

J. David Beckham, M.D., FIDSA

Department of Medicine
Division of Infectious Disease
University of Colorado School of Medicine
VA Rocky Mountain Regional Medical Center
12700 East 19th Avenue, B168
Aurora, CO 80045
Office: 303-724-4927
David.beckham@cuanschutz.edu

Education:

1993-1997 Undergraduate: Baylor University, Waco, Texas
Degree: **Bachelor of Arts**, Biology and Chemistry
1997-2001 Graduate: Baylor College of Medicine, Houston, Texas
Degree: **Doctor of Medicine**

Professional Experience:

2016-Current **Staff Physician and VA Merit Scholar**
VA Eastern Colorado Health Care System

2015-Current **Associate Professor of Medicine, Neurology & Immunology&Microbiology**
University of Colorado School of Medicine &

2009-2015 **Assistant Professor of Medicine, Neurology & Immunology&Microbiology**
University of Colorado School of Medicine

2007-2009 **Instructor of Medicine**
University of Colorado School of Medicine

2005-2010 **Post-Doctoral Research Training in Neurovirology**
Mentor: Kenneth L. Tyler MD
University of Colorado School of Medicine

2004-2005 **Clinical Fellowship**
University of Colorado School of Medicine
Aurora, Colorado
Specialty: **Infectious Disease**

2001-2004 **Internship and Residency**
Baylor College of Medicine, Houston, Texas
Specialty: **Internal Medicine**

LICENSURE AND CERTIFICATION:

Texas State Board of Medical Examiners, Medical License, 2003-2004
State of Colorado Board of Medical Examiners, Medical License, 2004-Present
American Board of Internal Medicine Certified, Oct.-2004, Recertified Jan 2014
ABIM Infectious Disease Certified, Oct-2006, Recertified November 2016

ACADEMIC APPOINTMENTS:

2012-2019:

Director of the Infectious Disease Fellowship Training Program, University of Colorado School of Medicine, Aurora, CO

2012-2019:

Director of the Infectious Disease Advanced Research Training Program, University of Colorado School of Medicine, Aurora, Colorado

2014-2016:

Founding Director of the NeuroInfectious Diseases and Autoimmune Neurology Fellowship Training Program. University of Colorado School of Medicine

2016-current:

Attending Physician, Veterans Affairs Eastern Colorado Medical Center, Denver, Colorado

2007-current:

Attending Physician, University of Colorado Hospital, Aurora, Colorado

2008-2013, 2016-2017:

Medical Director of Occupational Health, University of Colorado School of Medicine, Aurora, Colorado

AWARDS AND HONORS:

Undergraduate: Phi Beta Kappa Scholar, Magna Cum Laude Graduate
Honors Program Graduate with Distinction, Excellence in Biology Award,
Folmar Research Award, Golden Key Honor Society, Donald Kaiser Pre-Med
Scholarship

Graduate: American Cancer Society Research Grant

Post-Graduate: Residency Assistance Program Leader, Microbiology T32 Training Grant, American Society for Virology Medical Virology Club Award, Far Beyond the Ordinary Award at University of Colorado Hospital 2004.

Professional: VA Career Development Award

American Society for Clinical Investigation Young Investigator Award 2008

NIH Loan Repayment Program Participant (2008-2014)

VA Merit Scholar (2017)

NIH MIDB Study Section Member (2018-2022)

Ad Hoc Study Section Participate (~15) for NIH and DOD
Ad Hoc DOD Programmatic Review Panel member (2017, 2019)

Advisory Boards:

TerumoBCT Scientific Advisory Board (2019-current)

PROFESSIONAL SOCIETIES:

Fellow, American College of Physicians (FACP)

Fellow, Infectious Disease Society of America (FIDSA)

Member, American Society for Virology (ASV)

Member, American Society for Microbiology (ASM)

Member, American Association for the Advancement of Science (AAAS)

Other Memberships:

Movement Disorders Center Member (2016-current)

Colorado Clinical and Translational Sciences Institute Member (2014-current)

Center for Neurosciences Member (2015-current)

Center for RNA Biosciences Member (2016-current)

University of Colorado Cancer Center Member (2017-current)

Research Funding:

Active:

Grant Number: I01BX003863

Funding Agency: VA Merit Review

Principal Investigator: J. David Beckham, MD

Project Title: Defining the Mechanisms of alpha-synuclein dependent restriction of viral neuroinvasion.

