every year on the CNS and Sexuality in Humans (1995 to 2009).
Biology of Memory Course, Cold Spring Harbor Laboratory, New York - 1 lecture every two years on "Ethological Approaches to Learning and Memory". (1996 – 2002)
Neurocognition and Behavior I/II, Neuroscience Program JHU School of Medicine – 1 lecture every year on "Bird song". (2004 to 2013).
Neurocognition and Behavior II, Neuroscience Program, JHU School of Medicine – 1 lecture every year "The Neuroendocrinology of Sexual Behavior". (2005 to 2013).

Training Record at JHU: Graduate Students and Post-doctoral Fellows

Pre-doctoral students, sole advisor

<u>Name</u>	<u>Degree Date</u>	<u>Current Position</u>
Dr. Daniel J. Bernard	PhD, 1995	Professor, McGill University School of Medicine, Dept of Pharmacology and Therapeutics
Dr. Joseph M. Casto	PhD, 2001 JHU	Associate Professor of Behavioral Biology, School of Biological Sciences, Illinois State University, Normal, IL
Dr. Deborah Duffy	PhD, JHU 2001	Director for Institutional Research and Planning, Thomas Edison State University, Trenton NJ
Dr. Jennifer Sartor	PhD, JHU, 2004, post-doc JHU 2004 to 2006	Chief Compliance Officer and Special Projects Executive, Advanced Reconstructive Surgery Alliance, Columbia MD
Dr. Christina Castelino	PhD, 2006 JHU	Senior Medical Writer at ETHOS Health Communications
Dr. Hayley Kleitz-Nelson	PhD, 2010,	Assistant Professor of Psychology, Delaware County Community College
Dr. Tyler Stevenson	PhD, 2011,	Professor of Physiology, University of Glasgow, Glasgow Scotland, UK
Dr. Melvin Rouse	PhD 2014	Associate Professor, Psychology University of Puget Sound, Tacoma, WA
Dr. Onur Iyilicki	PhD, JHU 2015	Assistant Professor Koc University, Istanbul Turkey
Dr. Beau Alward	PhD, JHU 2015,	Assistant Professor, Integrative Biology and Physiology, UCLA, Los Angeles, CA

Pre-doctoral students, co-advisor

<u>Name</u>	<u>Degree Date</u>	<u>Current Position</u>
Dr. Karyn M. Frick (Co-advised with Prof. Olton)	PhD, 1996	Professor, Dept of Psychology University of Wisconsin, Milwaukee
Dr. Scott A. MacDougall-Shackleton (Co-advised with Prof. Hulse)	PhD, 1997	Professor, Dept of Psychology University of Western Ontario, Canada

Dr. Timothy Q. Gentner
(Co-advised with Prof. Hulse)

PhD, 1998 Associate Professor, University of
California, San Diego, Dept of Psychology

Post-doctoral fellows

<u>Name,</u>	<u>Date in Lab</u>	<u>Current Position</u>
Dr. Thomas Hahn,	1994-96	Professor, Neurobiology, Physiology & Behavior University of California, Davis
Dr. Lauren Ritters,	1998 to 2000	Professor, Dept. of Zoology University of Wisconsin, Madison
Dr. George Bentley,	1996 to 2000	Professor, Dept of Integrative Biology, Univ of California, Berkeley
Dr. Catherine Auger,	1999 to 2003	Coordinator, Neurobiology Major Univ of Wisconsin, Madison
Dr. Donna Maney,	1999 to 2003,	Professor, Dept of Psychology Emory University, Atlanta, GA
Dr. Keith Sockman,	2001 to 2004	Associate Professor, Dept of Biology Univ of North Carolina
Dr. Charlotte Cornil,	2005 to 2007	Tenured Research Scientist, University of Liege, Belgium
Dr. Kathleen Lynch,	2005 to 2009	Associate Professor, Dept of Biology, Hofstra University, Hempstead, NY
Dr. Takashi Yamamura,	2006 to 2010	Senior Researcher, Division of Animal Breeding and Reproduction Research; National Agriculture and Food Research Organization Institute of Livestock and Grassland Sciences, Tsukuba Japan
Dr. Farrah Madison	2009 post-doc,	Assistant Professor Department of Integrative Biology University of Wisconsin, Madison
Dr. Kathleen Yoder,		2012 to 2014, post-doc; Medical Director at ghg greyhealth group New York, N.Y.

