

# Justine Hoch

**Contact Information:**  
justine.hoch@nyu.edu

## **Positions:**

July 2022 Assistant Professor, Vanderbilt University  
Department of Psychology and Human Development  
2019 – present Postdoctoral Fellow, New York University  
Advisor: Karen Adolph

## **Education:**

2014 – 2019 Ph.D., Psychology: Cognition and Perception, New York University  
M. Phil., Psychology: Cognition and Perception, New York University  
Advisor: Karen Adolph  
2008 – 2012 B.S., Psychology: Neuroscience, Minor: Philosophy, Denison University  
Advisor: Harry Heft

## **Research Training:**

2012 – 2014 Lab Manager, UC Berkeley, Advisor: Fei Xu  
2012 (Summer) RA, UC Berkeley, Advisor: Alison Gopnik  
2012 Senior Honors Thesis, Denison University, Advisor: Harry Heft  
2011 (Summer) RA, Temple University, Advisors: Nora Newcombe, Kathy Hirsh-Pasek  
2010 – 2012 RA, Denison University, Advisor: Harry Heft

## **Research Interests:**

Exploratory behavior; learning; development of perception-action systems

## **Honors and Awards:**

2018 Martin Braine Fellowship, New York University (\$2,000)  
2018 ICIS Student Travel Award (\$400)  
2017 ISDP Best Student Poster Award  
2017 ISDP Student Travel Award (\$400)  
2016 Dean's Student Travel Award, New York University (\$500)  
2015, 2016 NSF Graduate Research Fellowship Program, Honorable Mention  
2014 – 2019 MacCracken Graduate Fellowship, New York University  
2012 Rita Snyder Thesis Research Award, Denison University  
2012 Sigma Xi Scientific Research Society, Denison University  
2011 – 2012 Earl and Irene Wells Scholarship, Denison University  
2011 – 2012 Psychology Senior Fellow, Denison University  
2011 RA Summer Fellowship, Temple University (\$1,000)  
2010 Inducted to Psi Chi Psychology Honorary, Denison University  
2010 Denison Undergraduate Summer Research Fellowship (\$2,000)  
2009 – 2012 Dean's List, Denison University  
2008 – 2012 Denison University Founders Scholarship (\$92,000)

## **Publications:**

\*joint first authorship, †undergraduate trainee

1. West, K., Soska, K., Cole, W., Han, D., **Hoch, J.**, Hospodar, C., Kaplan, B. (in press). From description to generalization, or there and back again. Commentary on Yarkoni's 'The generalizability crisis.' *Behavioral and Brain Science*.
2. Hospodar, C., **Hoch, J.**, Lee, D.K., Shrout, P., & Adolph, K. (2021). Practice and proficiency: Factors that facilitate infant walking skill. *Developmental Psychobiology*, 1-14.
3. Hoang, L., **Hoch, J.**, Ossmy, O., Adolph, K., Fern, X., & Fern, A. (2021). Modeling infant free-play

behavior using Hidden Markov Models. *Proceedings of the IEEE International Conference on Development and Learning ICDL-EPIROB*. **Finalist for best paper award.**

