

Marcos Costa Vieira

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Current position

Senior Computational Research Scientist, University of Chicago, 2020 – Present

Supervisor: Dr. Sarah Cobey

Education

- 2014 – 2020 **University of Chicago**
PhD in Ecology & Evolution, advised by Dr. Sarah Cobey
- 2012 – 2014 **Universidade Federal de Goiás (Brazil)**
MSc. in Ecology and Evolution
- 2008 – 2011 **Universidade Federal do Ceará (Brazil)**
BSc. in Biological Sciences

Awards and Fellowships

2018 – William Rainey Harper Fellowship (University of Chicago, 1 year)

Publications

Preprints

Garretson, T.A., Liu, J., Li, S.H., Scher, G., Santos, J.S.S., Hogan, G., **Vieira, M.C.**, Furey, C., Atkinson, R.K., Ye, N., Ort, J., Kim, K., Hernandez, K. A., Eilola, T., Schultz, D.C., Cherry, S., Cobey, S. and S.E. Hensley. 2024. Immune history shapes human antibody responses to H5N1 influenza viruses. *medRxiv*.

Published

Kim, K.*, **Vieira, M.C.***, Gouma, S., Weirick, M.E., Hensley, S. and S. Cobey. 2024. Measures of population immunity can predict the dominant clade of influenza A (H3N2) in the 2017-2018 season and reveal age-associated differences in susceptibility and antibody-binding specificity. *Influenza and Other Respiratory Viruses*, e70033. *Equal contributions.

Vieira, M.C., Palm, A-K.E., Stamper, C.T., Tepora, M.E., Nguyen, K.D., Pham, T.D., Boyd, S.D, Wilson, P.C. and S. Cobey. 2023. Germline-encoded specificities and the predictability of the B cell response. *PLoS Pathogens*, 19(8):e1011603.

Shaw, D.G., Aguirre-Gamboa, R., **Vieira, M.C.**, Gona, S., DiNardi, N., *et al.* 2023. Antigen-driven colonic inflammation is associated with development of dysplasia in primary sclerosing cholangitis. *Nature Medicine*, 29:1520-1529.

- Arcanjo, R., **Vieira, M.C.**, Sivaguru, M. and R.A. Novak. Impact of mono (2-ethylhexyl) phthalate (MEHP) on the development of mouse embryo in vitro. *Reproductive Toxicology*, 115:112-123.
- Vieira, M.C.**, Donato, C.M., Arevalo, P., Rimmelzwaan, G., Lopez, L., Huang, Q.S., Wood, T., Dhanasekaran, V., Koelle, K. and S. Cobey. 2021 Lineage-specific protection and immune imprinting shape the age distributions of influenza B cases. *Nature Communications*, 12:4313.
- Oidtman, R., Arevalo, P., Bi, Q., McGough, L., Russo, C.J.R., Vera-Cruz, D., **Vieira, M.C.** and K.M. Gostic. Influenza immune escape under heterogeneous host immune histories. 2021. *Trends in Microbiology*, 29:1072-1082.
- Guthmiller, J.J., Utset, H.A., Henry, C., Li, L., Sun, W., **Vieira, M.C.**, Zost, S., Huang, M., Hensley, S.E., Cobey, S., Palese, P. and P.C. Wilson. 2021. An Egg-Derived Sulfated N-Acetylglucosamine Glycan Is an Antigenic Decoy of Influenza Virus Vaccines. *mBio*, 12:e00838-21.
- Henry, C., Zheng, N-Y., Huang, M., Cabanov, A., Rojas, K. *et al.* 2019. Influenza virus vaccination elicits poorly adapted B cell responses in elderly individuals. *Cell Host & Microbe* 13:357-366.e6
- Neu, K., Huang, M., La, J. **Vieira, M.C.**, Kim, K. *et al.* 2018. Spec-seq unveils transcriptional subpopulation of antibody-secreting cells following influenza vaccination. *Journal of Clinical Investigation* 129:93-105 .
- Vieira, M.C.**, Zinder, D. and S. Cobey. 2018. Selection and neutral mutations drive pervasive mutability losses in long-lived anti-HIV B-cell lineages. *Molecular Biology and Evolution* 35:1135-1146.
- Scherrer, S., Lepesqueur, C., **Vieira, M.C.**, Almeida-Neto, M., Dyer, L., Forister, M. and I.R. Diniz. 2016. Seasonal variation in diet breadth of folivorous Lepidoptera in the Brazilian cerrado. *Biotropica* 48:491-498.
- Vieira, M.C.** and M. Almeida-Neto. 2015. A simple stochastic model for complex coextinctions mutualistic networks: robustness decreases with connectance. *Ecology Letters* 18:144-152 .
- de Araújo, W.S., **Vieira, M.C.**, Lewinsohn, T.M. and M. Almeida-Neto. 2015. Contrasting effects of land use intensity and exotic host plants on the specialization of interactions in plant herbivore networks. *PLoS One* 10: e0115656.
- Gontijo, L., **Vieira, M.C.**, Araújo, W. S. and M. Almeida-Neto. 2014. Proportion of exotics and relatedness of host species mediate the positive effect of plant richness on the species richness fruit flies. *Ecological Entomology*, 39:716-722
- Vieira, M.C.**, Cianciaruso, M.V. and M. Almeida-Neto. 2013. Plant-pollinator coextinctions and the loss of plant functional and phylogenetic diversity. *PLoS One* 8 (11), e81242.
- Vieira, M.C.** and P.E.C. Peixoto. 2013. Winners and losers: a meta-analysis of functional determinants of fighting ability in arthropod contests. *Functional Ecology*, 27:305-313.

