

Amanda Dawn Melin

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Department of Anthropology and Archaeology
 & Department of Medical Genetics
 University of Calgary
 2500 University Drive
 Calgary, Alberta, Canada T2N 1N4

Foraging Behaviour, Sensory Ecology, Genetics & Genomics, Primate Evolution

PROFESSIONAL APPOINTMENTS

Assistant Professor, Canada Research Chair	2016-present
<i>Department of Anthropology and Archaeology & Department of Medical Genetics</i>	
University of Calgary, Calgary, Alberta, Canada	
Assistant Professor	2014-2015
<i>Department of Anthropology</i>	
Washington University, St. Louis, Missouri, USA	
Postdoctoral Fellow	2011-2013
<i>Department of Anthropology; Ecology and Evolutionary Biology</i>	
Dartmouth College, Hanover, New Hampshire, USA	
Visiting Research Scientist	2010
<i>Department of Integrated Biosciences</i>	
University of Tokyo, Kashiwa, Chiba, Japan	

EDUCATION

Doctor of Philosophy	2006-2011
<i>Department of Anthropology</i>	
University of Calgary, Calgary, Alberta, Canada	
Master of Arts	2003-2006
<i>Department of Anthropology</i>	
University of Calgary, Calgary, Alberta, Canada	
Bachelor of Science with Distinction	1998-2003
<i>Department of Biological Sciences</i>	
University of Calgary, Calgary, Alberta, Canada	

RESEARCH GRANTS AND AWARDS

Current and Pending Grants and Fellowships

National Sciences and Engineering Research Council of Canada Discovery Grant and Discovery Accelerator Supplement: "Primate dietary ecology and sensory evolution" PI <i>Awarded</i>	\$310 000 (CAD)	2017-2021
Canadian Foundation for Innovation: "Primate genomics and dietary ecology" PI <i>Awarded</i>	\$768 000 (CAD)	2017-2020
National Geographic: "Do animals drive the evolution of fruit traits?" Co-PI <i>Awarded</i>	\$24 700 (USD)	2017-2018
University of Calgary Inflammation, Infection and Chronic Disease Award: "The bugs-to-drugs initiative" Co-PI <i>Awarded</i>	\$250 000 (CAD)	2016-2019
The Wenner-Gren Foundation: "Olfaction as an adaptation to hunting and gathering in the rainforest: testing old hypotheses with new approaches" Senior Personnel (Co-PI) <i>Awarded</i>	\$20 000 (USD)	2015-2017

Past Grants and Fellowships

International Center for Advanced Renewable Energy and Sustainability (I-CARES) Grant	\$25 000 (USD)	2014-2015
NSERC Postdoctoral Fellowship	\$80 000 (CAD)	2012-2014
Clair Garber Goodman Research Fund	\$4 250 (USD)	2012
P.E.O. International Postdoctoral Scholar Award	\$15 000 (USD)	2011-2012
Wenner-Gren Dissertation Fieldwork Grant	\$17 139 (USD)	2009-2010
Alberta Odd Fellow Rebekah Visual Research Award	\$1 200 (CAD)	2009-2010
Sigma-Xi Grant-In-Aid of Research	\$500 (USD)	2008-2009
The Leakey Foundation General Research Grant	\$13 420 (USD)	2007-2009
NSERC Canada Graduate Scholarship, Doctoral	\$70 000 (CAD)	2007-2009
Animal Behaviour Research Grant	\$1 000 (USD)	2007-2008
Alberta Ingenuity Fund Scholarship	\$106 000 (CAD)	2004-2009
NSERC Postgraduate Scholarship A, Masters	\$34 600 (CAD)	2003-2005
American Society of Primatologists Research Grant	\$1 500 (USD)	2004
<i>9 additional institutional awards during graduate work</i>	> \$57 000 (CAD)	2003-2011

Honors and Leadership Awards

Canada Research Chair (NSERC stream, Tier II- Junior Scientist)	2017-2021
Excellence in Supervision Award – University of Calgary	2017
American Society of Primatologists Early Career Achievement Award	2017
NASA and National Geographic FameLab USA Science Communication National Finalist	2014
Elected Membership – Full member of Sigma Xi, The Scientific Research Society	2014
Alberta Citizenship Award	2011
Operation Minerva Mentor Recognition	2010
<i>5 additional awards for communication and research excellence</i>	2001-2011

PUBLICATIONS

Journal Articles *denotes mentees in publications where AD Melin played a mentoring role; †denotes corresponding authorship

