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Education

- 2015 **Ph.D., Neuroscience**
Washington University, Saint Louis, Missouri
- 2010 **B.S., Behavioral Biology** (*Summa Cum Laude*)
Southern Wesleyan University, Central, South Carolina
- 2010 **B.A., English Language and Literature** (*Summa Cum Laude*)
Southern Wesleyan University, Central, South Carolina

Professional Appointments

- 2019-present **Assistant Professor**
Department of Cell Biology and Neuroscience
Rutgers University, New Brunswick, New Jersey
- 2015-2018 **Postdoctoral Research Fellow**
Department of Immunology
University of Washington, Seattle, Washington

Research Support

Current Support

- 2021-2023 **R21 MH125034** Daniels (PI)
NIH/NIMH
Maternal ZIKV infection as an environmental risk factor for mental illness
- 2021-2026 **R01 NS120895** Daniels (PI)
NIH/NINDS
Investigating astrocytic RIPK3 as a driver of protective neuroinflammation during viral encephalitis
- 2021-2022 **R01 NS120895-S1** Daniels (PI)
NIH/NINDS
Research Supplement to Support Diversity (Supplementee: Juan Angel)
- 2022-2025 **R01 NS120895-S2** Daniels (PI)
NIH/NINDS
Research Supplement to Support Diversity (Supplementee: Irving Estevez)

Past Support

- 2019-2021 **CSCR20ERG003** Daniels (PI)
New Jersey Commission on Spinal Cord Research
Investigating RIPK3 as a driver of inflammatory astrocyte activation in spinal cord injury.

2019-2021	Research Grant American Parkinson's Disease Association Title: Investigating astrocytic RIPK3 activation in Parkinson's disease.	Daniels (PI)
2017-2018	F32 AI12954 Ruth L. Kirschstein Postdoctoral NRSA Title: RIP3 mediated restriction of neuropathogenesis during viral encephalitis	Daniels (PI), Oberst (Sponsor)
2014-2015	F31 NS087866 Ruth L. Kirschstein Predoctoral NRSA Title: Interferon regulation of the blood-brain barrier during West Nile encephalitis	Daniels (PI), Klein (Sponsor)
2011-2014	DGE- 1143954 NSF Graduate Research Fellowship Title: Brain endothelial cell polarity and immune trafficking at the blood-brain barrier	Daniels (PI), Klein (Sponsor)
2009	SCICU Undergraduate Research Grant South Carolina Independent Colleges and Universities Title: Hippocampal lesions and spatial memory loss in rats due to latent toxoplasmosis	Daniels (PI), Rouse (Sponsor)

Publications

- Kung PL, Chou TC, Lindman M, Chang NP, Buckley BD, Atkins C, and **Daniels BP**. (2021) Zika virus-induced TNF α signaling dysregulates expression of neurologic genes associated with psychiatric disorders. *BioRxiv*. 2021.11.15.468744. doi:10.1101/2021.11.15.468744 (Preprint)
- Chou T*, Chang NP*, Krishnagiri M, Patel AP, Lindman M, Angel JP, Kung P, Atkins C, and **Daniels BP**. (2021) Fibrillar α -synuclein induces neurotoxic astrocyte activation via RIP kinase signaling and NF- κ B. *Cell Death & Disease*. 12:756. doi:10.1038/s41419-021-04049-0 (*Equal contribution)
- Xu R, Boreland AJ, Li X, Erickson C, Jin M, Atkins C, Pang Z, **Daniels BP**, and Jiang P. (2021) Developing human pluripotent stem cell-based organoids with a controllable microglia ratio for modeling brain development and pathology. *Stem Cell Reports*. 16:1-15. doi:10.1016/j.stemcr.2021.06.011
- Daniels BP** and Oberst A. (2020) Outcomes of RIP kinase signaling during neuroinvasive viral infection. *Current Topics in Microbiology and Immunology*. Springer, Berlin, Heidelberg. doi: 10.1007/82_2020_204 (Book Chapter)
- Williams JL, Manivasagam S, Smith BC, Sim J, Vollmer LL, **Daniels BP**, Russell JH, and Klein RS. (2020) Astrocyte-T cell crosstalk regulates region-specific neuroinflammation. *Glia*. 2020:1-14. doi:10.1002/glia.23783
- Orozco SL, **Daniels BP**, Yatim N, Messmer MN, Quarato G, Snyder AG, Ralli-Jain P, Frase S, Tait SWG, Green DR, Albert ML, and Oberst A. (2019) RIPK3 activation leads to continued cytokine synthesis after loss of cell membrane integrity. *Cell Reports*. 28:2275-2287. doi:10.1016/j.celrep.2019.07.077
- Wuertz KM, Treuting PM, Hemann EA, Esser-Nobis K, Snyder AG, Graham JB, **Daniels BP**, Wilkins C, Snyder J, Voss KM, Oberst A, Lund J, and Gale Jr. M. (2019) STING is required for host defense against neuropathological West Nile virus infection. *PLOS Pathogens*. 15(8): e1007899. doi:10.1371/journal.ppat.1007899
- Snyder AG, Hubbard NW, Messmer MN, Kofman SB, Hagan CE, Orozco SL, Chiang K, **Daniels BP**,

