

CURRICULUM VITAE
PATRICK J. BOSQUE, M.D.

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CURRENT APPOINTMENTS

2008-present **Associate Professor, Department of Neurology, University of Colorado Medical Center, Denver, Colorado.**

2001-present **Neurologist, Denver Health and Hospital, Denver, Colorado**

2016-present **Chief, Neurology Division, Denver Health and Hospital, Denver, Colorado**

PREVIOUS APPOINTMENTS

University of Colorado, Denver

2001-2007 Assistant Professor, Department of Neurology

University of California, San Francisco

1996-2001 Assistant Adjunct Professor, Department of Neurology and the Institute for Neurodegenerative Diseases, University of California, San Francisco.

1994-2001 Medical Staff, Movement Disorders and Parkinson's Disease Clinic, University of California, San Francisco.

1992-1995 Neurodegenerative Diseases Fellow, Prusiner Laboratory, Department Neurology.

1993-1995 Clinical Instructor, Department of Neurology.

1993-1995 Clinical Instructor, Department of Emergency Medicine.

1995-1996 Examining Physician, Multiple Sclerosis Center.

Vanderbilt University, Nashville, Tennessee

1989-1992 Resident Physician, Department of Neurology (PGY3-5).

1987-1989 Resident Physician, Department of Medicine (PGY1-2).

EDUCATION

1983-1987 University of California, San Diego, M.D., 1987.

1978-1982 Stanford University, B.S. (with distinction), Biology, 1982.

LICENSES AND CERTIFICATIONS

Colorado medical license: 39936

California medical license: G073989 (expired 12/2001).

Certification in Neurology (No. 39453), American Board of Psychiatry and Neurology, 1994.

PROFESSIONAL ORGANIZATIONS

Member, American Academy of Neurology.

Fellow, American Neurological Association.

PROFESSIONAL SERVICE

Member, Epic Physician Advisory Council (members assist in the design, testing and implementation of the electronic health record at Denver Health) 2014 to present

Member, Lifelink Physician Advisory Council. (Council members assist in the design, testing and implementation of the Seimen's Soaring electronic health record at Denver Health). 2012 to 2014.

Member, LifeLink Governance Committee, 2013 to 2014.

Member, FDA Transmissible Spongiform Encephalopathy Advisory Committee, 2011 to 2014

Member of Data, Safety and Monitoring Board for "The Diagnosis and Treatment of Critical Illness Polyneuropathy" Marc Moss, MD, Principal Investigator, 2009 to 2015

Member, Faculty Senate, University of Colorado Denver, School of Medicine, June 2008 to June 2010.

Sub-investigator in the following clinical trials:

Duloxetine in Patients with Central Neuropathic Pain in Multiple Sclerosis
Lilly USA, LLC
Richard L Hughes MD (PI Denver)
2009-2010

Thrombin Receptor Antagonist in Secondary Prevention of Atherothrombotic Ischemic Events (TRA2P)
Schering-Plough
Richard L Hughes MD (PI Denver)
2008-2011

Insulin Resistance Intervention after Stroke (IRIS)
NIH/Yale
Richard L Hughes MD (PI Denver)
2004-2012

Warfarin Versus Aspirin in Reduced Ejection Fraction (WARCEF)
NIH
Richard L. Hughes MD (PI Denver)
2003-2011

Prevention Regimen For Effectively Avoiding Second Strokes: (PROFESS)
Boehringer-Ingelheim
Richard L. Hughes MD (PI Denver)
2003-2008

Study to Assess the Safety and Tolerability of Intravenous Carbamazepine in Adults With Epilepsy
Lundbeck Inc.
Edward H. Maa (PI Denver)
2010-2012