- 41 **Melin AD**[†], Walco ER*, Chiou K, Kawamura S, Fedigan L. Color vision affects rates of fruit consumption in wild capuchin monkeys (*Cebus capucinus imitator*), especially among juveniles. *Proceedings of the National Academy of Sciences*. 114:10402-10407. **2017**
- 40 Bergstrom M, Emery Thompson M, **Melin AD**, Fedigan LM. Using urinary parameters to estimate seasonal variation in the physical condition of female white-faced capuchin monkeys (*Cebus capucinus imitator*). *American Journal of Physical Anthropology*. 163:707-715. **2017**
- 39 Hiramatsu C, **Melin AD**, Allen WL, Dubuc C, Higham JP. Experimental evidence that primate trichromacy is well suited for detecting primate social colour signals. *Proceedings of the Royal Society B*. 284: 20162458. **2017**
- 38 **Melin AD**[†], Khetpal V*, Matsushita Y, Zhou K, Campos F, Welker B, Kawamura S. Howler monkey foraging ecology suggests convergent evolution of routine trichromacy as an adaptation for folivory. *Ecology and Evolution*. 7:1421-1434. **2017**
- 37 Tsutsui K, Otoh M, Sakurai K, Suzuki-Hashido N, Hayakawa T, Misaka T, Ishimaru Y, Aureli F, **Melin AD**, Kawamura S, Imai H. Variation in ligand responses of the bitter taste receptors TAS2R1 and TAS2R4 among New World monkeys. *BMC Evolutionary Biology*. 16:208. **2016**
- 36 Hogan JD*, **Melin AD**, Mosdosy KN*, Fedigan LM. Seasonal importance of flowers to Costa Rican capuchins (*Cebus capucinus imitator*): implications for plant and primate. *American Journal of Physical Anthropology*. 161: 591-602. **2016**
- 35 Mason VC, Li G, Minx P, Schmitz J, **Melin AD**, Dominy NJ, Springer MS, Wilson RK, Warren WC, Helgen KM, Murphy WJ. Genomic analysis reveals remarkable hidden biodiversity within colugos, and the sister group to primates. *Science Advances*. 10 Aug 2016: 2(8), e1600633. **2016**
- 34 Valenta K, Miller CN, Monckton SK, Styler SA, Jackson DJ, **Melin AD**, Lehman SM, Chapman CA and Lawes MJ. Fruit ripening signals and cues in a Madagascan dry forest: Haptic indicators reliably indicate fruit ripeness to dichromatic lemurs. *Evolutionary Biology*. 43: 344-355. **2016**
- 33 **Melin AD**[†], Wells K, Moritz GL, Kistler L, Orkin JD, Timm RM, Bernard H, Lakim MB, Perry GH, Kawamura S, Dominy NJ. Euarchontan opsin variation brings new focus to primate origins. *Molecular Biology and Evolution*. 33: 1029-1041. **2016**
- 32 Schoof V, Bonnell T, Jack K, Ziegler T, **Melin AD**, Fedigan L. Male endocrine response to seasonally varying environmental and social factors in a Neotropical primate, *Cebus capucinus*. *American Journal of Physical Anthropology*. 159: 671-682. **2016**
- 31 **Melin AD**[†], Kline DW, Hiramatsu C, Caro T. Zebra stripes through the eyes of predators, zebras, and humans. *PLoS ONE*. 11: e0145679. **2016**

- 30 Crowley BE, **Melin AD**, Yeakel JD, Dominy NJ. Do oxygen isotope values in collagen reflect the ecology and physiology of Neotropical mammals? *Frontiers in Ecology and Evolution*. 3: 127. **2015**
- 29 Valenta K**, Edwards M, Rafaliarison RR, Johnson SE, Holmes SM, Brown KA, Dominy NJ, Lehman SM, Parra EJ, **Melin AD**†. Visual ecology of true lemurs suggests a cathemeral origin for the primate cone opsin polymorphism. *Functional Ecology*. doi:10.1111/1365-2435.12575 **2015**
- 28 Valenta K*, Brown KA, Rafaliarison RR, Styler SA, Jackson DA, Lehman SM, Chapman CA, **Melin AD**. Sensory integration during foraging: the importance of fruit hardness, colour and odour to brown lemurs. *Behavioral Ecology and Sociobiology*. 69: 1855-1865. **2015**
- 27 Valenta K, Brown KA, **Melin AD**, Monckton SK, Styler SA, Jackson DA, Chapman CA. It's Not Easy Being Blue: Are There Olfactory and Visual Trade-Offs in Plant Signaling? *PLoS ONE*. 10: e0131725. **2015**
- 26 Mosdossy K*, **Melin AD**†, Fedigan LM. Quantifying seasonal fallback on invertebrates, pith and bromeliad leaves by white-faced capuchin monkeys (*Cebus capucinus*) in a tropical dry forest. *American Journal of Physical Anthropology*. 158: 67-77. **2015**
- 25 **Melin AD**†, Danosi C*, McCracken G, Dominy NJ. Dichromatic vision in a fruit bat with diurnal proclivities, the Samoan flying fox (*Pteropus samoensis*). *Journal of Comparative Physiology A*. 200: 1015-22. **2014**
- 24 **Melin AD**†, Crowley BE, Brown ST, Wheatley PV, Moritz GL, Tuh F, Bernard H, DePaolo DJ, Jacobson AD, Dominy NJ. Calcium and carbon stable isotope ratios as paleodietary indicators. *American Journal of Physical Anthropology* 154: 633-43. **2014**
- 23 **Melin AD**†, Young HC, Mosdossy K*, Fedigan LM. Seasonality, extractive foraging, and the evolution of primate sensorimotor intelligence. *Journal of Human Evolution* 71: 77-86. **2014**
- 22 Moritz GL, **Melin AD**, Tuh F, Bernard H, Ong P, Dominy N. Niche convergence suggests functionality of the nocturnal fovea. *Frontiers in Integrative Neuroscience* 8: 1-12. **2014**
- 21 Campos FA, Bergstrom ML, Childers A, Hogan JD, Jack KM, **Melin AD**, Mosdossy KN, Myers MS, Parr NA, Sargeant E, Schoof VAM, Fedigan LM. Drivers of home range characteristics across spatiotemporal scales in a Neotropical primate, *Cebus capucinus*. *Animal Behaviour*. 91:93-109. **2014**
- 20 Matsumoto Y, Hiramatsu C, Matsushita Y, Ozawa N, Ashino R, Nakata M, Kasagi S, Di Fiore A, Schaffner CM, Aureli F, **Melin AD**, Kawamura S. Evolutionary renovation of L/M opsin polymorphism confers a fruit discrimination advantage to ateline New World monkeys. *Molecular Ecology*. 23: 1799-1812. **2014**
- 19 Fedigan L, **Melin AD**, Addicott J, Kawamura S. The heterozygote superiority hypothesis for polymorphic colour vision is not supported by long-term fitness data from wild Neotropical monkeys. *PLoS ONE*. 9: e84872. **2014**

