8. **Luque**, **A.,** R. Collepardo-Guevara, S. Grigoryev, and T. Schlick, "Dynamic condensation of linker histone C-terminal domain regulates chromatin structure," *Nucleic Acids Research*, 42, 7553–7560 (**2014**). https://doi.org/10.1093/nar/gku491. Impact factor*:* 19.16. Q1.
7. Hernando-Pérez, M., M. Aznar, E. Pascual Vega, A. Ionel, J.R. Castón, **A. Luque**, J.R. Carrascosa, D. Reguera, and P.J. de Pablo, "The interplay between mechanics and stability of viral cages," *Nanoscale* 6, 2702–2709 (**2014**). https://doi.org/10.1039/C3NR05763A. Impact factor: 7.394. Q1.
6. **Luque**, **A.,** D. Reguera, A. Morozov, J. Rudnick, and R. Bruinsma, "Physics of shell assembly: Line tension, hole implosion, and closure catastrophe," *Journal of Chemical Physics*. 136, 184507 (**2012**). https://doi.org/10.1063/1.4712304. Impact factor: 2.894. Q1.
5. Aznar[G]*, M., **A. Luque***, and D. Reguera, "Relevance of capsid structure in the buckling and maturation of spherical viruses," *Physical Biology*. 9, 036003 (**2012**). https://doi.org/10.1088/1478-3975/9/3/036003. Impact factor 2.536. Q2.
4. Reguera, D., **A. Luque**, P. S. Burada, G. Schmid, J. M. Rubí, and P. Hänggi, "Entropic splitter for particle separation," *Physical Review Letters*. 108, 020604 (**2012**). https://doi.org/10.1103/PhysRevLett.108.020604. Impact factor*:* 9.185. Q1. **Press***:* American Physics Society (APS), Physics magazine, https://physics.aps.org/articles/v5/6.
3. Carrasco*, C., **A. Luque***, M. Hernando-Pérez, R. Miranda, J. L. Carrascosa, P. A. Serena, M. de Ridder, A. Raman, J. Gómez-Herrero, I. A. T. Schaap, D. Reguera, and P. J. de Pablo, "Built-in mechanical stress in viral shells," *Biophysical Journal*. 100, 1100–1108 (**2011**). https://doi.org/10.1016/j.bpj.2011.01.008. Impact factor: 3.972. Q1.
2. **Luque, A.** and D. Reguera, "The structure of elongated viral capsids," *Biophysical Journal*. 98, 2993–3003 (**2010**). https://doi.org/10.1016/j.bpj.2010.02.051. Impact factor: 3.972. Q1. **Press**: Universitat de Barcelona News, https://www.ub.edu/web/ub/en/menu_eines/noticies/2010/06/34.html.
1. **Luque**, **A.,** R. Zandi, and D. Reguera, "Optimal architectures of elongated viruses," *Proceedings of the National Academy of Sciences USA*. 107, 5323-5328 (**2010**). https://doi.org/10.1073/pnas.0915122107. Impact factor: 12.780. Q1. **Press***:* Universitat de Barcelona News, https://www.ub.edu/web/ub/en/menu_eines/noticies/2010/06/34.html.

Book Chapters

1. **Luque*, A.** and D. Reguera*, "Theoretical Studies on Assembly, Physical Stability, and Dynamics of Viruses," in M.G. Mateo, editor, Structure, and Physics of Viruses, Springer (**2013**), *Subcellular Biochemistry*, 68, 553-595. https://doi.org/10.1007/978-94-007-6552-8_19.

Conference Reports

1. Hufsky, F., D. Beslic, D. Boeckaerts, S. Duchene, E. González-Tortuero, A. J. Gruber, J. Guo, D. Jansen, J. Juma, K. Kongkitimanon, **A. Luque**, M. Ritsch, G. Lencioni Lovate, L. Nishimura, C. Pas, E. Domingo, E. Hodcroft, P. Lemey, M.B. Sullivan, F. Webber, F. González-Candelas, S. Krautwurst, A. Pérez-Cataluña, W. Randazzo, G. Sánchez, M. Marz. "The International Virus Bioinformatics Meeting 2022." *Viruses.*14, no. 5:973 (**2022**). Impact factor: 5.048. Q1. https://doi.org/10.3390/v14050973.