Training at the University of Maryland, College Park

Graduate Students

Adam Fishbein
Graduate Student NACS Program UMD
(co-advised with Robert J Dooling)
2014-2021

PhD 2021 Post-doctoral scholar, University of
California, San Diego, Dept of Psychology

Chelsea Haakenson
Graduate Student NACS Program UMD
2015 to 2022

PhD 2022

Program Officer, National Institute of Aging (NIH)
2022-present.

Post-doctoral Fellows

Nora H. Prior

Post-doc 2016-2021 (joint advising with Robert J.
Dooling). Present position, Assistant Professor
Psychology, Cornell University, Ithaca NY

Evangeline Rose

PhD, Post-doctoral fellow Psychology Department
UMD 2020 to 2024 Present position: Instructor, Blue
Ridge Community and Technical College,
Martinsburg, WV

Karan Odom

PhD, Post-doctoral fellow Psychology Department
UMD 2021 to 2024. Present position, Assistant
Professor, Department of Biology, University of the
Pacific, Stockton, CA

Departmental Committees (Boston College) 1989-1991

Search Committees: Social Psychology Position 1990, Cognitive Psychology Position 1991
Undergraduate curriculum committee, 1990-1991
Graduate Admissions committee, 1991

Departmental and University Committees (Johns Hopkins University) 1991 to 2014

Undergraduate coordinator, Department of Psychology 1993 to 1995
Assistant coordinator, Behavioral Biology major 1994 to present
Chair, Undergraduate neuroscience program committee 1997 to present
Library liaison for the Psychology Department 1992 to 1998
Institutional Animal Care and Use Committee, Homewood Campus, JHU 1992 to 2000.

Institutional Animal Care and Use Committee, entire University 2000 to 2002.
University student ethics board 1994 to 1996
University representative to the Maryland-Wallonia, Belgium Sister State Committee 1992 to 1994
Search committees: cognitive search 1993; biopsychology search 1994; biopsychology search 1995; biopsychology search, 1999
Arts & Sciences and Engineering Joint Curriculum Committee, JHU 1995 to 1997
Premedical Sub-committee of the Arts & Sciences Curriculum Committee, JHU spring 1995.
Member, Academic Council, Homewood Schools, John Hopkins University 1998-1999
Dean's Undergraduate Admission Committee, 2000 to 2002.
President's Commission on Undergraduate Education, Johns Hopkins University, 2000 to 2003
Chair, Academic Affairs Subcommittee, President's Commission on Undergraduate Education, Johns Hopkins University, 2000 to 2003
Premedical Advising Committee, Johns Hopkins 2000 to 2008
Member Academic Council, Homewood Schools, Johns Hopkins University 2002 to 2007.
Chair, Dean's Standing Committee on Premedical Education 2008

Professional Societies

American Association for the Advancement of Science (Fellow)
American Psychological Association (Fellow, Division 6: Behavioral Neuroscience and Comparative Psychology)
American Psychological Society (Fellow)
The Animal Behavior Society
International Society for Neuroethology
The Society for Behavioral Neuroendocrinology
The Society for Neuroscience
The American Ornithological Society (Fellow)
The Wilson Ornithological Society
Association of Field Ornithologists

Professional Societies, Leadership and Service Activities

Program Committee Member (1989), International Conference on Hormones, Brain and Behavior, Liege, Belgium
Meeting organizer (1997), Member of the Nomination Committee (1998-2000), Society for Behavioral Neuroendocrinology
Program Chair, Society for Behavioral Neuroendocrinology, Lisbon, Portugal, 2004
International Advisory Committee, International Avian Endocrinology Symposium 2004-2008
President-elect, Society for Behavioral Neuroendocrinology, 2006-2008
President, Society for Behavioral Neuroendocrinology, 2009-2011
Past-President, Society for Behavioral Neuroendocrinology, 2011-2013
Program Committee Member, International Conference on Hormones, Brain and Behavior

Program Committee, 24th International Ornithological Congress, Hamburg, Germany
International Advisory Committee, International Congress on Chronobiology, Delhi, India, 2012

Editorial Boards; Associate Editor

Current Ornithology 1994 to 2000.

