

EFRAÍN E. RIVERA-SERRANO, PH.D.

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EDUCATION

- Ph.D.** Comparative Biomedical Sciences, North Carolina State University, Raleigh, NC 2016
Dissertation: “*Cardiac cell type-specific antiviral responses and mechanisms of viral antagonism of cellular innate responses.*”
- M.Sc.** Plant Cell Biology & Biotechnology, North Carolina State University, Raleigh, NC 2012
Thesis: “*Chemical genetic approaches for the study of tonoplast protein trafficking in Arabidopsis.*”
- B.Sc.** Biology & Chemistry, Pontificia Universidad Católica de Puerto Rico, Ponce, PR 2009
Graduated *Summa Cum Laude* (3.97/4.0)

EMPLOYMENT

- Contributing Editor**, *American Scientist Magazine* 2020-current
- Social Media Specialist (Part-Time)**, *American Scientist Magazine* 2020-current
- Social Media for the *Molecular Biology of the Cell Journal***, American Society for Cell Biology 2019-current
- Research Associate (Virologist)**, University of North Carolina at Chapel Hill 2019-2020
- Postdoctoral Research Associate (Virologist)**, University of California, Davis 2018-2019
- Postdoctoral Research Fellow (Virologist)**, University of North Carolina at Chapel Hill 2017-2019
- Graduate Research Assistant (Cell biologist/Virologist)**, North Carolina State University 2009-2016

PEER-REVIEWED PUBLICATIONS (CLICK [HERE](#) FOR LINK TO GOOGLE SCHOLAR PAGE)

- [2021] Das A, Yin X, **Rivera-Serrano EE**, Walker C, Feng Z, Lemon SM. Cellular entry and egress of quasi-enveloped human hepatitis viruses. *Nat Rev Microbiol.* (under revision)
- [2021] **Rivera-Serrano EE** and Lemon SM. Vesicle-mediated transcytosis and export of viruses. Encyclopedia of Virology. 4th Ed. (Book Chapter, *in press*)
- [2020] Li C, Shi J, Wang H, **Rivera-Serrano EE**, Yang D, Zhou G, Sun C, Cameron EE, Yu L. Polymerase fidelity contributes to foot-and-mouth disease virus pathogenicity and transmissibility in vivo. *J Virol.* PMID: 33028719
- [2020] **Rivera-Serrano EE**, Gizzi AS, Arnold JJ, Grove TL, Almo, SC, Cameron EE. Viperin reveals its true function. *Annu Rev Virol.* 7: 421-446
- [2019] Kong W, **Rivera-Serrano EE**, Neidleman JA, Zhu J. (2019) HIV-1 replication benefits from the RNA epitranscriptomic code. *J Mol Biol.* 431(24):5032-5038
- [2019] Yamane D, Feng H, Rivera-Serrano EE, Selitsky SR, Hirai-Yuki A, Das A, McKnight KL, Misumi I, Hensley L, Lovell W, González-López O, Suzuki R, Matsuda M, Nakanishi H, Ohto-Nakanishi T, Hishiki T, Wauthier E, Oikawa T, Morita K, Reid LM, Sethupathy P, Kohara M, Whitmire JK, Lemon SM. Basal expression of interferon regulatory factor 1 drives intrinsic hepatocyte resistance to multiple RNA viruses. *Nat Microbiol.* 4(7): 1096–1104
- [2019] Li Y, Wang L, **Rivera-Serrano EE**, Chen X, Lemon SM. TNRC6 proteins modulate hepatitis C virus replication by spatially regulating the binding of miR-122/Ago2 complexes to viral RNA. *Nucleic Acids Res.* 9;47(12):6411-6424
- [2019] **Rivera-Serrano EE**, González-López O, Das A, Lemon SM. Cellular entry and uncoating of naked and quasi-enveloped human hepatoviruses. *eLife.* 8:e43983
- [2018] González-López O, **Rivera-Serrano EE**, Hu F, Hensley L, McKnight KL, Ren J, Stuart DI, Fry EF, Lemon SM. Redundant late domain functions of tandem VP2 YPX₃L motifs in cellular egress of quasi-enveloped hepatitis A virus. *J Virol.* 92(23): e01308-18