Articles In Preparation

3. **A. Luque**, S. Nayfach, S. Benler, S. Roux, and S. White, "Modern remnants of ancient small viruses across environments." *Complete manuscript draft, submit Fall 2022. Target Journal: Nature Microbiology* (Impact factor: 30.960. Q1).
2. Cobo-López, S.[P], M. Witt[G], Forest Rohwer, and **A. Luque**, "Assessing transient dynamics in ecology: A case study on phage and bacteria populations. *Complete manuscript draft, submit Fall 2022. Target Journal: PNAS* (Impact factor: 12.780. Q1).
1. Brown, C.[G] and **A. Luque**, "pyCapsid: Obtaining the geometrical and mechanical anatomy of viral capsids." *Complete manuscript draft, submit Fall 2022. Target Journal: Bioinformatics* (Impact factor: 6.937. Q1).

FUNDING

Cumulative funding: 2,136,762 USD. Sources of funding: 2 federal grants, 1 private foundation grant, and 13 intramural grants.

Funded Grants

1,501,875 USD – Perpetual viral origins, The Gordon and Betty Moore Foundation, Award #9871, co-P.I. Nov. 2021 – Dec. 2024

300,000 USD – Characterization and prediction of viral capsid geometries, National Science Foundation, Award 1951678, Mathematical Biology program, sole P.I.	Sep. 2020 – Aug. 2023
160,027 USD – Collaborative research: A national consortium for synergistic undergraduate mathematics via multi-institutional interdisciplinary teaching partnership (SUMMIT-P), National Science Foundation, co-PI.	Sep. 2016 – Aug. 2021
25,025 USD – University Graduate Fellowship Program to support a graduate student, sole P.I.	Aug. 2020 – Sep. 2021
3,000 USD – Prediction of the decay time of viruses from genomic information, Summer Undergraduate Research Program, San Diego State University, sole P.I.	Jul – Aug. 2020
3,000 USD – Quantification of conserved structural properties within viral lineages, Summer Undergraduate Research Program, San Diego State University, sole P.I.	May-August 2019
3,000 USD – Identifying common structural properties among microbial viruses and human viruses, Summer Undergraduate Research Program, San Diego State University, sole P.I.	May-August 2018
50,000 USD – Viromics: Area of Excellence research proposal, San Diego State University, co-PI.	Jul. 2016 – Jun. 2018
15,000 USD – Modeling phage-bacteria dynamics in mucus: A multiscale approach to phage therapy, California State University Program for Education and Research in Biotechnology (CSUPERB), sole P.I.	July 2017 – Nov. 2018
10,000 USD – Mathematical modeling of phage lifestyles and their ecological impact in coral reefs, University Grant Program, San Diego State University, sole P.I.	Jul. 2017 – Jun. 2018
22,212 USD – Course Redesign with Technology Award, California State University: Calculus for the Life Sciences	Mar. 2017 – Jun. 2018
35,000 USD – Interdisciplinary graduate fellowships in viromics, San Diego State University, co-P.I.	Sep. 2016 – Aug. 2018.
3,000 USD – Modeling phage survival in limiting bacterial growth conditions, Summer Undergraduate Research Program, San Diego State University, sole P.I..	May – Aug. 2017
16,180 USD – Course Redesign with Technology Award, California State University: Methods of Applied Mathematics	Mar. 2016 – June 2017
2,500 USD – Center for Teaching and Learning Mini-Grant: Inverting Methods of Applied Mathematics I: Learning Glass and Team-Based Learning, San Diego State University, July 2015.	Jul. 2015 – Jun. 2016
2,500 USD – Structure of phages in the human microbiome, Summer Undergraduate Research Program, San Diego State University, sole P.I.	May – Aug. 2015

Pending Grants

$1,454,160 USD – Identifying the missing structural link between ancient viruses and cellular protein compartments, NASA Exobiology Program. Co-Investigator (P.I. at SDSU with subaward $872,003).	Jul. 2022

Not Funded Grants (last 4 years)