Project Period: 7/1/2017-6/30/2021

Total Annual and Direct Annual Funding: \$200,000

Grant Number: PRMRP PR160117

Funding Agency: Department of Defense Medical Investigator Initiated Research Award

Principal Investigator: J. David Beckham, MD

Project Title: Zika virus Vaccine Target Development in a Mouse Model of Disease

Project Period: 6/15/2017-6/14/2020

Total Annual Funding: \$593,573 Direct Annual Funding: \$388,218/yr

Grant Number: CCTSI Co-Pilot CU/CSU Award

Funding Agency: CCTSI

Principal Investigator(s): Ramesh Akkina, PhD and J. David Beckham, MD

Project Title: Modeling Zika virus Pathogenesis in Humanized Mice

Project Period: 5/2019-4/2020

Total Annual and Direct Funding: \$60,000

Grant Number: R43 AI136190

Funding Agency: NIH/NIAID
Principal Investigators: Stelzer/Beckham/Kieft
Project Title: Targeting xrRNA structures to treat Zika virus infection
Project Period: 2/1/2018-1/31/2021
Total Annual Funding: \$306,000 Direct Annual Funding: \$ 200,000

Completed:

2017-2019	NIH/NIAID R21 AI129569 Understanding pathogenic noncoding RNA production in Zika virus infection
2015-2016	CCTSI and Center for Neuroscience Award
2011-2014	Rocky Mountain Regional Center for Excellence for Biodefense and Emerging Infectious Diseases Developmental Project NIAID U54 AI065357/RMDP009
2008-2013	NIH/NIAID 5K08AI076518
2010-2011	ARRA Supplement NIH/NIAID 5K08AI076518-03S1
2009-2011	Mucosal & Vaccine Research Colorado
2009-2010	ARRA Supplement NIH/NIAID 5K08AI076518-02S1
2008-2009	American Society for Clinical Investigation Young Investigator Award
2007-2008	VA Career Development Award-2
2005-2007	NIH/NIAID T32AI07537

Publications:

- 1) **Beckham JD**, Cadena A, Lin J, Piedra PA, Glezen WP, Greenberg SB, RL Atmar. Respiratory viral infections in patients with chronic obstructive pulmonary disease. *J Infection*. 2005. 50:322-330.
- 2) **Beckham JD**, Tyler KL. Multiple Sclerosis Treatment Complications. *Rev Neurol Dis*. 2005. 2(3):158-163.
- 3) **Beckham JD**, Tyler KL. Initial Management of Acute Bacterial Meningitis in Adults: Summary of IDSA Guidelines. *Rev Neurol Dis*. 2006. 3(2):57-60.
- 4) Tyler KL and **Beckham JD**. Management of Acute Shingles. *Rev Neurol Dis*. 2007. 4(4):203-208.
- 5) **Beckham JD** and Tyler KL. Developments in the Field of Creutzfeldt-Jakob Disease. *Rev Neurol Dis*. 2007. 4(3):168-72.
- 6) Goody RJ, **Beckham JD**, Rubtsova K, Tyler KL. JAK-STAT signaling pathways are activated in the brain following reovirus infection. *J Neurovirol*. 2007 Jul;13(4):373-383.
- 7) **Beckham JD**, Goody R, Clarke P, Bonny C, Tyler KL. A novel strategy for the treatment of viral CNS infection utilizing a cell-permeable inhibitor of c-Jun N-terminal kinase. *Journal of Virology*. 2007. 81(13): 6984-92.

- 8) Davis LE, **Beckham JD**, Tyler KL. North American encephalitic arboviruses. *Neurol Clin*. 2008 26:727-57.
- 9) **Beckham JD**, Tuttle K, Tyler KL. Reovirus activates TGF- β and BMP signaling pathways in the CNS which contribute to neuronal survival following infection. *Journal of Virology*. 2009 May; 83(10):5035-45.
- 10) Clarke P, **Beckham JD**, Goody R, Leser JS, Tyler KL. Fas-mediated apoptotic signaling in the mouse brain following reovirus infection. *Journal of Virology*. 2009 Jun; 83(12): 6161-70.
- 11) **Beckham JD**, Tuttle KD, Tyler KL. Caspase-3 activation is required for Reovirus-induced Encephalitis in vivo. *Journal of Neurovirology*. 2010 Aug; 16(4):306-17.
- 12) Dionne KR, Leser JS, Lerenzen KA, **Beckham JD**, Tyler KL. A brain slice culture model of viral encephalitis reveals an innate CNS cytokine response profile and the therapeutic potential of caspase inhibition. *Exp Neurol*. 2011 Apr; 228(2):222-31.
- 13) **Beckham JD** and Tyler KL. Neuro-Intensive care of patients with CNS infections. *Neurotherapeutics*. 2012 Jan; 9(1): 124-138.
- 14) Beatman E, Oyer R, Shives KD, Hedman K, Brault AC, Tyler KL, **Beckham JD**. West Nile replication is Independent of Autophagy activation. *Virology*. 2012. 433: 262-272.
- 15) Davis LE, Oyer R, **Beckham JD**, KL Tyler. Elevated CSF cytokines in the Jarisch-Herxheimer reaction of general paresis. *JAMA Neurology*. 2013. 79(8):1060-4.
- 16) Clarke P, Leser JS, Quick E, Dionne K, **Beckham JD**, KL Tyler. Death receptor mediated apoptotic signaling is activated in the brain following infection with West Nile Virus in the absence of a peripheral immune response. *J. Virology*. 2014. 88(2):1080-9.
- 17) Steele A, Lee E, Manuzak J, Dillon S, **Beckham JD**, McCarter M, Santiago ML, Wilson CC. Microbial exposure alters HIV-1-induced Mucosal CD4+ T Cell Death pathways ex vivo. *Retrovirology*. 2014, Feb 4. PMID: 24495380
- 18) Shives K, Beatman E, Chamanian M, O'Brien CA, Hobson-Peters J, **Beckham JD**. West Nile virus-Induced activation of mTOR Complex 1 supports viral growth and viral protein expression. *Journal of Virology*. 2014 Aug;88(16):9458-71. PMID: 24920798.

