

# Natalia Vélez

Department of Psychology  
Princeton, NJ 08540

Email: [nvelez@princeton.edu](mailto:nvelez@princeton.edu)  
Web: [nataliavelez.org](http://nataliavelez.org)

## Education & Professional Experience

- 2023– Princeton University  
Assistant Professor, Department of Psychology
- 2020–2023 Harvard University  
Postdoctoral Fellow (Mentors: Samuel J. Gershman, Fiery Cushman)
- 2014–2020 Stanford University  
Ph.D. in Psychology (Mentor: Hyowon Gweon)
- 2010–2014 Massachusetts Institute of Technology  
B.S. in Brain & Cognitive Sciences

## Funding

- 2022–2024 Templeton World Charity Foundation Grant, (Role: Co-I with Thomas L. Griffiths (PI), Amanda Seed, and Thomas Morgan)  
“Understanding diverse intelligences via diverse constraints”  
\$1,500,00 total direct costs approved
- 2019–2023 NIH Blueprint D-SPAN Award (F99/K00; Role: PI)  
“Computational and neural underpinnings of decision-making in social contexts”  
\$369,300 total direct costs approved
- 2015–2018 Stanford CNI Innovation Grant: \$12,500 in seed funding for neuroimaging studies

## Honors & Awards

- 2018 Stanford Centennial Teaching Award
- 2017 Psych One Zimbardo Teaching Prize
- 2017 Travel Award, Conference on Cognitive Computational Neuroscience
- 2015 NSF Graduate Research Fellowship
- 2014 Stanford EDGE (Enhancing Diversity in Graduate Education) Fellowship
- 2014 MIT Hans Lukas-Teuber Award for Outstanding Academics

## Publications

### PEER-REVIEWED PUBLICATIONS

1. **Vélez, N.**, Chen, A. M., Burke, T., Cushman, F., & Gershman, S. J. (2023). Teachers recruit mentalizing regions to represent learners' beliefs. *PNAS*. [[paper](#)] [[repository](#)]

2. **Vélez, N.**, Christian, B., Hardy, M., Thompson, B. D., & Griffiths, T. L. (2023). How do humans overcome individual computational limitations by working together?. *Cognitive Science*, 47(1), e13232. [\[paper\]](#)
3. Torabian, S., **Vlez, N.**, Sochat, V., Halchenko, Y. O., Grossman, E. D. The PyMVPA BIDS-App: A Robust MultiVariate Pattern Analysis Pipeline for fMRI Data. *Frontiers in Neuroscience*, 17, 1233416.
4. Xiang, Y., **Vélez, N.**, & Gershman, S. J. (2023). Collaborative decision making is grounded in representations of other peoples competence and effort. *Journal of Experimental Psychology: General*.
5. **Vélez, N.**, Wu, C.M., & Cushman F.A. (2022). Representational exchange in social learning: Blurring the lines between the ritual and instrumental. (\*Commentary on Jagiello et al., 2022). *Behavioral and Brain Sciences*.
6. Chuey, A., Asaba, M., Bridgers, S., Carrillo, B., Dietz, G., Garcia, T., Leonard, J. A., Liu, S., Merrick, M., Radwan, S., Stegal, J., **Vélez, N.**, Woo, B., Wu, Y., Zhou, X. J., Frank, M. C., & Gweon, H. (2021). Moderated online data-collection for developmental research: Methods and replications. *Frontiers in Psychology*, 12, 4968. [\[paper\]](#)
7. **Vélez, N.** & Gweon, H. (2021). Learning from other minds: An optimistic critique of reinforcement learning models of social learning. *Current Opinion in Behavioral Sciences*. [\[paper\]](#)
8. **Vélez, N.**, Bridgers, S., & Gweon, H. (2019). The rare preference effect: Statistical information influences affiliation judgments. *Cognition*. [\[paper\]](#) [\[repository\]](#)
9. **Vélez, N.** & Gweon, H. (2018). Integrating incomplete information with imperfect advice. *Topics in Cognitive Science*. [\[paper\]](#) [\[repository\]](#)
10. Koster-Hale, J.\*, Richardson, H.\*, **Velez-Alicea, N.**, Asaba, M., Young, L., & Saxe, R. (2017). Mentalizing regions represent continuous, abstract dimensions of others' beliefs. *Neuroimage*. [\[paper\]](#)
11. Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*. [\[paper\]](#)

## BOOK CHAPTERS

1. Wu, C. M., **Vélez, N.**, & Cushman, F. A. (2022). Representational exchange in human social learning: Balancing efficiency and flexibility. In I. Cogliati Dezza, E. Schulz & C. Wu (Eds.) *The drive for knowledge: the science of human information-seeking*. Cambridge University Press. [\[preprint\]](#)