- 18 Brent L JN, **Melin, AD**. The Genetic Basis of Primate Behaviour: Genetics and Genomics in Field-Based Primatology. *International Journal of Primatology* 35: 1-10. **2014**
- 17 **Melin AD**⁺, Hiramatsu C, Parr NA*, Matsushita Y, Kawamura S, Fedigan LM. The behavioural ecology of colour vision: considering fruit conspicuity, detection distance and dietary importance. *International Journal of Primatology* 35: 258–287. **2014**
- 16 Valenta K*, Burke RJ, Styler SA, Jackson DA, **Melin AD**, Lehman SM. Colour and odor drive fruit selection and seed dispersal by mouse lemurs. *Scientific Reports* 3: 2424. **2013**
- 15 **Melin AD**⁺, Kline D, Hickey CM, Fedigan L. Food search through the eyes of a monkey: a functional substitution approach for assessing the ecology of colour vision. *Vision Research* 86: 87-96. **2013**
- 14 **Melin AD**⁺, Matsushita Y, Moritz G, Dominy NJ, Kawamura S. Inferred M/L cone opsin polymorphism of ancestral tarsiers sheds dim light on the origin of anthropoid primates. *Proceedings of the Royal Society B*. 208 no. 1759. **2013**
- 13 **Melin AD**⁺, Moritz GL, Fosbury RA, Kawamura S, Dominy NJ. Why aye-ayes see blue. *American Journal of Primatology* 74: 185-192. **2012**
- 12 Carnegie S, Fedigan L, **Melin AD**. Reproductive seasonality in female capuchins (*Cebus capucinus*) in Santa Rosa (Área de Conservación Guanacaste), Costa Rica. *International Journal of Primatology* 32: 1076-1090. **2011**
- 11 Parr N*, **Melin AD**, Fedigan LM. Figs are more than fallback foods: the relationship between *Ficus* and *Cebus* in a tropical dry forest. *International Journal of Zoology* 2011: 1-10. **2011**
- 10 Lynch JW, Matthews L, Boyette A, Macfarlan SJ, Phillips KA, Falotico T, Ottoni E, Verderane M, Izar P, Schulte M, **Melin AD**, Fedigan L, Janson C, Alfaro M. Anointing variation across wild capuchin populations: A review of material preferences, bout frequency and anointing sociality in *Cebus* and *Sapajus*. *American Journal of Primatology* 73: 1-16. **2011**
- 9 **Melin AD**⁺, Fedigan LM, Young HC, Kawamura S. Can colour vision variation explain sex differences in invertebrate foraging by capuchin monkeys? *Current Zoology* 56: 300-312. **2010**
- 8 Hiwatashi T, Okabe Y, Tsutsui T, Hiramatsu C, **Melin AD**, Oota H, Schaffner CM, Aureli F, Fedigan LM, Innan H, Kawamura S. An explicit signature of balancing selection for colour vision variation in New World monkeys. *Molecular Biology and Evolution* 27: 453–464. **2010**
- 7 **Melin AD**⁺, Fedigan LM, Hiramatsu C, Hiwatashi T, Parr N, Kawamura S. Fig foraging by dichromatic and trichromatic white-faced capuchin monkeys in a tropical dry forest. *International Journal of Primatology* 30: 753-775. **2009**
- 6 Hiramatsu C, **Melin AD**, Aureli F, Schaffner CM, Vorobyev M, Kawamura S. Interplay of olfaction and vision in fruit foraging of spider monkeys. *Animal Behaviour*. 77: 1421-1426. **2009**

- 5 Hiramatsu C, **Melin AD**, Aureli F, Schaffner CM, Vorobyev M, Matsumoto Y, Kawamura S. Importance of achromatic contrast in short-range fruit foraging of primates. *PLoS ONE*. 3: 1-12. **2008**
- 4 **Melin AD**⁺, Fedigan LM, Hiramatsu C, Kawamura S. Polymorphic colour vision in white-faced capuchins (*Cebus capucinus*): Is there foraging niche divergence among phenotypes? *Behavioural Ecology and Sociobiology*. 62: 659-670. **2008**
- 3 **Melin AD**⁺, Fedigan L, Hiramatsu C, Sendall C, Kawamura S. Effects of colour vision phenotype on insect capture by a free-ranging population of white-faced capuchins (*Cebus capucinus*). *Animal Behaviour*. 73: 205-214. **2007**
- 2 Bergmann P, **Melin AD**, Russell A. 2006. Differential segmental growth of the vertebral column of the rat (*Rattus norvegicus*). *Zoology*. 109: 54-65. **2006**
- 1 **Melin AD**, Bergmann P, Russell A. 2005. Mammalian postnatal growth estimates: the influence of weaning on the choice of a comparative metric. *Mammalogy*. 86: 1042-1049. **2005**

Manuscripts In Review, In Revision or Submitted *denotes mentees in publications where AD Melin played a mentoring role