- 19) Kleinschmidt-DeMasters BK, **Beckham JD**. West Nile virus encephalitis 16 years later. Brain Pathology. 2015 Sep; 25(5):625-33. PMID 26276026
- 20) **Beckham JD**, Tyler KL. Arbovirus Infections. Continuum. 2015 Dec;21(6):1599-611. PMID 26633778.
- 21) Henao-Martinez AF and **Beckham JD**. Cryptococcosis in Solid Organ Transplant Recipients. Current Opinion in Infectious Diseases. 2015 Aug; 28(4):300-7. PMID: 26098495.
- 22) Beatman E, Massey A, Shives K, Chamanian M, Stoermer Burrack KA, Morrison TE, **Beckham JD**. Alpha-synuclein expression restricts RNA viral infections in the brain. Journal of Virology. 2015 Dec 30. PMID 26719256.
- 23) Klionsky DJ, et al. Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition). Autophagy. 2016 Jan 2;12(1):1-222. PMID 26799652. (Co-author on guidelines with other authors in the field)
- 24) Grubaugh N, Massey A, Shives K, Stenglein MD, Ebel G, **Beckham JD**. West Nile virus population structure, injury, and interferon-stimulated gene expression in the brain from a fatal case of encephalitis. Open Forum in Infectious Diseases. eCollection 2016 Jan. PMID 26730392.
- 25) Pastula DM, Smith DE, **Beckham JD**, Tyler KL. Four emerging arboviral diseases in North America: Jamestown Canyon, Powassan, chikungunya, and Zika virus diseases. J Neurovirol. 2016 Feb 22. PMID 26903031.
- 26) **Beckham JD**, Pastula DM, Massey A, Tyler KL. Zika virus, an emerging global pathogen. JAMA Neurology. 2016 May. PMID 27183312.
- 27) White MK, Wollebo HS, **Beckham JD**, Tyler KL, Kamel Khalili. Zika virus: An emergent neuropathological agent. Annals of Neurology. July 2016. Oct; 80(4):479-89. PMID 26464346.
- 28) Massey A, **Beckham JD**. Alpha-synuclein, a novel viral restriction factor hiding in plain sight. DNA and Cell Biology. September 2016. PMID 27631132.
- 29) Pastula DM, Smith DE, **Beckham JD**, Tyler KL. An Overview of Zika Virus Disease. Neurotherapeutics. Jul 2016. 6(3):93-4. PMID 27366289.
- 30) Pastula DM, Durrant JC, Smith DE, **Beckham JD**, Tyler KL. Zika Virus Disease for the Neurointensivist. Neurocrit Care. 2016 Dec 19. PMID 27995511
- 31) Smith DE, **Beckham JD**, Tyler KL, Pastula DM. Zika virus disease for neurologists. Neurol Clin Pract. 2016 Dec;6(6):515-522.

