Erin E. Hecht, Ph.D.

Curriculum Vitae

Assistant Professor, Department of Human Evolutionary Biology, Harvard University
Mailing address: 11 Divinity Ave, Cambridge, MA 02138
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Office phone: 617-384-8642 | Email: erin_hecht@fas.harvard.edu
http://hechtlab.org | http://caninebrains.org/

Research Interests

I am a comparative neuroscientist studying the relationship between brain structure and function, particularly in the evolution of neural adaptations to support complex cognitive, behavioral, and affective functions like social learning, tool use, and communication. My work uses a variety of structural and functional neuroimaging techniques including DTI, MRI, and PET, as well as behavioral measures, in clinical and non-clinical human subjects, nonhuman primates, and canids.

Education

2014 – 2015	Postdoctoral Research Laboratories of Tricia King, Ph.D. & Diana Robins, Ph.D. Department of Psychology, Georgia State University
2013	Postdoctoral Research Laboratory of Dietrich Stout, Ph.D. Department of Anthropology, Emory University
2006 – 2013	Ph.D., Neuroscience Laboratory of Lisa A. Parr, Ph.D. Yerkes National Primate Research Center, Emory University
2002 – 2006	B.S., Cognitive Science/Neuroscience, *Summa cum laude* Laboratory of Jaime A. Pineda, Ph.D. University of California, San Diego

Honors and Awards

2018	Invited Talk, Cold Springs Harbor Laboratories
2018	Invited Talk, South Eastern Evolution and Human Behavior Meeting
2018	Invited Talk, Dept. of Human Evolutionary Biology, Harvard University
2017, 2018	Invited Participant, NSF/NIH BRAIN Initiative Investigators' Meeting
2016	Invited Talk, National Institutes of Health
2016	Brains & Behavior Seed Grant, Georgia State University
2016	Invited symposium participant and speaker, From Tools and Gestures to the Language-Ready Brain, Emory University
2016	Invited talk, Evolution of Social Complexity Seminar Series, Arizona State University
2015	Invited talk, Institute on Aging, University of Florida
2014	Organizer/host, Workshop on Action, Brain, Language, and Evolution, Emory University
2013	Invited participant, NSF Workshop on Phylogenetic Principles of Brain Structure and Function at Janelia Farms
2013	Emory Nominee, NIH Director's DP5 Early Independence Award
2012	Invited talk, Bioanthropology Seminar, Emory University
2012	Guest lecture, From Botox to Behavior, Emory University
2012	Second Place, Best Student Poster, XXIV Congress of the International Primatological Society, Cancun, Mexico
2012	Pilot Research Grant, Center for Systems Imaging, Emory University
2012	Invited Talk, Frontiers in Neuroscience Seminar Series, Student Research Featured for Interviewing Graduate Applicants
2010 – 2013	Ruth L. Kirchstein National Research Service Award Predoctoral Fellowship
2010 – 2012	Dissertation Fieldwork Grant, The Wenner-Gren Foundation
2010-2012	Osmundsen Initiative Award, The Wenner-Gren Foundation
2010	Travel sponsored by Tetsuro Matsuzawa, Ph.D., IPS President XXIII Congress of the International Primatological Society, Kyoto, Japan
2009	Guest Lectures, Neuroscience and Philosophy, Emory University
2008	Honorable Mention, NSF Graduate Research Predoctoral Fellowship
2007 – 2008	NIGMS Training Grant, Emory University
2007	Honorable Mention, NSF Graduate Research Predoctoral Fellowship
2006 – 2011	Division Scholar Fellowship, Emory University
2006	*Summa Cum Laude*, University of California, San Diego
2006	US Grants Student Research Grant, University of California, San Diego
2005	Chancellor's Research Scholarship, University of California, San Diego
2004 – 2005	William H. Stout Scholarship, University of California, San Diego