Talks and posters

Options for the Control of Influenza XII. Brisbane, Australia. September 2024. (Poster)

Collaborative Influenza Vaccine Innovation Centers (CIVICs) Annual Meeting.
Bethesda, Maryland. August 2024. (Talk)

Centers for Excellence in Influenza Research and Response (CEIRR) Annual Meeting.
New York City, New York. July 2024. (Poster)

Epidemics-9. Bologna, Italy. November 2023. (Poster)

Midwest Computational Biology Workshop. Chicago, Illinois. September 2023. (Talk)

AIRR Community Seminar Series. (Remote). April 2023. (Talk)

Evolutionary Scales of the Immune System Working Group. Dresden, Germany. July 2022. (Talk)

Epidemics-7. Charleston, South Carolina. December 2019. (Poster)

Ecology and Evolution of Infectious Diseases meeting. Princeton, New Jersey. June 2019. (Poster)

Models of Infectious Disease Agent Study (MIDAS) meeting. Bethesda, Maryland. May 2019. (Poster)

Aging and Adaptation in Infectious Diseases working group. Santa Fe, New Mexico.
April 2019. (Talk)

Keystone Symposia on B cell - T cell interactions. Keystone, Colorado. February 2019.
(Poster)

Advances in Immune Repertoire Measurement and Analysis. San Francisco, California.
January 2019. (Poster)

Epidemics-6. Sitges, Spain. December 2017. (Talk)

2017 SMBE Meeting. Austin, Texas. July 2017. (Poster)

Epidemics-5. Clearwater Beach, Florida. December 2015. (Poster)

Teaching

Instructor

Mathematical Ecology Field Bootcamp (Instituto Serrapilheira). 2023

Teaching assistant

BIOS 33365 Evolutionary and Genomic Medicine (University of Chicago). 2018.

Biological Sciences Division Quantitative Biology Bootcamp (University of Chicago).
2017, 2018.

Ecology of the Amazon Rainforest Bootcamp (Instituto Nacional de Pesquisas da
Amazônia). 2012, 2013.

Peer review

Reviewer for *PNAS*, *Biological Conservation*, *Ecography*, *Scientific Reports*, *Frontiers in Immunology*, *Molecular Biology and Evolution*, *Virus Evolution*, *American Journal of Epidemiology* and *Ecology Letters*.