1,284,728 USD – Identifying the missing structural link between ancient viruses and cellular protein compartments, NASA Exobiology Program. Co-Investigator (P.I. at SDSU with subaward $660,525).	Jun. 2021
47,748,555 USD – Reefense: ARKWALL, DARPA (Reefense program), Department of Defense, Co-Investigator.	Apr. 2021
788,343 USD – Identifying the common structural origin of ancient viruses and cell compartments, NASA, Exobiology Program, Co-Investigator (P.I. at SDSU with subaward 4325,847).	May 2020
2,145,998 USD - Activating Prophage in the Cystic Fibrosis Lung Microbiome. National Institute of Allergy and Infectious Diseases (NIAID-NIH), co-P.I.	Feb. 2019
1,439,898 USD - Collaborative Research: Metabolic carbon/oxygen decoupling during coral reef phase shifts. National Science Foundation (NSF), Biological oceanography. Submitted Feb 2018, co-P.I.	Feb. 2018

AWARDS, FELLOWSHIPS, AND HONORS

2020 Mentors Hall of Fame, Student Research Symposium, San Diego State University.
2019 Grant Research and Enterprise Writing Fellowship, San Diego State University (3,000 USD).
2019 Outstanding Faculty Award, College of Sciences, San Diego State University.
2019 Outstanding Faculty Award, Department of Physics, San Diego State University.
2019 Senate Teaching Excellence Award nominee, San Diego State University.
2018 Faculty Innovation and Leadership Award, California State University (10,000 USD).
2018 Top ePortfolio Award for "Calculus for the Life Sciences: Growth Mindset and Active Learning" as part of the Course Redesigned with Technology Program.
2017 California State University Program in Education and Research in Biotechnology (CSUPERB) Travel Award, Institute of Mathematical Sciences, Singapore (2,000 USD).
2017 Outstanding Faculty Award, Department of Physics, San Diego State University.
2017 Center for Teaching and Learning Academy Award, San Diego State University.
2012 Thesis Honors by the *Claustre de Doctors* of the Universitat de Barcelona, Spain.
2011 Thesis Honor Award from the Ph.D. program of the Government of Catalonia, Spain (6,000 EUR).
2010 Research Fellowship for a research visit at the University of California, Los Angeles, funded by the Government of Catalonia, Spain (7,500 EUR).
2007 Ph.D. Research Fellowship. Government of Catalonia, Spain, 2007-2010 (60,000 EUR).
2006 Extraordinary M.S. Award in Biophysics from the Universitat de Barcelona, Spain, 2006.
2006 Undergraduate Research Fellowship. Ministry of Education and Science, Spain (4,000 EUR).

PRESENTATIONS

Invited Talks and Seminars

2022 Physics Seminar, Department of Biology, University of Miami, Coral Gables, FL, USA.
2022 Biology Seminar, Department of Biology, University of Miami, Coral Gables, FL, USA.
2022 Ciclo Los Viernes de la Evolución, Colegio Nacional, Mexico City, Mexico (Spanish).
2022 Mathematics Seminar, Temple University, Philadelphia, PA, USA.
2022 Mathematical Biology Colloquium, University of California, Merced, CA, USA.
2022 Computational Science Research Colloquium, San Diego State University, San Diego, CA, USA.
2022 Physics Colloquium, Florida International University, Miami, FL, USA.
2021 Biology of Viruses (BIL354), The University of Miami, Miami, FL, USA.
2021 Interdisciplinary Center for Quantitative Modeling in Biology, University of California, Riverside, USA.
2020 International Conference on Science and Technology of Complex Fluids, Universidad de Guanajuato, Guanajuato, Mexico.
2020 Computational Science Research Colloquium, San Diego State University, San Diego, USA.
2019 International Workshop on Calorimetry and Microbial Ecology, Telluride Science Research Center, Telluride, CO, USA.
2019 San Diego Microbiology Group, University of California, San Diego, USA.
2018 Computational Science Research Colloquium, San Diego State University, San Diego, CA,USA.
2018 York Cross-disciplinary Centre for Systems Analysis, University of York, UK.
2018 Coral Club, San Diego, CA, USA.
2017 International workshop on geometry and shape analysis in biological sciences, Institute for Mathematical Sciences, Singapore.
2015 Computational Science Research Colloquium, San Diego State University, San Diego, USA.
2015 Southern California Systems Biology Conference, UC Irvine, CA, USA.
2015 International Year of the Phage Conference, San Diego State University, USA.
2014 Center for Genomic Regulation, Barcelona, Spain.
2014 Condensed matter seminar series, Department of Physics, Universitat de Barcelona, Spain.
2014 Biomathematics and Computational Biology Colloquium, Courant Institute of Mathematical Sciences, New York University, New York, NY, USA.
2014 Viral Information Institute, San Diego State University, San Diego, CA, USA.
2014 Physics seminar, Hunter College of The City University of New York, New York, USA.
2013 Seminar at the Department of Biochemistry and Molecular Biology, Pennsylvania State University, Hershey, USA.
2011 Seminar condensed matter series, Universidad Autónoma de Madrid, Spain.