Positions and Affiliations

2019 –	Assistant Professor Department of Human Evolutionary Biology Faculty of Arts and Sciences Harvard University
2016 – 2019	Affiliated Scientist Division of Developmental and Cognitive Neuroscience Yerkes National Primate Research Center Emory University
2015 – 2019	Research Scientist Center for Behavioral Neuroscience Georgia State University
2014 – 2015	Postdoctoral Research Laboratories of Tricia King, Ph.D. & Diana Robins, Ph.D. Department of Psychology, Georgia State University
2013 – 2014	Contract neuroimaging analysis Laboratory of Chet Sherwood, Ph.D. Department of Anthropology George Washington University
2013	Contract neuroimaging analysis Dog Star Technologies, Inc. / Laboratory of Greg Berns, Ph.D. Department of Psychology Emory University
2013	Postdoctoral Research Laboratory of Dietrich Stout, Ph.D. Department of Anthropology Emory University
2007 – 2013	Dissertation Research Laboratory of Lisa A. Parr, Ph.D. Yerkes National Primate Research Center Graduate Program in Neuroscience, Div. of Biological & Biomedical Sciences Emory University

2007	Laboratory Rotation Laboratory of Lisa Parr, Ph.D. Yerkes National Primate Research Center, Emory University
2007	Laboratory Rotation Laboratory of James K. Rilling, Ph.D. Department of Anthropology, Emory University
2007	Laboratory Rotation Laboratory of Krish Sathian, M.D., Ph.D. Department of Neurology, School of Medicine, Emory University
2003 – 2006	Research Assistant Laboratory of Jaime A. Pineda, Ph.D. Department of Cognitive Science, University of California, San Diego
2003 – 2006	Clinical Assistant Private Neuropsychology Practice La Jolla, California

Funding

Pending

Neurodynamic trajectories as biological signatures and predictors of skill learning
Army Research Office, Department of Defense (PI: E. Hecht)
Total funds requested: $522,772.00

- *This research would use neuroimaging and behavior assays to track plastic neural changes associated with skill training in military working dogs.*

Current

Ocular Sequelae and Intervention in a Rat Model of Blast Overpressure Polytrauma
Merit Award Proposal, Department of Veterans Affairs (PI: S. Fleisler; E. Hecht is a collaborator)
Total funds requested: $637,764.00

- *This research would compare 2 models of blast-induced traumatic brain injury in a rat model, and tests the efficacy of a novel, blood-brainbarrier permeable multifunctional antioxidant (MFAO ("HK-2")) and a neuroprotectant (phenoxybenzamine ("PBZ")), alone and in combination, to limit the severity of polytrauma. Dr. Hecht's contribution would consist of using high-resolution ex vivo DTI imaging to evaluate the therapeutic efficacy of HK-2 and PBZ in preventing or attenuating polytrauma.*

Neural adaptations in response to selection for reduced or increased aggression
The Wenner-Gren Foundation (PI: E. Hecht; Co-PI: T. Preuss)
$19,600 January 1, 2017 – December 31, 2018

- *This research tests long-standing anthropological hypotheses about evolutionary pressures that may have shaped our human ancestors' behavior and brain morphology. High-resolution MRI and DTI scans will be used to pinpoint neural systems that respond to selection pressure for or against aggression using a highly specific experimental model, foxes selectively bred for either reduced or increased aggression. Identified neural systems will then be examined in humans and in our closest living primate relatives, bonobos and chimpanzees.*

Collaborative Research: NCS-FO: Individual Variation, Plasticity, and Learning in Human Brain Evolution
NSF 1631563 (PI: E. Hecht; Co-PIs: D. Stout, T. Preuss, D. Gutman, A. Kruger)
$970,704 July 1, 2016 – June 30, 2019

- *This project investigates the evolutionary mechanisms and contemporary processes underlying human technological learning, including factors which may mediate individual differences in technological learning. This is a multi-institution project involving Georgia State University (lead) and Emory University.*

Effects of oxytocin on brain, behavior and social development
NIMH R01 MH104534 PI: L. Parr
$203,148 February 1, 2016 – January 31, 2020

- *This grant examines the effects of repeated oxytocin administration on social behavior and neural development in infant monkeys. E. Hecht's subaward supports longitudinal analysis of neuroimaging data in these monkeys.*

Collaborative Research: NSF-IOS: Impact of Selection Pressure for Social Behavior on Canid Brain Evolution
NSF 1457291 (Co-PIs: D. Gutman, M. Kent, E. Hecht, T. Preuss, S. Sakai)
$532,390 August 1, 2015 – July 31, 2019

- *This multi-institution grant between Emory University (lead institution), Georgia State University, and University of Georgia-Athens will use behavioral tests, in vivo neuroimaging, and post mortem neuroimaging to investigate neuroanatomical adaptations resulting from selection pressure for social approach and social avoidance in several breeds of domestic dogs and in domesticated foxes.*