Baker D, and Oberst A. (2019) Intratumoral activation of the necroptotic pathway components RIPK1 and RIPK3 potentiates anti-tumor immunity. *Science Immunology*. 4(36): eaaw2004. doi: 10.1126/sciimmunol.aaw2004

Daniels BP, Kofman SB, Smith JR, Norris GT, Snyder AG, Kolb JP, Gao X, Locasale JW, Martinez J, Gale Jr. M, Loo YM, and Oberst A. (2019) The nucleotide sensor ZBP1 and kinase RIPK3 induce the enzyme IRG1 to promote an antiviral metabolic state in neurons. *Immunity*. 50:1-13. doi:10.1016/j.immuni.2018.11.017

Daniels BP, Snyder AG, Olsen TM, Orozco S, Oguin III TH, Tait SWG, Martinez J, Gale Jr. M, Loo YM, and Oberst A. (2017) RIPK3 restricts viral pathogenesis via cell death-independent neuroinflammation. *Cell*. 169:301-313. doi:10.1016/j.cell.2017.03.011

Daniels BP, Jujjavarapu H, Durrant DM, Williams JL, Green RR, Lazear HM, Gale Jr. M, Diamond MS, and Klein RS. (2017) Regional astrocyte interferon signaling restricts pathogenesis during neurotropic viral infection. *Journal of Clinical Investigation*. 127(3):843-856. doi:10.1172/JCI88720

Gutierrez KD, Davis MA, **Daniels BP**, Olsen TM, Ralli-Jain P, Tait SW, Gale Jr. M, and Oberst A. (2017) MLKL activation triggers NLRP3-mediated processing and release of IL-1 β independent of gasdermin-D. *Journal of Immunology*. 198(5):2156-2164. doi:10.4049/jimmunol.1601757

Pal P, **Daniels BP**, Balaban A, Oskman A, Diamond MS, Sinnis P, Klein RS, and Goldberg DE. (2016) The histidine-rich protein II of *Plasmodium falciparum* triggers an inflammasome-dependent response that compromises blood-brain barrier integrity and promotes cerebral malaria pathogenesis. *mBio*. 7(3):e00617-16. doi:10.1128/mBio.00617-16

Durrant DM, **Daniels BP**, Pasieka TJ, Dorsey D, and Klein RS. (2015) CCR5 limits cortical viral loads during West Nile virus infection of the central nervous system. *Journal of Neuroinflammation*. 12:233. doi:10.1186/s12974-015-0447-9

Miner JJ, **Daniels BP**, Shrestha B, Proenca-Modena JL, Lew ED, Lazear HM, Gorman MJ, Lemke G, Klein RS, and Diamond MS. (2015) The TAM receptor tyrosine kinase Mertk protects against neuroinvasive viral infection by maintaining blood-brain barrier integrity. *Nature Medicine*. 21(12):1464-72. doi:10.1038/nm.33974

Daniels BP and Klein RS. (2015) Knocking on closed doors: Host interferons dynamically regulate blood-brain barrier function during viral infections of the central nervous system. *PLOS Pathogens*. 11(9):e1005096. doi:10.1371/journal.ppat.1005096 (Review article)

Lazear HM*, **Daniels BP***, Pinto AK, Huang AC, Vick SC, Gale Jr. M, Klein RS, & Diamond MS. (2015) Interferon- λ restricts West Nile virus neuroinvasion by enhancing integrity of the blood-brain barrier. *Science Translational Medicine*. 7(284):284ra59. doi: 10.1126/scitranslmed.aaa4304 (*Equal contribution)

Daniels BP and Klein RS. (2015) Viral sensing at the blood-brain barrier: new roles for innate immunity at the CNS vasculature. *Clinical Pharmacology and Therapeutics*. 97(4):372-79 (Review article)