A Double-blind, Randomized Conversion to Monotherapy Study to Evaluate the Efficacy and Safety of Brivaracetam in Subjects (≥ 16 to 75 Years Old) With Partial Onset Seizures AND
An Open-label, Multinational, Multicenter, Follow-up Study to Evaluate the Long-term Safety and Efficacy of Brivaracetam
UCB, Inc.
Edward H. Maa (PI Denver)
2008-2010

Efficacy And Safety Study Of Pregabalin (Lyrica) As Monotherapy In Patients With Partial Seizures AND
Extension Study Of Long-Term Safety And Efficacy Of Pregabalin As Monotherapy (Lyrica) In Patients
With Partial Seizures
Pfizer
Edward H. Maa (PI Denver)
2007-2011

CURRENT AND PENDING RESEARCH FUNDING

Ongoing:

Ultrasensitive detection of human prion disease. *NIH/NCATS Colorado CTSI* Grant Number UL1 TR001082. Awarded April 2016. Role: Co-investigator

TEACHING AND SUPERVISORY EXPERIENCE

Molecules to Medicine Lecture. Prions: proteins gone wrong. Collaborative lecture with basic science faculty at UCHSC in new integrative curriculum on protein structure, folding and pathogenic misfolding. Annual 1 hour lecture 2005-2016

Internal Medicine Resident Lecture Series: Coma. Two 1 hour semi-annual lectures, 2008-2014

Lecture on CSF analysis. Interpretive Clinical Pathology course. UCHSC. February, 2004-2009.

Attending physician, Department of Medicine, Neurology Division, Denver Health and Hospital, October 2001 to present. Supervise residents, medical students and nurse practitioners in wards and neurology clinics.

Attending physician, Neurology Outpatient Clinic, UCSF. Supervise Neurology and Internal Medicine residents, instruct residents and medical students. 1993-2001.

Neurology Ward Clinical Attending, UCSF. Supervise ward teams consisting of residents and medical students in the treatment of patients on the inpatient Neurology service. April, 2001.

Small group instructor, Introduction to Clinical Medicine, Neurology Section, UCSF. Instruct groups of 4 to 8 first and second year medical students in the principles of the neurologic examination. 1994-2001.

Neurology Ward Teaching Attending, UCSF. Met daily with students during the month of their Neurology clerkship. April, 1998, June 2001.

COMMUNITY SERVICE

Volunteer physician, Haight-Ashbury Free Medical Clinic, San Francisco, CA. 1992-2001

HONORS AND AWARDS

Outstanding Clinical Teacher, Nominated by members of Class of 2003, UCHSC School of Medicine. June 2002.

Volunteer of the Year, Haight-Ashbury Free Medical Clinic, 1996.

EDITORIAL POSITIONS

Ad hoc reviewer, Neurology, 2000 –present

Ad hoc reviewer, PLoS One, 2000 –present

Ad hoc reviewer Biochemistry 2014

PUBLICATIONS

Accepted for publication

Peer reviewed papers published or in press.

Bosque PJ, Boyer PJ, Mishra P. A 43-kDa TDP-43 Species Is Present in Aggregates Associated with Frontotemporal Lobar Degeneration. PLoS One. 2013 May 21;8(5):e62301.

Braun CN, R L. Hughes , **P J. Bosque.** Reversible Cerebral Vasoconstriction Syndrome 3 Months after Blood Transfusion. J Stroke Cerebrovasc Dis. 2012 Feb 15. [Epub ahead of print].

C. Alan Anderson,**Patrick Bosque,** Christopher M. Filley, David B. Arciniegas, B.K. Kleinschmidt-DeMasters, John Pape, Kenneth L. Tyler. Lessons from the Colorado Surveillance Program for Chronic Wasting Disease Transmission to Humans: Two Highly Suspicious but Negative Cases. Archives of Neurology. 2007 Mar;64(3):439-41

Erdem Tamguney, Kurt Giles, Essia Bouszmondo-Bernstein, **Patrick Bosque,** Jiri Safar, Steven DeArmond, Micheal Miller, Stanley Prusiner. Transmission of elk and deer prions to transgenic mice. Journal of Virology. 2006 Sep;80:9104-14 2006.