- 32) Henao-Martinez AF, Gross L, McNair B, McCollister B, DeSanto K, Montoya JG, **Beckham JD**. Risk Factors for Cryptococcal meningitis-A single center experience in the US. *Mycopathologia*. August 2016. PMID 27502502.
- 33) Shives K, Massey A, May N, Morrison TE, **Beckham JD**. mTORC1/4EBP/eIF4E signaling supports positive-strand RNA virus growth and protein expression. *Viruses*. October 2016. 18;8(10). PMID 27763553.
- 34) Akiyama BM, Laurence HM, Massey AR, Costantino DA, Xuping X, Yang Y, Shi PY, Nix JC, **Beckham JD**, Kieft JS. Zika virus produces non-coding RNAs using a multi-pseudoknot structure that confounds cellular exonuclease activity. *Science*. December 2, 2016; 354(6316):1148-1152. PMID 27934765
- 35) Duca LM, **Beckham JD**, Tyler KL, Pastula DM. Zika virus Disease and Associated Neurologic Complications. *Curr Infect Dis Rep*. 2017 Jan;19(1):4. PMID 28220392.
- 36) Shives K, Tyler KL, **Beckham JD**. Molecular mechanisms of neuroinflammation and injury during acute viral encephalitis. *Journal of Neuroimmunology*. March 11, 2017. S0165-5728(16)30433-7. Doi: 10.1016. PMID 28291542.
- 37) **Beckham JD**. Zika virus, a novel mosquito-borne congenital virus infection. *Journal of Neurovirology*. 2017 Apr 20. PMID 28429288.
- 38) McGuinness I, **Beckham JD**, Tyler KL, Pastula DM. An Overview of Yellow Fever Virus Disease. *Neurohospitalist*. 2017 Oct;7(4):157-158.
- 39) Hamadani BH, Franco-Paredes C, McCollister B, Shapiro L, **Beckham JD**, Henao-Martinez AF. Cryptococcosis and cryptococcal meningitis: New predictors and clinical outcomes at a US academic medical center. *Mycosis*. 2017 Dec 28. PMID: 29284182.
- 40) Brown B, Fidell A, Ingolia G, Murad E, **Beckham JD**. Defining etiologies and outcomes of patients presenting with neuroinflammation; a retrospective cohort study. *Clinical Neurology & Neurosurgery*. Sep 2018; 172:105-111. PMID 29986194
- 41) Lesteberg K, **Beckham JD**. Mechanisms of neuroinflammation in the CNS following viral infection. *Viral Immunology*. Sep 15, 2018. PMID 30222521.
- 42) Brown BL, Fidell A, Ingolia G, Murad E, **Beckham JD**. Infectious Causes and Outcomes in Patients presenting with Cerebral Spinal Fluid Pleocytosis. *Journal of Neurovirology*. 2019. Mar 8. PMID: 30850974
- 43) Gill CM, **Beckham JD**, Piquet AL, Tyler KL, Pastula DM. Five Emerging Neuroinvasive Arboviral Diseases: Cache Valley, Easter Equine Encephalitis,

Jamestown Canyon, Powassan, and Usutu. Semin Neurol. 2019 Aug;39(4):419-427. PMID 31533182.

44) Khan M, **Beckham JD**, Piquet AL, Tyler KL, Pastula DM. An Overview of Powassan Virus Disease. Neurohospitalist. 2019 Oct;9(4):181-82. PMID 31534605

45) Gill CM, Kapadia RK, **Beckham JD**, Piquet AL, Tyler KL, Pastula DM. Usutu Virus disease: a potential problem for North America? J Neurovirol. 2019 Dec 19. PMID 31858483.

Manuscripts In Review:

46) Lesteberg K, Fader D, **Beckham JD**. Pregnancy alters innate immune responses to Zika virus infection in the genital tract. 2020. (In Revision).

47) Monogue B, Massey A, Chen Y, Lesteberg K, Johnson M, Steiner J, Brundin P, Kunath T, **Beckham JD**. Alpha-synuclein expression mediates innate immune activation in neurons. 2020. (In Revision).

48) Sparks H, Massey A, **Beckham JD**. Zika virus xrRNA structure in the 3'UTR regulates sfRNA-dependent inhibition of type II interferon expression in the brain. 2020 (In Peer Review).

Book Chapters:

1) **J. David Beckham** and Kenneth L. Tyler. 'Clinical Manifestations of Neurological Disease'. West Nile Encephalitis Virus Infection: viral pathogenesis and the host immune response. Ed: Michael Diamond. Springer Publishers. 2008.

2) **J. David Beckham** and Kenneth L. Tyler. 'Viral Encephalitis' Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 8th Ed. Elsevier Churchill Livingstone. Philadelphia, 2009. Revised 2013, Revised 2018.

3) **J. David Beckham**, Marylou V. Solbrig, and Kenneth L. Tyler. 'Infections of the Nervous System.' Neurology in Clinical Practice. 6th Ed. Bradley, Daroff, Jankovic, Fenichel. Elsevier. 2012. Updates: 7th Ed. Revised 2019.

4) Ryan Oyer, **J. David Beckham**, Kenneth L. Tyler. "West Nile virus and St. Louis virus encephalitis". Handbook of Clinical Neurology. Neurovirology, Vol. 123 (3rd series) Neurovirology. Ed. Tselis and Boos. Elsevier B.V. 2014.

5) **J. David Beckham** and Kenneth L. Tyler. "Viral Myelitis". Infections of the Central Nervous System. 4th Ed. Scheld, Whitley, Marra. 2014.

6) Daniel E. Smith MD, **J. David Beckham MD**, Daniel M. Pastula MD, MHS, Kenneth L. Tyler MD. Neurologic Manifestations of West Nile virus disease. Clinical Neurovirology. 2nd Edition. 2019.

7) Kleinschmidt-DeMasters BK, **Beckham JD**, Tyler KL. Infections and Inflammatory Disorders. Practical Surgical Neuropathology. 2018.

8) Asturias E, **Beckham JD**. Arbovirus Dermatology. Fitzpatrick's Dermatology. 2018.

