|  |  |
| --- | --- |
| **Rafael  Maia**  **Junior Fellow**  **Simons Foundation Society of Fellows** | **Department of Ecology, Evolution  and Environmental Biology**  **Columbia University**  **New York, NY 10027**  **+1 330-687-5079**  [**rm3368@columbia.edu**](mailto:rm3368@columbia.edu)  [**www.rafaelmaia.net**](http://www.rafaelmaia.net) |

|  |  |
| --- | --- |
| **Appointments** | Columbia University, New York NY • July 2015 – Present  Simons Foundation Junior Fellow (3-year postdoctoral fellowship),  Department of Ecology, Evolution & Environmental Biology  Supervisor: Dr. Dustin Rubenstein  University of Idaho, Moscow ID • Aug 2014 – June 2015  Postdoctoral Fellow, Department of Biological Sciences  Supervisor: Dr. Luke Harmon |
| **Education** | The University of Akron, Akron OH • 2009 – 2014  PhD, Integrated Bioscience PhD program  Advisor: Dr. Matthew D. Shawkey  Universidade de Brasília, Brasília, Brazil • 2006 – 2008  MSc, Ecology  Advisor: Dr. Regina H. Macedo  Universidade de Brasília, Brasília, Brazil • 2001 – 2004  BSc, Biological Sciences  Universidade de Brasília, Brasília, Brazil • 2003 – 2007  BSc, Science Teaching in Biological Sciences |
| **Grants & Awards** | Fellowships & Research Grants  2014 Junior Fellow Award, Simons Foundation Society of Fellows ($366,000)  2012 Doctoral Dissertation Improvement Grant (DDIG), NSF ($14,844)  2012 Frank M. Chapman Research Grant, American Museum of Natural History ($2,000)  2011 Tiered Mentoring Research Program, The University of Akron/Choose Ohio  First ($2,500)  2010 Grant-in-Aid of Research, Sigma XI ($400)  2006 Developing Nations Research Grant, Animal Behavior Society ($1,000)  Travel Awards  2012 International Society for Behavioral Ecology (ISBE), Lund, Sweden  2011 Phylogenetic Comparative Methods & Macroevolution in R, Santa Barbara CA  2011 NESCent Evolutionary Quantitative Genetics Workshop, Durham NC  2010 International Ornithological Congress (IOC), São José dos Campos, Brazil2008 Iridescence: More than Meets the Eye, ASU SOLS, Tempe AZ  2007 Advanced Topics in Behavioral Ecology Workshop, IEB-Chile, Santiago, Chile  2006 4th North American Ornithological Conference (NAOC), Veracruz, Mexico  2005 Annual Meeting of the Animal Behavior Society (ABS), Salt Lake City UT |
| **Publications** | Journal Articles  (†equal contribution, \*undergraduate co-author)  25. **Maia R.**, White T. Comparing colours using visual models. *Under review.* (preprint doi: 10.1101/175992)  24. Brooks K.C., **Maia R.**, Duffy J.E., Hultgren K.M. & Rubenstein D.R. Ecological generalism facilitates the evolution of sociality in snapping shrimps. *Ecology Letters,* In Press*.*  23. Uyeda, J.C., Pennell, M.W., Miller, E.T., **Maia R.** & McClain, C.R. 2017. The evolution of energetic scaling across the vertebrate tree of life. *The American Naturalist* 190:185-199.  22. D’Alba L.†, **Maia R.**†, Hauber M.E. & Shawkey M.D. 2016. The evolution of eggshell cuticle in relation to nesting ecology. *Proceedings of the Royal Society of London B: Biological Sciences* 283:20160687.  21. **Maia R.**, Rubenstein D.R. & Shawkey M.D. 2016. Selection, constraint, and the evolution of coloration in African starlings. *Evolution* 70:1064-1079.  20. Rubalcaba J.G., Polo V., **Maia R.**, Rubenstein D.R. & Veiga J.P. 2016. Sexual and natural selection in the evolution of extended phenotypes: the use of green nesting material in starlings. *Journal of Evolutionary Biology* 29:1585-1592.  19. Iskandar J.P.\*, Eliason C.M., Astrop T., Igic B., **Maia R.** & Shawkey M.D. 2016. Morphological basis of glossy red plumage colors. *Biological Journal of the Linnean Society* 119:477-487.  18. Eliason C.M., **Maia R.** & Shawkey M.D. 2015. Modular color evolution facilitated by a complex nanostructure in birds. *Evolution* 69:357-367.  