Hormones and Behavior, 1997 to present.

General and Comparative Endocrinology, Associate Editor, 2004 to 2009

Journal of Chemical Neuroanatomy, 2005 to 2013

Endocrinology, 2006 to 2010

Series Editor, Oxford University Press, Behavioral Neuroendocrinology 2005 to 2022

Ad Hoc Editorial Consultant

American Naturalist, Animal Behaviour

Auk, Behavioral Neuroscience

Behavioral Brain Research, Biology of Reproduction,

Brain, Behavior and Evolution, Brain Research

Brain Research Bulletin, Canadian Journal of Physiology and Pharmacology; Condor

Developmental Psychobiology, Developmental Brain Research

Ecology, Endocrinology, Ethology, European Journal of Neuroscience,

General and Comparative Endocrinology, Genes, Brain and Behavior, Journal of Biological Rhythms

Journal of Chemical Neuroanatomy

Journal of Comparative Neurology, Journal of Comparative Psychology, Journal of Comparative Physiol. A

Journal of Comparative Physiology B, Journal of Experimental Biology, Journal of Experimental Zoology,

Journal of Experimental Psychology: Animal Behavior Processes

Journal of Neurobiology, Journal of Neuroscience

Journal of Neuroendocrinology, Nature, Neuroscience Letters

Learning and Memory, Neuron, Ornithological Monographs, Pharmacology, Biochemistry and Behavior,

Physiology and Behavior, Physiological Zoology, Proceedings of the Royal Society, B,

Proceedings of the National Academy of Sciences, Public Library of Science, Restorative Neurology and Neuroscience, Science, Trends in Ecology and Evolution, Trends in Neurosciences

Grant Reviewing

Alzheimer's Disease and Related Disorders Association, Inc., Ad Hoc Reviewer

Austrian Science Fund, Ad Hoc Reviewer

Belgian National Fund for Scientific Research, Ad Hoc Reviewer

Medical Research Council, Canada, Ad Hoc Reviewer

Natural Science and Engineering Research Council, Canada, Ad Hoc Reviewer

US National Science Foundation, Ad Hoc Reviewer

Natural Environment Research Council, UK, Ad Hoc Reviewer

Natural Science and Engineering Research Council, UK, Ad Hoc Reviewer

BBSRC, UK, Ad Hoc Reviewer

European Commission Research Grant Program, Ad Hoc Reviewer
 Faculty Grants Program, University of Alaska, Ad Hoc Reviewer
 Smithsonian Institution Scholarly Studies Program, Ad Hoc Reviewer
 USDA Reproductive Biology Program, Ad Hoc Reviewer
 Maryland Sea Grant Program, Ad Hoc Reviewer
 Neurology Foundation of New Zealand, Ad Hoc Reviewer
 NIMH Initial Review Group, Psychobiology and Behavior, Special Reviewer, 1994
 NIMH Initial Review Group, Behavioral Neuroscience and Psychobiology, Special Reviewer, 1994
 NIMH Systems Neuroscience Program, Special Emphasis Panel, Visiting Member 1995, 1996
 NSF Advisory Panel; Physiology and Behavior 1996 to 1998
 DRG, Initial Review Group, Biopsychology, Visiting Member 1997
 NIMH Special Emphasis Panel, Training Review, Visiting Member 2000
 CSR/NIH, Initial Review Group, Integrative, Functional and Cognitive Neuroscience-I, Full Member 1998-2002
 NIDA Initial Review Group, Ad Hoc Reviewer, 2005
 CSR/NIH, Fellowship Review Committee, Member 2002 to 2004. Acting Chair, 2005.
 CSR/NIH, Neurobiology of Motivated Behavior, Ad hoc member 2005
 CSR/NIH, Auditory Study Section, Ad hoc member 2005, 2006
 CSR/NIH, Neurodifferentiation, Plasticity and Regeneration Study Section, Ad Hoc member 2006
 CSR/NIH, Neurobiology of Sleep and Circadian Rhythms Study Section, Ad Hoc member, 2006
 CSR/NIH, Sensory-Motor Integration Study Section, Ad Hoc member, 2007
 CSR/NIH, Neurobiology of Motivated Behavior Study Section, Ad Hoc member, 2007
 CSR/NIH, Neurobiology of Motivated Behavior Study Section, Full Member, 2009 to 2012
 CSR/NIH, R15 AREA Grant review panel, ad hoc member March 2014
 CSR/NIH, R15 AREA Grant review Panel (MDCN-R), ad hoc member
 CSR/NIH Biobehavioral Regulation and Ethology study section, ad hoc member, June, 2016, 2018, 2019
 NICHD/NIH Reproduction, Andrology, and Gynecology Subcommittee, ad hoc member October 2020