Journal Editorial Board Memberships

Associate Editor: Journal of Neurovirology 2017-Present

Special Issue Editor: "Neuroinvasive viral infections" Viruses 2019

Special Issue Co-Editor: "Arthropod-borne Infections: The Outbreak Edition" Tropical Medicine and Infectious Diseases 2019

Ad Hoc Peer Reviewer:

PNAS, Nature Parkinson's Disease, PLoS Pathogens, Journal of Virology, Neurology, Lancet Infectious Diseases, Virology, American Journal of Tropical Medicine and Hygiene, Journal of Infectious Diseases, Scientific Reports, Antiviral Research, Journal of Neurology, Journal of Parkinson's Disease, Journal of Clinical Virology, Journal of Neurovirology, Journal of Neuroinflammation.

NIH Grant Review Committees:

Regular Membership:

NIH MIDB Study Section, Member (July 1, 2018-June 30, 2022)

Ad Hoc NIH Review Committee work:

NIH Virology B Study section (ad hoc member: 2014, 2016, 2017, 2018)

NIH Special Emphasis Panel (SEP) ZRG1 BBBP-T (50) June 2016

NIH P01 Special Emphasis Panel (1/2017, 10/2017)

NIH ZAI1-AWA-M-M2 Zika virus Rapid Review Panel (2017)

NIH ZRG1 IDM-P(90), Zika virus Complications Review Panel (2017-2018)

Department of Defense Review Committees:

PRMP Vaccine Development for Infectious Diseases (VDID) Review Panel (9/2017)

PRMP FY17 Programmatic Review Committee (11/2017, 11/2019)

CDMRP FY18 PRMP Review Panel (2/2018, 10/2018)

Other Grant Review Committees:

University of Colorado School of Medicine: HIV (T32) Training Grants

Wellcome Trust Grant Review

Colorado Clinical & Translational Sciences Institute Grant Reviewer

IDSA Medical Scholars Program Review Committee (2016-current)

National Committee Service:

2015-2018 IDSA Training Directors Program Committee

2015-current IDSA Medical Scholars Program Committee- IDSA Foundation sponsored scholarship program

2016-2018 IDWeek Abstract Review Committee
2014-2018 IDWeek Mentorship Program

Local Committee Service:

2010-2019 Infectious Disease Fellowship Research Committee
2009-2012 Co-Director for University of Colorado School of Medicine
Division of Infectious Diseases Grand Rounds
2012-2018 Faculty Senate University of Colorado School of Medicine
2012-2018 GME Residency Internal Review Committees
2015-2019 Physician Scientist Training Program Admissions Committee
2015-2016 Infectious Disease Division Committees: Faculty Recruitment,
Physician-Scientist Recruitment, Fellow Recruitment, PEC/CCC
2016-current Microbiology Graduate Program Admission Committee Member
2017-current T32 Faculty for Molecular Pathogenesis in Infectious Diseases
Training Faculty, Department of Microbiology, UC Denver.
2018-2020 Member, Colorado IDSA Board of Directors
2019-current MSTP Admissions Committee Member
2019 Dept of Immunology&Microbiology Faculty Search Committee

Invited Seminars

April 2009: Colorado IDSA Invited Speaker. 'What's New with Viral Infections of the CNS'.

May 2010: UTMB Galveston National Laboratory: 'Search for the Holy Grail: Viral Pathogenesis in the Central Nervous System'

August 2010: Invited Symposium, NIAID Intermountain West Immunology Group: "Neuronal Responses to Acute Viral Encephalitis"

September 2011: NIAID Rocky Mountain Regional Center of Excellence Annual Meeting. "Therapeutic targeting of mTOR to treat viral encephalitis."

October 2012: NIAID Rocky Mountain Regional Center of Excellence Annual Meeting. 'West Nile virus-induced changes in proteostasis'

May 2013: University of Colorado Microbiology, Molecular Pathogenesis of Infectious Diseases Mini-Symposium. "Defining the Mechanisms of WNV Neurovirulence".

October 2013: NIAID Rocky Mountain Regional Center of Excellence Annual Meeting. "Mechanisms of WNV RNA translation"

December 2014: Invited Symposium, Colorado State University.
Microbiology, Immunology and Pathology Visiting Professor Seminar
"Use of West Nile virus to define Conserved Viral-host Interactions"

July 2015: University of Colorado School of Medicine

Department of Neurology Grand Rounds.
“Viral-host interactions in the brain from bench to bedside”

July 2015: American Society for Virology Conference: “Alpha-synuclein inhibits viral infections in the brain”. J. David Beckham, Kathryn Shives, and Aaron Massey

October 2015: University of North Carolina
Systems Immunogenetics Annual Meeting
“Translating West Nile virus from the Bedside to the Bench”

January 2016: Molecular Pathogenesis of Infectious Disease Seminar Series, University of Colorado. “Alpha-synuclein is a novel viral restriction factor in the brain”

June 2016: Invited Seminar for the Colorado Children’s Immunization Coalition and the Center for Global Health.
“Vector-Borne Disease and Related Vaccine Developments: Zika, Dengue and Chikungunya”.

