

Curriculum Vitae

Sara A. Carioscia

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Education

- 2019– PhD Student in Cell, Molecular, Developmental Biology and Biophysics
Johns Hopkins University, Baltimore, MD
Advisor: Rajiv C. McCoy
- 2017 BS in Biology; Classical Studies
Georgetown University, Washington, DC

Professional experience

- 2017–2019 Science Policy Fellow
IDA Science and Technology Policy Institute, Washington, DC
- 2013–2017 Undergraduate Researcher
Georgetown University Department of Biology
Advisor: Manus M. Patten

Fellowships

- 2021–2026 National Science Foundation Graduate Research Fellowship (\$138,000)
- 2021–2022 Johns Hopkins Center for Educational Resources Technology Fellowship (\$5,500)
- 2016 Georgetown University Research Opportunities Program (\$3,500)
- 2015 Zukowski-Kolleng Fellowship, Georgetown University (\$3,500)

Awards

- 2021 Victor G. Corces Teaching Award, Johns Hopkins Department of Biology (\$400)
- 2021 Excellence in Teaching Award, Johns Hopkins School of Arts and Sciences (Finalist)
- 2018 Secure World Foundation Young Professionals Scholarship (\$1,500)

Publications & presentations

RESEARCH ARTICLES

- 2019 Carioscia, S.A., Linck, E., Crane, K., Lal, B. "Assessment of the Utility of a Government Strategic Investment Fund for Space." *New Space Journal* 7, no. 4. doi.org/10.1089/space.2019.0006
- 2016 Rydzewski, W., Carioscia, S.A., Lievano, G., Lynch, V., Patten, M. "Sexual Antagonism and Meiotic Drive Cause Stable Linkage Disequilibrium and Favour Reduced Recombination on the X Chromosome." *Journal of Evolutionary Biology* 29, no. 6. [doi/abs/10.1111/jeb.12866](https://doi.org/10.1111/jeb.12866)
- 2015 Patten, M., Carioscia, S.A., Linnen, C. "Biased Introgression of Mitochondrial and Nuclear Genes: A Comparison of Diploid and Haplodiploid Systems." *Molecular Ecology* 24, no. 20. [doi/abs/10.1111/mec.13318](https://doi.org/10.1111/mec.13318)

ORAL PRESENTATIONS

- 2021 Joint Genomics Working Group, Johns Hopkins University. "Testing Adherence to Mendel's Laws of Inheritance in Humans." Carioscia, S.A., McCoy, R.C.
- 2020 Space Education and Strategic Applications Conference. "Assessing the Utility of Government Strategic Investment in Space." Carioscia, S.A.
- 2020 Johns Hopkins University Department of Biology. "Using DNA Sequence to Predict Chromosome Interactions." Carioscia, S.A., Taylor, J.
- 2020 Johns Hopkins University Department of Biology, Baltimore, MD. "Machine Vision Pipeline for Web Identification." Carioscia, S.A., Corver, A., Gordus, A.
- 2019 Johns Hopkins University Department of Biology, Baltimore, MD. "Simulating the Fitness Effects of Neandertal-Introgressed Mutations." Carioscia, S.A., McCoy, R.C.
- 2019 White House Office of Science and Technology Policy (OSTP), Washington, DC. "The Commercial Development of Supersonic Aircraft." Carioscia, S.A., Locke, J., Lewis, M.
- 2018 69th International Astronautical Congress (IAC), Bremen, Germany. "Evaluating Government's Role in Space Commercialization." Carioscia, S.A., Linck, E., Crane, K., Lal, B.
- 2018 American Institute of Aeronautics and Astronautics (AIAA) Technical Committee Meeting, Washington, DC. "Challenges and Ways Forward in On-Orbit Servicing, Assembly, and Manufacturing." Carioscia, S.A., Lal, B.
- 2018 Intelligence Community Space Board (ICSB), Virginia. "Global Trends in Space Traffic Management." Balakrishnan, A., Carioscia, S.A. (Co-presenter)
- 2018 White House OSTP, Washington, DC. "Improving Controls on Exports and Foreign Investment in the U.S. Space Industry." Crane, K., Carioscia, S.A. (Co-presenter)