Committees, Professional & Campus Service

Campus Service: University of Maryland, College Park 2014-2022

Membership on the UMCP Budget Reform Task (with Deloitte Higher Education Division)
 Chair of the President's Flagship 2020 Commission, sub-committee on academic innovation and efficiency
 Chair, undergraduate neuroscience major development committee
 Member, post-doctoral advisory board
 Research safety oversight committee – Representative Dean
 Facilities Council– Representative Dean
 Lockheed Martin-UMD Strategic Review Board
 Goddard-UMD Steering Committee
 Member and then Chair Provost Computer Science task force

Chair, search committee for the Dean of the School of Public Health, UMD (2016)
Chair, search committee for the Dean of College of Computer, Mathematical and Natural Sciences, UMD (2017)
Vice Chair, search committee for the President of the University of Maryland, College Park (2019-2020)
Co-chair, President's Task force on public safety and community policing, University of Maryland, College Park (2020-2021)

Campus Service: Johns Hopkins University, 1991 to 2014

Undergraduate coordinator, Department of Psychology 1993 to 1995
Assistant coordinator, Behavioral Biology major 1994 to 2014
Chair, Undergraduate neuroscience program committee 1997 to present
Library liaison for the Psychology Department 1992 to 1998
Institutional Animal Care and Use Committee, Homewood Campus, JHU 1992 to 2000.
Institutional Animal Care and Use Committee, entire University 2000 to 2002.
University student ethics board 1994 to 1996
University representative to the Maryland-Wallonia, Belgium Sister State Committee 1992 to 1994
Search committees: cognitive search 1993; biopsychology search 1994; biopsychology search 1995; biopsychology search, 1999
Arts & Sciences and Engineering Joint Curriculum Committee, JHU 1995 to 1997
Premedical Sub-committee of the Arts & Sciences Curriculum Committee, JHU spring 1995.
Member, Academic Council, Homewood Schools, John Hopkins University 1998-1999
Dean's Undergraduate Admission Committee, 2000 to 2002.
President's Commission on Undergraduate Education (CUE), Johns Hopkins University, 2000 to 2003
Chair, Academic Affairs Subcommittee, President's Commission on Undergraduate Education, Johns Hopkins University, 2000 to 2003
Premedical Advising Committee, Johns Hopkins 2000 to 2008
Member Academic Council, Homewood Schools, Johns Hopkins University 2002 to 2007.
Chair, Dean's Standing Committee on Premedical Education 2008

Other: Professional Societies, Leadership and Conference Service Activities

Program Committee Member (1989), International Conference on Hormones, Brain and Behavior, Liege, Belgium
Meeting organizer (1997), Member of the Nomination Committee (1998-2000), Society for Behavioral Neuroendocrinology

Program Chair, Society for Behavioral Neuroendocrinology, International Conference Lisbon, Portugal, 2004
International Advisory Committee, International Avian Endocrinology Symposium 2004-2008
President-elect, Society for Behavioral Neuroendocrinology, 2006-2008
President, Society for Behavioral Neuroendocrinology, 2009-2011

Past-President, Society for Behavioral Neuroendocrinology, 2011-2013
Program Committee Member, International Conference on Hormones, Brain and Behavior 2009,
2014
Program Committee, 24th International Ornithological Congress, Hamburg, Germany 2006
International Advisory Committee, International Congress on Chronobiology, Delhi, India, 2012