Completed

Neuroanatomical correlates of individual variation in cooperation and inequity aversion in capuchin monkeys
Brains and Behavior Program Seed Grant, Georgia State University
PI: E. Hecht; Co-PI: S. Brosnan
$27,650.70 July 1, 2016 – June 30, 2017

- *This seed grant funds in vivo MRI and DTI imaging in capuchin monkeys in order to identify neuroanatomical correlates of individual variation in prosocial behavior.*

Neural markers of training success and resilience to combat stress in military working dogs
The Emory University Research Committee (Lead PI: T. Preuss; Co-PIs: D. Gutman, E. Hecht) – $37,139.10

- *This pilot grant funds high-resolution post mortem DTI and T2 neuroimaging on fixed brains from 20 military working dogs, to serve as preliminary data in preparation for a larger DoD proposal. The research goal is to identify neural markers associated with anxiety, aggression, and PTSD-like symptoms related to training and/or deployment.*

RCN Laboratory Exchange Award from the Research Coordination Network on the Genetics and Genomics of Social Behavior
(RCN PI: W. Wilczynski NSF IOS 1256839; Exchange Award to E. Hecht, $4,959)

- *The award is intended to advance imaging technology for a new collaboration testing MRI imaging in different species. The award provides for imaging costs at the Biomedical Imaging Technology Center at the Emory University School of Medicine.*

The Prosocial Brain: Evolution of the Human Capacity for Empathy, Compassion and Cooperation
The Templeton Foundation 40463 (Lead PI: E. Albers; Co-PIs: T. King, D. Robins, T. Preuss, J. Rilling)

- *This multi-lab grant supported research on the neural basis of prosocial behaviors in monkeys, apes, and humans. Dr. Hecht's postdoctoral research associate position involved fMRI and DTI studies on the neural and behavioral correlates of empathy in humans, with comparisons to related nonhuman primate data.*

Learning to Be Human: Skill Acquisition and the Development of the Human Brain
The Leverhulme Trust F/00 144/BP (Lead PI: B. Bradley)

- *This multi-lab grant funded research on the neural, behavioral, and motor correlates of Paleolithic stone toolmaking skills. Dr. Hecht's postdoctoral research associate position focused on structural changes to white and gray matter with comparisons to related fMRI and FDG-PET functional activations.*

Neural Correlates of Action Perception: Brain Structure, Function, and Behavior
NIMH/NIH Predoctoral NRSA F31 MH086179-03
04/2010-03/2013

- *This predoctoral NRSA supported research comparing behavior, functional brain responses (FDG-PET), and anatomical connectivity (DTI) in brain systems for social perception in macaques, chimpanzees, and humans. Its goal was to identify uniquely human neural features that may underlie uniquely human disorders of social cognition, such as autism and schizophrenia.*

Neural adaptations underlying the evolution of social learning and imitation
Wenner Gren Foundation 8054 - Dissertation Fieldwork Grant ($15,000) & Osmundsen Initiative Award ($5,000)
05/2010 – 07/2012

- *The Dissertation Fieldwork Grant provides funding for topics on human evolution. The Osmundsen Initiative Award is additional, competitive research funding for projects that make a significant contribution to broader social or intellectual issues. This project compared the anatomical connectivity of the mirror system in macaques, chimpanzees, and humans to investigate the evolution of the neural basis of social learning.*

The neural foundations of human tool use
Pilot Grant, Emory Center for Systems Imaging ($12,000)
04/2012 – 07/2012

- *CSI Pilot grants provide research funding for neuroimaging. This project acquired FDG-PET functional scans and T1-weighted MRI structural scans in humans during the observation of hand actions and tool use. This provided a directly comparable dataset to chimpanzees, in order to elucidate the evolution of the neural bases for tool use.*

Division Scholar Fellowship
Graduate Division of Biological and Biomedical Sciences, Emory University
09/2006 – 09/2011

NIMGS Training Grant
NIMGS/NIH T32 GM008605

09/2007 – 09/2008

- *The NIMGS Training Grant supports graduate tuition, fees, benefits, stipend, and travel expenses. It also provided for the invitation of Nancy Kanwisher, Ph.D., a leading researcher in face perception neuroimaging, to a seminar series at Emory.*