MaWhinney S, Pape WJ, Forster JE, Anderson CA, **Bosque P**, Miller MW. Human prion disease and relative risk associated with chronic wasting disease. *Emerg Infect Dis* [serial on the Internet]. 2006 Oct. Available from <http://www.cdc.gov/ncidod/EID/vol12no10/06-0019.htm>

Nicole Gonzales, Elke Jarboe, B. K. Kleinschmidt-DeMasters, and **Patrick Bosque**. Acute multifocal CNS demyelination as first presentation of systemic malignancy. *Neurology*, Jul 2005; 65: 166.

D. A. Hall, M. A. Leehey, C. M. Filley, E. Steinbart, T. Montine, G. D. Schellenberg, **P. Bosque**, R. Nixon, and T. Bird PRNP H187R mutation associated with neuropsychiatric disorders in childhood and dementia *Neurology*, Apr 2005; 64: 1304 - 1306.

Bosque PJ, Ryou C, Telling G, Peretz D, Legname G, DeArmond SJ, Prusiner SB. Prions in skeletal muscle. *Proc Natl Acad Sci U S A*. 2002 Mar 19;99(6):3812-7.

Gerold Schmitt-Ulms, Giuseppe Legname, Michael A. Baldwin, Haydn L. Ball, Nicole Bradon, **Patrick J. Bosque**, Kathryn L. Crossin, Gerald M. Edelman, Stephen J. DeArmond, Fred E. Cohen, Stanley B. Prusiner. Binding of Neural Cell Adhesion Molecules (N-CAMs) to the Cellular Prion Protein. *Journal of Molecular Biology*. 2001. 314:1209-1225.

Mastrianni JA, Capellari S, Telling GC, Han D, **Bosque PJ**, Prusiner SB, DeArmond SJ. Inherited prion disease caused by the V210I mutation: Transmission to transgenic mice. *Neurology*. 2001 Dec 26;57(12):2198-205.

Bosque, Patrick J., Prusiner SB. Cultured cell sublines highly susceptible to prion infection. *Journal of Virology*. 2000 May;74(9):4377-86.

Supattapone S., **Bosque P**, Muramoto T., Wille H, Aagaard C, Peretz D, Nguyen H.-OB, Heinrich, C, Torchia, M., SafarJ, Cohen, FE, DeArmond, SJ, Prusiner SB, and Scott M. Prion protein of 106 residues creates an artificial transmission barrier for prion replication in transgenic mice. *Cell* 1999; 96: 869-878.

Ulm Janet E, Vnencak-Jones CL, **Bosque P**. Research on familial Creutzfeldt-Jakob disease (FCJD) resulting in presymptomatic testing: implications for the Human Genome Project. *J Genet Couns*. 1993 Mar;2(1):9-15.

Bosque, Patrick J., Vnencak-Jones CL, Johnson MD, Whitlock JA, McLean MJ. A PrP gene codon 178 base substitution and a 24-bp interstitial deletion in familial Creutzfeldt-Jakob disease. *Neurology* 1992; 42:1864-1870.

Reviews and Commentaries

Bosque P and Tyler K. Prions travels- feces and transmission of prion disease. *Journal of Infectious Diseases*. *J Infect Dis*. 2008 Jul 1;198:8-9..

Bosque P. Molecular types of Creutzfeldt–Jakob disease: The strange diversity of prions. Editorial. *Neurology*, November 2005; 65: 1520-1521.

Bosque P. Double blind trial of flupirtine in creutzfeldt-Jakob disease. *Neurology*. 2004. 65: 679.