- 5 Hogan J*, Fedigan LM, Hiramatsu C, Kawamura S, **Melin AD**⁺. Trichromatic foraging advantage for detecting flowers in a wild Neotropical primate. *Proceedings of the Royal Society B*. **In Revision**
- 4 Kries K*, Barros MAS, Duytschaever G, Orkin JD*, Pessoa DMA, **Melin AD**. Independent losses of colour vision in leaf-nosed bats (*Phyllostomidae*): links to cave roosting and dietary specialization on blood. *Molecular Ecology*. **In Review**
- 3 Jacobs RL, Veilleux CC, Louis Jr. EE, Frankel DC, **Melin AD**, Bradley BJ. Variation in colour vision capacity among cathemeral lemurs (*Eulemur*) and the ecology of dichromacy. *Behavioral Ecology and Sociobiology*. **Submitted**
- 2 Orkin JD*, Campos FA, Myers MS, Cheves Hernandez SE, Guadamuz A, **Melin AD**. Seasonality of the gut microbiota of free ranging white-faced capuchins in a tropical dry forest. *The ISME Journal*. **In Review**
- 1 Moreira LAA*, **Melin AD**. Primate coloration and socio-sexual selection with an eye to the New World. *International Journal of Primatology*. **In Review**

Book Chapters *denotes mentees in publications where AD Melin played a mentoring role

- 4 Kawamura S⁺ and **Melin AD**⁺. Evolution of genes for color vision and the chemical senses in primates. IN: Saitou N (ed). *Evolution of the Human Genome I: The Genome and Genes*. Springer, Tokyo **In Press**
- 3 **Melin AD**⁺, Hiramatsu C, Fedigan LM, Schaffner CM, Aureli F, Kawamura S. Polymorphism and adaptation of primate colour vision. IN: *Evolutionary Biology: Mechanisms and Trends*. Pontarotti (ed). Springer, Heidelberg, Germany, p225-241. **2012**

- 2 Valenta K, **Melin AD**. Protein limitation explains variation in primate colour vision phenotypes: a unified model for the evolution of primate trichromatic vision. IN *Zoology*, Maria-Dolores Garcia (Ed.), InTech, ISBN: 978-953-51-0360-8. **2012**
- 1 Kawamura S, Hiramatsu C, **Melin AD**, Schaffner CM, Aureli F, Fedigan LM. Polymorphic colour vision in primates: evolutionary considerations. In: *Post Genome Biology of Primates* Hirai H, Imai H, and Go Y. (eds). Springer, Tokyo, Japan: 93-120. **2012**

Book Chapters In Review or In Revision *denotes mentees in publications where AD Melin played a mentoring role

- 4 **Melin AD**. Primate senses: finding and evaluating food. IN: *Primate Diet and Nutrition: Needing, Finding, and Using Food*. Lambert JE and Rothman JM (eds.), University of Chicago Press, Chicago. **In Review**
- 3 **Melin AD**, Webb S*, Williamson R*. Methods in studying primate foraging ecology. IN: *Celebrating the career of Linda M Fedigan*. U Kalbitzer and K Jack (eds.) Springer. **Submitted**
- 2 Hogan J*, **Melin AD**. Intra- and interannual variation in the fruit diet of wild capuchins: impact of plant phenology. IN: *Celebrating the career of Linda M Fedigan*. U Kalbitzer and K Jack (eds.), Springer. **In Revision**
- 1 Bergstrom ML, **Melin AD**, Myers MS, Fedigan LM. Dietary profile, food composition, and nutritional intake of female white-faced capuchins. IN: *Celebrating the career of Linda M Fedigan*. U Kalbitzer and K Jack (eds.), Springer. **In Revision**

Other Contributions

- 1 **Melin AD**, Jack K, Fedigan LM, Méndez-Carvajal. Central American White-faced Capuchin (*Cebus imitator*). IN: *All the World's Primates*. N Rowe and M Myers (eds.), Pogonias Press, Charlestown, Rhode Island. **2016**

PRESENTATIONS AND SCIENCE COMMUNICATION

Selected Conference Contributions *denotes mentees

- Melin AD**, Duytschaever G*, Wells K, Ong P, Dominy NJ. Nectar and the genetic basis of ethanol metabolism in Euarchonta. 86th Meeting, American Association of Physical Anthropologists, New Orleans, Louisiana. **2017**
- Melin AD**. Hindsight Wasn't 20/20 Nor as Colorful: The Evolution of Primate Vision. American Association for the Advancement of Science (AAAS). Boston, Massachusetts. **2017**
- Kawamura S, Naoi T, Hayashi M, Ashino R, Niimura Y, Touhara K, Veilleux C*, Garrett E*, **Melin AD**. Divergent evolution of olfactory and taste receptor repertoire in New World monkeys with diverse color vision types and feeding habits. Society for Molecular Biology and Evolution (SMBE). Austin, Texas. **2017**

