

KATIE HINDE, Ph.D.

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RESEARCH INTERESTS: Mother's milk has an organizational effect on infant outcomes, not just by providing the energy and materials for somatic growth, but through other milk constituents that shape immunological, neurobiological, and behavioral development. I primarily investigate how variation in mother's milk and behavioral care influences infant outcomes from post-natal life into adulthood and inter-generationally. I am additionally interested in the organization of personality/temperament.

PROFESSIONAL EXPERIENCE

2011-Present Assistant Professor, Human Evolutionary Biology, Harvard University
2009-2011 Post-Doctoral Scholar, Brain, Mind, & Behavior, California National
 Primate Research Center, UC Davis
2008-2009 Lecturer, Department of Anthropology, UC Santa Barbara

AFFILIATIONS

Affiliate Scientist Brain, Mind, & Behavior Unit, California Nat'l Primate Research Center
Research Associate Nutrition Lab, Smithsonian National Zoological Park
Fellow Big Think Delphi

EDUCATION

2005-2008 Ph.D. Anthropology, University of California Los Angeles
2002-2004 M.A. Anthropology, University of California Los Angeles
1997-1999 B.A. Anthro, University of Washington Dept. Honors, *Magna Cum Laude*
1995-1997 Seattle Central Community College

GRANTS

2011 "Assessment of a Non-Human Primate Model of Human Mammary RNA during Lactation" California National Primate Research Center Post-Doc Pilot Grant to PI Danielle Lemay under CNPRC Base Grant NIH RR000169 (\$75,000 direct costs). Role: Collaborating Investigator
2009-2013 "Longitudinal Investigation of Maternal Influences on Infant Outcomes Mediated by Physiological Investment and Behavioral Care during Lactation in Rhesus Macaques (*Macaca mulatta*).” National Science Foundation BCS-0921978 (\$265,000 direct costs) Role: Principle Investigator
2006 American Society of Primatologists Research Grant (\$1500)
2005-2007 NSF Doctoral Dissertation Improvement Grant #0525025 "Maternal Condition and Lactational Investment: Nursing Behavior, Milk Production and Infant Outcomes in Captive Rhesus Macaques"

2004 Role: co-PI with advisor Joan Silk. (\$12,000)
Sigma Xi Grant-in-Aid-of Research

PUBLICATIONS

Peer-Reviewed: Journal Articles

- 2013** 15. **Hinde K**, Foster AB, Landis LM, Rendina D, Oftedal OT, Power ML. 2013. Daughter Dearest: Sex-Biased Calcium in Mother's Milk among Rhesus Macaques. *Am. J. Phys. Anthropol.* doi: 10.1002/ajpa.22229
- 2012** 14. O'Sullivan A, He X, McNiven EMS, **Hinde K**, Haggarty NW, Lönnerdal B, Slupsky CM. 2012. Metabolomic phenotyping validates the infant rhesus monkey as a model of human infant metabolism. *Journal of Pediatric Gastroenterology & Nutrition*. doi: 10.1097/MPG.0b013e31827e1f07
13. Miller EM, Aiello MO, Fujita M, **Hinde K**, Milligan L, Quinn EA. 2012. Field and Laboratory Methods in Human Milk Research. *Am J Hum Biol*. DOI: 10.1002/ajhb.22334
12. **Hinde K**, German B. 2012. Food in an evolutionary context: Insights from mother's milk. *J Sci Food Agric*. 92(11):2219-23.
11. Neville MC, Anderson SM, McManaman, Badger TM, Bunik M, Crume T, Dabelea D, Donovan S, Forman N, Frank DN, Friedman JE, German JB, Goldman A, Hadsell D, Hambidge M, **Hinde K**, Horseman ND, Hovey RC, Hovey RC, Janoff E, Krebs N, Lebrilla C, Lemay DG, MacLean PS, Meier P, Morrow A, Neu J, Nommsen-Rivers, Raiten DJ, Rijnkels M, Seewaldt V, Shur BD, VanHouten J, Williamson P. 2012. Lactation and neonatal nutrition: defining and refining the critical questions. *J Mamm Gland Biol Neoplasia*. 17:167-88
- 2011** 10. **Hinde K**, Milligan LM. 2011. Primate milk synthesis: Proximate mechanisms and ultimate perspectives. *Evol Anthropol* 20:9-23.
9. Tao N, Wu S, Kim J, An HJ, **Hinde K**, Power M, Gagneux P, German J, Lebrilla C. 2011. Evolutionary glycomics: Characterization of milk oligosaccharides in primates. *J Proteome Res*. 10:1548-1557
8. Jin L, **Hinde K**, Tao L. 2011. Species diversity and relative abundance of lactic acid bacteria in the milk of rhesus macaques (*Macaca mulatta*). *J Med Primatol* 40: 52–58.
7. Sullivan EC, **Hinde K**, Mendoza SP, Capitanio JP. 2011. Cortisol concentrations in the milk of rhesus monkey mothers are associated with confident temperament in sons, but not daughters. *Dev Psychobiol* 53: 96–104.
- 2010** 6. Goto K, Fukuda K, Senda A, Saito T, Kimura K, Glander KE, **Hinde K**, Dittus W, Milligan LA, Power ML, Oftedal OT, Urashima T. 2010. Chemical characterization of oligosaccharides in the milk of six species of New and Old world monkeys. *Glycoconj J*. 27:703–715
5. **Hinde K**, Capitanio JP. 2010. Lactational programming? Mother's milk predicts infant temperament and behavior. *Am J Primatol*. 72:522-529
- 2009** 4. **Hinde K**. 2009. Richer milk for sons but more milk for daughters: sex biased investment during lactation varies with maternal life history in rhesus macaques. *Am J Hum Biol* 21:512-519.

