

# LAURA E. LUQUE

## CONTACT INFORMATION

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## ACADEMIC BACKGROUND

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### Education

Ph.D. 2005 Univ. of Texas at Dallas, Richardson, TX (Molecular and Cell Biology)  
MS 2001 Univ. of Texas at Dallas, Richardson, TX (Molecular and Cell Biology)  
BS 1996 Florida International University, Miami, FL (Biology)

### Professional Appointments

2025-Present **Interim Director STEM Scholar Program**, CSE, Texas Christian University, Fort Worth, TX  
2024-Present **Senior Instructor**, Department of Biology, Texas Christian University, Fort Worth, TX  
2018-2023 **Instructor II**, Department of Biology, Texas Christian University, Fort Worth, TX  
2018-Present **Global Health Coordinator**, Pre-Health Professions Institute, Texas Christian University, Fort Worth TX  
2015-2018 **Instructor I**, Department of Biology, Texas Christian University, Fort Worth, TX  
2008-2015 **Assistant Professor**, Department of Biology, Rhodes College, Memphis, TN  
2007-08 **Visiting Assistant Professor**, Department of Biology, Rhodes College, Memphis, TN  
2005-2008 **Postdoctoral Fellow**, Department of Infectious Diseases, St. Jude Children's Research Hospital, Memphis, TN  
2002-2005 **Graduate Teaching Assistant**, Department of Biology, University of Texas at Dallas, Richardson, TX

### Honors and Awards

2024 Winner of Student Government Association Faculty Member of the Year Award  
2021 Winner of Wassenich Award for Mentoring in the TCU Community  
2021 Honors Professor of the Year  
2017 Nominated for Wassenich Award for Mentoring in the TCU Community  
2013 Early Leave, Rhodes College  
2012 Faculty Development Endowment Grant, Rhodes College  
2011 Faculty Development Endowment Grant, Rhodes College  
2010 Completion of SIPID program, NIH  
2004 Harris Award for best Research Discussion, UT Dallas

## TEACHING

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### Courses Taught

BIOL 10503 Introduction to Biology I, Texas Christian University, 2015-Present  
BIOL 10523 Introduction to Biological Investigation, Texas Christian University, 2022-Present

BIOL 30603 Cell, Molecular and Developmental Biology, Texas Christian University, 2017-2019, 2024

BIOL 30803 Human Parasitology, Texas Christian University, 2017-Present

BIOL 60910 Graduate Teaching in Biology, Texas Christian University, 2016-Present

SCIE 20970 STEM Summer Bridge Course, Texas Christian University, 2018-Present

SCIE 20970 STEM Scholars Research Seminar, Texas Christian University, 2018-Present

BIOL 40320 Teaching of Biology, Texas Christian University, 2016-2023

BIOL 10501 Introduction to Biology Lab, Texas Christian University, 2015-2021

BIOL 50910 Ethical Traveler Seminar, Texas Christian University, 2018-2020

BIOL 40703 Rwanda Health, Texas Christian University, 2019-2020

BIOL 30603 Cell, Molecular and Developmental Biology, Texas Christian University, 2017-2019

BIOL 10513 Introduction to Biology II, Texas Christian University, 2016

BIOL 10511 Introduction to Biology II Lab, Texas Christian University, 2016

BIOL 103 Introduction to Biology I, Rhodes College, 2008-2015

BIOL 131 Introduction to Biology I Lab, Rhodes College, 2008-2015

BIOL 301 Microbiology Lecture, Rhodes College, 2008-2015

BIOL 301L Microbiology Lab, Rhodes College, 2008-2015

BIOL 220 Biology of Human Parasites, Rhodes College, 2008-2015

BIOL 160 International Experience in Healthcare, Rhodes College, 2008-2015

#### Courses Developed at TCU

BIOL 40703 Global Perspectives in Health, 2019

SCIE 20970 STEM Summer Bridge Course, 2018

BIOL 30803 Human Parasitology (BIOL 30803 / BIOL 70950-069), 2017

BIOL 30603 Cell, Molecular and Developmental Biology (13 lectures), 2017

BIOL 10501 Introduction to Biology Lab, 2016

BIOL 60910 Graduate Teaching in Biology, 2016

#### Undergraduate Honors Thesis Directed

Malvika Ramesh. 2017-2018. Mechanisms of Parasite Immune-modulation and evasion

#### Undergraduate Honors Theses Committees

Mariana Zollinger. 2023. Understanding the Structure and Function of Protein Kinase C $\epsilon$  using Site Directed Mutagenesis

Anna C. Norman. 2022. Identifying the Protein Region Necessary for BRCA1 and p53 Binding

Kayla M. Thomas. 2022. Molding Melanin Magic

Margaret Xuan-Ngoc Vo. 2022. The effects of Antioxidant Therapy on Nuclear Factor Erythroid 2-Related Factor (NRF2) Expression in Microglial Cells

Lauren M. Edwards. 2021. Environment-sensitive Probes Based on Squaric Acid Scaffold

Jake M. Lynn. 2021. Effect of Macrocyclic Molecules on Cell Survival and Radical Oxygen Species Production in FRDA and HT22 Cells.