- Orkin JD*, Webb SE*, **Melin AD**. Three years of sampling the gut microbiota of free-ranging capuchin monkeys (*Cebus capucinus imitator*) in a tropical dry forest. 86th Meeting, American Association of Physical Anthropologists, New Orleans, Louisiana. **2017**
- Veilleux CC, Garrett EC, Bankoff RJ, Dominy NJ, Perry NJ, **Melin AD**. Effects of Agricultural Transitions on the Evolution of Human Sensory Systems. 86th Meeting, American Association of Physical Anthropologists, New Orleans, Louisiana. **2017**
- Melin AD**, Orkin JD*, Garrett EC*, Montague M, Bankoff R, Perry G, Warren W, Kawamura S. Behavioral ecology and sensory genomics of white-faced capuchin monkeys (*Cebus capucinus imitator*) in a comparative context. XXVI Congress of the International Primatological Society, Chicago, Illinois. **2016**
- *Walco E, Chiou K, Kawamura S, Fedigan L, **Melin AD**. Juvenile foraging efficiency in white-faced capuchins (*Cebus capucinus*): assessing the impact of colour vision. XXVI Congress of the International Primatological Society, Chicago, Illinois. **2016**
- Khetpal V*, Welker B, Matsushita Y, Kawamura S and **AD Melin**. Howler monkey foraging ecology suggests convergent evolution of routine trichromacy as an adaptation for folivory. 12th Annual Midwest Primate Interest Group Conference. St. Louis, Missouri. **2015**
- Melin AD**. Sensory ecology of wild capuchins: integrating fruit signals, nutrition, and foraging behavior. 17th Annual Meeting, Society for Evolutionary Studies, Tokyo, Japan. **2015**
- Valenta K, Brown KA, **Melin AD**, Monckton SK, Styler SA, Jackson DA and Chapman CA. Cost-based phylogenetically-controlled analysis of signal tradeoffs in primate-dispersed fruits. Oral presentation at the 84th Meeting, American Association of Physical Anthropologists, St. Louis, Missouri. **2015**
- Melin AD**, Shirasu M, Matsushita Y, Myers MS, Bergstrom ML, Venkataraman V, Rothman JM, Fedigan LM, Touhara K, Kawamura S. Examining the links among fruit signals, nutritional value, and the sensory behaviors of wild capuchin monkeys (*Cebus capucinus*). Oral presentation at the 84th Meeting, American Association of Physical Anthropologists, St. Louis, Missouri. **2015**
- Melin AD**, Moritz GL, Wells K, Danosi C, Matsushita Y, McCracken G, Kawamura S, Dominy NJ. Activity patterns, diet and the evolution of color vision in “Archonta”. Oral presentation at the 37th meeting of the American Society of Primatologists, Decatur, Georgia. **2014**
- Melin AD**, Crowley BE, Moritz GL, Jacobson AD, Dominy NJ. Calcium and carbon stable isotope ratios as paleodietary indicators. Poster presentation at the 83rd Meeting, American Association of Physical Anthropologists, Calgary, Alberta. **2014**
- Fedigan LM, Jack K and **Melin AD**. Collaborative long-term data sets and plans for the future: Thirty years of primate research in Costa Rica. Oral presentation at the 83rd Meeting, American Association of Physical Anthropologists, Calgary, Alberta. **2014**
- Melin AD**, Moritz GL, Wells K, Kawamura S, and Dominy, NJ. Visual pigments, treeshrews, and the origins of primates. Oral presentation at the XIV Congress of the International Primatological Society, Cancun, Mexico. **2012**
- Melin AD**, Mosdossy K, Young HC, and Fedigan, F. Seasonal variation in capuchin insectivory: Implications for the evolution of sensorimotor intelligence. Oral presentation at the 81st Meeting, American Association of Physical Anthropologists, Portland, Oregon. **2012**
- Melin AD**, Fedigan LM, Kline DW, and Kawamura S. Using multidisciplinary techniques to understand the adaptive significance of primate colour vision variation. Oral presentation **2011**

- at the 39th Annual Canadian Association of Physical Anthropologists Conference, Montreal, Quebec.
- Moritz GL, **Melin AD**, Fosbury R, Kawamura S, and Dominy NJ. Why aye-ayes see blue. Poster presentation at the 39th Annual Canadian Association of Physical Anthropologists Conference, Montreal, Quebec. **2011**
- Melin AD**, Kline DW, Hickey C, and Fedigan LM. Effects of color vision on finding food: insights from simulations of monkey vision. Poster presentation at the "Neuroethology: Behavior, Evolution & Neurobiology" Gordon Research Conference, Easton, Massachusetts. **2011**
- Melin AD**, Fedigan LM, and Parr N. Preference and seasonal use of "colourful" fruit: implications for primate colour vision. Oral presentation at the 6th Annual Canadian Society for Ecology and Evolution Conference, Banff, Alberta. **2011**
- Melin AD**, Parr N, Fedigan LM, and Kawamura S. Dietary selectivity by white-faced capuchins: how important are colourful fruits? Oral presentation at the XXIII Congress of the International Primatological Society, Kyoto, Japan. **2010**
- Melin AD**, Fedigan LM, Young H, and Kawamura S. Invertebrate foraging by Costa Rican capuchin monkeys: testing predicted sex differences in relation to colour vision variation. Oral presentation at the 33rd Annual Meeting of the American Society of Primatologists, Louisville, Kentucky. **2010**
- Melin AD**, McCabe G, and Fedigan LM. Are colourful fruits more nutritious? Implications for primate colour vision. Oral presentation at the 36th Annual Canadian Association of Physical Anthropologists Conference, Hamilton, Ontario. **2008**
- Melin AD**, Fedigan LM, Hiramatsu C, and Kawamura S. Fig foraging by capuchins: considering polymorphic colour vision. Oral presentation at the XXII Congress of the International Primatological Society, Edinburgh, Scotland. **2008**
- Melin AD**, Fedigan L, Hiramatsu C, and Kawamura S. Effects of colour vision phenotype on insect capture by free-ranging white-faced capuchin monkeys (*Cebus capucinus*) in Santa Rosa National Park, Costa Rica. Oral presentation given at the 29th Annual Meeting of the American Society of Primatologists, San Antonio, Texas. **2006**
- Melin AD**, Fedigan L, Hiramatsu C, and Kawamura S. Diet, foraging and colour vision: evaluating niche divergence among white-faced capuchins. Oral presentation given at the 34th Annual Canadian Association for Physical Anthropology Conference, Peterborough, Ontario. **2006**
- 43 presentations for which I am a co-author (not listed for brevity)* **2003-2017**

