
Dr. Kevin J. McGraw

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APPOINTMENTS

Professor of Evolutionary and Systems Biology, School of Life Sciences, Arizona State University, Tempe, AZ (August 2014 – present)

Associate Director for Facilities, School of Life Sciences, Arizona State University (July 2017 – present)

Senior Sustainability Scientist, Global Institute of Sustainability, Arizona State University, Tempe, AZ (July 2012 – present)

Director, School of Life Sciences Undergraduate Research Program (SOLUR), School of Life Sciences, Arizona State University, Tempe, AZ (August 2011 – June 2017)

Honors Faculty, Barrett Honors College, ASU (August 2009 – present)

Erskine Sabbatical Fellow, School of Biological Sciences, University of Canterbury, Christchurch, New Zealand (July – December 2010)

Associate professor of Evolutionary and Systems Biology, Arizona State University, School of Life Sciences, Tempe, AZ (July 2009 – July 2014)

Assistant professor of Evolutionary and Systems Biology, Arizona State University, School of Life Sciences, Tempe, AZ (August 2004 – June 2009)

EDUCATION

Post-doctoral associate, University of California, Davis, CA

Department of Animal Science, Jan.-Aug. 2004 (in collaboration with Dr. Kirk Klasing)
“Colorful pigments as natural immunostimulants in wild birds: an ecological perspective”

Ph.D., Cornell University, Ithaca, NY

Department of Neurobiology and Behavior, 1999-2003
“The costs and benefits of sexual coloration in songbirds”

M.S., Auburn University, Auburn, AL

Department of Zoology and Wildlife Science, 1997-1999
“Information content of carotenoid-based plumage coloration in the house finch”

B.S., St. Lawrence University, Canton, NY

Department of Biology, 1993-1997
Salutatorian, Suma Cum Laude, with Honors
“Hummingbird-flower coevolution at a montane riparian site in Costa Rica”

TEACHING EXPERIENCE

Course instructor, Arizona State University, AZ

Human Impacts on Animal Behavior (Fall 2016)

- Graduate seminar, one 75 min. discussion weekly

- Evolution of Avian Breeding Systems* (Fall 2014)
- Graduate seminar, one 75 min. discussion weekly
- Evolution of Human Behavior* (Fall 2012, 2014)
- Adult course (two 90 min. sessions), ASU Osher Lifelong Learning Institute
Florence, AZ (2012, 2017)
- 5-week freshmen seminar, one 50 min. meeting/week (Fall 2014)
- The Evolution of You: Biology of College Student*
- 5-week freshmen seminar, one 50 min. meeting/week (Fall 2017)
- Animal Behavior* (Sum. & Fall '05-7, '09, Spr. & Sum. '08, '13, Sum. '12, '14, '15)
Fall/Spring: Two 1.25-hr. lectures/week for 13-week course (syllabus available)
Summer: Five 1-hr. lectures per week for 4-week course (online offering as well)
- Vertebrate Zoology* (Spring '06, Fall '06 and '07, Spring '10-'12, Spring '14-'17)
Two 1.25-hr. lectures + a 3-hr. lab/week (syllabus available upon request)
- SOLUR Research Seminar* (Fall 2011-16, Spring 2012-17)
One 1.25-hr. lecture/week (syllabus available upon request)
- Bird Coloration* (Spring and Fall 2006, Fall 2011)
- 2 hr/week seminar (discussion of co-edited two-volume text)
- also as adult course (2 90 min. sessions), ASU Osher Lifelong Learning Institute
- Nutritional Approaches to Behavioral Ecology* (Fall 2011)
2.5 hr./week discussion-based seminar (syllabus available upon request)
- Current Topics in Behavioral Ecology* (Spring 2005)
2.5 hr./week discussion-based seminar (syllabus available upon request)
- Graduate Teaching Assistant, Cornell University, NY
Introductory Biology (Fall 2003)
Two weekly laboratory sections: 20 min. lecture and 3 hr. lab
- Course Instructor, Cornell University, NY
Animal Behavior (Summer 2003)
Five 1-hr. lectures per week for 6-week course
One 1-hr. discussion section per week
- Guest Lecturer, Cornell University, NY
Methods in Animal Behavior (Fall 2002)
1 hr. workshop: "Quantifying animal colors"
- Graduate Teaching Assistant, Cornell University, NY
Hormones and Behavior (Fall 2002)
2 weekly group discussions: 10 min. lecture and 50 min. discussion
1 hr. guest lecture: "Hormones and animal signals"
*Chosen 'Outstanding Graduate TA' in the Dept. of Neurobiology & Behavior
- Graduate Teaching Assistant, Auburn University, AL
Introductory Biology (Fall and Winter 1997 and 1998)
3 weekly laboratory sections: 15 min. lecture and 3 hr. lab (student rating: 9/10)
Environmental Biology (Fall and Winter 1997 and 1998)
3 weekly discussion sections: 10 min lecture and 50 min. discussion (rating: 9/10)
- Undergraduate Teaching Assistant, St. Lawrence University, NY
General Biology (1995-1997)
3 weekly laboratory sections: 10 min. introductory lecture and 3 hr. lab
Ecology (1996)
2 weekly laboratory sections: 10 min. introductory lecture and 3 hr. lab

POST-DOCTORAL RESEARCHERS

- Dr. Paul Nolan (2004-5), “Antioxidants, neurodevelopment, and vocal performance in a songbird”, Associate Professor at The Citadel (2006-present).
- Dr. William Medina-Jerez (2005-6), “Coloration as an aggressive signal in molting male house finches”, Associate Professor at University of Texas-El Paso (2006-present).
- Dr. Trevor Rivers (2006-7), “Variation in the fluorescent pigments of penguins and parrots”, lecturer in biology at University of Kansas (2013-present).
- Dr. Melissah Rowe (2008-10), “The molecular costs of being sexually attractive: a quantitative evaluation of carotenoid trade-offs between coloration and self-maintenance”, worked on funded grant by National Science Foundation. Post-doc at University of Oslo, Norway (2010-present).
- Dr. Masaru Hasegawa (2011), “Aggression as a function of urbanization in house finches”; post-doc on Fukushima bird grant with French ANR. Now post-doc at The Graduate University for Advanced Studies, Japan (2014-present).
- Dr. Mat Giraudeau (2010-13, 2015-present), “Causes and consequences of urban life in desert house finches”, worked on funded grant by National Science Foundation. Was post-doc at University of Zurich and University of Sydney; returned in Sept. 2015 as NERC post-doc for study of pathogen-host plasticity and adaptation.
- Dr. Tuul Sepp (2016-present), “Studying urban impacts on animal fitness using a pace-of-life-syndrome framework”, work funded by Marie Curie post-doctoral fellowship (Estonia).

*GRADUATE STUDENTS**Graduated*

- Matthew Toomey (Ph.D., 2005-11), “Control and function of retinal carotenoid accumulation in house finches”, *earned NSF doctoral dissertation improvement grant*, post-doc at Washington University – St. Louis (2011-present).
- Lisa Taylor (Ph.D., 2005-12), “Color signal evolution in male jumping spiders”, *earned NSF pre-doctoral fellowship*; research assistant professor in Entomology and Nematology Department, University of Florida (2013-present).
- Melissa Meadows (Ph.D. student, 2005-12), “Iridescent color ornaments as honest signals of fighting ability in Anna’s hummingbirds”, *earned NSF pre-doctoral fellowship*, post-doc at University of Tuebingen, Germany; assistant professor at St. Francis University (2016-present).
- Mike Butler (Ph.D., 2006-12), “Early-life nutritional and immunological control of ornamental carotenoid coloration in mallard ducks”, assistant professor at Lafayette College (2012-present).
- Rusty Ligon (Ph.D., 2009-15), “Dynamic color communication in chameleons”, post-doc at Lab of Ornithology, Cornell University.
- Brett Seymoure (Ph.D. candidate, 2009-16), “Evolution of Mullerian mimicry complexes in neotropical *Heliconius* butterflies”, co-advised with Dr. Ron Rutowski. Post-doc at National Park Service and Colorado State University.

Degree-pursuing under my direction

- Melinda Weaver (Ph.D. candidate, 2012-present), “Personality in the city: boldness and exploratory behavior of urban and rural Phoenix finches”.
- Rick Simpson (Ph.D. candidate, 2012-present), "Function and evolution of multiple, interacting visual signals in hummingbirds".
- Pierce Hutton (Ph.D. student, 2015-present), "Sleep, sexual selection, and city stress in house

finches"

Emily Webb (Ph.D. student, 2016-present), "Molecular-genetic determinants of carotenoid deposition and metabolism in colorful birds".

Visiting, rotating, or non-thesis

Erwan Mazureau (visiting summer intern, 2015), "Spread of fecal parasites at bird feeders", 3-month visiting undergraduate student from France (University of Poitiers).

Carlos Navarro Puig (visiting Ph.D. student, 2007), "Circulating antioxidants in starlings", 3-month visiting student from CSIC, Spain (advisor: Dr. J. J. Soler).

Jared Underwood (rotation Ph.D. student, 2005-6), volunteer researcher studying "Carotenoid pigments in the plasma of wild white-winged crossbills".

Jack Cerchiara (non-thesis graduate student, 2006-7), volunteered as a researcher to study "A comparative evaluation of circulating antioxidants in avian species".

Heather Adams (non-thesis graduate student, 2005-6), volunteered as a researcher to study "Coloration as an aggressive signal in molting male house finches".

UNDERGRADUATE RESEARCHERS

2016-17: 2 SOLUR Researchers (Reed, Givens), 1 SOLUR Apprentices (Avery Underwood), 1 CLAS USE student (Katie Ebertz), and 19 undergraduate students.

2015-16: 1 SOLUR Fellow (Reed), 1 SOLUR Researcher (Givens), 1 Barrett Honors Student (Brooke Sykes), 2 SOLUR SRE students (Josh Raiffe and Aidan Schneider), and 27 undergraduate students.

2014-15: 2 SOLUR Researchers (Bail, Steven Reed), 1 SOLUR Apprentice (Jess Givens), 2 Barrett Honors Students (Cook, Ellen Brooks), and 18 undergraduate students.

2013-14: 2 SOLUR Fellows (Behbahaninia, Bero-Buell), 3 SOLUR Researchers (Best, Yanez), 2 SOLUR Apprentices (Amber Bail, Meghan Chang), 2 Barrett Honors students (Bero-Buell and Meghan Cook), and 25 undergraduate students.

2012-13: 1 SOLUR Fellow (Bruemmer), 4 SOLUR Researchers (Melanie Mousel, Hirbod Behbahaninia, Stacy Arnold, Megan Best), 1 IMSD Scholar (Autumn Moore-Barkus), 4 SOLUR Apprentices (Brianna Bero-Buell, Kenneth Aiello, Courtney Baxter, and Lauren Yanez), 2 Barrett Honors students (Arnold and Bruemmer) and 26 undergraduate students.

2011-12: 3 SOLUR students (Bruemmer, Melanie Mousel, Hirbod Behbahaninia), 1 Barrett Honors student (Kristin McCartney), and 17 undergraduate students.

2010-11: 3 SOLUR students (Day, Emilie Cayron, Sarah Bruemmer) and 15 undergraduate students.

2009-10: 3 SOLUR students (Tourville, Morgan Day, Christie Ross), 3 Barrett honor's students (Afton Chavez, Danny Francescon, and Kasey Pierson), 1 AZ-START high school teacher (Jessica Hauer), and 11 undergraduate students.

2008-9: 1 SOLUR researcher (Izzy Tourville), 2 Barrett honor's thesis students (Ana Bascunan and Izzy Tourville), 1 SCENE high school student (Vicki Peng), 1 AZ-START high school teacher (Jon Miller), and 9 undergraduate researchers.

2007-8: 2 SOLUR apprentices (Izzy Tourville and Shana Quinn), 1 Barrett honor's thesis student (Shana Quinn), 1 SCENE high school student (Vicki Peng), and 11 undergraduates.

2006-7: 1 Barrett honor's thesis student (Kristen Lee) and 9 undergraduate researchers

2005-6: 2 SOLUR Researchers (Lauren Washington, Laura Beard) and 5 undergraduate researchers

2004-5: 2 SOLUR Apprentices (Lauren Washington, Laura Beard) and 4 undergraduate researchers

2004: 1 undergraduate at UC-Davis (Cedric Uyttingco), "Carotenoids as colorants and

- immunostimulants in red junglefowl”.
- 2003: 1 undergraduate at Cornell University (Theodore Chalupa), “Color ornaments as predictors of male competitive ability in zebra finches”.
- 2002: 1 honor’s thesis student at Cornell University (Alexander Gregory), “Sexual and seasonal differences in circulating carotenoid levels and dietary intake in American goldfinches”.
- 2001: 1 honor’s thesis student at Cornell University (Emiko Mackillop), “Social dominance, nutritional condition, and cell-mediated immune response: their interactions and effects on the expression of the badge in the male house sparrow”.

PUBLICATIONS

- UNDERLINED NAMES = STUDENTS/POST-DOCS MENTORED IN MY LAB

EDITED BOOKS

2006

- Hill, G. E. and **K. J. McGraw**. 2006. Bird Coloration. Volume I. Mechanisms and measurements. Harvard University Press: Cambridge, MA.
- Hill, G. E. and **K. J. McGraw**. 2006. Bird Coloration. Volume II. Function and evolution. Harvard University Press: Cambridge, MA.

PEER-REVIEWED JOURNAL ARTICLES (TOTAL PUBLICATIONS = 203; TOTAL CITATIONS = 9921
H-INDEX (GOOGLE SCHOLAR) = 54; I10-INDEX = 157)

2017

- Seymoure, B., A. Raymundo, **K. J. McGraw**, W. O. McMillan, and R. L. Rutowski. 2017. Environment dependent survival of cryptic and aposematic butterflies. *Curr. Zool.* (accepted).
- George, D. B., B. C. Schneider, **K. J. McGraw**, and D. R. Ardia. 2017. Carotenoids buffer the acute phase response on fever, sickness behavior, and rapid bill color change in zebra finches. *J. Exp. Biol.* (in press).
- Cook, M. O., M. J. Weaver, P. Hutton, and **K. J. McGraw**. 2017. The effects of urbanization and human disturbance on problem solving in juvenile house finches (*Haemorhous mexicanus*). *Behav. Ecol. Sociobiol.* (in press).
- Taylor, L. A., E. C. Powell, and **K. J. McGraw**. 2017. Frequent misdirected courtship in a natural community of colorful *Habronattus* jumping spiders. *PLOS One* (in press).
- Giraudeau, M., R. Stikeleather, J. McKenna, P. Hutton, and **K. J. McGraw**. 2017. Plumage micro-organisms and preen gland size in an urbanizing context. *Science Total Environ.* 580:425-429.