US Grants Student Research Grant
University of California, San Diego
01/2006 – 04/2006

- *This project investigated the role of the mu rhythm of the electroencephalogram in typically developing subjects. It investigated socio-cognitive functions that have been linked to autism, including facial expression perception, action understanding, and theory of mind.*

Chancellor's Research Scholarship
University of California, San Diego
06/2005 – 09/2005

- *This project investigated training of the mu rhythm of the electroencephalogram as a possible therapy for autism.*

Publications

Journal Articles

1. **Hecht EE**, Smaers JB, Dunn WJ, Kent M, Preuss TM, Gutman DA (*submitted*). Significant neuroanatomical variation among domestic dog breeds.

2. **Hecht EE**, Robins DL, Zarella O, Gautam P, Preuss TM, King TZ (*submitted*). Sex differences in white matter structural connectivity and neural responses to oxytocin.

3. Parr LA, Mitchell T, Brooks J, **Hecht EE** (*accepted).* Intranasal oxytocin in rhesus monkeys alters brain networks that detect social salience and reward. *American Journal of Primatology*.

4. **Hecht EE** (*accepted*). Plasticity, innateness, and the path to language in the primate brain: Comparing macaque, chimpanzee and human circuitry for visuomotor integration. *Interaction Studies*.

5. Stout D, **Hecht EE** (2017). The evolutionary neuroscience of cumulative culture. *PNAS* 114(30): 7861–7868 (invited article for Sackler Colloquium special issue).

6. Bradstreet LE, **Hecht EE**, King TZ, Turner JL, Robins DL (2017). Associations between autism traits and fractional anisotropy values in white matter tracts in a nonclinical sample of young adults. *Experimental Brain Research* 235(1):259-267.

7. **Hecht EE** (2016). Adaptations to vision-for-action in primate brain evolution: Comment on "Towards a Computational Comparative Neuroprimatology: Framing the Language-Ready Brain" by M. Arbib. *Physics of Life Reviews* 16:74-6.

8. **Hecht EE**, Mahovetz LM, Preuss TM, Hopkins WD (2016). A neuroanatomical predictor of mirror self-recognition in chimpanzees. *Social Cognitive and Affective Neuroscience* pii: nsw159.

9. **Hecht EE**, Robins DL, Gautam P, King TZ (2016). Intranasal oxytocin reduces animacy detection in women: Neural activation and individual variation. *NeuroImage* 16(147):314-329.

10. Chaminade T, **Hecht EE**, Bradley B, Stout D (2015). Cognitive demands of Lower Paleolithic toolmaking. *PLOS One 10(4):e0121804.*

11. **Hecht EE,** Gutman DA, Kreisheh N, Chaminade T, Bradley B, Stout D (2015). Acquisition of Paleolithic toolmaking abilities involves structural remodeling to inferior frontoparietal regions. *Brain Structure and Function 220(4):2315-31.*

12. Barks SK, Calhoun ME, Hopkins WD, Cranfield MR, Mudakikwa A, Stoinski TS, Patterson FG, Erwin JM, **Hecht EE**, Hof PR, Sherwood CC (2015). Brain organization of gorillas reflects species differences in ecological specialization. *American Journal of Physical Anthropology 156(2):252-62.*

13. **Hecht EE**, Gutman DA, Preuss TM, Stout D (2014). Virtual dissection and comparative connectivity of the superior longitudinal fasciculus in chimpanzees and humans. *NeuroImage 108:124-37.*

14. Keifer OP, Gutman DA, **Hecht EE**, Keilholz S, Ressler K (2014). A Comparative Analysis of Mouse and Human Medial Geniculate Nucleus Connectivity: A DTI and Classical Tracing Study. *NeuroImage 105:53-66.*

15. Streidter GF, Belgard TG, Cardona A, Chen CC, Chklovskii D, Davis F, Finlay B, Gunturhun O, Hale M, Heberlein U, **Hecht EE**, Hofmann HA, Holland L, Iwaniuk A, Jarvis E, Karten H, Katz P, Kristan W, Macagno E, Mitra P, Moroz L, Okano H, Preuss TM, Ragsdale C, Sherwood CC, Stevens C, Stuttgen M, Truman J, Tsumoto T, Wilczynski W (2014). NSF

Workshop Report: Discovering General Principles of Nervous System Organization by Comparing Brain Maps Across Species (2014). *Simultaneously published in the Journal of Comparative Neurology 522(7):1445-53 & Brain, Behavior and Evolution 83(1):1-8*.