Bosque P. Bovine spongiform encephalopathy, chronic wasting disease, scrapie, and the threat to humans from prion disease epizootics. *Current Neurology and Neuroscience Reports* 2002 Nov;2(6):488-95

Book Chapters

Patrick Bosque. (2014). Prion Diseases. In Lee Goldman and Dennis Ausiello, eds., *Cecil Medicine*. 24th

Edition, (Philadelphia.Elsevier. In press).

Patrick Bosque and Kenneth Tyler (2014) . Chapter 180. Prions and Prion Diseases of the Central Nervous System. In John Bennet, Raphael Dolin, Martin Blaser, editors. *Mandell, Douglas and Bennetts Principles and Practice of Infectious Diseases*, 8th Edition. Churchill Livingstone.

Bosque, Patrick J. "Vitamin B12 Deficiency" in Neurobase (electronic textbook) Arbor Publishing, San Diego, CA. 1999, revised 2014.

Prusiner, Stanley B. and **Patrick J. Bosque**. Prion Diseases. In Harrison's Principles of Internal Medicine 15th Edition, E. Braunwald, A. S. Fauci, D. L. Kasper, S. L. Hauser, D. L. Longo and J. L. Jameson, eds.: McGraw-Hill. 2001.

Abstracts

Bosque, Patrick, Priya Mishra, Philip Boyer, Kirk Hansen. A 37 kD form of TDP-43 in frontotemporal dementia. American Neurological Association. Baltimore. October, 2009.

Bosque, Patrick, Priya Mishra, Datherine Kunst, Kirk Hansen, Philip Boyer, Margittai. Attempts to isolate prion-like aggregates from PMCA treated brain homogenates. Rocky Mountain Prion Research Symposium. May 30, 2008. Fort Collins, CO.

Bosque, Patrick J., Thomas Lisse, Dong Han, Stephen DeArmond, Stanley B. Prusiner. New alterations in the prion protein gene associated with Creutzfeldt-Jakob disease. American Academy of Neurology, 53rd Annual Meeting. May, 2001.

Bosque, Patrick J., Telling GC, Cayetano J, De Armond SJ, Prusiner. Evidence for prion replication in skeletal muscle. American Neurological Association, 122nd Annual Meeting. Presented September 30, 1997.

Bosque, Patrick J., Glenn Telling, David Westaway, Julianna Cayetano, Stephen DeArmond, and Stanley B. Prusiner. Prion protein overexpression exclusively in skeletal muscle causes spontaneous myopathy. *Neurology* 46(2)[Suppl.]:250, 1996.

Bosque, Patrick J., Glenn C. Telling, Douglas. Hanahan and Stanley B. Prusiner. Ectopic expression of the prion protein directed by the insulin gene promoter to the pancreas of transgenic mice. *Neurology* 45 [Suppl.]:308, 1995.

INVITED LECTURES / PRESENTATIONS

Prion disease: biochemistry, diagnosis and the search for therapies. Department of Neurology Grand Rounds, University of Colorado Denver, August 3, 2016.

Update: Coma Prognosis in the era of therapeutic hypothermia. Department of Neurology Grand Rounds, University of Colorado Denver. June 2014.

Beyond PrP: prion-like processes in neurodegeneration. Department of Physical Medicine and Rehabilitation Grand Rounds, December 4, 2013.

A 43-kDa species of TDP-43 aggregates in fronto-temporal dementia. Expanding Prion Horizons 2013. Fort Collins, Colorado. October 18, 2013.

Beyond PrP: prion-like processes in neurodegeneration. Department of Neurology Movement Disorders Group, July, 2013.

Role of protein aggregation in neurodegenerative diseases of man. Meril NIH National Veterinary Scholars Symposium. Colorado State University, Fort Collins. August 4, 2012

Beyond the prion protein: prion-like phenomena in neurodegeneration. Behavioral Neurology and Psychiatry Monthly Conference. University of Colorado, Denver. August 1, 2012.

Prions: an update for Neurosurgeons. Neurosurgery of the Rockies Conference. Vail, Colorado. March 29, 2012.