Invited Lectures

- Duke University, USA**, Visiting Speaker in Evolutionary Anthropology Seminar **2016**
- University of Tokyo, Tokyo, Japan**, Visiting Speaker in Evolutionary Genomics Seminar **2015**
- New York University, New York New York**, Visiting Researcher in Anthropology **2013**
- Washington University in St. Louis**, Anthropology Colloquium Series **2013**
- University of Toronto, Toronto Canada**, Anthropology Colloquium Series **2012**
- University of California at Davis, Davis USA** Visiting Speaker in Primatology Seminar **2012**
- McGill University, Montreal Canada** Visiting Speaker in Anthropology Seminar **2011**
- University of Tokyo, Kashiwa Japan** Visiting Researcher in Integrated Biosciences Colloquium **2010**

University of Calgary, Calgary Canada Behavioural Neuroscience Research Seminar	2008
American School in Japan, Tokyo Japan Visiting Scientist Presentations (multiple) for elementary, middle and high school students on primate conservation and ecology	2006-2010

In the News: Popular Media Coverage of Research

New York University. " Detecting social signals may have affected how we see colors. " ScienceDaily. ScienceDaily, 14 June	2017
David Gray. Impacts of drought and famine on the gut microbiome of wild capuchins. Featured on the Eye Opener CBC. May 18 (link TBA).	2017
Johnston, Ian. ' Mismatch ' between the way our senses evolved and modern world is making us ill, experts warn . Featured on the Atlantic; one of many stories resulting from the AAAS session I co-organized on "How we came to our senses".	2017
Young E. To Lions, Zebras Are Mostly Gray. So why are they stripey? Featured on TheAtlantic.com. See also the story on CBC news and Eye Opener . January 26.	2016
Lutz D, Mallkowicz T. Hidden Talents of the Colorblind . Animated Short Interview Featured in the Ultra-Condensed Science Series. September 2.	2015
Williams C. Many animals can still see colour in the dead of night . BBC Earth December 1.	2014
Grens K. The Rainbow Connection : Color vision as we know it resulted from one fortuitous genetic event after another. The Scientist. October 1.	2014
Oosthoek S. Bugs may have made us brainy . Science News for Students. July 18.	2014
Insect diet helped early humans build bigger brains: Quest for elusive bugs spurred primate tool use, problem-solving skills . Science Daily. July 1. (Also featured in various other places, including IFL Science)	2014
Everding G. Quest for elusive bugs spurred primate tool use, problem-solving skills. Washington University Newsroom. June 25. Quest for elusive bugs spurred primate tool use, problem-solving skills . June 25	2014
NASA and National Geographic FameLab Science Communication Finalist. Colorblindness – disease or adaptation? February 22. National Finals Studying Color	2014
Keh D. A Functional substitution approach for studying the ecology of primate color vision . Dug Dug. August 31.	2013
Mahony M. The better to see you with . OnEarth. April 30.	2013
Quenqua D. For Early Primates, a Night Filled With Color . New York Times. April 2.	2013
Dartmouth College. Tarsiers' bulging eyes shed light on evolution of human vision . ScienceDaily. March 27.	2013
MacIntosh A. Extant models of early primates and the evolution of color vision . Centre for International Collaboration and Advanced Studies in Primatology Podcast. August 8.	2013
Barone, J. The Upside of Color Blindness . DISCOVER. April 2.	2007
Wayman, E. An Eye for Camouflage . Science NOW. January 9.	2007

RESEARCH EXPERIENCE

Primate Genomics and Dietary Ecology Laboratory, PI <i>Departments of Anthropology and Archaeology & Medical Genetics, University of Calgary</i> Genetic and genomic research on the sensory systems, dietary adaptations, microbiome, and ecology of wild primates and humans	2016-present
Santa Rosa Primate Project, Co-director (with LM Fedigan and K Jack) <i>Área de Conservación Guanacaste (ÁCG), Costa Rica</i> Coordination of long-term behavioural, ecological and conservation-oriented research on habituated capuchin monkeys and sympatric mammals	2011-present
Human Functional Substitution Model of Animal Vision <i>Vision and Aging Lab, Department of Psychology, University of Calgary</i> Design novel ways to evaluate the real-world consequences of colour and spatial vision variation present among mammals with a focus on foraging and predation	2008-present
Primate Molecular Ecology Laboratory, PI <i>Department of Anthropology, Washington University in St. Louis</i> Genetic and behavioral research on the visual systems, activity patterns, dietary adaptations, and ecology of primates and other small mammals	2014-2015
Relationships of Activity Pattern, Diet and Sensory Ecology of Treeshrews <i>Danum Valley and Mount Kinabalu, Sabah, Borneo</i> Integration of genetics, ecology, behaviour and stable isotopes to investigate relationships among sensory phenotypes, diet and activity pattern in diverse mammalian communities spanning trophic levels	2011-2015

TEACHING EXPERIENCE

Courses Instructed*University of Calgary (as Assistant Professor)*

Anthropology 505: Anthropological Genetics	Winter 2018
Anthropology 311: Primate Behaviour	Winter 2017
Anthropology 601: Quantitative Methods in Behavioural Ecology	2016 – 2017

Washington University in St. Louis (as Assistant Professor)

Anthropology 4911: Methods in Molecular Anthropology (with genetics lab)	Fall 2015
Anthropology 4181: Comparative Methods in Physical Anthropology	Spring 2015
Anthropology 4202: Anthropological Genetics	Fall 2014
Anthropology 3661: Primate Biology	Fall 2014