August 2016: Invited Seminar for University of Colorado Center for Neuroscience Annual Symposium.
“Mechanisms of alpha-synuclein induced restriction of viral infections in the CNS”

September 2016: Invited Seminar for Regis Pharmacy School.
“Emerging Infectious Diseases from alpha to Zika”

October 2016: Invited Seminar for University of Colorado, Center for Global Health
“Zika virus outbreak in the Americas”

October 2016 Molecular Pathogenesis of Infectious Diseases Conference invited seminar. University of Colorado Graduate School. Denver, CO.
“Pathogenesis of Zika virus from mosquitoes to neurons”

October 2016 University of Colorado Department of Medicine Grand Rounds
“Emerging infectious diseases: the impact of RNA virus evolution and host responses”

October 2016: Invited Plenary Talk for International Society for Neurovirology Meeting in Montreal, Canada.
“New insights into flavivirus pathogenesis with the emergence of Zika virus.”

November 2016: Invited Keynote Address for Rocky Mountain American Society for Microbiology. “Zika virus and small RNAs”.

November 2016: Invited Symposium at the Indo-US Research Summit on Emerging Infectious Diseases in Chalsa Hilltop, Jalpaiguri, West Bengal, India.
“Emerging Flavivirus Infections in the CNS”.

January 2017: Invited Visiting Professor, Michigan State University
Seminar: “The impact of RNA virus evolution on host responses to emerging infectious diseases”.

April 2017: Invited Plenary Lecture at the Society for Brain Mapping and Therapeutics symposium and co-chair for the session on Zika Virus:
Seminar: “The emergence of Zika virus as a global pathogen”

July 2017: Invited Plenary Lecture at the NIAID Rocky Mountain Laboratories Vector-borne Viruses Symposium. Hamilton, MT.
Seminar: “Alpha-synuclein: a novel inhibitor of viral infections in the CNS”

November 2017: Invited Visiting Professor Temple University Neurology Grand Rounds
Seminar: “Mechanisms of virus-induced neuroinflammation from the bedside to the bench to Parkinson’s disease pathogenesis.”

March 2018: Invited Speaker, Colorado-IDSA Regional Meeting. “Emerging Viruses You Need to Know”.

January 2019: Invited Speaker, University of California Irvine Virology Research Institute. “The evolution of virus-host interactions from RNA to alpha-synuclein”

June 2019: Invited Symposium Speaker, University of Edinburgh, MRC Center for Regenerative Medicine
“The functional role of alpha-synuclein during neuroinflammation”

October 2019: Invited Speaker, 20th Annual Colorado Immunology Conference. Steamboat Springs, CO.
“Alpha-synuclein: the Dr Jeckyll and Mr Hyde of innate immunity and neurodegenerative disease”

Scientific Meeting Organization

April 2018: Flavivirus Section Organizer and Session Chair
15th Annual International Symposium on Neurovirology and 2018 Conference on HIV in the Nervous System with the 24th Scientific Conference of the Society on Neuroimmune Pharmacology. Chicago, Illinois, USA

Scientific Abstracts, Posters, Conference Oral Presentations

July 2006: American Society for Virology Conference
Reovirus-induced encephalitis in neonatal mice is associated with JNK and c-Jun Activation.

J. David Beckham and Kenneth L. Tyler.

July 2007: American Society for Virology Conference
Transforming Growth Factor- β (TGF β) Signaling is Critical for Reovirus-Induced CNS Infection in Neonatal Mice.

J. David Beckham and Kenneth L. Tyler.

July 2008: American Society for Virology Conference
JNK Signaling Regulates Fas-mediated Apoptosis in Reovirus-infected Cells.
Penny Clarke, **J. David Beckham**, Robin J. Goody, Smith Leser, Cristen C. Hoyt,
Kenneth L. Tyler.

April 2008: Poster Presentation ASCI/AAP Joint Meeting: Transforming growth
factor- β (TGF- β) superfamily signaling is activated following viral infection of the
central nervous system. **J. David Beckham** and Kenneth L. Tyler

June 2009: American Society of Neurovirology Conference: "Viral Activation of BMP
signaling pathways contribute to neuronal survival".
J. David Beckham, Kathryn D. Tuttle, and Kenneth L. Tyler.

July 2009: American Society for Virology Conference
Reovirus activates BMP signaling pathways *in vitro* and *in vivo* which contribute to
neuronal survival following infection.
J. David Beckham, Kathryn D. Tuttle, and Kenneth L. Tyler.