16. **Hecht EE**, Murphy LE, Gutman DA, Votaw JR, Schuster DM, Preuss TM, Orban GA, Stout D, Parr LA (2013). Differences in Neural Activation for Object-Directed Grasping in Chimpanzees and Humans. *Journal of Neuroscience* 33(35):14117-14134.

17. **Hecht EE**, Gutman DA, Preuss TM, Sanchez MM, Parr LA, Rilling JK (2012). Process Versus Product in Social Learning: Comparative Diffusion Tensor Imaging of Neural Systems for Action Execution-Observation Matching in Macaques, Chimpanzees, and Humans. *Cerebral Cortex* 5:1014-24.

18. **Hecht EE**, Patterson R, Barbey AK (2012). What can other animals tell us about human social cognition? An evolutionary perspective on reflexive and reflective processing. *Frontiers in Human Neuroscience* 6:224. Invited review for special issue: Brains, Genes, and the Foundations of Human Society.

19. Parr LA, Boudreau M, **Hecht E**, Winslow JT, Nemeroff CB, Sanchez MM (2012). Early life stress affects cerebral glucose metabolism in adult rhesus monkeys (Macaca mulatta). *Developmental Cognitive Neuroscience* 2:181-193.

20. Parr LA, **Hecht E**, Barks SK, Preuss TM, Votaw JR (2009). Face processing in the chimpanzee brain. *Current Biology* 19:50-53.

21. Pineda JA, Brang D, **Hecht EE**, Edwards L, Carey S, Bacon M, Futagaki C, Suk D, Tom J, Birnbaum C, Rork A (2008). Positive behavioral and electrophysiological changes following neurofeedback training in children with autism. *Research in Autism Spectrum Disorders* 2:557-581.

22. Pineda JA, **Hecht EE** (2008). Mirroring and Mu Rhythm Involvement in Social Cognition: Are There Dissociable Subcomponents of Theory of Mind? *Biological Psychology* 3:306-14.

Book chapters

1. **Hecht EE**, Parr LA (2015). The chimpanzee mirror system and the evolution of fronto-parietal circuits for action observation and social learning. In Ferrari F & Rizzolatti G (Eds.), New Frontiers in Mirror Neurons Research, Oxford University Press.

2. Stout D, **Hecht EE** (2015). Neuroarchaeology. In Bruner E (Ed.), Human Paleoneurology, Springer.

3. **Hecht EE**, Stout D (2015). Techniques for Studying Brain Structure and Function. In Bruner E (Ed.), Human Paleoneurology, Springer.

4. Parr LA, **Hecht EE** (2009). Facial perception in non-human primates. In Calder A. et al. (Eds.), Handbook of Face Perception, Oxford University Press.

5. Pineda JA, Brang D, Futagaki C, **Hecht EE**, Grichanik M, Wood L, Bacon M, Carey S (2006). Effects of Neurofeedback Training on Action Comprehension and Imitation Learning. In Puckhaber H (Ed.), New Research on Biofeedback, Nova Science Publishers.

Meeting abstracts

1. **Hecht EE** (2019). Hands, Tools, and Words: Adaptation and Exaptation in Human Brain Evolution. Evolinguistics, Tokyo, Japan (invited keynote talk).

2. **Hecht EE** (2019). Brain-behavior evolution in primates and canids. Comparative MRI Workshop, Dusseldorf, Germany (talk).

3. Stout, D.S., Pargeter, J., Khreisheh, N., Bryant, K., **Hecht, E** (2018). The "molecular genetics" of social learning: skill acquisition and individual differences in learning. Society for American Archaeology (SAA) Meeting, Washington, D.C. (talk).

4. **Hecht EE** (2018). Comparative Neuroscience and Human Brain Evolution. South Eastern Evolution and Human Behavior Annual Meeting (talk).

5. **Hecht EE,** Gutman DA, Cooper L, Obatusin M, Kukekova A, Trut L, Preuss TM (2017). Neuroanatomical Correlates of Domestication in the Russian Fox Farm Experiment. Society for Neuroscience, Washington, DC (symposium talk).