2016

- Ligon, R. A., R. K. Simpson, N. A. Mason, G. E. Hill, and **K. J. McGraw**. 2016. Evolutionary innovation and diversification of carotenoid-based pigmentation in finches. *Evolution* 70:2839-2852.
- Ligon, R. A. and **K. J. McGraw**. 2016. Social costs enforce honesty of a dynamic signal of motivation. *Proc. R. Soc. B* 283:20161873.
- Hubbard, J. K., A. K. Hund, I. I. Levin, **K. J. McGraw**, M. R. Wilkins, and R. J. Safran. 2016. The importance of cross-validation, accuracy, and precision for measuring plumage color: a comment on Vaquero-Alba et al. (2016). *Auk* 134:34-38.
- Toomey, M. B. and **K. J. McGraw**. 2016. The effects of sun exposure on carotenoid

- accumulation and oxidative stress in the retina of the house finch (*Haemorrhous mexicanus*). *Avian Res.* 7:5 DOI 10.1186/s40657-016-0041-6.
- Crothers, L., R. A. Saporito, J. Yeager, K. Lynch, C. Friesen, C. L. Richards-Zawacki, **K. J. McGraw**, and M. Cummings. 2016. Warning signal properties covary with toxicity but not testosterone or aggregate carotenoids in a poison frog. *Evol. Ecol.* 30:601-621.
- Koch, R. E., **K. J. McGraw**, and G. E. Hill. 2016. Effects of diet on plumage coloration and carotenoid deposition in red and yellow domestic canaries (*Serinus canaria*). *Wilson J. Ornithol.* 128:328-333.
- Toomey, M. B., O. Lind, R. Frederiksen, R. W. Curley Jr., K. M. Riedl, D. Wilby, S. J. Schwartz, C. C. Witt, E. H. Harrison, N. W. Roberts, M. Vorobyev, **K. J. McGraw**, M. C. Cornwall, A. Kelber, and J. C. Corbo. 2016. Complementary shifts in photoreceptor spectral tuning unlock the full adaptive potential of ultraviolet vision in birds. *eLife* 5:e15675.
- Hutton, P., and **K. J. McGraw**. 2016. Urban impacts on oxidative balance and animal signals. *Front. Ecol. Evol.* 4: doi: 10.3389/fevo.2016.00054.
- Hutton, P., and **K. J. McGraw**. 2016. Urban-rural differences in eye, bill, and skull allometry in house finches (*Haemorrhous mexicanus*). *Integr. Comp. Biol.* 56:1215-1224.
- 2015
- Hutton, P., Seymoure, B. M., **McGraw, K. J.**, Ligon, R. A., and Simpson, R. K. 2015. Dynamic color communication. *Current Opin. Behav. Sci.* 6:41-49.
- Hasegawa, M., Giraudeau, M., Kutsukake, N., Watanabe, M., and **McGraw, K. J.** 2015. Bayesian estimation of competitiveness in male house finches: small-billed males are more competitive. *Anim. Behav.* 108:207-214.
- Pearlstein, E., Hughs, M., Mazurek, J., **McGraw, K. J.**, Pesme, C., Riedler, R., and Gleeson, M. 2015. Ultraviolet-induced visible fluorescence and chemical analysis as tools for examining featherwork. *J. Am. Inst. Conserv.* 54:149-167.
- Ge, Z., Johnson, J. D., Cobine, P. A., **McGraw, K. J.**, Garcia, R., and Hill, G. E. 2015. High concentrations of ketocarotenoids in hepatic mitochondria of *Haemorrhous mexicanus*. *Physiol. Biochem. Zool.* 88:444-450.
- Rowe, M., Pierson, K. L., and McGraw, K. J. 2015. Exploratory behavior is associated with plasma carotenoid accumulation in two congeneric species of waterfowl. *Behav. Proc.* 115:181-190.
- Fasanello, V. J., Carlton, E. D., Pott, M., Marchetto, N. M., Vaughn, E., **McGraw, K. J.**, Mauck, R. A., and Haussmann, M. F. 2015. Monomorphic ornamentation related to oxidative damage and assortative mating in the black guillemot (*Cephus grylle*). *Waterbirds* 38:106-110.
- Giraudeau, M., Chavez, A., Toomey, M. B., and McGraw, K. J. 2015. Effects of carotenoid supplementation and oxidative challenges on physiological parameters and carotenoid-based coloration in an urbanization context. *Behav. Ecol. Sociobiol.* 69:957-970.
- Pearlstein, E., Hughs, M., Mazurek, J., **McGraw, K. J.**, Pesme, C., and Garcia-Garibay, M. 2015. Correlations between photochemical damage and UV fluorescence of feathers. ICOM-CC 17th Triennial Conference, Melbourne, Australia (15-19 September 2014), in press.
- Steffen, J. E., Learn, K. M., Drumheller, J. S., Boback, S. M., and **McGraw, K. J.** 2015. Carotenoid composition of colorful body stripes and patches in the painted turtle (*Chrysemys picta*) and red-eared slider (*Trachemys scripta*). *Chelonian Conserv. Biol.* 14:56-63.
- Newbrey, J. L., Paszkowski, C. A., **McGraw, K. J.**, and Ogle, S. 2015. Laying-sequence variation in yolk carotenoids and egg characteristics in the red-winged blackbird *Agelaius phoeniceus*. *J. Avian Biol.* 46:46-54.

2014

- Giraudeau, M., Nolan, P. M., Black, C. E., Earl, S., Hasegawa, M., and **McGraw, K. J.** 2014. Song characteristics track bill morphology along a gradient of urbanization in house finches (*Haemorhous mexicanus*). *Frontiers Zool.* 11:83.
- Thomas, D. B., **McGraw, K. J.**, Butler, M. W., Carrano, M. T., Madden, O., and James, H. F. 2014. Ancient origins and multiple appearances of carotenoid-pigmented feathers in birds. *Proc. R. Soc. B* 282:20140806.
- Ismar, S. M. H., Daniel, C., Iqic, B., Morrison-Whittle, P. K., Ballard, G., Millar, C. D., Fidler, A. E., **McGraw, K. J.**, Wakamatsu, K., Stephenson, B. M., Cassey, P., Dearborn, D. C., and Hauber, M. E. 2014. Sexual plumage dichromatism in a size dimorphic seabird. *Wilson J. Ornithol.* 126:417-428.
- Taylor, L. A., Clark, D. L., and **McGraw, K. J.** 2014. Natural variation in condition-dependent display colour does not predict male courtship success in a jumping spider. *Anim. Behav.* 93:267-278.
- Giraudeau, M. and **McGraw, K. J.** 2014. Physiological correlates of urbanization in a desert songbird. *Integr. Comp. Biol.* 54:622-632.
- McCartney, K. L., Ligon, R. A., Butler, M. W., DeNardo, D. F., and **McGraw, K. J.** 2014. The effect of carotenoid supplementation on immune system development in juvenile male veiled chameleons (*Chamaeleo calyptratus*). *Frontiers Zool.* 11,26:1-15.
- Taylor, L. A., Clark, D. L., and **McGraw, K. J.** 2014. From spiderling to senescence: ontogeny of color in the jumping spider, *Habronattus pyrrithrix*. *J. Arachnol.* 42:268-276.
- Hasegawa, M., Ligon, R. A., Giraudeau, M., Watanabe, M., and **McGraw, K. J.** 2014. Urban and colorful house finches are less aggressive. *Behav. Ecol.* 25:641-649.
- Friedman, N. R., **McGraw, K. J.**, and Omland, K. E. 2014. History and mechanisms of carotenoid plumage evolution in the New World Orioles (*Icterus*). *Comp. Biochem. Physiol. B* 172-173:1-8.
- Giraudeau, M., Mousel, M., Earl, S., and **McGraw, K. J.** 2014. Parasites in the city: degree of urbanization predicts poxvirus and coccidian infections in house finches (*Haemorhous mexicanus*). *PLOS One* 9:e86747.
- Thomas, D. B., **McGraw, K. J.**, James, H. F., and Madden, O. 2014. Non-destructive descriptions of carotenoids in feathers using Raman spectroscopy. *Analyt. Methods* 6:1301-1308.
- Friedman, N., **McGraw, K. J.**, and Omland, K. E. 2014. Evolution of carotenoid pigmentation in caciques and meadowlarks (Icteridae): repeated gains of red plumage coloration by carotenoid C-4 oxygenation. *Evolution* 68:791-801.
- Brown, A. C., Leonard, H. M., **McGraw, K. J.**, and Clotfelter, E. 2014. Maternal effects of carotenoid supplementation in an ornamented cichlid fish (*Amantitlania siquia*). *Funct. Ecol.* 28:612-620.
- Peluc, S. I., Reed, W. L., Gibbs, P., and **McGraw, K. J.** 2014. Maternal dietary carotenoids mitigate detrimental effects of maternal GnRH on offspring immune function in Japanese quail (*Coturnix japonica*). *J. Avian Biol.* 45:334-344.

2013

- Ligon, R. A. and **McGraw, K. J.** 2014. Chameleons communicate with complex colour changes during contests: different body regions convey different information. *Biol. Letters* 9:20130892.
- McGraw, K. J.**, Giraudeau, M., Hill, G. E., and Toomey, M. B. 2013. Ketocarotenoid circulation, but not retinal carotenoid accumulation, is linked to eye disease status in a wild songbird. *Arch. Biochem. Biophys.* 539:156-162.
- Pickett, S. R. A., Weber, S. B., **McGraw, K. J.**, Norris, K. J., and Evans, M. R. 2013. Environmental and parental influences on offspring health and growth in great tits (*Parus*

- major*). PLoS One 8:e69786.
- Butler, M. W., Karanfilian, B., Homsher, M., and **McGraw, K. J.** 2013. Carotenoid supplementation during adulthood, but not development, decreases testis size in mallards. *Comp. Biochem. Physiol. A* 166:465-469.
- Giraudeau, M., Sweazea, K., Butler, M. W., and **McGraw, K. J.** 2013. Effects of carotenoid and vitamin E supplementation on oxidative stress and plumage coloration in house finches (*Haemorhous mexicanus*). *Comp. Biochem. Physiol. A* 166:406-413.
- Hill, G. E., Fu, X., Balenger, S., **McGraw, K. J.**, Giraudeau, M., and Hood, W. R. 2013. Changes in concentrations of circulating heat shock proteins in house finches in response to different environmental stressors. *J. Field Ornithol.* 84:416-424.
- Alan, R. R., McWilliams, S. R., and **McGraw, K. J.** 2013. The importance of antioxidants for avian fruit selection during autumn migration. *Wilson J. Ornithology* 125:513-525.
- Lendvai, A. Z., Giraudeau, M., Nemeth, J., Bako, V., and **McGraw, K. J.** 2013. Carotenoid-based plumage coloration reflects feather corticosterone levels in male house finches (*Haemorhous mexicanus*). *Behav. Ecol. Sociobiol.* 67:1817-1824.
- Butler, M. W. and **McGraw, K. J.** 2013. Eggshell coloration reflects both yolk characteristics and dietary carotenoid history of female mallards. *Funct. Ecol.* 27:1176-1185.
- Butler, M. W. and **McGraw, K. J.** 2013. Immune function is related to adult carotenoid and bile pigment levels, but not dietary carotenoid access during development, in female mallard ducks. *J. Exp. Biol.* 216:2632-2640.
- Thomas, D. B., McGoverin, C. M., **McGraw, K. J.**, James, H. F., and Madden, O. 2013. Vibrational spectroscopic analyses of unique yellow feather pigments (sphenicins) in penguins. *J. R. Soc. Interface* 10:20121065.
- Pickett, S. R. A., Weber, S. B., **McGraw, K. J.**, Norris, K. J., and Evans, M. R. 2013. Environmental and parental influences on offspring health and growth in great tits (*Parus major*). PLoS One 8:e69786.
- Brown, A. C., **McGraw, K. J.**, and Clotfelter, E. D. 2013. Dietary carotenoids increase yellow non-pigment coloration of female convict cichlids (*Amantitlania nigrofasciata*). *Physiol. Biochem. Zool.* 86:312-322.
- Butler, M. W., Stahlschmidt, Z. R., Ardia, D. R., Davis, S., Davis, J. R., Guillette, Jr., L. J., Johnson, N., McCormick, S. D., **McGraw, K. J.**, and DeNardo, D. F. 2013. Thermal sensitivity of immune function: evidence against a generalist-specialist tradeoff among endothermic and ectothermic vertebrates. *Am. Nat.* 181:761-774.
- Taylor, L. A. and **McGraw, K. J.** 2013. Male ornamental coloration improves courtship success in a jumping spider, but only in the sun. *Behav. Ecol.* 24:955-967.
- Cohen, A. A., Bowman, R., Boughton, R. K., Bridge, E., Heiss, R. S., Schoech, S. J., and **McGraw, K. J.** 2013. Circulating carotenoid levels are negatively associated with previous reproductive success in Florida Scrub-Jays (*Aphelocoma coerulescens*). *Can. J. Zool.* 91:64-70.
- 2012
- Rowe, M., Tourville, E. A., and **McGraw, K. J.** 2012. Carotenoids in bird testes: links to body carotenoid supplies, plumage coloration, body mass, and testes mass in house finches (*Carpodacus mexicanus*). *Comp. Biochem. Physiol. B* 163:285-291.
- Butler, M. W. and **McGraw, K. J.** 2012. Differential effects of early- and late-life access to carotenoids on adult immune function and ornamentation in mallard ducks (*Anas platyrhynchos*). PLoS One 7:e38043.
- Meadows, M. G., Roudybush, T., and **McGraw, K. J.** 2012. Dietary protein affects iridescent coloration in Anna's hummingbirds. *J. Exp. Biol.* 215:2742-2750.
- Behbahaninia, H., Butler, M. W., Toomey, M. B., and **McGraw, K. J.** 2012. Food color