- [2017] McKnight KL, Xie L, González-López O, **Rivera-Serrano EE**, Chen X, Lemon SM. Protein composition of the hepatitis A virus quasi-envelope. *Proc Natl Acad Sci USA*. 114(25): 6587-6592
- [2017] **Rivera-Serrano EE**, DeAngelis N, Sherry B. Spontaneous activation of a MAVS-dependent antiviral signaling pathway determines high basal interferon- β expression in cardiac myocytes. *J Mol Cell Cardiol*. 111: 102-113 (*Selected for Journal Cover, Volume 111, October 2019)
- [2017] **Rivera-Serrano EE**, Fritch EJ, Scholl EH, Sherry B. A cytoplasmic RNA virus alters the function of the cell splicing protein SRSF2. *J. Virol*. 91(7): e02488-16 (*Selected for Journal Cover, Volume 9, Issue 9)
- [2017] **Rivera-Serrano EE** and Sherry B. NF- κ B activation is cell type-specific in the heart. *Virology*. 502: 133-143
- [2014] Stebbing RE, Irvin SC, **Rivera-Serrano EE**, Boehme KW, Ikizler M, Yoder JA, Dermody TS, Sherry B. An ITAM in a nonenveloped virus regulates activation of NF- κ B, induction of beta interferon, and viral spread. *J Virol*. 88(5): 2572-2583
- [2012] **Rivera-Serrano EE**, Rodriguez-Welsh MF, Hicks GR, Rojas-Pierce M. A small molecule inhibitor partitions two distinct pathways for trafficking of tonoplast intrinsic proteins in Arabidopsis. *PLoS ONE*. 7(9): e44735

PUBLISHED OPINION ARTICLES, NEWS HIGHLIGHTS, AND SERVICE

Published Opinion Articles & Blogs

- [2020] Why people receiving the COVID-19 vaccines still need to wear masks. *American Scientist* (link [here](#))
- [2020] Vaccines, antiscience beliefs, and future pandemics. *American Scientist* (link [here](#))
- [2020] Navigating out of academia. *BioTechniques* (link [here](#))
- [2020] Debunking misinformation during a pandemic through storytelling. *BioTechniques* (link [here](#))
- [2020] Preguntas communes sobre los virus (in Spanish). *CienciaPR* (link [here](#))
- [2019] Breaking the silence: talking about mental health in graduate education. *BioTechniques* (link [here](#))
- [2019] Hashtag SciComm: How Social Media Platforms Are Shaping the Future of Science. *PLoS SciComm* (link [here](#))

Interviews and Highlights

- [2020] Quoted in ‘The core lesson of the COVID-19 heart debate’, by Ed Yong for *The Atlantic* (link [here](#))
- [2020] Quoted in ‘6 feet apart is the gold standard, but should it be?’, Markham Heid for *Elemental Medium* (link [here](#))
- [2020] Quoted in ‘Is 6 feet far enough for social distancing? Here’s what science says’, by Isabella Isaac-Thomas for *PBS NewsHour* (link [here](#))
- [2020] Quoted in ‘What we know about the coronavirus model the White House unveiled’, by Denise Chow for *NBC News* (link [here](#))
- [2020] Quoted in ‘Everything you need to know about cleaning public surfaces in a pandemic’ by Dr. Katherine J. Wu for *PopSci* (link [here](#))
- [2019] Interviewed in ‘Efraín Rivera-Serrano: Personal training for scientists’ by *Journal of Cell Biology* (link [here](#))
- [2019] Interviewed by *eLife Journal* (link [here](#))
- [2016] Interviewed in ‘In Living Color’ by NC State University College of Veterinary Medicine (link [here](#))

Reviewer and Editing Service

- [2020 – current] Contributing Editor for *American Scientist Magazine*
- [2019 – current] Freelance Writer for *Biotechniques Journal*
- [2016 – 2020] Ad Hoc Reviewer for: *Virology, Journal of Biological Chemistry, and Cells*

OTHER TEACHING AND COMMUNICATIONS EXPERIENCE

Classroom Teaching Experience

- 2020 **Discussion Facilitator and Laboratory Coordinator**, Nicaraguan Emerging and Endemic Diseases (NEED) Graduate Virology Module at the National Autonomous University of Nicaragua at León
- 2020 **Guest Lecturer**, ‘Communicating Science through Social Media’ at the University of California, Davis
- 2019 **Guest Lecturer**, ‘Principles of Light Microscopy’ at Meredith College
- 2018 **Laboratory Instructor**, Introduction to Biochemistry Laboratory (BIOC107L) at UNC-Chapel Hill