2010 Physics seminar, Brookhaven National Laboratory, Long Island, CA, USA.
2010 Quantitative biology seminar, University of Southern California, Los Angeles, USA.
2010 Biophysics seminar, University of California, Los Angeles, USA.
2010 Seminar, National Center of Biotechnology (CNB- CSIC), Madrid, Spain.
2009 Condensed matter seminar series, Universitat de Barcelona, Barcelona, Spain.
2009 Quantitative biology seminar, Institute of Marine Sciences (ICM-CSIC), Barcelona, Spain.

Contributed Talks

2022 FASEB Virus Structure and Assembly, Southbridge, Connecticut, USA.
2022 International Virus Bioinformatics Meeting, Valencia, Spain (online).
2020 International Colloquium Physics and Function of Protein Nanoshells: From Viruses to Biomimetic Nanocontainers, Condensed Matter Division 2020 Meeting, Madrid, Spain (online).
2020 International Coral Reef Symposium (ICRS), (cancelled due to COVID19).
2011 FISES'11: XVII National Conference on Statistical Physics, Barcelona, Spain.
2009 SEV 2009: X Spanish National Conference of Virology, Salamanca, Spain.

MENTORING

Assistant Professors (1)

Uduak George, Department of Mathematics & Statistics, SDSU. 2020 – Present

Postdoctoral Researcher (1)

Sergio Cobo-López, biophysical modeling, co-mentorship, SDSU. 2021 – Present
Margarita Salas fellowship.

Doctoral Students (3)

Diana Lee, Computational Science, SDSU. 2016 – Present
NSF G-STEM Scholarship, Computational Science Qualcomm Award, SIAM CSE Award, Grace Hopper Scholar 2017, SACNAS Scholar, Viral Information Institute Interdisciplinary Graduate fellowship.

James Mullinix, Computational Science, SDSU. 2015 – Present
NSF G-STEM Scholarship, Student Travel Award, Computational Science Tioga Research Award and Natural Selection, Inc. Award.

Kevin Joiner, Computational Science, SDSU. 2015 – 2018
SMART Fellowship, Department of Defense, NSF G-STEM Scholarship, Computational Science ESET Research Award.

Master Students (10)

Aurora Vogel, Applied Mathematics, co-mentorship, SDSU. 2021 – Present
Emma Sully, Applied mathematics, lab internship, SDSU. Summer 2021
Brandon Ricafrente, Physics, SDSU. 2020 – Present
Colin Brown, Physics, SDSU. 2019 – Present
Matthew Witt, Physics, SDSU. 2017 – 2019
Emily Jasien, Applied Mathematics, SDSU. 2015 – 2017
Shahir Sikder, Mathematics, SDSU. 2015 – 2016
Emma George, Cell Molecular Biology, co-mentorship, SDSU. 2015 – 2016
Maria Aznar, Biophysics, co-mentorship, Universitat de Barcelona. 2010 – 2011

Undergraduate Students (17)

Vaishnavi Patel, Biology, SDSU. 2022 – Present
Caitlin Bartels, Biology, SDSU. 2020 – Present
Jessica Vogt, Computer Science, SDSU. Fall 2021
Neilsen Lu, Mathematics, SDSU. 2020 – 2021
Antonio Cobarrubia, Physics, SDSU. 2018 – 2019
Austin Crispin-Smith, Physics, SDSU. 2018 – 2019
Jarod Tall, Physics, SDSU. 2018 – 2019
Meg Robinson, Mathematics, SDSU. 2018 – 2019
Malida Hecht, Physics, SDSU. 2018 – 2019