Daniels BP, Sestito SR, & Rouse ST. (2015) An expanded task battery in the Morris water maze reveals effects of *Toxoplasma gondii* infection on learning and memory in rats. *Parasitology International*. 64(1):5-12. doi:10.1016/j.parint.2014.09.002

Durrant DM, Williams JL, **Daniels BP**, & Klein RS. (2014) Chemokines referee inflammation within the central nervous system during infection and disease. *Advances in Medicine*. 2014:806741. doi:10.1155/2014/806741 (Review article)

Durrant DM, **Daniels BP**, & Klein RS. (2014) IL-1R1 signaling regulates CXCL12-mediated T cell localization

and fate within the CNS during West Nile virus encephalitis. *Journal of Immunology*. 193(8):4095-4106. doi:10.4049/jimmunol.1401192

- Daniels BP**, Holman DW, Cruz-Oregno L, Jujjavarapu H, Durrant DM & Klein RS. (2014) Viral pathogen-associated molecular patterns regulate blood-brain barrier integrity via competing innate cytokine signals. *mBio*. 5(5):e01476-14. doi:10.1128/mBio.01476-14
- Cruz-Oregno L*, **Daniels BP***, Dorsey D, Basak SA, Grajales-Reyes JG, McCandless EE, Piccio L, Schmidt RE, Cross AH, Crosby SD, & Klein RS. (2014) Enhanced sphingosine-1-phosphate receptor 2 expression underlies female CNS autoimmunity susceptibility. *Journal of Clinical Investigation*. 124(6):2571-2584. doi:10.1172/JCI73408 (*Equal contribution)
- Williams JL, Patel JR, **Daniels BP**, Klein RS. (2014) Targeting CXCR7/ACKR3 as a therapeutic strategy to promote remyelination in the adult central nervous system. *Journal of Experimental Medicine*. 211(5):791-799. doi:10.1084/jem.20131224
- Daniels BP**, Cruz-Oregno L, Paseika TJ, Couraud PO, Romero IA, Weksler B, Cooper J, Doering TL, & Klein RS. (2013) Immortalized human cerebral microvascular endothelial cells maintain the properties of primary cells in an *in vitro* model of immune migration across the blood brain barrier. *Journal of Neuroscience Methods*. 212(1):173-179. doi:10.1016/j.jneumeth.2012.10.001
- Szretter KJ, **Daniels BP**, Cho H, Gainey MD, Yokoyama WM, Gale Jr M, Virgin HW, Klein RS, Sen GC, & Diamond MS. (2012) 2'-O methylation of the viral mRNA cap by West Nile virus evades Ifit1-dependent and -independent mechanisms of host restriction in vivo. *PLOS Pathogens*. 8(5): e1002642. doi:10.1371/journal.ppat.1002642

Selected Talks and Conference Presentations

- 2022 **FASEB Research Conference: Translational Neuroimmunology**
Invited Talk, Asheville, NC
- 2021 **Rutgers Cell Biology and Neuroscience Society: Student-Invited Speaker**
Invited Talk, New Brunswick, NJ
- 2021 **Pfizer, Inc.: Inflammation and Immunology Research Unit**
Invited Talk, virtual seminar
- 2021 **American Society for Neurochemistry Annual Meeting**
Selected symposium proposal and talk, virtual conference
- 2021 **American Parkinson's Disease Association Virtual Research Roundtable**
Invited speaker and panelist, virtual event
- 2020 **The STEM Village Immunology Seminar Series**
Invited talk, virtual event
- 2020 **National Institutes of Allergy and Infectious Disease, Rocky Mountain Laboratories**
Invited talk (pending rescheduling due to COVID-19), Hamilton, MT
- 2020 **Fox Chase Cancer Center, Research Institute**
Invited talk (pending rescheduling due to COVID-19), Philadelphia, PA
- 2019 **Robert Wood Johnson Medical School, Child Health Institute**
Invited Talk. New Brunswick, NJ.
- 2019 **Lerner Research Institute, Department of Neuroscience Seminar**
Invited Talk. The Cleveland Clinic, Cleveland, OH
- 2019 **American Society for Virology Annual Meeting**
Selected Talk. Minneapolis, MN
- 2019 **I3D Symposium: Immune cells at the forefront of health and disease**
Invited talk. Rutgers New Jersey Medical School, Newark, NJ
- 2016 **American Association of Immunologists Annual Meeting**
Selected Talk. Seattle, WA.