July 2009: American Society for Virology Conference
Potential Role of Daxx in Reovirus-induced Neuronal Apoptosis.
Kalen Dionne, **J. David Beckham**, J. Smith Leser, Kenneth L. Tyler.

July 2011: American Society for Virology Conference
West Nile virus infection activates autophagy in Neurons
Ryan J. Oyer, Karla Hedman, Erica Beatman, **J. David Beckham**

September 2011: Rocky Mountain Regional Center of Excellence Annual Meeting.
Therapeutic targeting of mTOR to treat viral encephalitis.
J. David Beckham

March 2012: NIAID Regional Centers of Excellence National Meeting.
West Nile virus Manipulates mTOR activity in Support of Viral Replication
Karla Hedman, Erica Beatman, **J. David Beckham**

July 2013: American Society for Virology Conference Oral Presentations:
1) 'Defining NS3 host binding partners' Kathryn Shives and **J. David Beckham**
2) 'Mechanisms of WNV Subcortical neurovirulence' Erica Beatman and **J. David Beckham**

July 2014: American Society for Virology Conference, 'TOR dependent S6K is activated
in support of West Nile virus gene expression' Kathryn Shives and **J. David Beckham**

July 2015: American Society for Virology Conference, 'Mechanism of Alpha-synuclein restriction in neurons' Aaron Massey and **J. David Beckham**

July 2015: American Society for Virology Conference, 'Mechanism of mTOR-dependent RNA translation following viral infections' Katherine Shives and **J. David Beckham**

September 2015: Grand Challenges In Parkinson's Disease Conference. "Alpha-synuclein restricts RNA viral infections in Neurons". **J. David Beckham** and Aaron Massey.

May 2016: Rocky Mountain Neuroscience Conference. "Alpha-synuclein expression restricts RNA virus infections in the brain". Katherine Shives, Aaron Massey, **J David Beckham**.

October 2016: International Society of Neurovirology Conference. "Alpha-synuclein is phosphorylated in the brain following viral infection." Aaron Massey, **J. David Beckham**

April 2018: International Society of Neurovirology Conference: "Alpha-synuclein induced immune responses during viral encephalitis." Aaron Massey, **J. David Beckham**

October 2018: Grand Challenges in Parkinson's Disease: "Alpha-synuclein functional role in immune mediated responses in the brain." Aaron Massey, **J. David Beckham**

June 2019: Positive-strand RNA virus Keystone Meeting in Kerry, Ireland
"A functional role for alpha-synuclein expression in innate immunity during acute viral infection. Aaron Massey, Brendan Monogue, **J. David Beckham**

July 2019: American Society for Virology Conference, University of Minnesota

1) Oral Presentation: "Xrn1-resistant RNA structures support viral growth and replication" Hadrian Sparks, **J. David Beckham**

2) Oral Presentation: "Pregnancy-induced immune modulation during acute Zika virus infection" Kelsey Lesteborg, **J. David Beckham**

August 2019: Department of Defense MHSRS Meeting, Kissimmee, FL. "Manipulation of flavivirus 3'UTR structural interactions as a novel vaccine attenuation strategy" Hadrian Sparks, **J. David Beckham**.

Teaching Experience:

Medical Students:

2011-2018	University of Colorado School of Medicine Foundations of Doctoring Preceptor (Students: Lincoln Pac, Joshua Shapiro, Micah Friedman)
2008-2010	Integrated Clinicians Course (IDPT 8005): "Infectious Diseases in Clinical Practice"
2007-current	Inpatient Infectious Diseases Attending Physician (MED 8009)

2012-2019 **Course Director** Clinical Infectious Diseases (MED 8009)
University of Colorado School of Medicine Clinical Elective
2005-current Medical School course: Microbiology Infectious Disease Group
Cases (IDPT 6004)
2007-current Medical School Lectures: Neurology Block (IDPT 6001), 'Acute
Infections of the CNS' – 2 hours of lectures on NeuroID
2014-current Medical School Lectures: Microbiology/ID Block (IDPT 6004),
'Mechanisms of Herpes Virus Infections' – 2 hours of lecture
covering all herpes virus infections.

Graduate Students:

Graduate School Faculty Appointments: Biomedical Sciences, MSTP, Microbiology,
Immunology, and Clinical Science.

2012-current Graduate School Lecture (Microbiology): Molecular Virology and
Pathogenesis (MICB7701) 'Mechanisms of flavivirus infections'
2012-current Graduate School Lecture (Neuroscience): Biological Basis of
Psychiatric and Neurological Disorders, NRSC 7614. 'The
Pathogenesis of Viral Encephalitis'.