4. \*Hoch, J., \*Ossmy, O., Cole, W.G., Hasan, S., & Adolph, K. (2021). "Dancing" together: Infant-mother locomotor synchrony. *Child Development*, *92*, 1337-1353.
5. Adolph, K. E. & Hoch, J. (2020). The importance of motor skills for development. In M. M. Black, A. Singhal, & C. H. Hillman (Eds.), *Building future health and well-being of thriving toddlers and young children. 95<sup>th</sup> Nestlé Nutrition Institute Workshop, Geneva September 2020*. Basel: Karger, pp. 1-9.
6. Rachwani, J., Hoch, J., & Adolph, K. (2020). Action in development: Variability, flexibility, and plasticity. In C. S. Tamis-LeMonda & J. J. Lockman (Eds.). *Handbook of infant development*. Cambridge University Press, pp. 469-494.
7. Hoch, J., Rachwani, J., & Adolph, K. (2020). Where infants go: Real-time dynamics of locomotor exploration in crawling and walking infants. *Child Development*, *91*, 1001-1020.
8. Adolph, K., Hoch, J., & Ossmy, O. (2020). James Gibson's ecological approach to locomotion and manipulation: Development and changing affordances. In J. Wagman & J. Blau (Eds.). *Perception as the Detection of Information: Reflections on Gibson's Ecological Approach to Visual Perception*. New York: Taylor & Francis, pp 248-266.
9. Adolph, K., & Hoch, J. (2019). Motor development: Embodied, embedded, enculturated, and enabling. *Annual Review of Psychology*, *70*, 141-164.
10. Hoch, J., †O'Grady, S., & Adolph, K. (2019). It's the journey, not the destination: Locomotor exploration in infants. *Developmental Science*, *22*, e12740.
11. Adolph, K., Hoch, J., & Cole, W. (2018). Development (of walking): 15 suggestions. *Trends in Cognitive Science*, *22*, 699-711.
12. Adolph, K., Rachwani, J., & Hoch, J. (2018). Motor and physical development: Locomotion. In *Reference Module in Neuroscience and Biobehavioral Psychology*, Elsevier.
13. \*Ossmy, O., \*Hoch, J., MacAlpine, P., Hasan, S., Stone, P., & Adolph, K. (2018). Variety wins: Soccer-playing robots and infant walking. *Frontiers in Neurorobotics*, *12*, 19.
14. Heft, H., Hoch, J., Edmunds, T., & Weeks, J. (2014). Can the identity of a behavior setting be perceived through patterns of joint action? *Behavioral Science*, *4*, 371-393.

#### **Manuscripts in Preparation & Under Review:**

1. Hoch, J., Hospodar, C., & Adolph, K. (in prep). Calculated exploration: Infants are sensitive to the cost of movement.
2. Hoch, J., Hospodar, C., Ossmy, O., †Alves, G., & Adolph, K. (in prep.). Get a move on: Gross-motor toys and caregiver absence increase infant locomotor exploration.
3. \*Hoch, J., \*Ossmy, O., & Adolph, K. (in prep.). Foraging in the playroom: Toward a model of human infant locomotor play.
4. \*Ossmy, O., \*Hoch, J., Han, D., MacAlpine, P., Stone, P., & Adolph, K. (in prep.). Walking and falling: Using simulated robots to model variability and error in the development of infant walking.
5. Hoch, J. (invited chapter). *Resources for Ecological Psychology*. Routledge.

#### **Shared Datasets:**

1. \*Hoch, J., \*Ossmy, O., & Adolph, K. (2019). "Dancing" together: Infant-mother locomotor synchrony. *Dataverse*. <http://doi.org/10.17910/b7.943>.
2. Hoch, J., Rachwani, J., & Adolph, K. (2017). Where infants go: Real-time dynamics of locomotor exploration in crawling and walking infants. *Dataverse*. <http://doi.org/10.17910/B7.458>.

3. **Hoch, J.**, & Adolph, K. (2015). It's the journey, not the destination: Locomotor exploration in infants. *Databrary*. <http://doi.org/10.17910/B7.140>.

### **Conference Symposia:**

1. **Hoch, J.**, Hospodar, C., & Adolph, K. (2021). Motivations and constraints: Factors that shape infant locomotor play. *Society for Research in Child Development*, [Virtual].
2. **Hoch, J.**, Ossmy, O., Han, D., Heiman, C., Cole, W., Lee, D., & Adolph, K. (2018). Learning to walk: Immense and varied input. *International Congress on Infant Studies*, Philadelphia, PA.
3. Adolph, K., Ossmy, O., **Hoch, J.**, & Cole, W. (2018). (Re)using video to document procedures, illustrate findings, grow sample sizes, and ask new questions—How to get the most out of infant data. *International Congress on Infant Studies*, Philadelphia, PA.
4. **Hoch, J.**, Rachwani, J., & Adolph, K. (2017). Locomotor exploration is more random than destination directed. *Society for Research in Child Development*, Austin, TX.