POSTER PRESENTATIONS

- 2021 Biology of Genomes, Cold Spring Harbor Laboratory (Online). "Haplotype phasing, genotype imputation, and mapping of meiotic crossovers from sparse gamete sequencing data." Carioscia, S.A.,* Weaver, K.,* Ariad, D., McCoy, R.C. (*Co-presenters)
- 2020 The Allied Genetics Conference (TAGC), Genetics Society of America (Online). "Simulating the Impact of Neandertal Introgression on the Distribution of Fitness Effects of Human Genetic Variation." Carioscia, S.A., McCoy, R.C.

- 2019 13th Annual Genomics and Bioinformatics Symposium, Baltimore, MD. "Simulating the Impact of Neandertal Introgression on the Distribution of Fitness Effects of Human Genetic Variation." **Carioscia, S.A., McCoy, R.C.**
- 2017 Georgetown University Research Conference, Washington, DC. "Effects of Chimerism on Sibling Rivalry in Marmosets." **Carioscia, S.A., Patten, M.**
- 2015 Georgetown University Research Conference, Washington, DC. "Biased Introgression of Mitochondrial and Nuclear Genes: A Comparison of Diploid and Haplodiploid Systems." **Carioscia, S.A., Linnen, C., Patten, M.**

IDA SCIENCE AND TECHNOLOGY POLICY INSTITUTE REPORTS

- 2019 **Carioscia, S.A., Locke, J., Boyd, I., Lewis, M., Hallion, R.** "The Commercial Development of Civilian Supersonic Aircraft." www.ida.org/commercial-development-of-civilian-supersonic-aircraft
- 2019 **Carioscia, S.A., Zuckerman, B., Grad, O.** "Short-term training opportunities in cancer informatics with implications for the emerging National Cancer Institute (NCI) Informatics Technology for Cancer Research (ITCR) Program."
- 2019 Simon, I., **Carioscia, S.A.** "Review of U.S. Government Policy on Life Sciences Dual-Use Research of Concern."
- 2019 Williams, S., Cox, C., **Carioscia, S.A.** "Personal Genomic Data Case Study: Ownership, Sharing, and Privacy Issues."
- 2019 Linck, E., [8 others including **Carioscia, S.A.**]. "Evaluation of a Human Mission to Mars by 2033." www.ida.org/evaluation-of-a-human-mission-to-mars-by-2033
- 2019 Locke, J., [8 others including **Carioscia, S.A.**]. "Toward the Development of National Planetary Protection Policy."
- 2019 Crane, K., Linck, E., **Carioscia, S.A., Lal, B.** "Assessment of the Utility of a Government Strategic Investment Fund for Space." www.ida.org/assessment-of-the-utility-of-a-government-strategic-investment-fund-for-space
- 2018 **Carioscia, S.A., Corbin, B., Lal, B.** "Ways Forward: On-Orbit Servicing, Assembly, and Manufacturing of Spacecraft." www.ida.org/D-10445
- 2018 Simon, I., **Carioscia, S.A., Rozansky, R.** "Federally-funded Infectious Disease '-Omics' Databases."
- 2018 Howieson, S., Clavin, C., Balakrishnan, A., **Carioscia, S.A., Gallo, J., Acheson-Field, H.** "Examination of Federal Assessment Capabilities for ARPA-E."
- 2018 Crane, K., Howieson, S., **Carioscia, S.A., Linck, E., Buenconsejo, R.** "Improving Controls on Exports and Foreign Investment in Space Technologies."
- 2018 Lal, B., Balakrishnan, A., Caldwell, B., Buenconsejo, R., **Carioscia, S.A.** "Global Trends in Space Situational Awareness and Space Traffic Management." www.ida.org/D-9074