6. **Hecht EE,** Bryant K, Gutman DA, Kruger AC, Preuss TM, Stout D (2016). Individual variation, plasticity, and learning in human brain evolution. BRAIN Initiative Investigators' Meeting, Washington, DC, UCA. (poster)

7. **Hecht EE,** Gutman DA, Dunn WD, Keifer OP, Sakai S, Kent M, Preuss TM (2016). Neuroanatomical variation in domestic dog breeds. Society for Neuroscience, San Diego, CA, USA. (poster)

8. **Hecht EE**, Robins DL, Gautam P, King TZ (2016). An fMRI study of the individual variation in oxytocin-mediated tendency to anthropomorphize in women. International Neuropsychological Society, London, UK. (poster)

9. King TZ, **Hecht EE**, Gautam P, Robins D (2016). An fMRI study of animacy attribution and individual differences. American Academy of Clinical Neuropsychology, Boston, MA. (poster)

10. **Hecht EE**, Stout D, Preuss TM (2016). From action perception to toolmaking: adaptations to fronto-parietal circuits in human brain evolution. American Association of Physical Anthropologists, Atlanta, GA. (poster)

11. **Hecht EE** (2016). Form and function in neural circuits for action and language. NSF-Funded Workshop on Action, Vision, and Language and their Brain Mechanisms in Evolutionary Relationship, Atlanta, GA. (invited workshop talk)

12. **Hecht EE,** Robins DL, King TZ (2015). The role of individual differences on the effect of intranasal oxytocin on perceived social and non-social stimuli. Society for Neuroscience, Chicago, IL. (poster)

13. Preuss TM, **Hecht EE,** Jacquez N, Bryant K, Fields A, Li L, Gutman D (2015). Comparative connectivity of the amygdala in chimpanzees and humans. Society for Neuroscience, Chicago, IL. (poster)

14. Dunn WD, Chen R, Zhang L, **Hecht EE**, Levey AI, Gutman DA (2015). Identification of initial visit factors predictive of cognitive maintenance or cognitive decline in memory clinic patients. Society for Neuroscience, Chicago, IL. (poster)

15. **Hecht EE**, Gutman DA, Bradley BA, Preuss TM, Stout D (2014). Virtual dissection and comparative connectivity of the superior longitudinal fasciculus in chimpanzees and humans. Society for Neuroscience, Washington, DC. (poster)

16. Barks SK; Erwin JM; Stoinski TS; Calhoun MC; Hopkins WD; Cranfield MR; Mudakikwa A; Patterson FG; **Hecht EE**; Bauernfeind AL; de Sousa AA; Stimpson CD; Zilles K; Hof PR; Sherwood CC. 2014. Variable neuroanatomy in gorillas reflects ecological specialization and population size effects. International Gorilla Workshop, Atlanta, Georgia. (poster)

17. **Hecht EE,** Murphy LE, Gutman DA, Preuss TM, Stout D, Parr LA (2014). Adaptations to action observation circuits in primate brain evolution. International Primatological Society, Hanoi, Vietnam. (invited symposium talk)

18. **Hecht EE** (2014). Neural systems for action perception and social learning in macaques, chimpanzees, and humans. NSF-Funded Workshop on Action, Vision, and Language and their Brain Mechanisms in Evolutionary Relationship, Los Angeles, California. (invited workshop talk)

19. **Hecht EE,** Gutman DA, Chaminade T, Khreisheh N, Bradley B, Stout D (2013). White matter structural changes during the acquisition of Stone Age tool-making skills. Society for Neuroscience, San Diego, CA. (poster)

20. **Hecht EE**, Murphy LE, Gutman DA, Parr LA (2012). How do chimpanzees understand others' actions? Brain activation, white matter connectivity, and behavior. Society for Neuroscience, New Orleans, LA. (poster)

21. **Hecht EE**, Murphy LE, Gutman DA, Parr LA (2012). How do chimpanzees understand others' actions? Brain activation, white matter connectivity, and behavior. Society for Social Neuroscience, New Orleans, LA. (poster)

22. **Hecht EE**, Murphy LE, Gutman DA, Parr LA (2012). Does the chimpanzee brain "mirror" observed actions? Functional neuroimaging during action execution and observation. International Primatological Society, Cancun, Mexico. (poster)