Diandria P. Veals. 2021. Synthesis of a 4-Iodo Substituted Pyridinophane for Fundamental Characteristic Analysis

Lauren Callaghan. 2020. Discovering Novel Genes That Allow Bacillus Anthracis to Survive Host Defenses

Lexi Goehring. 2020. Creating Biocompatible Polymers Loaded with Porous Silicon Potentially for Drug Delivery

Olivia Kinsinger. 2020. Reducing ROS and Chelating Metal Ions in Neuronal Cells Using Novel Compounds.

Lauren Nakhleh. 2019. Oxidative Stress as a Target for Alzheimer's Disease Therapeutics

Daniel Ta. 2019. Synthesis of Organic Salts and their Use as Gelators

Nghi (April) Tran. 2019. Uncovering the Effects of Thyroid Disruptors on Immune Function of Fathead Minnows.

Terrul Ratcliff. 2017. The interaction between exercise and increased cerebrospinal fluid flow on amyloid beta clearance following inflammation

## RESEARCH AND CREATIVE ACTIVITIES

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### Refereed Publications

De la Salud Bea, R. Adam Fine Petraglia, **Luque, LE**. 2015. Synthesis, antimicrobial activity and toxicity of analogs of the scorpion venom BmKn peptides, *Toxicon*, 2015 Jul 14;101:79-84. Epub 2015 May 14. <http://dx.doi.org/10.1016/j.toxicon.2015.05.006>

De la Salud Bea, R., Ascuitto M.R., **Luque, LE**. 2014. Synthesis of analogs of peptides from *Buthus martensii* scorpion venom with potential antibiotic activity, *Peptides*, 2015 Jun 1;68:228-32. Epub 2014 Nov1. <http://dx.doi.org/10.1016/j.peptides.2014.10.008>

Johnson, KM, González M, Dueñas L, Gamero M, Relyea G, **Luque LE**, and Caniza M. 2013. Improving waste segregation while reducing costs in a tertiary-care hospital in a lower middle-income country in Central America. *Waste Management Research* 31(7):733-8

Davis, JR, Boyle SA, Khan A, Gay ALJ, Grisham JM, and **Luque LE**. 2012. Snake parasitism in an urban old-growth forest. *Urban Ecosystems* 15: 739-752. <http://dx.doi.org/10.1007/s11252-012-0234-7>

**Luque LE**, Bridges O, Mason JN, Boyd K, Portner A, Russell CJ. 2010. Residues in the heptad repeat A region of the fusion protein modulate the virulence of Sendai virus in mice. *Journal of Virology* 84(2): 810-821

Zhan X, Slobod KS, Krishnamurthy S, **Luque LE**, Takimoto T, Jones B, Surman S, Russell CJ, Portner A, Hurwitz JL. 2008. Sendai virus recombinant vaccine expressing hPIV-3 HN or F elicits protective immunity and combines with a second recombinant to prevent hPIV-1, hPIV-3 and RSV infections. *Vaccine* 26(27-28): 3480-3488

**Luque LE**, Russell CJ. 2007. Spring-loaded heptad repeat residues regulate the expression and activation of the paramyxovirus fusion (F) protein. *Journal of Virology* 3130-3141

Russell CJ, **Luque LE**. 2006. The structural basis of paramyxovirus invasion. *Trends in Microbiology* 14(6):243-6

**Luque LE**, Grape KP, Junker M. 2002. A highly conserved arginine is critical for the functional folding of inhibitor of apoptosis (IAP) BIR domains. *Biochemistry* 41(46):13663

#### Non-Refereed Publications

Chumchal, M.M., **Luque LE**. 2020. Going abroad: how pre-health students can make the most of their international experience. *Apply Magazine*. 2020-2021 edition

#### Oral Presentations at Scholarly Meetings

Cytoskeletal rearrangement in human red blood cells induced by the Plasmodium falciparum protein EBA-175. 88<sup>th</sup> Annual Meeting of the American Society of Parasitologists, Quebec, Canada. 2013

Hyperfusogenic variants of Sendai virus cause increased pathogenicity in mice. 27<sup>th</sup> Annual Meeting of the American Society of Virology. Ithaca, NY. 2008

Regulation of membrane fusion and virus replication by spring-loaded residues in the Sendai virus fusion (f) protein. 26<sup>th</sup> Annual Meeting of the American Society of Virology. Madison, WI. 2007

Conserved Heptad Repeat A Residues are Critical Determinants of the Expression and Activation of the Paramyxovirus Fusion (F) Protein. 25<sup>th</sup> Annual Meeting of the American Society of Virology. Madison, WI. 2006