### **Conference Posters:**

\*joint first authorship, †undergraduate trainee

1. **Hoch, J.**, Hospodar C., Adolph, K. (2021). *Effects of increasing the cost of movement on infants' locomotor exploration*. Development in Motion Conference, [Virtual].
2. Hospodar, C., **Hoch, J.**, Cole, W., Adolph, K. (2021). *Stability in the development of infant walking: Locomotor activity and walking skill*. North American Society for the Psychology of Sport and Physical Activity, [Virtual].
3. Hospodar, C., **Hoch, J.**, †Elasmar, Y., & Adolph, K. (2021). Developmental and real-time influences on infant locomotor activity: Effects of locomotor posture and toy dispersion. *Society for Research in Child Development*, [Virtual].
4. Hospodar, C., **Hoch, J.**, Lee, D.K., Shrout, P., & Adolph, K. (2021). The development of walking skill: Effects of contextual factors, skill onset ages, and locomotor practice. *Society for Research in Child Development*, [Virtual].
5. Hospodar, C., **Hoch, J.**, Lee, D.K., Shrout, P., & Adolph, K. (2020). Locomotor cascades in context: When, how long, how well, and how much infants walk. [Poster session cancelled]. *International Congress on Infant Studies*, Glasgow, Scotland.
6. **Hoch, J.**, Hospodar, C., †Alves, G., †Karns, J., Shilling, M., Perricone, J., & Adolph, K. (2020). Effects of toy type, caregiver availability, and temperament on infants' free play activity. [Poster session cancelled]. *International Congress on Infant Studies*, Glasgow, Scotland.
7. **Hoch, J.**, Hospodar, C., †Alves, G., & Adolph, K. (2020). Effects of increasing the cost of movement on infants' locomotor exploration. [Poster session cancelled]. *International Congress on Infant Studies*, Glasgow, Scotland.
8. **Hoch, J.**, Hospodar, C., †Alves, G., †Selber, P., & Adolph, K. (2019). Effects of toy type and caregiver availability on infants' free play activity. *Cognitive Development Society*, Louisville, KY.
9. \***Hoch, J.**, \*Ossmy, O., MacAlpine, P., Hasan, S., Stone, P., & Adolph, K. (2019). Walking and falling: Using simulated robots to model variability and error in the development of infant walking. *Society for Research in Child Development*, Baltimore, MD.
10. **Hoch, J.**, †El Fadel, O., †Selber, P., & Adolph, K. (2019). Increasing the cost of movement: Does infant exploration play the price? *Society for Research in Child Development*, Baltimore, MD.
11. \***Hoch, J.**, \*Ossmy, O., & Adolph, K. (2018). Foraging in the playroom: Toward a model of human infant locomotor play. *International Congress on Infant Studies*, Philadelphia, PA.
12. \*Ossmy, O. \***Hoch, J.**, Hasan, S., Cole, W.G., & Adolph, K. (2018). Dancing together: The nature of infant-mother locomotor synchrony *International Congress on Infant Studies*, Philadelphia, PA.