CONFERENCE PAPERS

- 2019 Linck, E., **Carioscia, S.A., Crane, K., Lal, B.** "Preferred Policy Instruments to Achieve U.S. Government Goals for Human Spaceflight and Private Sector Space Markets." 70th International Astronautical Congress (IAC).
- 2018 Balakrishnan, A., **Carioscia, S.A., Caldwell, B., Lal, B.** "Future of the Space Situational Enterprise." Advanced Maui Optical and Space Surveillance Technologies Conference

(AMOS). amotech.com/2018/Balakrishnan

- 2017 Lal, B., Carioscia, S.A. "Evaluating Options for Civil Space Situational Awareness." Advanced Maui Optical and Space Surveillance Technologies Conference (AMOS). amotech.com/2017/Lal

NON-ACADEMIC MATERIAL

- 2020 Carioscia, S.A., Taylor, D., Weaver, K. "Science in Space." Splash Weekly (Podcast).
2020 Carioscia, S.A. "Biotech, grad school, networking, and putting yourself out there." Titus Talks (Podcast). <https://alexandertitus.com/Carioscia>
2019 Lal, B., Crane, K., Carioscia, S.A., Linck, E. "Strategic Role of Government in Space Commercialisation." *Room EU* 21(3). room.eu.com/strategic-role-of-government-in-space-commercialisation
2018 Carioscia, S.A., Caldwell, B., Lal, B., Ouellette, S. "STPI Holds Panel on Space Traffic Management." IDA Research Insight. www.ida.org/research-insight-9284

Teaching

- Jan. 2022 Instructor, Peer Editing Workshop, Carnegie Institute of Embryology
Aug. 2021 Instructor, Teaching Assistant Orientation, Johns Hopkins School of Arts and Sciences
2021 Guest Lecturer, Seminar in Biotechnology, University of New Hampshire Manchester
2021 Teaching Assistant, Developmental Genetics Lab, Johns Hopkins (AS.020.340, Spring)
2021, 2020 Instructor, [Computational Biology Workshop](#), Agara Bio Community Lab
2020 Teaching Assistant, Developmental Genetics Lab, Johns Hopkins (AS.020.340, Fall)
2014–2019 SAT and ACT Instructor, Capital Educators, Rockville, MD
2014–2017 Writing Tutor, Georgetown University Writing Center

Academic, community, & university service

PANELS

- 2021 Panelist, How Do I NOT Pay for Graduate School?, Johns Hopkins Life Design Lab
2021 Panelist, Using Twitter in Grad School, Johns Hopkins Graduate Career Services
2020 Session Moderator, Johns Hopkins Department of Biology Retreat
2020 Session Moderator, Space Education and Strategic Applications Conference
2019 Workshop Organizer, Networking and Connections, IDA Brown Bag Series
2018 Panelist, AIAA Technical Committee Meeting, Washington, DC
2018 Workshop Moderator, White House OSTP, Washington, DC
2018 Panelist, Using Science in Policy, Arizona State University, Washington, DC
2018 Panelist, Alumni Careers, Georgetown University Writing Center

COMMITTEES

2019–	Class of 2017 Alumni Committee, Georgetown University
2018–2019	U.S. Air Force 2030 Science and Technology Strategy Executive Committee
2015–2016	Catalyst Digital Badge Pilot Program, Georgetown University

EDUCATION, VOLUNTEERING, & OUTREACH

2020–	symBIOsis Board Member, Johns Hopkins University Biology Department
2020–	First-year Student Mentor, Johns Hopkins University Biology Department
2018–	Mentor, Georgetown University Career Center
2016–2017	Undergraduate Director, Georgetown University Writing Center

ASSOCIATIONS & STUDENT GROUPS

2020–	Member, American Society of Human Genetics (ASHG)
2020–	Member, Association of Women in Science (AWIS)
2019–	Member, Genetics Society of America (GSA)
2019–	Member, Johns Hopkins University Women of Whiting (WOW)
2019–	Member, Johns Hopkins Science Policy Group
2019–2021	Vice President, Johns Hopkins University Cycling Team
2015–2016	Board Member, Georgetown University Triathlon Team