- preferences against a dark, textured background vary in relation to sex and age in house finches (*Carpodacus mexicanus*). *Behaviour* 149:51-65.
- Peluc, S. I., Reed, W. L., **McGraw, K. J.**, and Gibbs, P. 2012. Carotenoid supplementation and GnRH challenges influence female endocrine physiology, immune function and egg-yolk characteristics in Japanese quail (*Coturnix japonica*). *J. Comp. Physiol. B.* 182:687-702.
- Giraudeau, M., Toomey, M. B., and **McGraw, K. J.** 2012. Can house finches (*Carpodacus mexicanus*) use non-visual cues to discriminate the carotenoid content of foods? *J. Ornithol.* 153:1017-1023.
- Butler, M. W. and **McGraw, K. J.** 2012. Developmental immune history affects adult immune function but not carotenoid-based ornamentation in mallard ducks. *Funct. Ecol.* 26:406-415.
- Toomey, M. B. and **McGraw, K. J.** 2012. Mate choice for a male carotenoid-based ornament is linked to female dietary carotenoid intake and accumulation. *BMC Evol. Biol.* 12:3.
- Butler, M. W., Toomey, M. B., **McGraw, K. J.**, and Rowe, M. 2012. Ontogenetic immune challenges shape adult personality in mallard ducks. *Proc. R. Soc. B* 279:326-333.
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- McGraw, K. J.**, A. M. Stoehr, P. M. Nolan, and G. E. Hill. 2001. Plumage redness predicts breeding onset and reproductive success in the house finch: a validation of Darwin's theory. *J. Avian Biol.* 32:90-94.
- 2000
- Badyaev, A. V., G. E. Hill, A. M. Stoehr, P. M. Nolan, and **K. J. McGraw**. 2000. The evolution of sexual dimorphism in the house finch: II. Population divergence in relation to local selection. *Evolution* 54:2134-2144.
- McGraw, K. J.** and G. E. Hill. 2000. Plumage brightness and breeding-season dominance of male house finches: a "negatively correlated handicap"? *Condor* 102:456-461.
- McGraw, K. J.** and G. E. Hill. 2000. Carotenoid-based ornamentation and status signaling in the house finch. *Behav. Ecol.* 11:520-527.
- McGraw, K. J.** and G. E. Hill. 2000. Differential effects of endoparasitism on the expression of carotenoid- and melanin-based ornamental colors. *Proc. R. Soc. Lond. B* 267:1525-1531.
- Stoehr, A. M., P. M. Nolan, G. E. Hill and **K. J. McGraw**. 2000. Nest parasites in a passerine bird: seasonal patterns and effects on reproductive biology. *Can. J. Zool.* 78:2126-2133.
- 1999
- McGraw, K. J.** and G. E. Hill. 1999. Induced homosexual behaviour in male house finches (*Carpodacus mexicanus*): the "Prisoner Effect". *Ethol. Ecol. Evol.* 11:197-201.
- McGraw, K. J.**, G. E. Hill, and A. J. Keyser. 1999. Ultraviolet reflectance of colored leg bands. *J. Field Ornithol.* 70:236-243.

BOOK CHAPTERS

- Burns, K. J., **K. J. McGraw**, A. J. Shultz, M. C. Stoddard, and D. B. Thomas. 2017. Advanced methods for studying pigments and coloration using avian specimens. Pp. 23–55 in M. S. Webster (editor), *The role of collections in ornithology: the extended species*. *Studies in Avian Biology* (no. 50), CRC Press, Boca Raton, FL.
- McGraw, K. J.** 2011. Avian antioxidants and oxidative stress: insights from food, physiology, and feathers. Pp. 161-174 in: *Oxidative stress* (Mandelker, L. and Vajdovich, P., eds), Springer, NY.
- McGraw, K. J.** and J. D. Blount. 2009. Control and function of carotenoid coloration in birds: a review of case studies. Pp. 487-510 in *Carotenoids: Physical, Chemical, and Biological Functions and Properties* (J. T. Landrum, ed.). CRC Press, Boca Raton, FL.
- McGraw, K. J.** and A. L. A. Middleton. 2009. American Goldfinch (*Carduelis tristis*). *The Birds of North America Online* (A. Poole, Ed.). Ithaca, NY: Cornell Laboratory of Ornithology.
- McGraw, K. J.** 2009. Visual signaling in animals. In: *Encyclopedia of Neuroscience* (L. R. Squire, ed.), vol. 10. Academic Press Oxford, pp. 307-311.
- Blount, J. D. and **K. J. McGraw**. 2007. The signal functions of carotenoid coloration in plants and animals. In: *Carotenoids. Volume 4: Natural Functions* (G. Britton, S. Liaaen-Jensen, and H. Pfander, eds.). Birkhauser, Switzerland.
- McGraw, K. J.** 2006. The mechanics of uncommon colors in birds: pterins, porphyrins, and

- psittacofulvins. In: Bird Coloration. Volume 1. Mechanisms and measurements (G. E. Hill and K. J. McGraw, eds.). Harvard University Press: Cambridge, MA.
- McGraw, K. J.** 2006. The mechanics of carotenoid coloration in birds. In: Bird Coloration. Volume 1. Mechanisms and measurements (G. E. Hill and K. J. McGraw, eds.). Harvard University Press: Cambridge, MA.
- McGraw, K. J.** 2006. The mechanics of melanin coloration in birds. In: Bird Coloration. Volume 1. Mechanisms and measurements (G. E. Hill and K. J. McGraw, eds.). Harvard University Press: Cambridge, MA.

POPULAR ARTICLES

- McGraw, K. J.** 2010. Nature's colors of love. Ask-a-Biologist website, School of Life Sciences, ASU (<http://askabiologist.asu.edu/explore/natures-colors-love>).
- McGraw, K. J.** 2005. Polly want a pigment? Cracking the chemical code to red coloration in parrots. Australian Birdkeeper Magazine 18:608-611.
- McGraw, K. J.** 2004. What flamingos might look like if they ate blueberries. ASK magazine (Arts and Sciences for Kids) 3:33.
- McGraw, K. J.** 2003. Color me chemically: an analysis of feather pigments in colorful birds. The Sample (Retsch Inc. newsletter) 23:6-7.
- McGraw, K. J.** and G. E. Hill. 2003. Why birds wear bright colors. Highlights for Children 58:24-25.

SCIENTIFIC GRANTS

INTERNATIONALLY FUNDED

- European Commission, "Assessing urban impacts on wildlife using the pace-of-life framework" (\$32,764 subaward as part of award for studying urban-rural variation in survival and reproduction in finches), 2016-18 (co-PI with Dr. Tuul Sepp).
- Natural Environment Research Council (UK), "Phenotypic plasticity in an emerging pathogen" (\$38,100 subaward as part of award for \$300,000 over 2 years to study of host-pathogen plasticity and adaptation in a songbird-conjunctivitis disease system), 2015-2017 (co-PI with two British colleagues and a shared post-doc).
- French National Research Agency, \$24,000 (subaward as part of €200,000 award for 18-months to European and Japanese collaborators for study of Fukushima nuclear disaster on vertebrate physiology and morphology), 2011-2014 (co-PI with two ASU researchers, two French researchers, and two Japanese researchers).

FEDERALLY FUNDED

- National Science Foundation (DEB-1637590), "LTER: CAP IV: Design with nature: framework for exploring urban ecology and sustainability" (3% allocation on \$6,761,958), 2016-2021.
- National Science Foundation (IOS-1702016), Doctoral Dissertation Improvement Grant (to R. K. Simpson and KJM; \$20,085), "The Evolution of Hummingbird Coloration and Courtship Displays", 2017-present.
- National Science Foundation (IOS-1501556), Doctoral Dissertation Improvement Grant (to B. M. Seymoure, R. Rutowski, and KJM; \$20,085), "Shedding Light onto Butterfly Signaling: Light Environment, Signals, and Visual Systems", 2015-17.
- National Science Foundation, (IOS-1401236), Doctoral Dissertation Improvement Grant (to R. A. Ligon and KJM; \$19,622), "The Function and Evolution of Rapid Color Change as a Social Signal", 2014-16.

National Science Foundation (IOS-1033390, -1128916, -1237013, and -1337606), REU supplements to IOS-0923694 (\$7225 in 2010 & \$6000 in 2011, 2012, and 2013).
National Science Foundation (IOS-0923694), Behavioral Systems panel, lone PI (\$315,283); “Condition-dependent signal reception: limitations and functions of carotenoids in avian color vision”; 2009-13.
National Science Foundation (IOS-0910357), Doctoral Dissertation Improvement Grant (to M.B. Toomey and KJM; \$11,372), “What you see is what you get: behavioral implications of retinal carotenoid accumulation”, 2009-12.
National Science Foundation (IOS-0925633), REU supplement to IOS-0746364 (\$6925; 2009).
National Science Foundation (IOS-0746364), Functional and Regulatory Systems panel, lone PI (\$344,467); “The Molecular Costs of Being Sexually Attractive: a Quantitative Assessment of Carotenoid Limitations for Coloration and Self-Maintenance”; 2008-12.
STAR Fellowship, Environmental Protection Agency (\$100,000; 2000-2003).

INDUSTRY FUNDED

Central Garden and Pet Inc., "Nutri-finch: testing an oil-based antioxidant remedy for emerging infectious avian pathogens" (\$36,168; 2012-2013). co-PI with Dr. Mathieu Giraudeau (McGraw lab post-doc).
Kaytee Wild Bird Food Inc., “Effect Of A Mosaic Black-And-White Contrasting Background On Seed Color Preferences In House Finches” (\$11,083; 2011-2012).
Kaytee Wild Bird Food Inc., “Seasonal Effects Of Supplemental Dietary Lutein And Vitamin E On Health State And Oxidative Stress Susceptibility In House Finches” (\$23,096; 2011-2012). co-PI with Dr. Mathieu Giraudeau (McGraw lab post-doc).
Kaytee Wild Bird Food Inc., “An Experimental Test Of The Effect Of Seed-Color-Contrast On Food Preferences Of House Finches” (\$9900); 2010.
Kaytee Wild Bird Food Inc., “Wild bird preferences for colorful food and feeders” (\$20,000); 2009-10.
Scotts Wild Bird Food Inc., “Carotenoids and wild bird feeding”, (\$12,000); 2008.

PROFESSIONAL-SOCIETY FUNDED

Conference travel grant, Society for Integrative and Comparative Biology and the National Science Foundation (\$1500; 2014)
Conference travel grant, International Penguin Conference (\$1500; 2004)
Conference travel grant, International Symposium on Avian Endocrinology (\$500; 2004)
Student Research Award, American Ornithologists’ Union (\$1793; 2003)
Grant-in-Aid-of-Research, Society for Integrative and Comparative Biology (\$765; 2003)
Sigma Xi Grant-in-Aid-of-Research, Cornell Chapter (1999, 2000, 2001, 2002, 2003)
Student Travel Award, International Carotenoid Society (2001)
Marcia Brady Tucker Travel Award, American Ornithologists’ Union (2001, 2003)
Frank Chapman Fund, American Museum of Natural History (\$1000; 2001)
Sigma Xi Grant-in-Aid-of-Research, National Chapter (2000, 2001)

UNIVERSITY FUNDED

SOLS RTI Faculty Bold Initiatives award, ASU (\$5000; awarded for collaborative work with Dr. Arvind Varsani on avian viromes; 2017).
Center for Evolutionary Medicine Venture Fund (\$6000; awarded to me to study urban impacts on the avian microbiome; 2015).
SoLS RTI Collaborative Post-doc Research Grant (\$7500; awarded to my post-doc, Mat Giraudeau, and I to study the avian microbiome as a function of urban stress; 2015).
SoLS Initiatives Grant, ASU (\$5000; awarded to my PhD student, Pierce Hutton, and I; 2015)

Citizen Science and Citizen Engagement (CSCE) grant (\$7500), Office of the Vice President for Entrepreneurship and Innovation, ASU (2014)
Summer Research Experience for Undergraduate (REU) award (\$4500), Central Arizona Phoenix - Long Term Ecological Research grant (via the National Science Foundation), ASU (2014)
Undergraduate Summer Enrichment Award (\$2400), College of Liberal Arts and Sciences, ASU (2014, 2015)
Barrett Faculty Support Fund (\$1120.65), Barrett The Honors College, ASU (2013)
Faculty Summer Research Awards (\$4000 in 2012; \$3000 in 2013), CAP-LTER program, Global Institute of Sustainability, ASU
Summer Graduate Assistance Award (\$5040), CAP-LTER program, Global Institute of Sustainability, ASU (2012)
Transdisciplinary Seed Grant, University of California-Los Angeles (\$13,530), co-PI with four UCLA professors (PI = Dr. Ellen Pearlstein) (2012-present)
SoLS Initiatives Grant, ASU (\$5000; awarded to my post-doc, Dr. Mat Giraudeau and I; 2011)
Frontiers in Life Sciences conference grant, School of Life Sciences, ASU (\$30,000; awarded to my Ph.D. students to organize a conference on iridescent coloration in spring 2008).
Excellence in Graduate Student Mentoring Award, Division of Graduate Studies and the Office of the Vice President for Research, ASU (\$2000; 2007)
In-house research grant, SoLS Initiatives Program, Arizona State University (\$8200; 2005)
Graduate Student Conference Transportation Grant, Cornell University (2000, 2001, 2002, 2003)
Graduate Student Travel Award, Auburn University (1999)
COSAM Student Travel Grant, Auburn University (1999)
Graduate Student Research Award, Auburn University (1999)
Goldberg Travel Fund Recipient, St. Lawrence University (1996)
Crowell Summer Award in Field Biology, St. Lawrence University (\$500; 1996)
PEW Undergraduate Research Fellowship, St. Lawrence University (\$2500; 1996)

SCIENTIFIC AWARDS AND HONORS

Elliot Coues Achievement Award, American Ornithological Society (2017)
Elected Fellow, International Carotenoid Society (2017)
Elected Fellow, American Ornithological Society (2016)
ASU President's Professor, nominee, ASU (2015)
US Professor of the Year Award, unit nominee, ASU (2015)
ASU Outstanding Doctoral Mentor, nominee, ASU (2013, 2015, 2016)
Special Recognition (Runner-Up) Award, Sun Devil Family Association Professor of the Year, ASU (2013)
CLAS teaching award, nominee, ASU (2012, 2013)
Parents Association Professor of the Year, nominee, ASU (2010)
Erskine Sabbatical Fellowship, University of Canterbury, New Zealand (2010)
Presidential Exemplar Award (with tenure promotion; \$50,000 research award), ASU (2009-14)
Faculty Ambassadors Award, ASU (\$1000), 2009
Elective Member, American Ornithologists' Union (2006)
Featured investigator of the month, Research and Development (R&D) Magazine (02/2006)
Outstanding New Investigator Award, American Ornithologists' Union (2005)
Outstanding New Investigator Award, Animal Behavior Society (2005)
Job offer, Assistant professor, Dartmouth College, Hanover, NH (2004; declined)
Post-doctoral fellowship, University of California-Davis (2004-present)