3. **Hinde** K, Power M, Oftedal OT. 2009. Rhesus macaque milk: Magnitude, sources, and consequences of individual variation over lactation. *Am J Phys Anth* 138:148-57.
- 2007** 2. **Hinde** K. 2007. First-time macaque mothers bias milk composition in favor of sons. *Curr Biol* 17:R958-R959.
1. **Hinde** K. 2007. Milk composition varies in relation to the presence and abundance of *Balantidium coli* in the mother in captive rhesus macaques (*Macaca mulatta*). *Am J Primatol* 69:625-34.

Peer-Reviewed: Book Chapters

- 2013** **Hinde** K. 2013. Lactational Programming of Infant Behavioral Phenotype In: Primate Developmental Trajectories in Proximate and Ultimate Perspectives. Clancy KBH, Hinde K, Rutherford JN, eds. Springer, New York. pp 187-207
- Fairbanks LA, **Hinde** K. 2013. Behavioral Response of Mothers and Infants to Variation in Maternal Condition: Adaptation, Compensation and Resilience. In: Primate Developmental Trajectories in Proximate and Ultimate Perspectives. Clancy KBH, Hinde K, Rutherford JN, eds. Springer, New York. pp 281-302

Book Chapters

- Bales KL, Maninger N, **Hinde** K. 2012. New directions in the neurobiology and physiology of paternal care. In: Relationship Science: Integrating Evolutionary, Neuroscience, and Sociocultural Approaches. Eds. Gillath O, Adams G. Kunkel A. Am Psych Assoc. Washington DC. 91-111.

Volumes Edited

- Building Babies: Primate Developmental Trajectories in Proximate and Ultimate Perspectives. 2013. Editors: Clancy KBH, **Hinde** K, Rutherford JN. *Developments in Primatology: Progress and Prospects*, Vol. 37. Springer, New York. p 531. ISBN 978-1-4614-4059-8

PRESENTATIONS/PUBLISHED ABSTRACTS

- Hinde** K, Wechsler M. 2012. Intergenerational epigenetic effects on milk production and infant condition in a non-human primate model. International Society of Research in Human Milk and Lactation. Trieste, Italy.
- Hinde** K, Wechsler M. 2012. Long-term consequences of reduced maternal investment in rhesus macaque daughters. 81st Meeting of the American Association of Physical Anthropologists. Portland, OR
- Hinde** K, Foster AB, Capitanio JP. Cortisol in Mother's Milk Mediates the Coordinated Development of Infant Behavior and Physiology. 2011. VIII. Göttinger Freilandtage: Behavioral Constraints and Flexibility Göttingen, Ger
- Hinde** K, Maninger N, Mendoza SP, Mason, WA, Wang GB, Cherry SR, Bales KL. 2011. Neurobiological changes in the reward circuit following pair-bond formation in monogamous titi monkeys (*Callicebus cupreus*). American Society of Primatologists Annual Meeting, Austin TX *Am J Primatol*. 73: 95.