- 2010 **South Carolina Academy of Science Annual Meeting**
Selected Talk. Charleston, SC.
- 2010 **South Carolina Independent Colleges and Universities Research Symposium**
Invited Talk. Columbia, SC.
- 2009 **Carolina Undergraduate Social Science Symposium**
Selected Talk. Aiken, SC.

Awards and Honors

- 2019 **Early Career Faculty Travel Award**
American Association of Immunologists
- 2018 **Postdoc Mentoring Award, Finalist**
University of Washington, Seattle, WA
- 2016 **Trainee Abstract Award**
American Association of Immunologists
- 2015 **David M. Kipnis Outstanding Dissertation in the Biomedical Sciences Award**
Washington University School of Medicine, Saint Louis, MO
- 2010 **Honors Program Graduate**
Southern Wesleyan University, Central, SC
- 2010 **Honor Society for Scholars of English**
Sigma Tau Delta
- 2009 **National Honor Society**
Alpha Chi
- 2008-2010 **National Science and Mathematics Access to Retain Talent (SMART) Grant**
U.S. Department of Education
- 2006-2010 **Palmetto Fellowship**
South Carolina Commission on Higher Education

Mentorship and Mentee Honors

- Graduate Students
- 2021-present **Irving Estevez**
PhD Student, Neuroscience
Awardee: Research Supplement to Promote Diversity, NINDS (2022-2025)
Selected Talk: American Society for Neurochemistry Annual Meeting (2022)
- 2020-present **Tsui-Wen (Tracy) Chou**
PhD Student, Microbiology and Molecular Genetics
Selected Talk: American Society for Neurochemistry Annual Meeting (2022)
- Marissa Lindman**
PhD Student, Microbiology and Molecular Genetics
Selected Talk, Registration Award: American Society for Virology Annual Meeting (2021)
Selected Talk, Registration Award: FASEB Translational Neuroimmunology (2020)
- 2019-present **Nydia Chang**
PhD Student, Neuroscience
Young Investigator Educational Enhancement Award, ASN (2021)
Keystone Joint Neuroimmunology/Neurodegeneration Registration Award (2021)
Selectee for AAAS Catalyzing Advocacy in Science and Engineering Workshop (2019)
- Postbaccalaureate Scholars
- 2021-present **Juan Angel**
Awardee: Research Supplement to Promote Diversity, NINDS (2021-2022)

- Undergraduate Students
- 2021-present **Sarah Adams**
Ben Buckley
- 2020-present **Nicholas Panzera**
Selected Talk: American Society for Virology Annual Meeting (2021)
Division of Life Sciences Summer Undergraduate Research Fellowship (2021)
- 2019-present **Po-Lun Kung**
Selected Talk: American Society for Virology Annual Meeting (2021)
Division of Life Sciences Summer Undergraduate Research Fellowships (2020, 2021)
- 2019-2021 **Medha Krishnagiri**
Parkinson's Foundation Summer Student Fellowship (2020)
- Winnie Wong**
Division of Life Sciences Summer Undergraduate Research Fellowship (2020)
Aresty Undergraduate Research Fellowship (2019)
- 2019-2020 **Aisha Patel**
Henry Rutgers Scholar (School of Arts and Sciences Outstanding Thesis Award)
Department of Cell Biology and Neuroscience Outstanding Thesis Award
Division of Life Sciences Summer Undergraduate Research Fellowship (2019)
- Srija Indukuri**
- Rotation and Visiting Students
- 2019 **Kimberly Newman**
Rotation Student, Neuroscience
- 2019 **Hahram Kim**
Undergraduate Summer Intern
Amherst College Meiklejohn Fellowship (2019)

Teaching

Graduate Teaching

- Rutgers University
- 2021 **Advanced Studies in Neuroscience** (Co-instructor)
- 2020-present **Current Concepts of Immunology** (Course director, co-instructor)

Undergraduate Teaching

- Rutgers University
- 2020-present **Immunology** (Course director, co-instructor)
- 2020-present **Laboratory in Immunology** (Co-Instructor)
- Bard College
- 2017 **Citizen Science: Science as Storytelling** (Sole Instructor)
- Seattle University
- 2016 **Fundamentals of Immunology** (Sole Instructor)
- Washington University in St. Louis
- 2013 **Scientific Literacy/Intro to Environmental Biology** (Teaching Assistant)
- 2011 **Principles of the Nervous System** (Head Teaching Assistant)
- 2011 **Summer Premedical Institute** (Co-Instructor)