Post-doctoral fellowship, Centre National de la Recherche Scientifique, France (2003; declined)
Post-doctoral fellowship, University of California-Los Angeles (2003; declined)
Outstanding Student Presentation, Meeting of the American Ornithologists' Union (2003)
Outstanding Graduate Teaching Assistant, Dept. Neurobiol. & Behavior, Cornell Univ. (2002-3)
CALs Fellowship, Cornell University, for pursuit of Ph.D. (1999)
Phi Kappa Phi Honor Society, Auburn University (1999)
Membership to Association of Field Ornithologists, Inc. (1999)
CALs Fellowship, Cornell University, for pursuit of Ph.D. (1999)
βββ Outstanding Senior Biology Major Award (1997)
Edward and Gertrude Warner Award, for pursuit of graduate education (1997)
Phi Beta Kappa Honor Society, St. Lawrence University (1996-1997)
βββ Biology Honor Society, St. Lawrence University (1994-1997)

ACADEMIC PRESENTATIONS

Invited Seminars

- McGraw, K. J.**, Weaver, M., Giraudeau, M., and Hutton, P. 2016. Urban impacts on avian life-history variation: integrative approaches to studying sex, stress, sleep, signaling, and sickness in the city. Symposium speaker at Meeting for the Society of Integrative and Comparative Biology, Portland, OR.
- Hutton, P. and **K. J. McGraw**. 2015. Artificial light at night: impacts on birds. 26th Annual Meeting of the International Dark-Skies Association, Phoenix, AZ.
- McGraw, K. J.** 2015. Nutrition and animal colors: a pigmentary perspective. Undergraduate Nutrition Colloquium, ASU-Downtown campus, Phoenix, AZ.
- Hutton, P. and **McGraw, K. J.** 2015. Antioxidants and Animal Health: A Pigmentary Perspective on Avian Dietary Variation in the City. Symposium speaker at International Urban Wildlife Conference, Chicago, IL.
- McGraw, K. J.** 2015. Birds, baseball, and bright colors. SOLS Professor Mini-Symposium, ASU.
- McGraw, K. J.** and Giraudeau, M. 2014. Physiological correlates of urbanization in a desert songbird. Meeting of the Society of Integrative and Comparative Biology, Austin, TX.
- McGraw, K. J.** 2014. Sex, disease, & stress in the city: variation in sexual selection and condition along an urban gradient. Department of Biological Sciences, Dartmouth College, Hanover, NH.
- McGraw, K. J.** 2014. Sex and disease in the city: links between carotenoid coloration, parasites, and urbanization. Meeting of the International Carotenoid Society, Salt Lake City, UT.
- Butler, M. W. and **McGraw, K. J.** 2013. Physiological roles of a pigment used in eggshell coloration. Symposium on Physiological and Functional Advances in Avian Coloration. Meeting of the American Ornithologists' Union, Chicago, IL.
- Thomas, D. B., **McGraw, K. J.**, McGovern, C. M., and James, H. F. 2013. Vibrational spectroscopic analyses of unique feather pigments in penguins. Symposium on Physiological and Functional Advances in Avian Coloration. Meeting of the American Ornithologists' Union, Chicago, IL.
- Toomey, M. B., Enright, J. M., Riedl, K. M., Schwartz, Witt, C. C., Harrison, E. H., Lind, O., Kelber, O., **McGraw, K. J.**, and Corbo, J. C. 2013. Complementary shifts in carotenoid metabolism and opsin tuning facilitate avian color discrimination. Symposium on Physiological and Functional Advances in Avian Coloration. Meeting of the American Ornithologists' Union, Chicago, IL.
- Thomas, D. B., James, H. F., and **McGraw, K. J.** 2013. Non-destructive, *in-situ* analysis of

- avian plumage pigments using Raman spectroscopy. Symposium on The Extended Specimen: Emerging Frontiers in Collections-based Ornithological Research. Meeting of the American Ornithologists' Union, Chicago, IL.
- McGraw, K. J.** 2013. Sex and filth in the city: urban impacts on avian health and sexual selection. Smithsonian Institute of Tropical Research, Gamboa, Panama.
- McGraw, K. J.** 2013. Sex and filth in the city: urban impacts on avian health and sexual selection. CAP Community Seminar Series, Global Institute of Sustainability, Arizona State University, Tempe, AZ.
- McGraw, K. J.** 2013. Sex and filth in the city: urban impacts on avian health and sexual selection. Smithsonian National Museum of Natural History, Washington, D.C.
- McGraw, K. J.** 2013. Carotenoids on an island - a test of trade-off and condition-dependence models for body carotenoid accumulation in a community of introduced New Zealand songbirds. School of Biological Sciences, Washington State University, Pullman, WA.
- McGraw, K. J.** 2013. Carotenoids on an island - a test of trade-off and condition-dependence models for body carotenoid accumulation in a community of introduced New Zealand songbirds. Gordon Conference on Carotenoids, Ventura, CA.
- McGraw, K. J.** 2012. Honesty and deceit in the plant and animal kingdoms. Lying conference, Arizona State University (declined; illness).
- McGraw, K. J.** 2012. Evolution of pigment-based coloration in birds: a biochemical and phylogenetic perspective. Institute of Zoology, University of Tartu, Estonia.
- McGraw, K. J.** 2012. Comparative carotenoid nutrition. Meeting of the Comparative Nutrition Society, Asilomar, CA (plenary lecture).
- McGraw, K. J.** 2012. Sex in the city: ornament and health variation in the face of genetic homogeneity in urban and rural desert finches. Department of Biology, University of Montana, Missoula, MT.
- McGraw, K. J.** 2011. The evolution of human behavior: animal feeding and breeding instincts. Sigma Xi Scientific Society (local ASU chapter), Tempe, AZ.
- McGraw, K. J.** 2010. The evolution of bird coloration. School of Biological Sciences, University of Canterbury, Christchurch, New Zealand.
- McGraw, K. J.** 2010. The evolution of bird coloration. University seminar, Lyon College, Batesville, AR.
- McGraw, K. J.** 2009. Bird colors as bioindicators of climate change and human environmental impacts. Department of Conservation and Science seminar, Smithsonian Institute – National Zoo, Washington, D.C.
- McGraw, K. J.** 2009. The evolution of carotenoid pigmentation in birds: a phylogenetic and biochemical perspective. San Diego State University, Department of Biology, San Diego, CA.
- McGraw, K. J.** 2009. The evolution of carotenoid pigmentation in birds: a phylogenetic and biochemical perspective. University of Maryland-Baltimore County, Department of Biology, Baltimore, MD.
- McGraw, K. J.** 2009. Carotenoids as narcissistic agents of color evolution: a bird's eye view. Meeting of the American Association for the Advancement of Science, Chicago, IL.
- McGraw, K. J.** 2009. Carotenoids and the brain: more than just a pretty face. 3rd annual ASU/Barrow's Neuroscience symposium, Phoenix, AZ (could not attend at last minute due to illness).
- McGraw, K. J.** 2009. The evolution of carotenoid pigmentation in birds: a phylogenetic and biochemical perspective. Symposium presentation at the Meeting of the Animal Behavior Society, Pirenopolis, Brazil.
- McGraw, K. J.** 2008. New roles of unique pigments in birds. Department of Integrative Biology, University of California-Berkeley, Berkeley, CA.

- McGraw, K. J.** 2008. Interspecific variation in avian iridescent coloration: ecological, phylogenetic, and quality-signaling predictors. Frontiers in Life Science conference on Iridescence, Arizona State University, Tempe, AZ.
- McGraw, K. J.** 2007. The evolution of ornate colors in songbirds: from biochemicals to behavior. Observatoire Océanologique Européen, Centre Scientifique de Monaco, Principality of Monaco.
- McGraw, K. J.** 2007. The evolution of ornate colors in songbirds: from biochemicals to behavior. Department of Biology, University of Puget Sound, Tacoma, WA.
- McGraw, K. J.** 2007. The costs and benefits of melanin coloration in birds. Plenary talk, Meeting of the Japanese Society for Pigment Cell Research, Toyoake, Aichi, Japan.
- McGraw, K. J.** 2007. The evolution of ornate colors in songbirds: from biochemicals to behavior. Arizona State University-West, Department of Integrated Natural Sciences, Phoenix, AZ.
- McGraw, K. J.,** M. Massaro, and T. Rivers. 2007. Annual, sexual, size-, and condition-related variation in the color and fluorescent pigment content of yellow crests in Snares penguins (*Eudyptes robustus*). Plenary talk, 6th International Penguin Conference, University of Tasmania, Australia.
- McGraw, K. J.** 2007. Carotenoids as narcissistic agents of color evolution. Plenary talk, Center for Ecology, Evolution, and Behavior annual symposium, University of Kentucky, Lexington, KY.
- McGraw, K. J.** 2007. The evolution of ornate colors in songbirds: from biochemicals to behavior. Department of Biology, Ohio Wesleyan University, Delaware, OH.
- McGraw, K. J.** and M. B. Toomey. 2007. Carotenoid partitioning among body tissues in an avian model species: implications for trade-offs and differential functions. Gordon Conference on Carotenoid Pigments, Ventura, CA.
- McGraw, K. J.** 2006. Birds communicate in color: what the costs of color production tell us about how colors are used as signals. Cognition, Action, and Perception Seminar Series. Department of Psychology, Arizona State University, Tempe, AZ.
- Safran, R. J., **K. J. McGraw,** C. R. Neuman, I. J. Lovette, M. R. Evans, and A. Lotem. 2006. Geographic variation in the expression and function of mate choice signals in *Hirundo rustica*. IV North American Ornithological Conference, Veracruz, Mexico.
- McGraw, K. J.** 2006. Birds communicate in color: different colors send different messages. The Citadel, Charleston, SC.
- McGraw, K. J.** 2006. The evolution of ornate colors in songbirds: from biochemicals to behavior. University of Massachusetts, Amherst, MA.
- McGraw, K. J.** 2006. The evolution of ornate colors in songbirds: from biochemicals to behavior. New England Aquarium, Boston, MA.
- McGraw, K. J.** 2006. The evolution of ornate colors in songbirds: from biochemicals to behavior. Department of Biology, St. Lawrence University, Canton, NY.
- McGraw, K. J.** 2005. The evolution of ornate colors in songbirds: from biochemicals to behavior. Department of Biology, Ithaca College, Ithaca, NY.
- McGraw, K. J.** 2005. The evolution of ornate colors in songbirds: from biochemicals to behavior. Department of Ecology and Evolution, University of Chicago, Chicago, IL.
- McGraw, K. J.** 2005. The evolution of ornate colors in songbirds: from biochemicals to behavior. Centre National de la Recherche Scientifique, Montpellier, France.
- McGraw, K. J.** 2005. The evolution of ornate colors in songbirds: from biochemicals to behavior. Max-Planck Institute for Ornithology, Seewiesen, Germany.
- McGraw, K. J.** 2004. Sexual selection for plumage ornaments in barn swallows: revisiting signal production and function. University of California-Riverside, CA.
- McGraw, K. J.** 2004. Nutrition and animal colors. Comparative Nutrition seminar, Department

- of Animal Science, University of California-Davis, Davis, CA.
- McGraw, K. J.** 2004. The evolution of ornate colors in songbirds: from biochemicals to behavior. Animal Behavior Graduate Group, University of California-Davis, Davis, CA.
- McGraw, K. J.** 2004. The evolution of ornate colors in songbirds: from biochemicals to behavior. School of Life Sciences, Arizona State University, Tempe, AZ (faculty job interview).
- McGraw, K. J.** 2004. The evolution of ornate colors in songbirds: a biochemical perspective. University of California-Berkeley, Berkeley, CA.
- McGraw, K. J.** 2004. Antioxidants and avian health: an ecological perspective. Department of Biological Sciences, Dartmouth College, Hanover, NH (faculty job interview).
- McGraw, K. J.** 2004. The evolution of ornate colors in songbirds: from biochemicals to behavior. Department of Biological Sciences, Dartmouth College, Hanover, NH (faculty job interview).
- McGraw, K. J.** 2003. Biochemical and physiological costs and benefits of carotenoid coloration in finches. Department of Biological Sciences, Binghamton University, Binghamton, NY.
- McGraw, K. J.** 2003. The evolution of ornamental coloration in songbirds: a biochemical perspective. Department of Organismic Biology, Ecology, and Evolution. University of California, Los Angeles, CA.
- McGraw, K. J.** 2003. Carotenoids as immunostimulants in birds: an ecological approach. Department of Avian Science, University of California, Davis, CA.
- McGraw, K. J.** 2003. The evolution of ornamental coloration in songbirds: a biochemical perspective. Department of Animal Science, University of California, Davis, CA.
- Hill, G. E. and **K. J. McGraw.** 2003. A biochemical and phylogenetic approach to the study of ornamental coloration in birds. *Plenary lecture, 2nd European Conference on Avian Colour Vision and Coloration*, Muséum National d'Histoire Naturelle, Paris, France.
- McGraw, K. J.** 2003. Androgens and attractiveness: a novel, testosterone-mediated mechanism for the expression of sexual coloration in zebra finches. Reproductive Endocrinology seminar series, Department of Animal Sciences, Cornell University, Ithaca, NY.
- McGraw, K. J.** 2001. The costs and benefits of carotenoid deposition in zebra finch eggs. Department of Biology, Queen's University, Kingston, Ontario, Canada.
- McGraw, K. J.** 2001. Carotenoid intake, metabolism, and deposition in colorful songbirds. Division of Nutritional Sciences, Cornell University, Ithaca, NY.