- 2014 **Guest Lecturer**, ‘Introduction to Scientific Writing and Rhetoric in the Sciences’ at NC State University
 2012 **Laboratory Instructor**, Plant Life Laboratory (PB200) at NC State University

Teaching & Communication Workshops (NC State University, 2011-2015)

[1] Introduction to teaching, [2] Learning styles, [3] Active learning, [4] Motivating students: Creating a healthy environment, [5] Establishing credibility and authority in the classroom, [6] Evaluation and grading, [7] Effective questioning techniques, [8] Strategies for facilitating effective tutoring and review sessions, [9] Designing an effective syllabus, [10] Intercultural communication in the US classroom, [11] Dynamic lecturing: facilitating critical thinking in the classroom, [12] Negotiating authority in the classroom, [13] Responding to student writing

Participation in Panels and Workshops (selected)

- 2020 **Invited Lecturer**, ‘The Power of Social Media’ at the University of California, Davis
 2020 **Invited Presenter**, ‘Illuminating the Micro-World to Understand Viral Infections’, *American Scientist’s* lunchtime seminar series (recorded video available [here](#))
 2020 **Invited Panelist**, ‘Managing challenges, struggles & uncertainty in Academia,’ Memorial Sloan Kettering and the Postdoctoral Association (5/27/2020)
 2020 **Invited Panelist**, ‘La Importancia de Mentores en Tiempos Dificiles’, SACNAS UPR-Río Piedras (5/13/2020)
 2020 **Invited Panelist**, NPR Joe’s Big Idea Community Outreach Mentor Chat (webinar 3/18/2020)
 2020 **Invited Speaker**, ‘Exactly the same, but different – using our scientific interests to design science communication strategies’, Duke University SciComm Lunch & Learn Series
 2019 **Invited Participant**, ‘Inclusive SciComm Workshop’, SACNAS Annual Meeting, Honolulu, HI
 2019 **Invited Speaker**, ‘A Logic of Diversity: Applying Virological Concepts to Solve Social Problems’, University of Oregon, USA
 2019 **Invited Panelist**, ‘Getting Published’ Virtual Panel, Yale Ciencia Academy
 2019 **Invited Speaker**, ‘Hashtag SciComm: How Social Media Platforms Are Shaping the Future of Science’, University of California, Davis, USA

Participation in Podcasts & Videos (selected)

- 2020 **This Week In Science (TWIS) Podcast**, ‘How to Better Know a Virus’ (recorded live video [here](#))
 2020 **Skype A Scientist Series**, ‘Viruses’ with Dr. Sarah McAnulty (recorded video [here](#))
 2020 **STEM Uncovered**, ‘All Things Microscopic: Scientists Tell Us About Their Research!’ (YouTube video [here](#))
 2020 **The Science Pawdcast (Season 2, Ep. 8)**, ‘Viruses’ (recording [here](#))

FELLOWSHIPS, AWARDS, AND RECOGNITIONS (SELECTED)

- [in progress] **Certificate in Editing**, The Poynter Institute
 [2020] Highlighted as one of “**100 Inspiring Hispanic/Latinx Scientists in America**” by Cell Mentor (full [list](#) here)
 [2019] Kavli Foundation Scholarship – to attend SACNAS 2019 Annual Meeting, Honolulu, Hawai’i
 [2017] **UNC-CH/NIH T32** Infectious Disease Pathogenesis Postdoctoral Institutional Training Grant, (NIH AI007151-39), “Cellular entry of naked and quasi-enveloped hepatitis A virus (HAV)”
 [2016] **First Prize** Award of Excellence, Poster Presentation at the NC State University College of Veterinary Medicine Research Forum
 [2016] **Student Fellow**, Cultivating Cultures of Ethics in STEM: Comparing Meanings of Responsible Innovation Across Bioengineering Communities, The Genetic Engineering and Society (GES) Center at NCSU
 [2014] Featured as one of “**30 Male Scientists of Color That You Should Know**”; by Dr. Lewis and Dr. Fullilove, American Chemical Society Diversity eBrief
 [2010] Graduate Assistance in Areas of National Need (**GAANN**) **Fellowship** in Biotechnology; Department of Education
 [2009] NC State University Graduate School **Diversity Enhancement Grant**
 [2009] Initiative for Maximizing Student Diversity (**IMSD**) **Scholarship**
 [2008] Puerto Rico Louis Stokes Alliance for Minority Participation (**PR-LSAMP** **Scholarship**)