23. Gutman DA, Keifer OP, **Hecht EE**, Saltz J (2011). The Computable Brain: An interactive website to allow exploration and sharing of functional imaging data. 4th INCF Congress of Neuroinformatics, Boston, Massachusetts. (poster)

24. **Hecht EE**, Gutman DA, Davis LE, Preuss TM, Rilling JK, Parr LA (2011). Neural adaptations for social learning: Connectivity and responsivity of the mirror system in macaques, chimpanzees, and humans. Workshop on the Biology of Prosocial Behavior, Atlanta, Georgia. (poster)

25. **Hecht EE**, Davis LE, Gutman DA, Parr LA (2011). Do chimps "mirror" others' actions? A functional neuroimaging study of action execution and observation. Society for Social Neuroscience, Washington, D.C. (poster)

26. **Hecht EE**, Davis LE, Gutman DA, Parr LA (2011). Do chimps "mirror" others' actions? A functional neuroimaging study of action execution and observation. Society for Neuroscience, Washington, D.C. (poster)

27. **Hecht EE**, Gutman DA, Preuss TM, Parr LA, Rilling JK (2010). Neural adaptations for imitation: Diffusion tensor imaging of the mirror system in macaques, chimpanzees, and humans. Society for Neuroscience, San Diego, California. (poster)

28. **Hecht EE**, Gutman DA, Rilling JK, Parr LA (2010). Why is human imitation different? Connectivity of the mirror system in macaques, chimpanzees, and humans. International Primatological Society, Kyoto, Japan. (invited symposium talk)

29. Parr LA, Barks SK, **Hecht EE**, Votaw JK (2010). Neural basis of face processing in chimpanzees and monkeys using FDG-PET. International Primatological Society, Kyoto, Japan. (invited symposium talk)

30. Barks SK, Parr LA, **Hecht E**, Votaw JR, Rilling JK (2009). Comparing social cognitive, non-social cognitive, and resting brain activity in chimpanzees. Association of Physical Anthropologists, Chicago, Illinois. (poster)

31. **Hecht EE**, Parr LA (2009). Neural correlates of action perception in chimpanzees. The Primate Mind, Erice, Sicily. (invited workshop talk)

32. **Hecht EE**, Barks SK, Preuss TM, Rilling JK, Votaw JR, Parr LA (2008). Functional neuroimaging of the neural correlates of face recognition in chimpanzees. Society for Neuroscience, Washington, D.C. (poster)

33. **Hecht EE**, Parr A, Barks SK, Preuss TM, Rilling JK, Votaw JR (2008). Neural correlates of facial recognition in chimpanzees. International Primatological Society, Edinburgh, Scotland. (poster)

34. **Hecht EE**, Gutman DA, Glasser M, Mascaro J, Hamann S, Preuss TM, Rilling JK (2008). Comparing amygdala connectivity between monkeys, apes, and humans using diffusion tensor imaging. American Association of Physical Anthropologists, Columbus, Ohio. (poster)

35. **Hecht EE**, Gutman DA, Glasser M, Mascaro J, Hamann S, Preuss TM, Rilling JK (2007). Comparing amygdala connectivity between monkeys, apes and humans using diffusion tensor imaging. Society for Neuroscience, San Diego, California. (poster)

36. Elfenbein H, Davis JB, **Hecht EE**, Agmon E, Brang D, Pineda JA (2007). TMS of the inferior frontal gyrus inhibits mu rhythm suppression and decreases performance on social cognition tasks. Society for Neuroscience, San Diego. (poster)

37. **Hecht EE**, Pineda JA (2007). Mirror Neuron System and Mu Rhythm Involvement in Social Cognition. Cognitive Neuroscience Society, New York. (poster)

38. Bacon M, Carey S, **Hecht EE**, Futagaki C, Pineda JA (2006). Efficacy of Neurofeedback

Training on Autism Spectrum Disorder. Cognitive Neuroscience Society, San Francisco. (poster)

39. **Hecht EE**, Brang D, Futagaki C (2006). Mu Rhythm Training in Autism Spectrum Disorders. Undergraduate Research Conference, University of California, San Diego. (talk)

Teaching

Courses

Teaching Assistant, Grant Writing Workshop
Integrated Biological Sciences 522
Fall Semester 2008, Emory University
Course instructors: Richard A. Kahn, Ph.D; Lisa A. Parr, Ph.D.; Dieter Jaeger, Ph.D.