- Wechsler M, **Hinde** K. 2011. Despite reduced maternal investment during infancy, first-born rhesus macaques daughters can catch up. American Society of Primatologists Annual Meeting, Austin TX *Am J Primatol.* 73: 39.
- Foster AB, Landis LM, Rendina D, **Hinde** K. 2011. Calcium and phosphorus in milk are associated with maternal parity and infant sex in *Macaca mulatta*. *Am J Primatol.* 73:63
- Hinde** K, Jin L, Tao L. 2011. Mother's milk and commensal gut bacteria: what we know and what we need to find out. 80th Meeting of the American Association of Physical Anthropologists. Minneapolis, MN *Am J Phys Anth* 144: 63.
- Hinde** K, Maninger N, Mendoza SP, Mason, WA, Rowland DJ, Wang GB, Cherry SR, Bales KL. 2010. D1 dopamine receptor binding potential as a function of pair-bond status in monogamous titi monkeys (*Callicebus cupreus*). Society for Neuroscience Annual Meeting, San Diego CA
- Maninger N, **Hinde** K, Mendoza SP, Mason, WA, Cherry SR, Bales KL Where does monogamy reside in the brain? A functional imaging study of pair-bonding in the titi monkey (*Callicebus cupreus*). Society for Neuroscience Annual Meeting, San Diego CA
- Sullivan EC, **Hinde** K, Capitanio JP, Mendoza SP. 2009. Cortisol concentrations in rhesus monkey milk: Implications for Offspring Biobehavioral Development. 40th Annual International Society of Psychoneuroendocrinology Meeting.
- Hinde** K, Capitanio JP. 2009. Mother's milk energy shapes infant growth and behavioral development in rhesus macaques (*Macaca mulatta*). LXXVIII American Association of Physical Anthropologists Meeting, Chicago, IL. *Am J Phys Anth* 48:151
- Hinde** K. 2008. Lactational performance in primiparous and multiparous rhesus macaques: milk energy density and milk yield. IUSSP International Seminar on Trade-offs in Female Life Histories: Raising New Questions in an Integrative Framework. Bristol, United Kingdom, 23-25 July 2008.
- Hinde** K, Capitanio JP. 2008. Lactational programming? Mother's milk energy predicts infant behavior and temperament. American Society of Primatologists Annual Meeting. West Palm Beach, Florida. June. *Am J Primatol* 70:27.
- Hinde** K. 2007. Sex-biased milk production varies with life history in rhesus macaques. VI. Göttinger Frielandtage: Primate behavior and human universals. Göttingen, Germany. Primate Report SI:30
- Hinde** K. 2007. Milk composition and yield in primiparous and multiparous rhesus macaques (*Macaca mulatta*). LXXVI American Association of Physical Anthropologists Meeting, Philadelphia, PA. *Am J Phys Anth* 44:130
- Sullivan EC, **Hinde** K, Capitanio JP, Mendoza SP. 2007. Cortisol concentrations in rhesus monkey milk: Relationship to cortisol concentrations in plasma and offspring sex. 40th Annual International Society for Developmental Psychobiology Meeting. *Dev Psychobio*, 49: 741.
- Sullivan E, **Hinde** K, Capitanio JP, Mendoza SP. 2007. Cortisol concentrations in rhesus monkey milk. American Society of Primatologists Meeting, Winston-Salem, NC. *Am J Primatol* 69:59.
- Tao N, Ninonuevo MR, **Hinde** K, Lebrilla CB. 2006. Profiling of oligosaccharides in non-human mammalian milk. American Society of Mass Spectrometry 54th Meeting Seattle, Wa. June.

- Hinde K.** 2006. Milk production in adolescent and prime age rhesus macaques. International Society of Research in Human Milk and Lactation. Niagara-on-the-Lake, CA, J Human Lactation 23:A37
- Hinde K.** 2006. Sources of variation in milk composition from two populations of rhesus macaques (*Macaca mulatta*). American Society of Primatologists Meeting, San Antonio, Texas, August. Am J Primatol 68(S1):44
- Hinde K.** 2006. Lactational Performance in primiparous and multiparous captive rhesus macaques (*Macaca mulatta*) American Society of Primatologists Meeting, San Antonio, Texas, August. Am J Primatol 68(S1):132
- Hinde K.** 2005. Maternal condition varies in relation to maternal condition in captive rhesus macaques (*Macaca mulatta*). LXXIV American Association of Physical Anthropologists Meeting, Milwaukee, WI. Am J Phys Anth S40:115.
- Hinde K.** 2004. Milk composition and maternal condition in captive rhesus macaques (*Macaca mulatta*). XX Congress of the International Primatological Society, Torino, Italy August. Folia Primatologica 75: 274.
- Hinde K, Kyes RC, Iskandar E, Iskandriati D, Sajuthi D.** 2002. A Case Study: Evidence of Trisomy X in a Free-ranging population of Long-tailed Macaques on Tinjil Island, Indonesia. American Society of Primatologists Meeting, Oklahoma City. Am J Primatol 57: 47.
- Hinde K, Newell-Morris L, Ha JC.** 2001. Maternal illness and reproductive failure in primiparous macaques (*M. nemestrina*). American Society of Primatologists Meeting, Savannah, Georgia, August. Am J Primatol 54: 84.
- Hinde K, Newell-Morris L.** 2000. Abortion- A "Biologically Smart" strategy in young macaques (*M. nemestrina*). American Society of Primatologists Meeting, Boulder, Colorado, June. Am J Primatol 51:62.