13. \*Ossmy, O. \*Hoch, J., MacAlpine, P., Hasan, S., Stone, P., & Adolph, K. (2018). Variety wins: Soccer-playing robots and infant walking. *International Congress on Infant Studies*, Philadelphia, PA.
14. \*Ossmy, O., \*Hoch, J., Hasan, S., Cole, W.G., & Adolph, K. (2018). Dancing together: The nature of infant-mother locomotor synchrony. *Social and Affective Neuroscience Society*, New York, NY.
15. Hoch, J., †O'Grady, S., & Adolph, K. (2017). Infants' exploration in an empty room versus a toy filled room: Same quantity, different quality. *Mathematical Biosciences Institute (MBI) workshop: Sensorimotor control of animals and robots*, Columbus, OH.
16. \*Hoch, J., \*Ossmy, O., MacAlpine, P., Hasan, S., Stone, P., & Adolph, K. (2017). Variety matters: What can we learn about infant walking from soccer-playing robots. *Mathematical Biosciences Institute (MBI) workshop: Sensorimotor control of animals and robots*, Columbus, OH.
17. \*Hoch, J., \*Ossmy, O., MacAlpine, P., Hasan, S., Stone, P., & Adolph, K. (2017). Variety matters: What can we learn about infant walking from soccer-playing Robots. *Cognitive Development Society*, Portland, OR.
18. \*Hoch, J., \*Ossmy, O., & Adolph, K. (2017). Foraging in the playroom: Random walk behavior in human infants. *Cognitive Development Society*, Portland, OR.
19. \*Hoch, J., \*Ossmy, O., MacAlpine, P., Hasan, S., Stone, P., & Adolph, K. (2017). Variety matters: What can we learn about infant walking from soccer-playing robots. *International Society of Developmental Psychobiology*, Washington, D.C.
20. \*Hoch, J., \*Ossmy, O., & Adolph, K. (2017). Foraging in the playroom: Random walk behavior in human infants. *International Society of Developmental Psychobiology*, Washington, D.C.
21. \*Ossmy, O., \*Hoch, J., Hasan, S., Cole, W.G., & Adolph, K. (2017). Dancing together: The nature of infant-mother locomotor synchrony. *International Society of Developmental Psychobiology*, Washington, D.C.
22. Hoch, J., †O'Grady, S., †Cheung, S., & Adolph, K. (2017). Infants' exploration in an empty room versus a toy-filled room: Same quantity, different quality. *Society for Research in Child Development*, Austin, TX.
23. Hoch, J., Sim, Z., & Xu, F. (2015). Infants use probability cues to guide future exploration. *Society for Research in Child Development*, Philadelphia, PA.
24. Ma, L., Berthiaume, V., Hoch, J., & Xu, F. (2013). Do infants infer intentional agents from the perception of auditory regularity? *Cognitive Development Society*, Memphis, TN.
25. Heft, H., Hoch, J., & Edmonds, T. (2012). Situated action and the affordances of places. *European Workshop on Ecological Psychology*, Madrid, Spain.

**Invited talks:**

2020                      Developmental Brown Bag, Stanford  
                                  Department of Applied Psychology, NYU

**Teaching:**

July 2018                Guest Lecture: Eye-Tracking, Sarah Lawrence College  
 Summer 2017        Guest Lecture: Eye-Tracking, Columbia University  
 Spring 2017           Guest Lecture: Developmental Psychology, New York University  
 Spring 2017           TA: Developmental Psychology, New York University

**Research Features in Public Media:**

2020                      Babies, *Netflix Documentary Series*  
 2018                      The way toddlers waddle can teach robot footballers how to play, *New Scientist*

**Undergraduate Students Mentored:**

2020 – 2021            Yasmine Elasmr, NYU  
 2019 – 2021            Jamie Karns, NYU, DURF recipient  
 2019 – 2020            Gabriela Koch da Costa Aguiar Alves, NYU, DURF recipient, Honors Thesis

2018 – 2019 Paige Selber, NYU, DURF recipient, Fulbright Scholar  
2017 – 2019 Omar El Fadel, NYU, DURF recipient  
2017 Zahin Ahmed, NYU  
2016 – 2017 Rose Egan, NYU, DURF recipient, Best Undergraduate Research Poster  
2015 – 2017 Sinclaire O’Grady, NYU, DURF recipient, Best Honor’s Thesis Award  
2016 (Summer) Shirley Chung, Swarthmore College  
2015 – 2016 Siffat Islam, NYU, DURF recipient  
2013, 2014 Berkeley Early Learning Lab, Summer Interns

**Professional Affiliations:**

Cognitive Development Society; International Society for Developmental Psychobiology; International Congress on Infant Studies; Sigma Xi Research Society; Society for Research in Child Development

**Adhoc Reviewer:**

*Developmental Psychology; Infant Behavior and Development; Journal of Environmental Psychology; Open Mind; Journal of Experimental Child Psychology*

**Academic Service:**

2020 (August) Coordinator for NYU Psychology Virtual Research Internship  
2019 Panel Chair, SRCD Special Topic Meeting: Learning through Play and Imagination

Updated 8/2021