Teaching Assistant, Human Behavioral Biology
Anthropology 305
Fall Semester 2007, Emory University
Course instructor: Melvin Konnor, M.D., Ph.D

Curriculum Development

"Emotions and the Brain: Neural Mechanisms of Behavior"
"Emotion and Memory in Action: Survival and Sociality"
"Emotion Sharing and Understanding: Neural Mechanisms of Behavior"
"Emotion Sharing and Understanding: Cross-Cultural Perspectives"
Lectures developed for the Emory-Tibet Science Initiative and delivered to Buddhist monks in Dharamsala, Tibet by Emory faculty members
Fall Semester 2009, Spring Semester 2010, Fall Semester 2013
Neuroscience Curriculum Director: Carol Worthman, Ph.D.

Guest Teaching and Invited Talks

"Behavioral selection, domestication, and brain evolution in canids"
Invited talk, Cold Springs Harbor Laboratories

May 2018

"What can other animals tell us about the evolution of human social cognition?"
Invited talk, Department of Psychology, Emory University
March 2018

"Comparative neuroscience and human brain evolution"
Invited talk, Department of Human Evolutionary Biology, Harvard University
March 2018

"Behavioral selection and brain evolution in primates and canids"
Invited talk, Neuroscience Institute seminar series, Georgia State University
February 2018

"Comparative neuroimaging and the evolution of social cognition"
Invited talk, National Institutes of Health
August 2016

"From action perception to toolmaking: adaptations to fronto-parietal circuits in human brain evolution"
Evolution of Social Complexity Seminar Series Invited Lecture
Fall Semester 2015, Arizona State University

"Adaptations to neural circuits for action understanding and tool use in primate brain evolution"
Neuroscience Institute Invited Lecture
Spring Semester 2015, University of Florida

"Acquisition of Paleolithic toolmaking abilities involves structural remodeling to inferior frontoparietal regions"
Center for Mind, Brain, and Culture Postdoctoral Research Symposium
Spring Semester 2014, Emory University

"Motor Systems: Action and Perception"
Neuroscience and Behavioral Biology 120-000: From Botox to Behavior
Fall Semester 2012, Emory University
Instructor: Kristen Frenzel, Ph.D.

"Comparative Functional Neuroimaging in Chimpanzees and Humans"
Bioanthropology Seminar, Department of Anthropology
Fall Semester 2012, Emory University

"Neural Adaptations for Social Learning: Connectivity and Responsivity of the Mirror System in Macaques, Chimpanzees, and Humans"
Frontiers in Neuroscience Seminar, Graduate Program in Neuroscience
Spring Semester 2012, Emory University

"Neural Adaptations for Social Learning: Or, Adventures with Mostly-Sedated Radioactive Chimpanzees"
ENCORE Seminar, Graduate Program in Neuroscience
Fall Semester 2011, Emory University

"Thinking about Other Minds" & "Feeling and Perceiving Emotion"
Special Topics in Neuroscience and Behavioral Biology 370-003: Neuroscience & Philosophy
Fall Semester 2009, Emory University
Instructor: Patricia Marseller, Ph.D.

Outreach

Volunteer Teaching at Atlanta Grade, Middle, and High Schools
Spring 2007 through Fall 2010

Professional Activity

Memberships
- Society for Neuroscience
- Society for Social Neuroscience
- International Primatological Society

Workshop Participation
- Organized & chaired NSF-sponsored workshop and symposium, "From tools and gestures to the language-ready brain," April 2016
- Organized & chaired workshop on Action, Brain, Language, and Evolution, and hosted visiting speaker Michael Arbib, October 2014
- Brain Operation Database and Collaboratory Workspace on Gesture Acquisition and Imitation, January 2014
- NSF Workshop on Phylogenetic Principles of Brain Structure and Function: Brain Maps Across Phylogeny, Janelia Farms, October 2013

Ad Hoc Reviewer
- Proceedings of the Royal Society of London B: Biological Sciences
- Neuroscience and Biobehavioral Reviews

- Brain Structure and Function
- Current Biology
- Human Brain Mapping
- Journal of Anatomy
- NeuroImage
- PLOS One

Other

- Contributor, National Chimpanzee Brain Resource website and data repository