CONFERENCE SEMINARS

- McGraw, K. J.** 2017. The evolution of nutritional and physiological mechanisms underlying carotenoid allocation in songbirds. Meeting of the International Carotenoid Society, Lucerne, Switzerland.
- Hutton, P. and **K. J. McGraw.** 2016. Flexibility of physiological and behavioral responses to light pollution. Meeting of the International Society of Behavioral Ecology, University of Exeter, UK.
- Seymoure, B., Loew, E., McMillan, W. O., **McGraw, K. J.**, and Rutowski, R. 2016. Mimetic coloration, behavior, and vision correspond to light environment. Meeting of the International Society of Behavioral Ecology, University of Exeter, UK.
- Simpson, R. K., J. Givens, and **K. J. McGraw.** 2016. Evolutionary patterns of hummingbird coloration. Annual Meeting of the Society for Integrative and Comparative Biology, Portland, OR.
- Hutton, P. and **K. J. McGraw.** 2015. Sleep, stress, and sickness in a city songbird subjected to shifting spectral signatures. 26th Annual Meeting of the International Dark-Sky Association, Scottsdale, AZ.
- McGraw, K. J.** and Hutton, P. 2015. Urbanization alters molt dynamics in a common desert

- songbird. Joint Meeting of the American Ornithologists' Union and Cooper Ornithological Society, Norman, OK.
- Ligon, R. A. and **McGraw, K. J.** 2015. Rapid color change in chameleons communicates information about motivation, aggression, and bite force. Meeting of the Animal Behavior Society, Anchorage, AK.
- Seymoure, B., Loew, E., McMillan, W. O., **McGraw, K. J.**, and Rutowski, R. 2015. *Heliconius* mimicry rings in a new light: light environment and signaling. Meeting of the Animal Behavior Society, Anchorage, AK.
- McGraw, K. J.**, S. Arnold, and M. Cook. 2015. Cognition in the city: impacts of urbanization and human disturbance on problem solving in a wild bird. Meeting of the Animal Behavior Society, Anchorage, AK.
- Taylor, L. A. and **K. J. McGraw.** 2015. Misdirected courtship in a community of colorful jumping spiders. Annual Meeting of the Entomological Society of America, Minneapolis, MN.
- McGraw, K. J.** and Giraudeau, M. 2014. Urban-rural variation in parasites, antioxidants, and oxidative stress in a desert songbird. Meeting of the International Society of Behavioral Ecology, New York, NY.
- Seymoure, B. M., McMillan, W. O., **McGraw, K. J.**, and Rutowski, R. L. 2014. *Heliconius* mimicry rings in a new light: light environment and signaling. Meeting of the International Society of Behavioral Ecology, New York, NY.
- Toomey, M. B., Enright, J. M., Lind, O., Frederiksen, R., Wilby, D., Riedl, K. M., Schwartz, S. J., Witt, C. C., Harrison, E. H., McGraw, K. J., Roberts, N. W., Cornwall, M. C., Kelber, A., and Corbo, J. C. 2014. Carotenoid metabolism and opsin tuning have coevolved to facilitate avian color discrimination. Meeting of the International Society of Behavioral Ecology, New York, NY.
- Weaver, M. J., Ligon, R. A., Mousel, M., and McGraw, K. J. 2014. Avian anthropobia? Behavioral and physiological responses of house finches across an urban gradient in the presence of a predator. Meeting of the International Society of Behavioral Ecology, New York, NY.
- Yeager, J., Saporito, R., **McGraw, K. J.**, and Richards-Zawacki, C. 2014. Impacts of anthropogenic disturbance to phenotypic traits under selection in incipient speciation. Meeting of the Evolution Society, Raleigh, NC.
- Newbrey, J. L., Paszkowski, C. A., **McGraw, K. J.**, and Ogle, S. 2014. Laying-sequence variation in yolk carotenoids and egg characteristics in the red-winged blackbird. Meeting of the American Ornithologists' Union, Estes Park, CO.
- Weaver, M. J., **McGraw, K. J.**, and Mousel, M. M. 2014. Avian anthropobia? Stress response of house finches across an urban gradient in the presence of humans. Meeting of the Society of Integrative and Comparative Biology, Austin, TX.
- Simpson, R. K. and **McGraw, K. J.** 2014. The role of a fluctuating environment on multimodal signals. Meeting of the Society of Integrative and Comparative Biology, Austin, TX.
- Ligon, R. A. and **McGraw, K. J.** 2013. Chameleon color change: evidence for communication via rapid chromatic transformation. Joint Meeting of Ichthyologists and Herpetologists, Albuquerque, N.M.
- Ligon, R. A. and **McGraw, K. J.** 2013. Rapid skin darkening as a signal of submission in veiled chameleons. Meeting of the Animal Behavior Society, Boulder, CO.
- McGraw, K. J.**, Giraudeau, M., Borkar, T., and Karam, L. 2013. A new software tool for analyzing animal coloration from digital photographs. Meeting of the Animal Behavior Society, Boulder, CO.
- Simpson, R. K. and **McGraw, K. J.** 2013. The role of a fluctuating environment on multimodal signals. Meeting of the Animal Behavior Society, Boulder, CO.

- Brown, A. C., **McGraw, K. J.**, and Clotfelter, E. D. 2013. Dietary carotenoids increase non-carotenoid coloration of female convict cichlids (*Amantitlania nigrofasciata*). Meeting of the Society for Integrative and Comparative Biology, San Francisco, CA.
- Toomey, M. B., **McGraw, K. J.**, Harrison, E., and Corbo, J. 2013. Fine-tuning of avian color vision by selective apocarotenoid metabolism. Gordon Research Conference on Carotenoids, Ventura, CA.
- Stahlschmidt, Z. R., Butler, M. W., Ardia, D. R., Davies, S., Davis, J. R., Guillette, L. J., Johnson, N., McCormick, S. D., **McGraw, K. J.**, and DeNardo, D. F. 2012. Thermal performance of innate immunity in vertebrates. Meeting of the Society for Integrative and Comparative Biology, Charleston, SC.
- Butler, M. W. and **McGraw, K. J.** 2012. Differential effects of early- and late-life access to carotenoids on adult immune function and ornamentation in mallard ducks (*Anas platyrhynchos*). Meeting of the American Ornithologists' Union, Vancouver, British Columbia, Canada.
- Seymoure, B., McMillan, O. W., **McGraw, K. J.**, and Rutowski, R. 2012. Heliconius mimicry rings in a new light. Meeting of the Society for Integrative and Comparative Biology, Charleston, SC.
- McGraw, K. J.** 2011. Elevated ambient temperatures impair antioxidant status and carotenoid-based sexual ornamentation. 16th International Symposium on Carotenoids, Krakow, Poland.
- McGraw, K. J.**, Chavez, A. and Immel, A. 2010. Why are birds less sexy in the city? A common garden experiment on carotenoids and oxidative stress in urban and rural house finches. Meeting of the International Society for Behavioral Ecology, Perth, Australia.
- Friedman, N. R., **McGraw, K. J.**, and Omland, K. E. 2010. Multiple gains of red coloration in blackbirds: convergence and parallelism in the evolution of carotenoid use. Meeting of the Animal Behavior Society, Williamsburg, VA.
- Meadows, M. G. and **K. J. McGraw**. 2010. Unexpected relationship between aggression and ornamentation in Anna's hummingbirds (*Calypte anna*). Meeting of the American Ornithologists' Union, San Diego, CA.
- Shawkey, M. D., L. B. D'Alba, **K. J. McGraw**, and R. J. Safran. 2010. Morphology of melanosomes in black, brown and grey feathers. Meeting of the American Ornithologists' Union, San Diego, CA.
- Peluc, S. I., W. L. Reed, and **K. J. McGraw**. 2010. Maternally derived testosterone and carotenoids influence offspring performance in Japanese quail. Meeting of the American Ornithologists' Union, San Diego, CA.
- Toomey, M. B. and **K. J. McGraw**. 2010. Dietary carotenoids affect color-vision-based foraging in the house finch. Meeting of the American Ornithologists' Union, San Diego, CA.
- Toomey, M. B., M. W. Butler, and **K. J. McGraw**. 2010. Long-term immune system activation depletes carotenoids from retina of house finches (*Carpodacus mexicanus*). Meeting of the Society for Integrative and Comparative Biology, Seattle, WA.
- Butler, M. W. and **K. J. McGraw**. 2010. Immunological perturbations during neonatal development reduce immunocompetence and body mass in adult mallards. Meeting of the Society for Integrative and Comparative Biology, Seattle, WA.
- Toomey, M. B. and **K. J. McGraw**. 2009. Is there a unique role for carotenoids in the production and perception of avian color signals? Meeting of the Animal Behavior Society, Pirenopolis, Brazil.
- Taylor, L. A. and **K. J. McGraw**. 2009. Effects of male coloration on mating success in a jumping spider. Meeting of the Animal Behavior Society, Pirenopolis, Brazil.
- Meadows, M. G. and **K. J. McGraw**. 2009. Do small iridescent badges signal dominance in Anna's hummingbird, *Calypte anna*? Meeting of the Animal Behavior Society,

- Pirenopolis, Brazil.
- Chui, C., **K. J. McGraw**, and S. Doucet. 2009. Migration timing, individual condition, and carotenoid content mediate crown colour variation in golden-crowned kinglets. Meeting of the American Ornithologists' Union, Philadelphia, PA.
- Hill, G. E., R. A. Ligon, and **K. J. McGraw**. 2009. The evolution of carotenoid pigment systems: a phylogenetic and biochemical approach. Meeting of the American Ornithologists' Union, Philadelphia, PA.
- Safran, R.J., **K. J. McGraw**, M. R. Wilkins, and J. K. Hubbard. 2009. Positive antioxidant balance over the breeding season predicts reproductive performance in barn swallows. Meeting of the American Ornithologists' Union, Philadelphia, PA.
- Weiss, S., E. Kennedy, and **K. J. McGraw**. 2008. Maternal ornamentation and yolk antioxidants correlate in female striped plateau lizards. Meeting of the International Society of Behavioral Ecology, Cornell University, Ithaca, NY.
- Safran, R. J., J. Adelman, **K. J. McGraw**, and M. Hau. 2008. Sexual signal exaggeration affects physiological state in male barn swallows. Meeting of the International Society of Behavioral Ecology, Cornell University, Ithaca, NY.
- Meadows Rader, M. and **K. J. McGraw**. 2008. Iridescent ornamentation as a status signal in male Anna's hummingbirds (*Calypte anna*). Meeting of the International Society of Behavioral Ecology, Cornell University, Ithaca, NY.
- Toomey, M. B. and **K. J. McGraw**. 2008. Variation in and correlates of retinal carotenoid accumulation in wild house finches (*Carpodacus mexicanus*). Meeting of the International Society of Behavioral Ecology, Cornell University, Ithaca, NY.
- Dierenfeld, E. S., **K. J. McGraw**, K. Fritsche, and K. Kerr. 2007. Nutrient composition of whole crayfish eaten by hellbender salamanders (*Cryptobranchus alleganiensis* spp.). Nutrition Advisory Group conference, Knoxville, TN.
- Clotfelter, E., Ardia, D., and **McGraw, K. J.** 2007. Red fish, blue fish: tradeoffs in pigmentation and immunity in *Betta splendens*. 44th Annual meeting of the Animal Behavior Society, Burlington, VT.
- Meadows, M. G. and **K. J. McGraw**. 2007. The role of iridescent coloration in hummingbird aggressive interactions. 44th Annual Meeting of the Animal Behavior Society, Burlington, VT.
- McGraw, K. J.**, K. Lee, and A. Lewin. 2007. The effect of stress on carotenoid-based coloration in zebra finches. 44th Annual Meeting of the Animal Behavior Society, Burlington, VT.
- Safran, R. J., Hau, M., Adelman, J., and **K. J. McGraw**. 2007. Testosterone increase from sexual signal enhancement in barn swallows. 44th Annual Meeting of the Animal Behavior Society, Burlington, VT.
- Taylor, L. A., **K. J. McGraw**, and D. Clark. 2007. Condition-dependence and microstructural mechanisms of coloration in male jumping spiders. Meeting of the American Arachnology Society, Susquehanna University, Selinsgrove, PA.
- Taylor, L. A., **K. J. McGraw**, and D. Clark. 2007. Condition-dependence and microstructural mechanisms of coloration in male jumping spiders. XVII International Congress of Arachnology, Sao Pedro, Brazil.
- Taylor, L. A., **K. J. McGraw**, and D. Clark. 2007. Condition-dependence and microstructural mechanisms of coloration in male jumping spiders. Meeting of the Arizona Imaging and Microanalysis Society, Arizona State University, Tempe, AZ.
- Smith, L. A., Burt, Jr., E. H., Sroka, J. R., Schroeder, M. R., and **K. J. McGraw**. 2007. Colorful parrot feathers inhibit bacterial degradation. Meeting of the Wilson Ornithological Society, Boston, MA.
- Burt, Jr., E. H., M. R. Schroeder, L. A. Smith, J. E. Sroka, and **K. J. McGraw**. 2007. Differently colored parrot feathers are differentially resistant to bacterial degradation.

- Annual Meeting of the American Ornithologists' Union, University of Wyoming, Laramie, WY.
- Hipfner, M., J. Dale, and **K. McGraw**. 2007. Foraging strategies and yolk carotenoid deposition in a community of marine birds. Pacific Seabird Group Meeting, Pacific Grove, CA.
- Toomey, M. B. and **K. J. McGraw**. 2007. Carotenoid pigments in the tissues of zebra finches (*Taeniopygia guttata*): identity, distribution, and intercorrelations. Meeting of the Society for Integrative and Comparative Biology, Phoenix, AZ.
- Meadows, M. G. and **K. J. McGraw**. 2007. How hummingbirds choose their fights: the role of iridescent coloration in aggressive interactions. Meeting of the Society for Integrative and Comparative Biology, Phoenix, AZ.
- McGraw, K. J.** 2006. Carotenoids as buffers for testosterone-induced immunosuppression. IV North American Ornithological Conference, Veracruz, Mexico.
- Hill, G. E. and **K. J. McGraw**. 2006. A biochemical, nutritional, and phylogenetic approach to the study of ornamental coloration in birds. Meeting of the Comparative Nutrition Society, Keystone, Colorado.
- McGraw, K. J.** 2006. The signal content of avian color signals: a meta-analysis. Meeting of the Animal Behavior Society, Snowbird, UT.
- Bezzerides, A. L. and **K. J. McGraw**. 2006. Elytra color as a signal of chemical defense in the Asian ladybird beetle *Harmonia axyridis*. Meeting of the Animal Behavior Society, Snowbird, UT.
- Dale, J., Williams, T. D., and **K. J. McGraw**. 2006. Social control of bill colouration in zebra finches. Meeting of the International Society for Behavioral Ecology, Tours, France.
- Safran, R. J., C. R. Neuman, **K. J. McGraw**, and I. J. Lovette. 2006. Adaptive dynamics of paternity allocation. Meeting of the International Society for Behavioral Ecology, Tours, France.
- McGraw, K. J.** 2005. Carotenoids, immunity, and integumentary coloration in red junglefowl. Meeting of the Animal Behavior Society, Snowbird, UT.
- Pizzi, R., **K. J. McGraw**, P. M. Nolan, and M. Gibbons. 2005. Novel plumage pigments, novel prey species antioxidants and immunostimulants: implications for captive penguin nutrition. Meeting of the European Zoo Nutrition Centre, Leipzig, Germany.
- McGraw, K. J.** 2005. The carotenoid cocktails that create sexually attractive colors in birds. 14th International Carotenoid Symposium, Edinburgh, Scotland.
- McGraw, K. J.** 2005. Carotenoids as immunomodulators in birds: a review. 14th International Carotenoid Symposium, Edinburgh, Scotland.
- McGraw, K. J.** and K. C. Klasing. 2005. Carotenoids mediate a trade-off between offspring quantity and quality in quail. Meeting of the Society for Integrative and Comparative Biology, San Diego, CA.
- Mays, Jr., H. L., **K. J. McGraw**, G. Ritchison, S. Cooper, V. Rush, and R. S. Parker. 2004. Plumage dichromatism in the yellow-breasted chat (*Icteria virens*). Post-ISBE workshop on colour signaling. Konnevesi, Finland.
- McGraw, K. J.**, Nolan, P. M., Jouventin, P., and Dobson, F. S. 2004. Penguins use a novel class of plumage pigments to color their feathers yellow. 5th International Penguin Conference, Ushuaia, Tierra del Fuego, Argentina.
- Hill, G. E. and **K. J. McGraw**. 2004. A biochemical and phylogenetic approach to the study of ornamental coloration in birds. Meeting of the American Ornithologists' Union, Université Laval, Québec, Canada.
- Hofmann, C., **McGraw, K. J.** and Omland, K. 2004. Orchard orioles: a tale of two pigments. Meeting of the American Ornithologists' Union, Université Laval, Québec, Canada.
- Hill, G. E. and **K. J. McGraw**. 2004. A biochemical and phylogenetic approach to the study of ornamental coloration in birds. 10th International Symposium for Behavioral Ecology,

