

# EFRAÍN E. RIVERA-SERRANO, PH.D.

✉ eerivaserrano@gmail.com

🌐 <https://eerivaserrano.com>

🐦 @NakedCapsid

## 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

---

- Social Media Specialist (Part-Time)**, Sigma Xi Society and *American Scientist* Magazine 2020-current
- Freelance Writer (Ad Hoc)**, *BioTechniques* Journal 2019-current
- Social Media (Twitter) Fellow**, American Society for Cell Biology (ASCB) 2019-current
- Research Associate (Virologist)**, University of North Carolina at Chapel Hill 2019-2020
- Postdoctoral Research Associate (Cell biologist)**, University of California, Davis 2018-2019
- Postdoctoral Research Fellow (Virologist)**, University of North Carolina at Chapel Hill 2017-2019
- Graduate Research Assistant (Cell biologist)**, North Carolina State University 2009-2016

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

---

- [2021] **Rivera-Serrano EE** and Lemon SM. Vesicle-mediated transcytosis and export of viruses. *Encyclopedia of Virology*. 4th Ed. (Book Chapter)
- [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 YPX<sub>3</sub>L 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- $\beta$  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- $\kappa$ 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- $\kappa$ 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***

- [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](#))

### ***Interviewed and Highlighted***

- [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](#))

### ***Reviewer and Editing Service***

Ad Hoc Scientific Reviewer for: *Virology, Journal of Biological Chemistry, Biochimica et Biophysica Acta, and Cells*

## **TEACHING 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