#### Poster Presentations at Scholarly Meetings

Challenges and opportunities to improve waste management in a resource poor hospital in El Salvador. 38th Annual International Conference on Global Health g. 2011

An integrative assessment of snake parasitism in an urban environment. 86<sup>th</sup> Annual Meeting of the American Society of Parasitologists. Anchorage, Alaska. 2011

An integrative assessment of snake parasitism across an urban-rural gradient. 51<sup>st</sup> Annual Meeting of the Society for integrative and Comparative Biology, Salt Lake City, Utah. 2011

Effects of land cover on parasite prevalence in snakes. 10<sup>th</sup> Annual Mid-South Geographic Information Systems (GIS) Conference. Germantown, TN. 2010

Challenges and opportunities to improve waste management in a resource poor hospital in El Salvador. Scientific Advisory Board Meeting. Memphis, TN. 2010

### Oral Presentations at National Meetings

Ethical Traveler: Guiding Students Through Health-Related Experiences Abroad. 43<sup>rd</sup> Alpha Epsilon Delta Biennial Convention. Tampa, Florida 2020

Ethical Traveler: Guiding Students Through Health-Related Experiences Abroad. Texas Association for Advisors of Health Professions. Lubbock, TX 2019

### Oral Presentations at TCU

Keynote speaker at the 2022 Honors Banquet

### Internal Grants

Rhodes Fellowship: Integrative research training in biological sub-disciplines (\$12,830.46), 2010

## SERVICE

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### Departmental Service

2023-Present Advancement and Communications Committee  
2023-2024 Biology COGS  
2018-2021 Biology Advisory Committee  
2018-2021 Biology COGS  
2017- 2019 Biology Department Reshoring Committee  
2017-2021 Biology Department Undergraduate Research Committee  
2015-Present Biology TA Orientation Training

### College Service

2021-2024 STEM Scholar Program Advisory Committee  
2018-2023 CIS Advisory Committee  
2015-Present Pre-health advisor  
2016-Present Global Health Initiative  
2015-2022 Honors College Faculty  
2017-2019 Honors College Liaison  
2017 Student Research Symposium (SRS) poster judge  
2016 CSE Honors Symposium oral presentation judge

### University Service

2024-Present Undergraduate Council (CSE representative)  
2025-Present Academic Appeals Committee (Committee member)  
2018-2023 Undergraduate Admissions and Retention Committee (Co-chair)  
2019 DEI EC IC (CSE representative)  
2018-2021 STEM Program (Chair of Curriculum Committee)

2017-Present Faculty Mentor for Doctors Without Borders  
2016-Present Mentor for Community Scholars  
2016-Present Faculty Mentor for Minority Association of Pre-Medical Students  
2016-2019 Frog Camp

### Community Service

Spring 2022 Lecture and Lab on DNA fingerprinting to students enrolled in the Latina STEM Fellowship Program  
June 2012 Infection Control in Hospital Infantil Manuel de Jesús Rivera “La Mascota” in Managua, Nicaragua  
June 2010 Infection Control in Hospital Nacional de los Niños Benjamín Bloom in San Salvador, El Salvador  
Fall 2010 Mentor for St. Mary’s High school student Amritha Kanakamedala

### Other Service

2014-2015 St. Jude Children’s Hospital Institutional Biosafety Committee (IBC)  
2013-2015 Rhodes College Educational Program Committee  
2011-2015 Rhodes College URCAS Natural Science representative  
2009-2015 Rhodes College Health Professions Advising Committee  
2010-2015 Admission events throughout the year (Rhodes College)  
2010-2015 Mentor for the St. Jude Summer Plus program (Rhodes College)  
2009-2015 Advisor in Biology, BMB, and BIO-ANSO bridge majors (Rhodes College)  
2008-2015 Faculty in the Latin American Studies program (Rhodes College)  
Spring 2013 Department Assistant Search Committee (Rhodes College)  
Fall 2012 Environmental Biology search committee (Rhodes College)  
Spring 2012 Department Assistant Search Committee (Rhodes College)  
Fall 2012 Community Health Committee (Rhodes College)

### Professional Membership

2013-Present American Public Health Association (member)  
2009-Present American Society of Parasitology (member)  
2006-Present American Society of Microbiology (member)

### Leadership

2024-Present Interim Director STEM Scholar Program  
2007-08 Chair, Postdoctoral Association Council, St. Jude Children’s Research Hospital, Memphis, TN  
2005-08 Officer, Local Outreach, Postdoctoral Association Council, St. Jude Children’s Research Hospital, Memphis, TN  
2003-04 President, Graduate Student Organization, University of Texas at Dallas, Richardson, TX  
2002 Co-organizer of the 7th Annual Chemistry-Biology Graduate Symposium, University of Texas at Dallas, Richardson, TX