Dartmouth College (as Instructor)

Anthropology 85: Undergraduate Independent Research 1	Fall 2012
Anthropology 87: Undergraduate Independent Research 2	Spring 2013

University of Calgary (as Instructor)

Anthropology 311: Primate Behaviour	Spring 2011
Anthropology 435: Evolutionary Anthropology	2010-2011

Psychology 505: Special Topics in Colour Vision and Colour Vision Deficiencies	Winter 2009
Anthropology 505: Research Design and Development in Primatology	2007-2008
Anthropology 552: Field Studies in Primatology	Winter 2007

Teaching Credentials*University of Calgary*

University Teaching Certificate	2010
Instructional Skills Workshop	2009

MENTORING AND OUTREACH

Postdoctoral Fellows and Senior Trainees Supervised

Gwen Duytchaever, Ph.D. <i>University of Calgary</i> . Laboratory Supervisor.	2016-present
Carrie Veilleux, Postdoctoral Scholar. <i>University of Calgary</i> . Uniting genomics and behaviour to investigate the sensory ecology of touch in wild primates.	2017-present
Joseph Orkin, Postdoctoral Scholar. <i>University of Calgary/ Washington University in St. Louis</i> . Changing environments, diet, and the gut microbiome of wild capuchin monkeys	2014-present
Eva Garrett, Postdoctoral Scholar. <i>University of Calgary/ Washington University in St. Louis</i> . Olfaction as an adaptation to hunting and gathering in the rainforest: testing old hypotheses with new approaches	2014-2017
Mrinalini Watsa, Postdoctoral Scholar. <i>Washington University in St. Louis</i> . Genetic chimeras in callitrichid primates	2013-2015

Graduate Research Supervised

Lais Pacheco, Ph.D. <i>University of Calgary</i> . Primate colour vision and sociosexual signaling in Neotropical primates	2017-present
Colin MacFarland, M.Sc. <i>University of Calgary</i> . Interactions among gut microbiota and eukaryotic parasites in wild howler monkeys (Co-supervised with Dr. Buret, University of Calgary)	2017-present
Rachel Williamson, M.A. <i>University of Calgary</i> . Foraging niche divergence among Costa Rican white-faced capuchin monkeys	2016-present
Shasta Webb, M.A. <i>University of Calgary/ Washington University in St. Louis</i> . Microbial adaptations to diet in wild Costa Ricans capuchin monkeys	2015-present
Jeremy Hogan, M.A. <i>University of Calgary</i> . Monkey-flower interactions in a seasonal dry forest (Co-supervised with Dr. Fedigan, University of Calgary)	2012-2014
<i>Currently serving on 6 additional graduate student committees</i>	2014-present

Undergraduate Research Supervised

Swellan Pinto, BH Honours student. <i>University of Calgary</i> . Genomic basis of ethanol metabolism in primates and their relatives.	2017-present
Jia Tang, BSc Honours student. <i>University of Calgary</i> . Primate population genomics from fecal samples.	2017-present

Michal Ginzbourg, Undergraduate Assistant. <i>University of Calgary</i> . DNA extraction from primate fecal samples for gut microbiome profiling.	2017
Swellan Pinto, ACHRI Summer Research Intern. <i>University of Calgary</i> . Genomic detection of seasonal parasite load in wild primates	2016-2017
Colin MacFarland, Undergraduate Intern. Genetic monitoring of <i>Giardia</i> infection in wild primate populations.	2016-2017
Emily Walco, <i>Washington University in St. Louis</i> . Color vision and age-related foraging in white-faced capuchin monkeys	2014-2015
Kelly Kries, <i>Washington University in St. Louis</i> . Molecular ecology and evolution of Phyllostomid bats	2014-2015
Cassandra Mitchell <i>Washington University in St. Louis</i> . Chimerism in callitrichid primates (Co-supervised with Dr. Watsa, Washington University)	2014-2015
Anna Villanyi, <i>Washington University in St. Louis</i> . Observer effects on captive primates at the St. Louis Zoo	2014-2015
Christina Danosi, <i>Dartmouth College</i> . Testing the diurnal frugivory hypothesis of primate colour vision in a fruit bat (<i>Pteropus samoensis</i>) with diurnal proclivities	2012-2013
Nalisha Kassam, <i>University of Calgary</i> . Effects of natural and simulated human colour vision deficiencies on search time and accuracy	2009-2010
Michael Lemmon, <i>University of Calgary</i> . Establishment and host preference of <i>Ficus</i> trees in a tropical dry forest	2008
Adrienne Blauel, <i>University of Calgary</i> . Predictors of predator alarm calls and responses by capuchin monkeys: evaluating sex, age and colour vision status	2008

Selected Grants, Awards, and Scholarships to Mentored Students and Post-docs

Eyes High Doctoral Scholarship: Behavioural and physiological responses to diets in a changing landscape (Shasta Webb, Ph.D. Student)	\$120 000 (CAD)	2017-2020
Alberta Children's Hospital Research Institute (ACHRI) Postdoctoral Fellowship (Joseph Orkin, Postdoctoral Scholar)	\$50 000 (CAD)	2016-2018
Sigma Xi Research Grant (Swellan Pinto, Undergraduate Student, 2017; Shasta Webb, Masters Student, 2016; Emily Walco, Undergraduate student 2015)	\$1 000 per student (USD)	2015-2017
Grant Gall Traineeship: Shifts in immunity and gut microbiota during pregnancy and lactation in wild capuchin monkeys (Shasta Webb, Masters Student)	\$40 000 (CAD)	2016-2017
Alberta Innovates Technology Futures: Behavioural and gut microbiome responses to pregnancy in wild capuchin monkeys (Shasta Webb, Masters Student)	\$26 500 (CAD)	2016-2017
The Wenner-Gren Foundation: Olfaction as an adaptation to hunting and gathering in the rainforest: testing old hypotheses with new approaches (Eva Garrett, Postdoctoral Scholar)	\$20 000 (USD)	2015-2017
American Society of Primatologists General Small Research Grant (Cassandra Mitchell, Undergraduate Student, 2015; Shasta Webb, Masters Student, 2016)	\$500 - \$1500 per student (USD)	2015-2016