- University of Jyväskylä, Finland.
- Safran, R. S., **K. J. McGraw**, and M. Evans. 2003. Geographic differences in sexual ornaments: plumage coloration, not tail streamers, is a sexually selected trait in North American barn swallows. Joint meeting of the Association of Field Ornithology and Wilson Ornithological Society, Cornell University, Ithaca, NY.
- McGraw, K. J.**, M. Nogare., P. M. Nolan, F. S. Dobson, and P. Jouventin. 2003. New plumage pigments in parrots and penguins. Meeting of the American Ornithologists' Union, University of Illinois, Urbana-Champaign, IL.
- McGraw, K. J.** 2003. Melanins, minerals, and mate quality: a new hypothesis and an experimental test. Meeting of the Animal Behavior Society, Univ. of Idaho, Boise, ID.
- Safran, R. S., **K. J. McGraw**, and M. Evans. 2003. Geographic differences in sexual ornaments: plumage coloration, not tail streamers, is a sexually selected trait in North American barn swallows. Meeting of the American Ornithologists' Union, University of Illinois, Urbana-Champaign, IL.
- Hill, G. E., **K. J. McGraw**, A. M. Stoehr, and R. A. Duckworth. 2003. Why are drab male house finches socially dominant to bright males? Meeting of the American Ornithologists' Union, University of Illinois, Urbana-Champaign, IL.
- Hill, G. E. and **K. J. McGraw**. 2002. Correlated changes in female mate choice and male plumage coloration in cardueline finches. 9th International Symposium for Behavioral Ecology, University of Quebec at Montreal, Montreal, Quebec, Canada.
- McGraw, K. J.** 2002. All plumage colors are not created equal: a review of the signaling information contained within carotenoid-, melanin-, and structural-based ornamental colors in birds. 9th International Symposium for Behavioral Ecology, University of Quebec at Montreal, Montreal, Quebec, Canada.
- McGraw, K. J.**, E. Adkins-Regan, and R. S. Parker. 2002. The evolutionary significance of carotenoid pigmentation in bird eggs. 13th International Carotenoid Society Symposium. Honolulu, Hawaii.
- McGraw, K. J.**, E. A. Vonnegut, and J. Dale. 2001. Social environment during molt predicts the expression of melanin-based plumage pigmentation in male house sparrows (*Passer domesticus*). Meeting of the Animal Behavior Society, Oregon State University, Corvallis, OR.
- McGraw, K. J.**, E. A. Vonnegut, J. Dale, and M. E. Hauber. 2001. Do different plumage colors reveal different information?: how nutritional stress affects the expression of melanin- and structurally based ornamental coloration. Meeting of the American Ornithologists' Union, University of Washington, Seattle, WA.
- Hill, G. E. and **K. J. McGraw**. 2000. Co-evolution of female mate preferences and the color and pattern of male plumage coloration in cardueline finches. Meeting of the American Ornithologists' Union, St. Johns, Newfoundland, Canada.
- McGraw, K. J.** 2000. Variation in the information content of carotenoid- and melanin-based ornamental plumage: empirical tests in two cardueline finch species. Meeting of the Animal Behavior Society, Morehouse College, Atlanta, GA.
- Hill, G. E. and **K. J. McGraw**. 2000. Co-evolution of female mate preferences and the color and pattern of male plumage coloration in cardueline finches. Meeting of the Animal Behavior Society, Morehouse College, Atlanta, GA.
- Stoehr, A. M., P. M. Nolan, G. E. Hill, and **K. J. McGraw**. 2000. The effects of nest mites on the reproductive biology of the house finch. Meeting of the Animal Behavior Society, Morehouse College, Atlanta, GA.
- McGraw, K. J.** 2000. Differential costs and signal content of carotenoid- and melanin-based plumage coloration. Graduate Student Research Forum, Department of Ecology and Evolutionary Biology, Cornell University, Ithaca, NY.

- McGraw, K. J.** 1999. The significance of male plumage coloration in mediating reproductive success and social dominance among male house finches (*Carpodacus mexicanus*). Auburn University, Auburn, AL.
- McGraw, K. J.** 1999. Breeding-season dominance and plumage ornamentation in the house finch, Meeting of the Animal Behavior Society, Bucknell University, Lewisburg, PA.
- Stoehr, A. M., K. J. McGraw, P. M. Nolan, and G. E. Hill. 1999. Parental care and brood size in house finches. Meeting of the Animal Behavior Society, Bucknell University, Lewisburg, PA.
- McGraw, K. J.** 1999. Carotenoid-based ornamentation and status signaling in the house finch. Graduate Student Research Forum, Auburn University, Auburn, AL.

CONFERENCE POSTERS

- Webb, E. A., and **K. J. McGraw**. 2017. Effects of artificial night at light on carotenoid allocation in king quail. Meeting of the International Carotenoid Society, Lucerne, Switzerland.
- Giraudeau, M., A. K. Ziegler, S. Ducatez, **K. J. McGraw**, and B. Tschirren. 2017. Interactive and long-term effects of yolk androgens and antioxidants in birds. Annual Meeting of the Society of Integrative and Comparative Biology, New Orleans, LA.
- Weaver, M. and **K. J. McGraw**. 2016. Variation in house finch novelty response across an urban gradient. Meeting of the International Society of Behavioral Ecology, University of Exeter, UK.
- Simpson, R. K. and **K. J. McGraw**. 2016. The evolution of hummingbird coloration and courtship displays. Meeting of the International Society of Behavioral Ecology, University of Exeter, UK.
- Weaver, M. J. and **K. J. McGraw**. 2016. Avian anthropophobia? Behavioral and physiological responses of house finches across an urban gradient in the presence of a predator. Annual All-Scientists Meeting of the CAP-LTER program, ASU, Scottsdale, AZ.
- Hutton, P. and **K. J. McGraw**. 2016. Urbanization alters molt dynamics in a common desert songbird. Annual All-Scientists Meeting of the CAP-LTER program, ASU, Scottsdale, AZ.
- Weaver, M. and **McGraw, K. J.** 2015. Bold urbanites and shy hillbillies? Variation in novel environment exploration in *Haemorrhous mexicanus*. Meeting of the Animal Behavior Society, Anchorage, AK.
- Hutton, P. and **McGraw, K. J.** 2015. Hit the lights: how experimental artificial night lighting influences sleep, disease, and stress in a songbird. Meeting of the Animal Behavior Society, Anchorage, AK.
- Staley, M., Bonneaud, C., Giraudeau, M., **McGraw, K. J.**, and Hill, G. E. 2015. The epidemiology of *Mycoplasma gallisepticum* infections in Arizona house finches (*Haemorrhous mexicanus*). Meeting of the Society of Integrative and Comparative Biology, West Palm Beach, FL.
- Ge, Z., Johnson, J. D., Cobine, P. A., **McGraw, K. J.**, Garcia, R., and Hill, G. E. 2015. High concentrations of ketocarotenoids in the hepatic mitochondria of a molting red songbird. Meeting of the Society of Integrative and Comparative Biology, West Palm Beach, FL.
- Bero-Buell, B., Ligon, R. A., and **McGraw, K. J.** 2014. Are males turned on by sexy females? Color, hormones, and behavior in zebra finches. Meeting of the International Society of Behavioral Ecology, New York, NY.
- Weaver, M., Mousel, M., and **McGraw, K. J.** 2013. Avian anthropophobia? Stress response of house finches to human presence along an urban gradient. All-Scientists Meeting of the Central Arizona-Phoenix Long Term Ecological Research program. Scottsdale, AZ.
- Baxter, C., Weaver, M., and **McGraw, K. J.** 2013. Do birds of a feather get locked together?

- Stress and behavior of mist-netted versus live-trapped finches. Meeting of the Animal Behavior Society, Boulder, CO.
- Weaver, M., Mousel, M., and **McGraw, K. J.** 2013. Avian anthropobia? Stress response of house finches to human presence along an urban gradient. Meeting of the Animal Behavior Society, Boulder, CO.
- Behbahaninia, H., Desaiivre, S., Giraudeau, M., Lendvai, A. Z., and **McGraw, K. J.** 2013. Developmental stress and adult morphometrics, immunity, and oxidative stress in house finches. Meeting of the Animal Behavior Society, Boulder, CO.
- Best, M. R., Ligon, R. A., and **McGraw, K. J.** 2013. Quantifying the skin patterns of chameleons: a comparison of two methods. Meeting of the Animal Behavior Society, Boulder, CO.
- Moore-Barkus, A. and **McGraw, K. J.** 2013. Carotenoid accumulation in California market squid *Loligo opalescens*. Meeting of the Animal Behavior Society, Boulder, CO.
- Toomey, M. B., Enright, J. M., Riedl, K. M., Schwartz, S. J., Witt, C. C., Harrison, E. H., **McGraw, K. J.**, and Corbo, J. C. 2013. Fine-tuning of avian color vision by selective apocarotenoid metabolism. FASEB Conference, Steamboat Springs, CO.
- Mousel, M., Giraudeau, M. and **McGraw, K. J.** 2013. Parasites in the city. All-Scientists Meeting of the Central-Arizona-Phoenix Long Term Ecological Research program. Scottsdale, AZ.
- McGraw, K. J.**, Giraudeau, M., Hill, G. E., and Toomey, M. B. 2012. Effects of an eye disease (*Mycoplasma gallisepticum*) on carotenoid accumulation, allocation, oxidative stress, and color vision in the house finch (*Carpodacus mexicanus*). Meeting of the International Society of Behavioral Ecology, Lund, Sweden.
- Behbahaninia, H., Butler, M. W., Toomey, M. B., and **McGraw, K. J.** 2012. Food color preferences against a dark, textured background vary in relation to sex and age in house finches (*Carpodacus mexicanus*). Meeting of the Animal Behavior Society, Albuquerque, NM.
- McGraw, K. J.**, Giraudeau, M., Hill, G. E., and Toomey, M. B. 2012. Effects of an eye disease (*Mycoplasma gallisepticum*) on carotenoid accumulation, allocation, oxidative stress, and color vision in the house finch (*Carpodacus mexicanus*). Meeting of the Animal Behavior Society, Albuquerque, NM.
- Gburek, T., Taylor, L. A., **McGraw, K. J.**, and Johnson, J. C. 2012. The condition-dependence of color signaling in female black widow spiders. Meeting of the Animal Behavior Society, Albuquerque, NM.
- Black, C., Nolan, P. M., **McGraw, K. J.**, and Giraudeau, M. 2012. Development of bird song along an urban-to-rural gradient. Meeting of the International Society of Behavioral Ecology, Lund, Sweden.
- Nolan, P. M., Black, C., Giraudeau, M., and **McGraw, K. J.** 2012. Song of adult house finches varies along a rural-to-urban gradient. Meeting of the International Society of Behavioral Ecology, Lund, Sweden.
- Black, C. E., Giraudeau, M., **McGraw, K. J.**, and Nolan, P. M. 2012. Bird song behavior along an urban-to-rural gradient. Annual Meeting of the Society for Integrative and Comparative Biology, Charleston, SC. *student poster award winner*
- Black, C. E., Giraudeau, M., **McGraw, K. J.**, and Nolan, P. M. 2012. Bird song behavior along an urban-to-rural gradient. Annual Meeting of the South Carolina Academy of Sciences, Aiken, SC. *student poster award winner*
- Toomey, M. B. and **K. J. McGraw.** 2011. Female choice for carotenoid-based color is linked to female carotenoid intake and accumulation. Annual Meeting of the Animal Behavior Society, Bloomington, IN.
- Taylor, L. A. and **K. J. McGraw.** 2011. Light-environment-dependent female choice for male