Rasmussen syndrome caused by persistent hyperglycemia. Department of Neurology Grand Rounds, March 7, 2012

Prions, strains and protein aggregation in neurodegenerative disease. UC Denver Neuroscience Interest Group. February 24, 2012

Protein aggregation in ALS and Fronto-temporal lobe degeneration. UC Denver Department of Neurology Grand Rounds, July 14, 2010.

CIDP or something else? An unusual subacute motor neuropathy. Department of Neurology Grand Rounds. November 30, 2007.

The physiology of migraine headaches. UCHSC Department of Neurology Grand Rounds. September 16, 2006.

The neuroleptic malignant syndrome. UCHSC Department of Neurology Grand Rounds. August 17, 2005.

New developments in the treatment of stroke and epilepsy. 30th National Primary Care Nurse Practitioner Symposium. Keystone, Colorado. July 23, 2005

The risk to human health from CWD. 2nd International Symposium on Chronic Wasting Disease. Madison, Wisconsin. July 13, 2005.

Prions in skeletal muscle. First Annual Baltimore Colloquium on Transmissible Spongiform Encephalopathies. Baltimore. February 16, 2005.

The risks to humans from prion epizootics. Ceres[®] Forum “Transmissible Spongiform Encephalopathies in Animal and Human Health: The Science and the Policy” March 9, 2004. Washington, D.C.

Lies, Damned Lies and the 14-3-3 assay on CSF for the diagnosis of Creutzfeldt-Jakob disease. Grand Rounds. Department of Neurology, UCHSC. Denver, March 4, 2004.

Creutzfeldt-Jakob disease and other prion dementias. Dementia Lecture Series. UCHSC Department of Psychiatry. Denver. October 14, 2003.

The role of protein misfolding in sporadic ALS. Department of Neurology, UCHSC. Denver, August 13, 2003.

Prion disease epizootics: assessing the threat to humans. 2003 Veterinary/Zoonotic Virology Symposium. Annual Meeting of the American Society of Virology. Davis, California. July. 2003.

Assessing the Risks of Transmitting Prion Disease: Focus on Gonadotropins. CME course. New York. June 6, 2003

The risk of transmitting prion disease through blood products. Bonfils Blood Center. Aurora, Colorado. May 14, 2003.

Recent developments in the diagnosis and treatment of prion diseases. Lecture to the Colorado Association of Clinical Neurologists. Denver, October 2, 2002.

Prion diseases and the risk to humans from CWD. Lecture to Retired Faculty Association. UCHSC. Denver, September 10, 2002.

Recognising human strains of prion disease. Grand Rounds. Department of Neurology, UCHSC. Denver, September 4, 2002.

Experimental models of human susceptibility to chronic wasting disease. Colorado Department of Wildlife Chronic Wasting Disease Symposium. Denver, August 2, 2002.

Assessing human susceptibility to chronic wasting disease. Seminar in Department of Pathology, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins. May 2, 2002

Are Humans and Cattle Susceptible to Chronic Wasting Disease? A Transgenic Mouse Study. International Symposium on the Status of BSE and Related Disease. Organized by the Korean Food and Drug Administration. Seoul. June, 2001.

Prion Diseases. Scientific Basis of Neurology Course (Faculty). American Academy of Neurology, 52nd

Annual Meeting, San Diego. April 2000.

Human Prion Diseases course (Faculty). American Academy of Neurology, 50th Annual Meeting, Minneapolis. April 1998.

Prion Disease. John Muir Medical Center. Walnut Creek, CA. July 1999.

Prion Disease. City College of San Francisco. May 1998

Prion Diseases. Japanese Society for Molecular Biology. Kyoto, Japan. December 1997.

New Therapies in Parkinson's Disease. Los Gatos Community Hospital, Los Gatos, CA. November 1996.

Prions and Mad Cow Disease. The Fromm Institute, University of San Francisco. October 1996.