Medical Science Training Program (MSTP)

2016-current Faculty Member MSTP
2016-current Molecules to Medicine MS1 MSTP Lecture

Medicine Residents:

2007-2008 University of Colorado at Denver HSC Medicine Resident Noon
Conference: "Acute and Chronic Meningitis"
2007-2012 St. Joseph Hospital Medicine Resident Lecture Series.
'Infections of the CNS'.
2012-2019 **Director** of the Inpatient ID Elective Rotation
2015-2019 **Director** of the Outpatient ID Elective Rotation
2015-2019 **Director** of the Inpatient ID Intern Selective Rotation

Neurology Residents:

2011-2016 **Block Director** Neurology Lectures for NeuroID.
2006-current UCSOM Neurology Residents Lecture Series. 'Infections of the
Nervous System'.
2010-2015 UCSOM Neurology Residents Emergency Lecture Series:
'Acute Infections of the CNS'

ID Fellows:

2007-2018 Outpatient Infectious Diseases Attending Physician
2007-current Lecturer, ID Fellowship Didactic Lecture Series
2012-2019 **Director** of the Infectious Diseases Fellowship Training
Program

2012-2015 **Course Director:** UCSOM Infectious Diseases Fellow Lecture Series.
2012-2015 **Director** of Infectious Diseases Case Conference Series

Neurology Fellows:

2014-2016 **Founding Director** of the Neuroimmunology & Neurological Infectious Disease Program
2014-Current **Founder & Director** of the NeuroID Clinic, University of Colorado Outpatient Pavilion

Graduate Education Committee Service:

CU AMC:

Microbiology Graduate Program Thesis Committee member: (2009-13) Henri Jupille, Laura Griffin (2011-2014), Sam Li (2012-2015), David Hawman (2013-16), Scott Seitz (2014-2019), Zoe Gonzales (2016-current), Sarah Stonedahl (2017-current), Ari Simenaur (Chair:2017-current)
Neuroscience Grad Program Thesis Committee Member: Eamon Quick (2013-17)

Graduate School Thesis Mentor: Katherine Shives (2012-2016), Bethany Brown (2015-2018), Hadrian Sparks (2017-current), Brendan Monogue (2018-current), Monica Graham (2018-present)

CU Boulder Thesis Committee:

Molecular, Cellular & Developmental Biology Program Thesis Committee: Alison Ruth Gilchrist (2016-2019).

Indian Institute of Science Education and Research, Kolkata, India:

External Thesis Committee Reviewer: Department of Biological Sciences: Das Sarma (2016), Afaq Hussain (2018)

Invited Community Lectures:

2012-2019: AIDS Community Outreach Lectures (Mountain Plains AIDS Education center)

2016 – Café Scientific Lecture: “Zika virus on the Brain?”

Primary Mentoring:

Postbaccalaureate Trainees

Kathryn Tuttle (2008-2010)-TGFbeta activation during viral infection.

Current Position: Post-doc Linda Cernic Inst. Univ Colorado

Ian Francis (2010) Undergraduate Research Project, Denver University.

Current Position: MD/PhD student at Boston University.

Erica Beatman MS (2010-2014) Alpha-synuclein function during viral infection.

Current Position: National Jewish Health Research

Aaron Massey MS (2012-2020): Viral Pathogenesis and Neuroinflammation during viral infection.

Dana Fader (2017-2019): Professional Research Assistant

Medical Students

Greg Ingolia MD (2016-2017): MSIV research mentor
Current Position: Residency Training, Univ Chicago

Graduate Students

Katherine Delaney Shives PhD (2012-2016) Microbiology Graduate Thesis Advisor and Mentor. Current position: Product Development Scientist for ViroCyte.

Bethany Brown PhD (2012-2013) Mentor for Masters in Clinical Science and Mentor for Clinical Science PhD thesis. Current Position: Clinical Research Manager, Terumo BCT.

Andrea Fidell MS (2017-2018): MPH of Biostatistics Student Research Mentor.
Current Position: Clinical Trials Coordinator, PCM Trials

Hadrian Sparks (2017-current): Microbiology Graduate Program Thesis Advisor

Brendan Monogue (2018-current): Graduate Student Microbiology

Monica Graham (2018-current): Graduate Student Microbiology

Medical Fellows

Ryan Oyer MD (2010-2012) ID Research Fellow. Current Position: Private Practice ID Physician.

Jessica Lum MD (2017-2018): ID Fellow Research Project. Current Position: Assistant Professor, Nebraska School of Medicine

Eias Murad MD (2017-2018): ID Fellow Research Project. Current Position: Transplant ID, Pheonix, Az.

Farrell Tobolowski MD (2018-2019): ID Fellow Research Project. Current Position: CDC EIS, Atlanta, Georgia

Post-doctoral Trainees

Mastooreh Chamanian PhD (2013-2014) Mentor for Post-doctoral Research Trainee

Kelsey Lesteberg PhD (2017-current): Post-doctoral Research Fellow

Faculty Trainees

Andres Haneo Martinez MD (2014-2018): Instructor of Medicine/ID, UCO
Current Position: Assistant Professor of Medicine/ID, UCO

Lakshmi Chauhan (2019-current): Assistant Professor Medicine/ID