- ornamental coloration in a jumping spider. Annual Meeting of the Animal Behavior Society, Bloomington, IN.
- Meadows, M. G. and **K. J. McGraw**. 2011. Dietary protein affects iridescent coloration in Anna's hummingbirds (*Calypte anna*). Annual Meeting of the Animal Behavior Society, Bloomington, IN.
- Friedman, N., **K. J. McGraw**, and K. Omland. 2011. How do orioles evolve orange? The phylogeny and mechanism of gains and losses of carotenoid pigmentation. Annual Meeting of the Animal Behavior Society, Bloomington, IN.
- Butler, M. B., R. Ligon, and **K. J. McGraw**. 2011. Are dominance and beak color developmentally plastic in female mallards, *Anas platyrhynchos*? Annual Meeting of the Animal Behavior Society, Bloomington, IN.
- Butler, M. B. and **K. J. McGraw**. 2011. Effects of carotenoids and immunity during development on adult health and coloration in male and female mallard ducks. 16th International Symposium on Carotenoids, Krakow, Poland.
- Rowe, M., G. A. Czirjak, **McGraw, K. J.**, and Giraudeau, M. 2011. Sexual ornamentation reflects antibacterial activity of ejaculates in mallards. 8th International Conference on Behaviour, Physiology and Genetics of Wildlife. University of Agricultural Sciences and Veterinary Medicine, Romania.
- Brown, A. C., **McGraw, K. J.**, and Clotfelter, E. 2010. Carotenoid allocation strategies in a reverse sexually dimorphic species. Meeting of the Animal Behavior Society, Williamsburg, VA.
- Chavez, A. B., A. J. Immel, and **K. J. McGraw**. 2010. Carotenoids and oxidative stress along an urban/rural gradient: a common garden experiment in male house finches (*Carpodacus mexicanus*). Meeting of the American Ornithologists' Union, San Diego, CA.
- Toomey, M. B. and **K. J. McGraw**. 2010. The effects of dietary carotenoid supplementation on retinal carotenoid accumulation and visual foraging behavior in the house finch (*Carpodacus mexicanus*). Gordon Conference on Carotenoids, Ventura, CA.
- Butler, M. W. and **K. J. McGraw**. 2010. Effect of immune perturbations during development on circulating carotenoid levels, immune function, and carotenoid-based coloration in mallard ducks. Gordon Conference on Carotenoids, Ventura, CA.
- Tourville, E. A., A. L. Bascunan, M. B. Toomey, and **K. J. McGraw**. 2009. Food color preferences of molting house finches (*Carpodacus mexicanus*) in relation to sex and plumage coloration. Meeting of the Animal Behavior Society, Pirenopolis, Brazil.
- Taylor, L. A. and **K. J. McGraw**. 2008. Effects of diet manipulation on male ornamentation in a colorful jumping spider (Salticidae). Meeting of the International Society of Behavioral Ecology, Cornell University, Ithaca, NY.
- Clotfelter, E. and **K. J. McGraw**. 2008. Coloration-immune trade-offs in the dichromatic Midas cichlid. Meeting of the International Society of Behavioral Ecology, Cornell University, Ithaca, NY.
- Butler, M. W. and **K. J. McGraw**. 2008. The importance of developmental history on a sexually selected trait. Meeting of the International Society of Behavioral Ecology, Cornell University, Ithaca, NY.
- Navarro, C., T. Perez-Contreras, J. M. Aviles, **K. J. McGraw**, and J. J. Soler. 2008. Beak color reflectance circulating carotenoid levels in spotless starlings (*Sturnus unicolor*). Meeting of the International Society of Behavioral Ecology, Cornell University, Ithaca, NY.
- Meadows Rader, M., N. Morehouse, R. Rutowski, J. Douglas, and **K. J. McGraw**. 2008. Quantifying iridescent coloration: a new apparatus and comparison of techniques. Frontiers in Life Science conference on Iridescence, Arizona State University, Tempe, AZ.
- Taylor, L. A., **K. J. McGraw**, and D. Clark. 2008. Effects of diet on male coloration in a

- jumping spider (Salticidae). Frontiers in Life Science conference on Iridescence, Arizona State University, Tempe, AZ.
- Taylor, L. A., **K. J. McGraw**, and D. Clark. 2008. Male coloration and mating success in a jumping spider (Salticidae). Graduates in Earth, Life, and Social Sciences symposium, Arizona State University, Tempe, AZ.
- Juola, F. A., **K. J. McGraw**, and D. C. Dearborn. 2007. Carotenoids and throat pouch coloration in the great frigatebird (*Fregata minor*). Meeting of the Animal Behavior Society, Burlington, VT.
- Washington, L. L. and **K. J. McGraw**. 2007. Variability in carotenoid accumulation among molting house finches. Meeting of the Society for Integrative and Comparative Biology, Phoenix, AZ.
- Georges, J., P. Deviche, **K. J. McGraw**, and P. M. Nolan. 2007. Carotenoids, vocal performance, and the brain: an early-life nutritional and antioxidative mechanism underlying neural control of animal communication. Meeting of the Society for Integrative and Comparative Biology, Phoenix, AZ.
- Toomey, M. B., **K. J. McGraw**, P. M. Nolan, N. Morehouse, and P. Jouventin. 2006. The first description of fluorescent yellow pigments in penguin feathers. IV North American Ornithological Conference, Veracruz, Mexico.
- Schroeder, M. R., L. A. Smith, J. E. Sroka, **K. J. McGraw**, and E. Burt. 2006. Colorful parrot feathers inhibit bacterial degradation. IV North American Ornithological Conference, Veracruz, Mexico.
- Meadows, M. G., **K. J. McGraw**, M. B. Toomey, and L. A. Taylor. 2006. Condition-dependence of structural colors in birds: a meta-analysis. IV North American Ornithological Conference, Veracruz, Mexico (*Student Poster Presentation Award Winner, Runner-up*)
- Washington, L. and **McGraw, K. J.** 2006. Variability in carotenoid accumulation among molting house finches. School of Life Sciences Undergraduate Research Forum, Arizona State University, Tempe. AZ.
- Georges, J., P. Deviche, **K. J. McGraw**, P. Nolan, and L. Beard. 2006. Carotenoids, neurodevelopment, and vocal performance in the zebra finch (*Taeniopygia guttata*). School of Life Sciences Undergraduate Research Forum, Arizona State University, Tempe, AZ.
- Shawkey, M. D. and **K. J. McGraw**. 2004. Yellow colour production in budgerigars. Meeting of the American Ornithologists' Union, Université Laval, Québec, Canada.
- Hofmann, C., **McGraw, K. J.** and Omland, K. 2004. Orchard orioles: a tale of two pigments. 10th International Symposium for Behavioral Ecology, University of Jyväskylä, Finland.
- McGraw, K. J.** and E. Adkins-Regan. 2004. Testosterone modulates lipoprotein status to control sexual attractiveness in a colorful songbird. 8th International Symposium in Avian Endocrinology, Arizona State University, Tempe, AZ.
- Hörak, P., L. Saks, U. Karu, I. Ots, P. F. Surai, and **K. J. McGraw**. 2003. How coccidian parasites affect health and appearance of greenfinches (*Carduelis chloris*). 9th Congress of the European Society for Evolutionary Biology. University of Leeds, U.K.
- McGraw, K. J.** and G. E. Hill. 2000. Differential effects of parasitism on the expression of carotenoid- and melanin-based ornamental coloration. Meeting of the American Ornithologists' Union, St. Johns, Newfoundland, Canada.
- Nolan, P. M., **K. J. McGraw**, A. M. Stoehr, S. R. Roberts, G. E. Hill, and M. C. Wooten. 2000. Sex ratio fluctuations & facultative sex ratio adjustment following an epidemic. Meeting for the International Society for Behavioral Ecology, Zurich, Switzerland.
- McGraw, K. J.** and G. E. Hill. 1999. Differential effects of parasitism on the expression of carotenoid- and melanin-based ornamental coloration. Meeting of the American Ornithologists' Union, Cornell University, Ithaca, NY.

- Nolan, P. M., **K. J. McGraw**, A. M. Stoehr, A. A. Ford, G. E. Hill and M. C. Wooten. 1999. Facultative sex ratio adjustment following an epidemic. Meeting of the Animal Behavior Society, Bucknell University, Lewisburg, PA.
- McGraw, K. J.**, G. E. Hill, and A. J. Keyser. 1998. UV Reflectance of Colored Leg Bands Used in Avian Research. Meeting of the Animal Behavior Society, Southern Illinois University, Carbondale, IL.

JOURNAL EDITORSHIPS

- Associate Editor, *Functional Ecology*, British Ecological Society (2005-present)
Associate Editor, *Behavioral Ecology and Sociobiology* (2005-present)
Associate Editor, *PLoS One* (2010-2014)
Reviewing Editor, *The Condor*, Cooper Ornithologists' Society (2008-12)
Associate Editor, *The Auk*, American Ornithologists' Union (2008-12)
Board of Consulting Editors, *Animal Behaviour*, Animal Behavior Society (2005-8)

MANUSCRIPT PEER REVIEW

- 2016: Scientific Reports, Current Biology, Evolution, Behavioral Ecology, PeerJ, Journal of Morphology.
- 2015: Proceedings of the National Academy of Sciences (USA), Proceedings of the Royal Society B, Biology Letters, Behavioral Ecology, Journal of Animal Science
- 2014: Nature, Archives of Biochemistry and Biophysics, Comparative Biochemistry and Physiology A (2), Evolutionary Biology, Functional Ecology, Journal of Ornithology (2), Journal of Raptor Research, Naturwissenschaften, Oecologia (2), Wilson Journal of Ornithology
- 2013: Nature, Proceedings of the Royal Society B, Biological Reviews, Behavioral Ecology, Ibis, Comparative Biochemistry and Physiology B
- 2012: Copeia, Comparative Biochemistry and Physiology B, Physiological and Biochemical Zoology, Advances in Pharmacy and Pharmacology
- 2011: Science, Boreal Environment Research, Marine Drugs, Ecology, Molecular Ecology Resources, Journal of Avian Biology, Journal of Experimental Biology, Physiological and Biochemical Zoology
- 2010: Science (2), Biological Reviews, Biological Journal of the Linnean Society, Animal Biology, BMC Ecology, PLoS One (2), Naturwissenschaften, Proceedings of the Royal Society of London B (3), Archives of Biochemistry and Biophysics, Acta Ornithologica, Wildlife Biology, Notornis
- 2009: BMC Evolutionary Biology, Proceedings of the Royal Society of London B (2), Behavioral Ecology, Physiological and Biochemical Zoology (3), Ecology Letters, Journal of Animal Ecology, Comparative Biochemistry and Physiology B, Journal of Applied Ecology, Naturwissenschaften, Evolution, Journal of the Royal Society Interface, Journal of Avian Biology, Journal of Experimental Biology (3), Ethology, Emu, Acta Ethologica, Biology Letters (2)
- 2008: Auk, Condor, Journal of the Royal Society Interface, Current Biology, Proceedings of the Royal Society of London B (2), Pigment Cell and Melanoma Research, EcoHealth, Biological Journal of the Linnean Society, Journal of Experimental Biology (2), PLoS Biology (3), Behavioral Ecology (2), Functional Ecology (2), Ibis, Ethology, Journal of Avian Biology, Physiological and Biochemical Zoology (2), Comparative Biochemistry and Physiology B, Canadian Journal of Zoology, Naturwissenschaften (6), Ornitologia Neotropical

- 2007: Biology Letters, Proceedings of the Royal Society of London B (3), PLoS Biology, Journal of Experimental Biology (2), Ecology, Ecological Research, Oikos, Biochemistry, Hormones and Behavior, Auk (2), Functional Ecology (2), Behavioral Ecology (3), Physiological and Biochemical Zoology (3), Naturwissenschaften (2), Condor, Wilson Journal of Ornithology, Ethology (4), Biological Journal of the Linnean Society, Comparative Biochemistry and Physiology B
- 2006: Science, Proceedings of the National Academy of Sciences, Evolution, Proceedings of the Royal Society of London (4), PLoS Biology, Behavioral Ecology (3), Journal of Animal Ecology (2), Auk (2), Functional Ecology, Oecologia, Biological Journal of the Linnean Society, Canadian Journal of Zoology, Journal of Ornithology, Ibis (2), Naturwissenschaften (2), Journal of Comparative Physiology B (3), Comparative Biochemistry and Physiology B
- 2005: Trends in Ecology and Evolution, Animal Conservation, Behavioural Processes, Biological Journal of the Linnean Society, Proceedings of the Royal Society of London B (3), Evolution, Poultry Science (2), Naturwissenschaften (4), Journal of Fish Biology, Journal of Field Ornithology, Animal Behaviour (5), Behavioral Ecology (3), Physiological and Biochemical Zoology, Ethology (3), Biology Letters, Proceedings of the National Academy of Sciences USA, The Condor, Journal of Avian Biology (2), Ibis, Comparative Biochemistry and Physiology, Behavioral Ecology and Sociobiology (3), Functional Ecology, Oecologia
- 2004: Evolution, Behavioral Ecology and Sociobiology, Journal of Field Ornithology, Behavioral Ecology, Journal of Animal Ecology (2), Animal Behaviour (5), The Auk (3), Proceedings of the Royal Society of London, Canadian Journal of Zoology (2), Functional Ecology (2), Journal of Avian Biology (2), The Ibis (2), Journal of Zoology, Proceedings of the Indian National Science Academy
- 2003: Animal Behaviour (2), Condor, Naturwissenschaften, Journal of Avian Biology, Behavioral Ecology (4), Functional Ecology (2), The Auk (3), Ethology, Herpetological Review, Behavioral Ecology and Sociobiology (3), Proceedings of the Royal Society of London B, Journal of Biosciences, Comparative Biochemistry and Physiology B
- 2002: Behavioral Ecology, Proceedings of the Royal Society of London B, Physiological and Biochemical Zoology, Functional Ecology, The Auk, Behavioral Ecology and Sociobiology, Ethology
- 2001: Functional Ecology, Ethology (2), The Condor (2), Proceedings of the Royal Society of London B

BOOK PEER REVIEW

- 2017: *Charles Darwin's Birds* (chapter and outline, Oxford University Press).
- 2014: *Progeny and Purpose* (proposal, Oxford University Press)
- 2013: *Darwin's Birds* (proposal, Oxford University Press)
- 2012: *Vertebrates: Comparative Anatomy, Function, Evolution* (Kardong, 6th ed., McGraw-Hill Co.)
The Dissection of Vertebrates (De Iuliis and Pulera, 2nd edition, Elsevier)
Perspectives on Animal Behavior (Goodenough et al., 3rd edition, John Wiley and Sons Inc.)
Principles of Animal Behavior (Dugatkin, 2nd edition, W. W. Norton and Co.)
Animal Behavior: A Conceptual Approach (chapters, Valone and Nordell, Oxford Univ. Press)
- 2009: *Animal Behavior* (proposal, Breed and Moore, Elsevier)
Animal Behavior: A Conceptual Approach (chapters, Valone and Nordell, Oxford Univ. Press)
Biological Science ("How Animals Work" chapters, Freeman, Pearson Education Inc.)
- 2008: *Analysis of Vertebrate Structure*, 6th edition (proposal, Hildebrand and Goslow, Wiley)
An Introduction to Animal Behaviour, 6th edition (proposal, Manning and Stamps-Dawkins, Cambridge University Press)

- 2007: *The Biology of Feathers* (proposal, Cambridge University)
Chapter 8 of *Principles of Animal Behavior* (Dugatkin, W.W. Norton & Co.).
Vertebrate Zoology (7th edition, Pough et al., Benjamin Cummings)
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GRANT PEER REVIEW

- 2017: National Science Foundation (Post-doctoral Fellowship panel)
2016: Leverhulme Trust (UK), National Science Center (Poland)
2015: National Science Foundation (Behavioral Systems pre-proposal panel), Research Foundation Flanders (Belgium)
2014: National Science Foundation (Behavioral Systems pre-proposal and full proposal panels)
German Research Foundation
2013: Directorate of Mathematics, Information, and Life Sciences, Air Force Office of Scientific Research
Animal Behavior Society (student grant competition)
National Science Foundation (pre-proposal panel member, Behavioral Systems cluster)
2012: Animal Behavior Society (student grant competition)
L'Agence Nationale de la Recherche, France
2011: L'Agence Nationale de la Recherche, France
Austrian Science Fund
Animal Behavior Society (student grant competition)
2010: Natural Environment Research Council, UK
L'Agence Nationale de la Recherche, France
Animal Behavior Society (student grant competition)
2009: Natural Environment Research Council, UK
National Science Foundation (panel member, Behavioral Systems cluster)
2008: Natural Sciences and Engineering Research Council of Canada
National Science Foundation (panel member, Physiological Systems cluster)
2007: Netherlands Organization for Scientific Research
2006: Natural Sciences and Engineering Research Council of Canada
Villanova University, Summer Research Fellowship for Faculty program
2005: National Science Foundation (Behavioral Systems cluster and Ecological Biology cluster)
2000-2003: Sigma Xi Grant Review Panel, Cornell University
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INVITED SERVICE LECTURES

- McGraw, K. J.** 2014. Sex, disease, & stress in the city: variation in sexual selection and condition along an urban gradient. Spirit of the Senses meeting group, Scottsdale, AZ.
Nolan, P. M., Black, C. E., Giraudeau, M., and **McGraw, K. J.** 2013. Urban effects on house finch song and its development. Charleston Natural History Society.
McGraw, K. J. 2012. Sex in the city: how urbanization in Phoenix shapes avian coloration. Arizona Seed Crackers Society, Mesa, AZ.
McGraw, K. J. 2012. Designing a nutritional antioxidant therapy to treat wild bird disease. Central Garden and Pet Inc. (Phoenix branch).
McGraw, K. J. 2011. Shifting family dynamics and the erosion of human societal support structures. West Valley Unitarian Universalist Church, Glendale, AZ.
McGraw, K. J. 2011. Parsing the paradox of secular sociality. West Valley Unitarian Universalist church, Glendale, AZ.