## REFEREED CONFERENCE PROCEEDINGS

1. **Vélez, N.** & Gweon, H. (2020). Preschoolers use minimal statistical information to infer the preferences and group membership of new individuals. *Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*. [\[preprint\]](#)
2. **Vélez, N.**, & Gweon, H. (2019). Neural mechanisms underlying the computation of socially inferred rewards. *Cognitive Computational Neuroscience*.
3. **Vélez, N.**, Wu, Y., & Gweon, H. (2018). Consistent but not diagnostic: Preschoolers' intuitions about shared preferences within social groups. *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*.
4. **Vélez, N.**, & Gweon, H. (2017). Integrating incomplete information with imperfect advice. *Cognitive Computational Neuroscience*.
5. **Vélez, N.**, Bridgers, S., & Gweon, H. (2016). Not all overlaps are equal: Social affiliation and rare overlaps of preferences. *Proceedings of the 38th Annual Meeting of the Cognitive Science Society*.
6. **Vélez, N.\***, Leong, Y. C.\*, Pan, C., Zaki, J., & Gweon, H. (2016). Learning and making novel predictions about others' preferences. *Proceedings of the 38th Annual Meeting of the Cognitive Science Society*.

## WORKING PAPERS

1. **Vélez, N.\***, Wu, C.M.\*, Deng, G., Gershman, S. J., & Schulz, E. (in prep). Individual expertise and community structure set the pace of technological development in online communities.
2. **Vélez, N.**, & Gweon, H. (in prep). Mentalizing regions and domain-general value representations play complementary roles in learning from advice.
3. Xiang, Y., Landy, J., Cushman, F., **Vélez, N.**, & Gershman, S. J. (under review). Produced and counterfactual effort contribute to responsibility attributions in collaborative tasks. [\[preprint\]](#)
4. Allen, K., Brändle, F., ... **Vélez, N.**, Watrous, A., Tenenbaum, J., & Schulz, E. (under review). Using games to understand the mind. [\[preprint\]](#)

## Selected Invited Talks

- 04/2022 Talk: *Using online video games to study large-scale collaborations*, Moral Psychology Speaker Series, Cornell University
- 11/2022 Talk: *Community structure and expertise shape technological development in online communities*, Cognition Workshop, Department of Psychology, University of Chicago

- 10/2022 Talk: *Community structure and expertise shape technological development in online communities*, Cognition, Brain & Behavior Talk Series, Harvard University
- 7/2022 Talk: *Teaching & learning from other minds*, Computational Summer School on Modeling Social and Collective Behavior (COSMOS), Konstanz, Germany
- 5/2022 Talk: *Using online video games to study large-scale collaborations*, UCSD
- 4/2022 Talk: *Neurocomputational mechanisms of teaching*  
Concepts & Categories Seminar, NYU
- 4/2021 Guest lecturer: *Social learning and cultural transmission of knowledge*  
HumBio 4B: Behavior, Health, and Development, Stanford University
- 4/2021 Discussant: *Perspectives on play*, SRCD Biennial Meeting
- 3/2021 Talk: *Cognitive and collective foundations of collaboration*  
PBS Early Career Colloquium, Johns Hopkins University
- 2/2021 Talk: *Cognitive and collective foundations of collaboration*  
Cognitive Proseminar Speaker Series, UW-Madison
- 2/2021 Talk: *Cognitive and collective foundations of collaboration*  
Social Brain Brownbag, Dartmouth University
- 2/2021 Talk: *Cognitive and collective foundations of collaboration*  
Social Cognitive Seminar Series, Brown University
- 7/2020 Talk: *Multigenerational innovation and division of labor in online communities*  
Workshop Co-organizer: “Cognition, Collectives, and Human Culture,” Annual Meeting of the Cognitive Science Society
- 7/2020 Talk: *Preschoolers use minimal statistical information to infer individuals’ preferences and group membership*  
Annual Meeting of the Cognitive Science Society
- 10/2019 Talk: *Preschoolers use minimal statistical information to infer individuals’ preferences and group membership*  
Symposium Chair: “How children’s understanding of social relationship guides their learning about others,” Cognitive Development Society

## Service & Outreach

### WORKSHOPS & CAREER DEVELOPMENT

2022

Instructor, *Probabilistic models of human social learning*  
Computational Summer School on Modeling Social and Collective Behavior (COS-  
MOS), Konstanz, Germany

- 2022 Panelist, *Writing the research statement*  
Princeton University
- 2022 Panelist, *Hiring in academia*  
Princeton University
- 2017–2018 Paths to PhD Workshop, *Writing the personal statement*
- Organized and led workshops for 2 groups of 25–30 local students from under-represented groups interested in pursuing a PhD in psychology
  - Matched each attendee to a current PhD student who provided one-on-one feedback on their personal statement
- 2016–2019 R Bootcamp
- Designed and led an intensive introduction to R for 3 groups of 15–20 undergraduate researchers. Course materials: [github.com/nataliavelez/RWorkshop](https://github.com/nataliavelez/RWorkshop)
- 2016–2017 Stanford Psychology Diversity Committee, inaugural member
- Chaired a department-wide colloquium on diversity and inclusion
  - Served as graduate student representative on the Faculty Development Initiative search committee