INVITED TALKS

- 2013 Harvard Thinks Big 4
Laboratory for Comparative Ethology, National Institute of Health (March)
Behavioral Ecology Group, Stony Brook University (April)
California Animal Nutrition Conference Annual Meeting (May)
- 2012 IGERT Program in Evolutionary Modeling: Model-Based Approaches to Biological and Cultural Evolution, Department of Anthropology, Washington State University
New York Lactation Consultants Association, Focused Perspective Series, New York Methodist Hospital
Human Evolution and Human Development Symposia, Center for Children and Families University of Notre Dame
Annual Meeting of the ADSA-AMPA-ASAS-CSAS-WSASAS, Phoenix, AZ Lactation Biology Symposium: The Long-Term Impact of Epigenetics and Maternal Influence on the Neonate through Milk-Borne Factors and Nutrient Status Joint
Milk and Lactation: Defining and Refining the Critical Questions Workshop, Anschutz Medical Campus of the University of Colorado, Denver
Darwin Festival, Salem State University
40th National Meeting of the Shakespeare Association of America, Boston MA
Organismal and Evolutionary Biology Department, Harvard University
- 2011 6th International Whey Conference, Chicago IL

- Gordon Research Conference, Mammary Gland Biology, Newport, RI
Primate Biology Group, UC Berkeley
- 2010 7th Annual International Milk Genomics Consortium Meeting, UC Davis
Physical Anthropology & Archeology Seminar Series, UC Santa Cruz
Department of Human Evolutionary Biology, Harvard University
Anthropology Department, New York University
- 2008 Inaugural Interdisciplinary Symposium, 31st American Society of Primatologists Meeting
Physical Anthropology & Archeology Seminar Series, UC Santa Cruz
Behavior, Evolution, & Culture Brownbag Series, UCLA
PsychoBio Brownbag Seminar, UC Davis
- 2007 Animal Behavior Research Group Seminar Series. University of Chicago

ORGANIZED SYMPOSIA & CONFERENCES

- Hinde K. 2011. Careers in Primatology: Options Outside Traditional Tenure Trajectories. Student Luncheon Workshop, 34rd American Society of Primatologists, Austin, TX
- Hinde K. 2011. 5th Annual California Workshop on Evolutionary Perspectives on Human Behavior at Cal Poly San Luis Obispo. Role: Lead Coordinator.
- Hinde K. 2010. The DOs and DON'Ts of the Academic Job Search. Student Luncheon Workshop, 33rd American Society of Primatologists Meeting, Louisville KY.
- Hinde K. 2010. 4th Annual California Workshop on Evolutionary Perspectives on Human Behavior at Cal Poly San Luis Obispo. Role: Lead Coordinator.
<http://www.cla.calpoly.edu/~srucas/3UC%202010.Program.pdf>
- Sellen D, Hinde K. 2009. Ecology and evolutionary biology of primate lactation: recent advances and future directions. LXXVIII American Association of Physical Anthropologists Meeting Chicago, IL.

TEACHING

Spring 2013	Building Babies (Seminar)	HEB, Harvard
Fall 2012	Sex, Love, & War: The Evolution of Human Behavior	HEB, Harvard
Fall 2012	Evol. Human Anatomy & Physiology	Life Sciences, Harvard
Spring 2012	Neurobiology of Sociality	HEB, Harvard University
Spring 2012	Building Babies (Lecture)	HEB, Harvard University
Spring 2009	Comparative Primate Life Cycle	Anthropology, UCSB
Winter 2009	Primate Social Behavior	Anthropology, UCSB
2008-09	Career Discovery Mentor	Science & Society Program, UCD
Winter 2006	Co-Instructor, Milk Genomics	Food Science & Technology, UC