- McGraw, K. J.** 2010. Nature's versions of April Fools. Sigma Xi scientific society (local chapter), Science café, Audubon conservation center, Phoenix, AZ.
- McGraw, K. J.** 2010. Why birds are colorful. Monte Vista retirement home, Mesa, AZ.
- McGraw, K. J.** 2009. The past, present, and future of human monogamy: an evolutionary perspective. West Valley Unitarian Universalist church, Glendale, AZ.
- McGraw, K. J.** 2009. Darwinian medicine: a new, yet old, approach to personal wellness. West Valley Unitarian Universalist church, Glendale, AZ.
- McGraw, K. J.** 2009. Finches are fun. Kyrene de las Brisas pre-school class, Chandler, AZ.
- McGraw, K. J.** 2008. Birds all around us. Kyrene del Cielo 1st grade class, Chandler, AZ.
- McGraw, K. J.** 2008. Communication in color: the avian language of love. Northern Arizona Audubon Society, Flagstaff and Sedona chapters AZ.
- McGraw, K. J.** 2008. The evolution of human behavior. Humanist Society of Greater Phoenix, AZ.
- McGraw, K. J.** 2008. The human legacy and a bird's-eye-view of death: how long should we last? West Valley Unitarian Universalist church, Glendale, AZ.
- McGraw, K. J.** 2008. Animal instincts: the science of human mating, dating, and copulating Paradise Valley Community College, Phoenix, AZ.
- McGraw, K. J.** 2008. Learning about local lizards. Kyrene del Cielo kindergarten class, Chandler, AZ.
- McGraw, K. J.** 2008. Desert colors as signals of environmental health: case studies on house finches, mallard ducks, and jumping spiders. McDowell Sonoran Conservancy, Phoenix, AZ.
- McGraw, K. J.** 2008. The evolution of religion: hidden costs and absent benefits in naturally and culturally selected contexts. West Valley Unitarian Universalist church, Glendale, AZ.
- McGraw, K. J.** 2008. Animal instincts: the science of human mating, dating, and copulating. Arizona Science Center, Phoenix, AZ.
- McGraw, K. J.** 2008. Communication in color: novel pigments in parrot plumage. Meeting of the American Society of Aviculturalists, Glendale, AZ.
- McGraw, K. J.** 2007. Carotenoids and bird behavior. Scotts Wild Bird Food, Marysville, OH.
- McGraw, K. J.** 2007. Parrot plumage colors: new pigments with new roles. Arizona Seed Cracker Association, Mesa, AZ.
- McGraw, K. J.** 2006. Parrot plumage colors: new pigments with new roles. Parrots of the Hills bird club, Fountain Hills, AZ.
- McGraw, K. J.** 2006. Communication in color: the avian language of love. Maricopa Audubon Society, Phoenix, AZ.
- McGraw, K. J.** 2005. The evolution of ornate colors in songbirds: a biochemical perspective. Department of Animal Care and Technologies, Arizona State University, Tempe, AZ.
- McGraw, K. J.** 1998. "Backyard birding: colors of the outdoors". Brockport Middle School, Brockport, NY.

ADDITIONAL SERVICE ACTIVITIES

(A) Extra-university

- External examiner, Doctoral Dissertation committee, Beth Reinke (Dartmouth College student), 2017
- Guest panelist on undergraduate research, Phoenix College (2016)
- University (CAP) representative, Annual LTER meeting, Santa Barbara, CA (2016)
- Special Awards Judge, Intel International Science and Engineering Fair, Phoenix, AZ (2005, 2013, 2016)
- External tenure and promotion packet referee, University of New Mexico and Transylvania University, 2015
- Judge, COS/AOU Student Presentation Award (2015)
- Citizen Science research project, 3 local schools (1 elementary, 2 middle), "Finches in the City", with P.

Hutton (2014-5). Funded by CSCE grant.
External examiner, Doctoral Dissertation Comprehensive Exam committee, Beth Reinke (Dartmouth College student), 2014
Chair, Bylaws Committee, Cooper Ornithological Society (2014-17)
Member, Board of Directors, Cooper Ornithological Society (2013-16)
Coordinator, Student Grant Program, Animal Behavior Society (2013)
Wildlife presentations, local school groups (Kyrene de la Sierra elementary school), 2012-14
External dissertation examiner, Institute of Zoology, University of Tartu, Estonia (student: Dr. Tuul Sepp, 2012)
Grant competition organizer, Latin American Diversity Research Fund, Animal Behavior Society (2012)
Judge, Founder's poster competition, Meeting of the Animal Behavior Society (2011)
Member-at-Large, Animal Behavior Society (2010-13)
Professor participant, Science "Pen Pal" program, Maple Avenue School, 6th grade class (2009)
Symposium co-coordinator, "Color communication in animals", Meeting of the Animal Behavior Society, Brazil (2009)
Referee, Student Research Grant competition, Animal Behavior Society (2009-2012)
Judge, Student presentation (Allee) competition, Meeting of the Animal Behavior Society (2009)
Volunteer youth educator, Camp Quest and Humanist Society of Greater Phoenix (2009-2010)
Judge, Best Student Presentation, Meeting of the Society for Integrative and Comparative Biology, Divisions of Animal Behavior and Ecology & Evolution, Phoenix, AZ (2007)
Coordinator, Student-Mentor Program and Jeopardy! student quiz, IV North American Ornithological Conference, Veracruz, Mexico (2006)
Committee member, Special Committee on Young Investigators, American Ornithologists' Union (2005-9)
Judge, Outstanding Student Presentation Award, Division of Ecology and Evolution, Meeting of the Society for Integrative and Comparative Biology (2005)
Conference session moderator, Animal Behavior Society (2003, 2005), Society for Integrative and Comparative Biology (2005)
Outside referee, Committee for Tenure and Promotion to Associate Professor, Idaho State University (2004)

(B) Intra-university

Panelist, Grantsmanship for Graduate Students, CAP-LTER program (2017)
Judge, Student Presentation award, local CAP-LTER research conference, Phoenix, AZ (2015, '17)
Chair, Sun Devil Athletics Board, ASU (2014-present)
Guest lecturer, Research Strategies in Animal Behavior (BIO 435, ANB 601) – 2017
Director, SOLUR program (2011-present)
Center director, "Lipid-soluble nutrient analysis lab", ASU (2009-present)
Concentration advisor (Animal Physiology and Behavior), Barrett Honor's College, ASU (2009-present)
Teaching mentor, SOLS junior faculty member, ASU (2016)
Guest lecturer, Acoustic Ecology (IAP 467) – 2016
Participant in faculty game night, SOLS Ambassadors, ASU (2016)
Research mentoring workshop, MAPS program, School of Life Sciences, ASU (2012, 2015)
Night of the Open door community presentation, "Glow in the Dark Birds", ASU (2012-2015)
Guest lecture on bird coloration, Ornithology (BIO 471), ASU (2013, 2015)
Faculty participant in Camp Ignite (for incoming freshmen), ASU (2016)
Search committee member, attending veterinarian, Department of Animal Care and Technologies, ASU (2014)
Mentoring panelist, Professional Values of Science course, ASU (2013)
Committee member, Animal Behavior hiring plan, ASU (2012-13)

Chairperson, Sigma Xi minigrant program, ASU local chapter (2012-14)
Committee member, Neuroscience faculty hiring plan (2012)
Ph.D. committee member, School of Life Sciences, ASU (17 graduated, 6 current)
President, local chapter of Sigma Xi Scientific Society (2011-2014)
Voting member, Institutional Animal Care and Use Committee (2011-2014)
Science Fair judge, MGE@MSA conference, ASU (2011)
Mentor, Obama Scholar program, ASU (2009-2010)
Committee member, Organismal/Physiological Ecologist job search, SoLS, ASU (2009-10)
Voting member, Sun Devil Athletics Board, ASU (2009-2014)
Ad hoc member, SoLS Collections Committee, ASU (2009-10)
Hike leader, SOLS Takes A Hike, Tres Rios and Botanical Gardens (2008-9)
Committee member, Community/Ecosystems Ecologist job search, SoLS, ASU (2008)
Elected committee member, Undergraduate Program committee (OISB representative), School of Life Sciences, Arizona State University (2007-10)
Working group co-chair, Animal Behavior PhD program, School of Life Sciences (2007-present)
Invited speaker, SOLUR research class, School of Life Sciences, ASU (R. Rutowski), (scientific writing: Fall 2005 and 2007; fieldwork = summer 2009)
Judge, GELSS symposium, ASU (02/07)
Science Studio and Ask-a-Biologist interviews, School of Life Sciences, Arizona State University, 2007 (download and listen at school website above)
Committee member, Undergraduate Curriculum Review committee, School of Life Sciences, Arizona State University (2006)
Committee chair, IGELS Concentration in Animal Behavior, School of Life Sciences, Arizona State University (2005-6)
Committee member, Integrative Neuroscience faculty job search, ASU (2004-5)
Coordinator, Animal Behavior 'Lunch Bunch' seminar series, Arizona State University (2004-5)
Assistant Men's Baseball Coach, Cornell University (2002-2003)
Departmental Student Discussion Group Coordinator, Cornell University (2000-2002)
Science Olympiad, Judge, Auburn University, (1998, 1999)
Departmental Seminar Social Organizer, Auburn University (1998)
Departmental Student Discussion Group Coordinator, Auburn University (1998)
MISTNET Coordinator (Avian Migration Information Systems Tracking NETWORK), St. Lawrence University (1995-1996)

SELECTED PRESS COVERAGE

Featured in BrewHoop in article comparing flying NBA player to flying birds:
<http://www.brewhoop.com/2017/2/17/14537288/can-giannis-fly-antetokounmpo-milwaukee-bucks-ornithology>
Featured in Forbes magazine article on red birds:
<http://www.forbes.com/sites/grrlscientist/2016/08/03/which-came-first-seeing-red-or-being-red/>
~ 12 articles on journal publication in *PLOS One* about urbanization and parasites in finches
(e.g. <http://www.natureworldnews.com/articles/5921/20140206/intestinal-infections-birds-linked-humans-urbanization.htm>)
~ 50 articles on journal article published in *Biology Letters* about chameleon color change
(e.g. <http://news.sciencemag.org/biology/2013/12/scienceshot-color-victory>)
featured in article on bird color in *The Cactus Wren* edition
(<http://www.maricopa-audubon.org/Wren%20Summer%202013.pdf>)
quoted in Audubon magazine piece on the science of feathers (2012)
(<http://www.audubonmagazine.org/articles/birds/science-feathers>)

- > 5 news pieces on 2011 Proceedings B paper on mallard personality
(<http://news.sciencemag.org/sciencenow/2011/06/scienceshot-an-infectious-person.html>)
- > 20 news/online articles written publicizing 2010 PLoS One article on swallow antioxidants
(<http://news.google.com/news/search?aq=f&um=1&cf=all&ned=us&hl=en&q=safra+swallows>)
- > 400 newspaper and online articles written publicizing 2008 Current Biology paper on testosterone and coloration in swallows; also four national radio interviews (San Francisco, New York, Houston, and Rockford, IL) and featured on CNN, Good Morning America, and The Science Times (NY Times) (06/08)
- Interviewed and featured on PBS Nature website as expert on animal mating (4/08), at <http://www.pbs.org/wnet/nature/females/monogamy.html>
- Televised news interview on human mating, KTVK Phoenix broadcast; featured online (5/07) at www.azfamily.com/news/local/stories/KTVKNews20070522_love.958ab1f4.html
- > 25 newspaper and online articles written publicizing 2007 Biology Letters paper on testosterone, health and color in finches (see personal website above for all article links)
- Photo gallery produced on ASU homepage highlighting our recent work on finch coloration in urban and rural settings (<http://www.asu.edu/vppa/photogallery/birds/1.htm>); “Research for the birds”, 10/06
- > 50 newspaper and magazine articles + NPR interview covering 2005 Science paper on dynamic paternity allocation and sexual ornamentation in barn swallows
- > 25 newspaper and magazine articles + ASU interview covering 2005 Biology Letters paper on new pigments discovered in parrot feathers
- > 50 newspaper and magazine articles + 3 radio interviews and 1 television interview covering 2003 Ethology paper on geographic variation in human mate preferences
- National Geographic News, 12 Jan. 2002, Evolution on Fast Forward: Finches Adapt to Climates
- USA Today, 11 January 2002, “Female finches evolve to control sex of chicks”
- NPR Radio interview, 13 October 2000. McConnell, P., "Brighter is Better", *Calling All Pets*

SOCIETY MEMBERSHIPS

Society for Integrative and Comparative Biology (September 2003-present)
International Society for Behavioral Ecology (January 2002-present)
International Carotenoid Society (January 2002-present)
Wilson Ornithological Society (January 2000-present)
American Ornithologists' Union (January 2000-present)
Cooper Ornithological Society (January 2000-present)
Sigma Xi (October 1999-present)
Association of Field Ornithologists, Inc. (April 1999-present)
Animal Behavior Society (April 1999-present)
American Association for the Advancement of Science (June 1998-June 1999)