2010 Southern Wesleyan University
Cell and Molecular Biology (Teaching Assistant)
 2009-2010 **Scientific Literacy** (Teaching Assistant)
 2009 **Biochemistry** (Teaching Assistant)
 2009 **Genetics** (Teaching Assistant)
 2007-2010 **Honors Freshman Seminar** (Teaching Assistant)
 2007-2010 **General Biology for Majors** (Supplemental Instructor)

Institutional Service

2021-2022 Rutgers University
Faculty Search Committee, Department of Cell Biology and Neuroscience
 -Member
 2020-present **Thesis Committees**
Doctoral
 -Maraj Alam (Neuroscience)
 -Julie Dobkin (Microbiology and Molecular Genetics)
 -Austin Graves (Microbiology and Molecular Genetics)
 -Kimberly Newman (Neuroscience)
 -Chadni Patel Cell and Developmental Biology)
 -Michael Rallo (Neuroscience)
Masters
 -Kimberly Vanexel (Computational and Integrative Biology)
Undergraduate
 -Patrick Adly-Gendi (Cell Biology and Neuroscience)
 -Simona Alomary (Cell Biology and Neuroscience)
 -Tanvi Banota (Cell Biology and Neuroscience)
 -Nithisha Cheedalla (Cell Biology and Neuroscience)
 -Robert Juniewicz (Biological Sciences)
 -Ritika Raghavan (Cell Biology and Neuroscience)

2020-present **University BSL3 Initiative Committee**
 -Member
 2020-present **Diversity and Engagement Committee, Department of Cell Biology and Neuroscience**
 -Member
 2019-present **Curriculum Committee, Department of Cell Biology and Neuroscience**
 -Member
 2019-present **Admissions Committee, Robert Wood Johnson Medical School MD/PhD Program**
 -Member

2016 University of Washington
Center for Innate Immunity and Immune Disease
 -Education outreach volunteer

2013-2015 Washington University
Production Team, Medical School Musical
 -Creative director
 2013-2015 **Future Educators**
 -Chairperson
 2012 **NSF Graduate Student Grant Writing Workshop**
 -Student mentor
 2011-2012 **Neuroscience Student Journal Club**
 -Co-coordinator

- 2010-2013 **Young Scientist Program**
-Teaching and community outreach volunteer
- Southern Wesleyan University
- 2009 **Faculty Colloquium Planning Committee**
-Student organizer
- 2008 **Freshman Seminar Common Reader Selection Committee**
-Student representative
- 2008 **Faculty Member of the Year Selection Committee**
-Student representative
- 2008 **First Year Curriculum Caucus**
-Honors student representative
- 2007-2008 **Student Government Association**
-Sophomore Class President

Professional Service

- Grant Review Service
- 2021-2022 **HIV Molecular Virology, Cell Biology and Drug Development (HVCD) Study Section**
-Early Career Reviewer Program: March 2021
-*Ad hoc* reviewer: November 2021, March 2022
- 2021 **Center for the Advancement of Science in Space (CASIS)**
-Reviewer
- 2020 **National Science Foundation**
-Reviewer/Panelist

- Conference Service
- 2021-2022 **Program Committee Member: “Glial Mechanisms and Injury”**
-American Society for Neurochemistry Annual Meeting
- 2021 **Session Co-Chair: “Flavivirus III: Pathogenesis”**
-American Society for Virology Annual Meeting
- 2021 **Symposium Co-Chair: “Unconventional roles for astrocytes in disease”**
-American Society for Neurochemistry Annual Meeting
- 2019 **Session Leader: “Choosing a postdoc to meet my needs”**
-American Society for Virology Annual Meeting

- Editorial Service
- 2018-present **Journal Reviewer**
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| - <i>ACS Infectious Diseases</i> | - <i>Cell Death and Disease</i> |
| - <i>Clinical and Translational Medicine</i> | - <i>Frontiers in Microbiology</i> |
| - <i>Journal of Neuroinflammation</i> | - <i>Journal of Virology</i> |
| - <i>Molecular Neurobiology</i> | - <i>Nature Communications</i> |
| - <i>Neuroscience Letters</i> | - <i>Parasites and Vectors</i> |
| - <i>PLOS Negl. Trop. Dis.</i> | - <i>PLOS Pathogens</i> |
| - <i>Scientific Reports</i> | - <i>Trends in Neurosciences</i> |