Public Outreach

<i>Cybermentor Program</i> , website-based, Mentor	2003-present
A mentoring program, which pairs professional women in science and engineering with young girls, aged 11-18. Involves weekly emails with a mentee about science-related topics as well as her individual interests and career goals. Provides constructive comments, listening and encouragement.	
<i>WitsOn (Women in Technology Sharing Online)</i> , website-based, Mentor.	2012-2013
An online program connects undergraduate students pursuing degrees in science, technology, engineering and medicine (STEM) with female mentors from industry and academia who share experience in issues of particular concern to women. The desired outcome is increased representation of women in STEM areas	
<i>Women in Science Program (WISP)</i> , Dartmouth College, Mentor	2011-2012
A research internship program, offered to first and second year female students; designed to recruit, retain and engage young women, who are under-represented in science, math and engineering, as active members of the research community	
<i>Operation Minerva</i> , Calgary, Canada, Mentor	2010
Job-shadowing project to encourage young women (Grade 8) to consider careers in science, engineering, math and technology and promote their self-confidence	
<i>Girls Field Hockey</i> , Lord Beaverbrook High School, Calgary, Canada, Head Coach	1999-2003
junior girls - teach skill and discipline while emphasizing fun, team work, sportsmanship	

PROFESSIONAL SERVICE

Departmental Activities

<i>Establish and Direct a U of C Biological Anthropology Writing Group</i>	2016-present
<i>Faculty, postdocs, and graduate students meet weekly for 3 hours to write and discuss current manuscripts/projects in progress</i>	
<i>Established the Washington University Genetics Group (WUGG)</i>	2014-2015
Faculty, postdocs, lab personnel, graduate and undergraduate students from local universities and The Genome Institute meet bi-monthly to discuss theory, analysis and tools in genetics and genomics with a focus on application to current projects	

Symposia Organized, Sessions Chaired and Other Conference Activities

<i>How We Came to Our Senses: Ecology, Evolution, and the Future of Human Sensation</i> ; Symposium co-organized with N Dominy: American Association for the Advancement of Science (AAAS). Boston, Massachusetts.	2017
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- Fueling Integrative Approaches in Primate Sensory Ecology and Genomics;* **2016**
Symposium co-organized with O Nevo: XXVI Congress of the International Primatological Society, Chicago, USA
- Local Arrangements Committee:* 84th congress of the American Association of Physical Anthropologists, St. Louis, Missouri, USA; Duties included website development: www.aapa2015.com **2014-2015**
- Variation & Evolution of Primate Colour Vision Revealed by Cross-Disciplinary Studies;* **2010**
Symposium co-organized with S Kawamura: XXIII Congress of the International Primatological Society, Kyoto, Japan
- Ecology and Conservation of Non-human Primates (Session Chair):* 33rd Annual American Society of Primatologists congress, Louisville, Kentucky, USA **2010**
- Neotropical Primate Ecology Workshop: Genes, Behaviour and the Senses* **2009**
(Symposium organized); Departmental symposium with four invited guest speaker in the area of sensory and behavioural ecology, University of Calgary, Canada

Editorial and Referee Activities

- Research Committee;* International Primatological Society **2015-2019**
- Associate Editor;* International Journal of Primatology **2017-present**
- Review Editor;* Frontiers in Ecology and Evolution **2015-2017**
- Guest Editor* (with L.J.N. Brent); International Journal of Primatology **2014**
Special Issue on The Genetic Basis of Primate Behaviour
- Manuscript reviews*
- American Journal of Primatology, American Naturalist, Animal Behaviour, Biology Letters, BMC Evolutionary Biology; Chemical Ecology; Evolutionary Anthropology, Evolutionary Biology, Frontiers in Zoology, International Journal of Primatology, Journal of Experimental Zoology, Journal of Human Evolution, Nature Ecology and Evolution, PLoS ONE, Proceedings of the Royal Society of London B; Scientific Reports **2009-present**
- Funding and Performance reviews (select)*
- ENA-Lyon University (France) Performance Review (molecular genetics); Graduate Women in Science grant, International Primatology Society, Leakey Foundation Fieldwork Grant, NSF CAREER grant, University of Vienna research platform review. **2009-present**

Professional Memberships

- American Society of Primatologists (ASP) **2004-present**
- Animal Behaviour Society (ABS) **2004-present**
- International Primatological Society (IPS) **2008-present**
- American Association of Physical Anthropologists (AAPA) **2011-present**
- American Association for the Advancement of Science (AAAS) **2013-present**
- American Association of Anthropological Geneticists (AAAG) **2013-present**

Sigma XI
Canadian Society for Ecology and Evolution

2013-present
2016-present

LANGUAGES

English: native language

Spanish: near fluent; speak, read, write, and translate

French: rudimentary

Note: throughout this document alternate spellings of words (e.g. color vs. colour) in titles reflect differing practices of the journals and societies in which the research was published/ presented