17. Simons M.J.P.†, **Maia R.**†, Leenknegt B.\* & Verhulst S. 2014. Carotenoid-dependent signals and the evolution of plasma carotenoid levels in birds. *American Naturalist* 184:741-751.  16.Manica L.T., **Maia R.**, Dias A., Podos J. & Macedo R.H. 2014. Vocal output predicts territory quality in a Neotropical songbird. *Behavioural Processes* 109(A):21-26.  15. Pessoa D.M.A., **Maia R.**, Ajuz R.C.A., Moraes P.Z.P.M.R., Spyrides M.H.C. & Pessoa V.F. 2014. The adaptive value of primate color vision for predator detection. *American Journal of Primatology* 76:721-729.  14. **Maia R.**, Rubenstein D.R. & Shawkey M.D. 2013. Key ornamental innovations facilitate diversification in an avian radiation. *Proceedings of the National Academy of Sciences* 110:10687-10692  13. **Maia R.**, Eliason C.M., Bitton P.-P., Doucet S.M. & Shawkey M.D. 2013. pavo: an R package for the analysis, visualization and organization of spectral data. *Methods in Ecology & Evolution* 4:906-913.  12. Sicsú P.\*, Manica L.T., **Maia R.** & Macedo R.H. 2013. Here comes the sun: multimodal displays are associated with sunlight incidence. *Behavioral Ecology & Sociobiology* 67:1633-1642.  11. **Maia R.**, Brasileiro L., Lacava R.V. & Macedo R.H. 2012. Social environment affects acquisition and color of structural nuptial plumage in a sexually dimorphic tropical passerine. *PLOS ONE* 7:e47501.  10. Snyder H.K.\*, **Maia R.**, DˊAlba L., Shultz A.J., Rowe K.M.C., Rowe K.C. & Shawkey M.D. 2012. Iridescent colour production in hairs of blind golden moles (Chrysochloridae). *Biology Letters* 8:393-396.  09. **Maia R.**, Macedo R.H. & Shawkey M.D. 2012. Nanostructural self-assembly of iridescent feather barbules through depletion attraction of melanosomes during keratinization. *Journal of the Royal Society Interface* 9:734-743.  08. Shawkey M.D., **Maia R.** & DˊAlba L. 2011. Proximate bases of silver color in Anhinga (*Anhinga anhinga*) feathers. *Journal of Morphology* 272:1399-1407.  07. **Maia R.**  & Macedo R.H. 2011. Achieving luster: prenuptial molt pattern predicts iridescent structural coloration in blue-black grassquits. *Journal of Ornithology* 152:243-252.  06. **Maia R.**, DˊAlba L. & Shawkey M.D. 2010. What makes a feather shine? A nanostructural basis for glossy black colors in feathers. *Proceedings of the Royal Society of London B: Biological Sciences* 278:1973- 1980.  05. Lacava R.V., Brasileiro L., **Maia R.**, Oliveira R.F. & Macedo R.H. 2010. Social environment affects testosterone level in captive male blue-black grassquits. *Hormones & Behavior* 59:51-55.  04. Santos E.S.A.\*, **Maia R.** & Macedo R.H. 2009. Condition dependent resource-value affects male-male competition in the blue-black grassquit. *Behavioral Ecology* 20:553-559.  03. **Maia R.**, Caetano J.V.O.\*, Báo S.N. & Macedo R.H. 2009. Iridescent structural colour production in male blue-black grassquit feather barbules: the role of keratin and melanin. *Journal of the Royal Society Interface* 6:S203-S211.  02. Aguilar T.M., **Maia R.**, Santos E.S.A.\* & Macedo R.H. 2008. Parasite levels in blue-black grassquits correlate with male displays but not female mate preference. *Behavioral Ecology* 19:292-301.  01. Dacier A., **Maia R.**, Agustinho D.P. & Barros M. 2006. Rapid habituation of scan behavior in captive marmosets following brief predator encounters. *Behavioural Processes* 71:66-69.  Invited Chapters  02. **Maia R.** & Santos E.S.A. 2008. Tropical Bird Communities. *in:* Tropical Bird Communities (edited by R.H. Macedo & M. Morris), *in:* Encyclopedia of Life Support Systems (EOLSS), Developed under the Auspices of the UNESCO, EOLSS Publishers, Oxford, UK.  01. Dias A., **Maia R.** & Dias R.I. 2008. Breeding Strategies of Tropical Birds. *in:* Tropical Bird Communities (edited by R.H. Macedo & M. Morris), *in:* Encyclopedia of Life Support Systems (EOLSS), Developed under the Auspices of the UNESCO, EOLSS Publishers, Oxford, UK. |