STUDENTS ADVISED

Graduate Students

Laura Klein	Human Evolutionary Biology, Harvard	Advisor
Cary Allen Blevins	Human Evolutionary Biology, Harvard	Advisor
Elizabeth Brown	Human Evolutionary Biology, Harvard	Committee Member

Undergraduate Students

Charlotte Lane '13	Human Evolutionary Biology, Harvard	Honors Thesis Advisor
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Jorie Sullivan '13	Human Evolutionary Biology, Harvard	Honors Thesis Co-Advisor
Jung-yun Lim '14	Human Evolutionary Biology, Harvard	Honors Thesis Advisor

Post-Docs

Dr. Amy Skibiell	Human Evolutionary Biology, Harvard	2012-2013
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PhD Thesis Examiner

Dr. Foteini Hassiotou	University of Western Australia, School of Chemistry and Biochemistry, and School of Anatomy, Physiology and Human Biology (2013)
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FELLOWSHIPS, HONORS & AWARDS

2007-2008	Chancellor's Dissertation Fellowship, UCLA
2007	Science and Society Fellow, UC Davis
2006	Best Student Presentation, American Society of Primatologists
2006	Philanthropic Education Organization Scholar Award
2003	UCLA Summer Research Mentorship Fellow
2003-2006	National Science Foundation Pre-Doctoral Fellowship
2002-2004	Center for the Study of Evolution and the Origins of Life Fellow, UCLA
2002-2003	Eugene Cota Robles Scholarship Award, UCLA
1999	Phi Beta Kappa
1998-1999	University of Washington Undergraduate Scholar Award
1998-1999	Holland Memorial Scholarship Award
1997-1998	University of Washington Alumnae Board Scholarship

PROFESSIONAL MEMBERSHIPS

American Association of Physical Anthropologists
 American Society of Nutrition (Lactation Interest Group)
 American Society of Primatologists
 International Society for Research in Human Milk and Lactation
 International Society of Primatologists
 Society for Neuroscience

PROFESSIONAL SERVICE

2013-2015	Executive Council, Int'l Society for Research in Human Milk and Lactation
2012-2014	Grad Student Mentor, Harvard Graduate Women in Science and Engineering
2012-2013	Standing Committee, Mind, Brain, and Behavior Initiative, Harvard University
2012-2013	Associate Editor, SPLASH! Milk Science Update, International Milk Genomics Consortium
2012-2013	Member, AAPA ad-hoc working group on new media
2010-2012	Chair, Education Committee, ASP
2008-2010	Member, Education Committee, ASP
2007-2008	Member, Inter-Disciplinary Representation Committee, ASP
2004-2008	Member, Publications Committee, ASP
2003-2004	Anthropology Representative, Social Sciences Council, UCLA
2003-2004	President, Anthropology Graduate Student Association, UCLA

Manuscript *Ad Hoc* Reviewer: *Am J Hum Biol*, *Am J Medical Primatol*, *Am J Primatol*,

Animal Behaviour, Behavioral Ecology, Behavioral Ecology and Sociobiology, Ev Anth, Int J Primatol, J Anatomy, J Human Lactation, PLoS One, PNAS, Proceedings Royal Soc B,

Grant Proposal *Ad Hoc* Reviewer: National Science Foundation, Leakey Foundation, France-Berkeley Fund

OUTREACH

- 2013 Why Mammals Suck: Monkey Milk & Infant Development” Vashon Island High School, Washington
- 2012 Organizer: ASP Booth “Are YOU Smarter than a MONKEY,” USA Festival of Science and Engineering, Washington DC
- 2011 ASP Education Outreach Bailey Middle School, Austin TX
- 2010 CNPRC Education Program Featured Scientist for UC Davis Career Discovery Program and USA National Youth Leadership Forum Staff, ASP Booth “Are YOU Smarter than a MONKEY” USA Festival of Science, Washington DC, ASP Student and Docent Outreach Seminar, Louisville Zoo, KY
- 2009 “The Study of Primates” Doyle Elementary School, San Diego, CA
- 2008 Featured Scientist, “Evolve: Skin” History Channel

RELEVANT WORK EXPERIENCE

- 1999-2001 Research Technologist, Washington National Primate Research Center (WaNPRC) Infant Primate Research Laboratory (IPRL)
Responsibilities: Surgical procedure assistance, perform x-ray imaging, DXA imaging, write and edit research protocols, organize research data, train new employees, medical supply inventory, clinical coverage, blood draws, research procedure assistance, instrument sterilization, conducted diurnal behavioral and physiological assessments of adult and infant primates including BSL 2/3 housed animals.