| **Software** | pavo organization, analysis & visualization of color data. [[github]](https://github.com/rmaia/pavo) [[CRAN]](https://cran.r-project.org/web/packages/pavo/index.html)  reBird R interface to the eBird API. [[github]](https://github.com/ropensci/rebird) [[CRAN]](https://cran.r-project.org/web/packages/rebird/index.html)  R scripts for thin-film optical modeling (Supplementary Material for [Maia *et al.* 2009](http://rsif.royalsocietypublishing.org/content/early/2009/02/09/rsif.2008.0460.focus.figures-only)) |
| **Presentations** | Invited Talks  Integrating development, constraints and selection in the study of avian color diversification New Jersey Institute of Technology • Mar 2017 University of Texas at Austin • Nov 2016 American Museum of Natural History Richard Gilder Graduate School Comparative Biology Seminars • Nov 2016 University of Pittsburgh • Nov 2016 New York University Evening Evolution Group • Dec 2015 Stephen F. Austin State University Biology Department Seminar • Dec 2015  The development, mechanisms and diversification of iridescent feather colors University of Idaho Biology Department Seminar Series • Oct 2014  The optics of diversity: using physics to illuminate the evolution of bird feather colors Oberlin College Biology Department Seminar Series • Nov 2013  From nano(structure) to macro(evolution): what the development and mechanisms of iridescence can tell us about plumage color diversification Physiological and Functional Advances in Avian Coloration Symposium, American Ornithologists’ Union Meeting • Aug 2013  Development and evolution of iridescent plumage colors Cornell Lab of Ornithology • Mar 2012  Key innovations and the evolution of iridescent ornamental colors The Role of Behavior in Non-Ecological and Non-Adaptive Speciation Symposium, ISBE Meeting • Aug 2012  The evolution of iridescent colors in African starlings The University of Akron Brown Bag Seminar Series • Apr 2012  Fragments of the rainbow: the development and evolution of iridescence in feathers The University of Pittsburgh Ecology & Evolution Seminar Series • Sep 2011  Contributed Presentations (3 most recent of 31 shown, †oral presentation, \*poster)  Selection, constraint and the evolution of coloration in African starlings.†  Evolution, Austin TX • 2016  Form and function in the evolution of iridescent hummingbird colors.\*  Evolution, Salt Lake City UT • 2013  Key innovations and the evolution of iridescent ornamental colors.†  Joint Congress on Evolutionary Biology, Ottawa, Canada • 2013 |
| **Mentoring** | Graduate Advisor  2019exp. Fernando Henrique Teófilo de Abreu • Ph.D. at INPA, Manaus, Brazil (co-advised with Marina Anciães) 2019exp. João Menezes • M.Sc. at USP, São Paulo, Brazil (co-advised with Eduardo Santos)  Graduate Committee  2017 Eleanor Diamant • M.A., E3B Columbia University (Major Advisor: Dustin Rubenstein)  High School Student Research  2016 Samuel Levy, The Heschel School, New York NY 2012 Sarah Dhinojwala, Our Lady of the Elms High School, Akron OH |
| **Teaching** | Teaching Assistant  The University of Akron 2013 Principles of Biology 2011 Ornithology 2009–2012 Natural Science: Biology  Universidade de Brasília 2006 Applied Statistics for Ecology (graduate course) 2005–2006 Animal Behavior (advanced undergraduate & graduate course) 2004–2005 Vertebrate Biology  Guest Lecturer  Universidade Católica de Brasília 2008 Field Methods in Biology (two-week field course)  Instructor  The University of Akron 2013 Programming and Applied Statistics using R (12h workshop)  Museu Nacional, Universidade Federal do Rio de Janeiro 2010 Applied Spectrophotometry for Animal Coloration Studies (10h workshop)  Universidade Católica de Brasília 2008 Statistics for ecology: experimental design and data analysis (10h workshop)  Universidade de Brasília 2006 Behavioral Ecology and Sociobiology (10h workshop) |
| **Service & Outreach** | Reviewer  Scientific Journals The Auk (2), American Naturalist (6), Behavioral Ecology (4), Behavioral Ecology and Sociobiology (5), Biological Journal of the Linnean Society, Biology Letters, Biota Neotropica, BMC Evolutionary Biology (2), Current Opinion in Behavioral Sciences, Evolution (5), Evolutionary Biology, Integrative Zoology (2), Journal of Animal Ecology, Journal of Avian Biology, Journal of Evolutionary Biology (2), Journal of Ornithology (2), Methods in Ecology and Evolution (2), Nature Communications, PLOS ONE, Ornitología Colombiana, Proceedings of the Royal Society of London B: Biological Sciences (10), Scientific Reports, Systematic Biology  National Science Foundation (NSF) panelist for the Division of Environmental Biology for the 2016 fiscal year ad hoc reviewer for the 2017 fiscal year  Ad hoc reviewer Reviewer for the book “Modern Phylogenetic Comparative Methods and their Application in Evolutionary Biology: Concepts and Practice” (L. Z. Garamszegi, ed.)  Associate Faculty Member for F1000Prime  Departmental & Society Service  American Society of Naturalists • 2012–2014 Graduate Council to the Executive Committee (member 2012–2013, chair 2013–2014)  The University of Akron • 2011–2012 Interviewer for the Honors College scholarship selection process Judge and peer reviewer for the University of Akron Biology Undergraduate Research Symposium (BURS) undergraduate authored publication award and best poster presentation award  Animal Behavior Society • 2009 Volunteer organizer and support team for the 46th annual meeting  Society for Conservation Biology • 2005 Volunteer organizer and support team for the 19th annual meeting  Brazilian Zoology Society • 2009 Volunteer organizer and support team for the 25th annual meeting  Media Coverage  Care2, Ciência Hoje (BRA), The Conversation, Discovery News, Eos Wetenschap (BEL/NLD), Examiner.com, Globo G1 (BRA), National Geographic’s “Not Exactly Rocket Science”, Nature, New Scientist, Museum Victoria (AUS), MSNBC, Ohio Authority, PNAS First Look, Popular Science, Sci-News, Science Daily, Sify News (IND), Süddeutsche Zeitung (GER), The University of Akron News, WKSU Exploradio, WQED, Yahoo! News  NPR’s [“The Golden Mole Award For Accidental Brilliance”](http://www.npr.org/2016/01/28/464710799/npr-contest-send-us-your-stories-of-happy-accidents-in-science) was inspired by [Snyder *et al.* 2012](http://rsbl.royalsocietypublishing.org/content/8/3/393).  Outreach Activities  The colorful sex life of birds • Nov 2016 Talk given to the Secret Science Club at The Bell House in Brooklyn, NY. [The Secret Science Club](http://secretscienceclub.blogspot.com/) is a monthly lecture series aimed at the general public, with a regular attendance of 300-400 people.  Evolutionary Biology Online Journal Club • 2012–2013 Creator and member of online discussion group, with meetings recorded and made available on the [website](http://evobiojournalclub.wordpress.com/).  Instituto Sangari & American Museum of Natural History • 2008 Supervisor of educational activities for the Darwin itinerant exhibit in Brasília, Brazil. Activities included preparing, monitoring and conducting guided tours; training tour guides; creating and lecturing “Meetings with Educators” talks, focusing on Darwin’s life as a tool in the teaching of evolution and the major misconceptions of evolutionary theory (audience: middle and high school teachers). |