About the Brother Lucian Blersch Symposium

Organized by the School of Natural Sciences and the Kozmetsky Center of Excellence in Global Finance at St. Edward's University, the event is free and open to the public. This symposium honors Brother Lucian Blersch, CSC, a longtime professor of Engineering at St. Edward's who died in 1986 and in whose name a professorship in the School of Natural Sciences was endowed by a gift from J.B.N. Morris hs '48, '52 and his family.

PAST SYMPOSIA

2013	Global Health & Infectious Disease: Stress and Inflammation
2012	Global Health & Infectious Disease: Pathogenic Proteins
2011	Global Health & Infectious Disease: Tuberculosis
2010	Global Health & Infectious Disease: HIV/AIDS

Learn more at **www.stedwards.edu/lucian**

ST. EDWARD'S UNIVERSITY

School of Natural Sciences
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Austin, TX 78704

CHANGE SERVICE REQUESTED

GLOBAL HEALTH & INFECTIOUS DISEASE SYMPOSIUM

AMYLOIDS AND HUMAN DISEASE

A joint event brought to you by the **Brother Lucian Blersch Endowment**

9.25.2015

9:30 a.m. | Carter Auditorium
John Brooks Williams
Natural Sciences Center
St. Edward's University

EAMONN F. HEALY, PhD
Professor of Chemistry
St. Edward's University

DAVID B. TEPLOW, PhD
Professor of Neurology
University of California, Los Angeles

LUCÍA CHAVEZ GUTIERREZ, PhD
Assistant Professor
Laboratory for the Research of Neurodegenerative Diseases
University of Leuven, Belgium

NIGEL GREIG, PhD
National Institution on Aging

ST. EDWARD'S UNIVERSITY

GLOBAL HEALTH & INFECTIOUS DISEASE

AMYLOIDS AND HUMAN DISEASE

Amyloids are insoluble fibrous protein aggregates that have been associated with the pathology of a range of human diseases, most notably Alzheimer's disease (AD). Beyond AD, diseases associated with the formation of amyloid deposits include Parkinson's disease, Spongiform encephalopathy (more commonly referred to as mad cow disease), and a range of dementias and prion diseases. Other neurodegenerative diseases, including Huntingdon's disease (HD) and Amyotrophic lateral sclerosis (ALS), are associated with the pathological aggregation of specific amyloidogenic proteins. Altogether, more than forty of these "protein deposition" diseases have been described so far, making this one of the most important, but also one of the more intractable, problems in biomedicine.

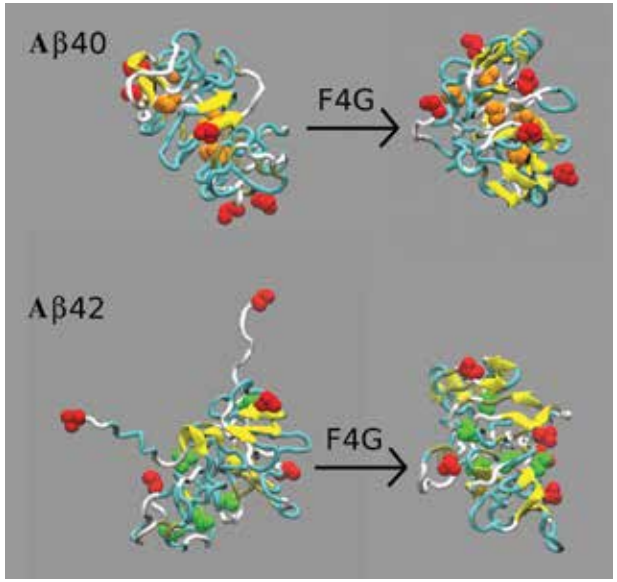
While no efficacious treatments have yet been found to delay or stop the progression of AD, remarkable scientific advances continue to be made in our understanding of these various pathologies. More importantly, a unified picture of the molecular and clinical features of protein misfolding and aggregation is emerging, yielding the exciting prospect of therapeutic advances that might be applicable across more than one disease.

This symposium will highlight some of the key advances made to date in our understanding of the molecular characteristics underpinning these clinical pathologies. Key biochemical targets will be highlighted, along with the challenges that these pose to the development of therapeutics.

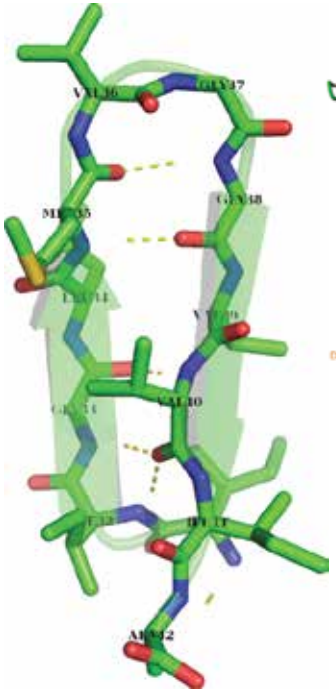
EVENT SCHEDULE

9:30 a.m.	Welcome
9:40 a.m.	Eamonn F. Healy, PhD, (St. Edward's University): *"A Novel Amyloidogenic Marker for Protein Misfolding Diseases"*
10:10 a.m.	David Teplow, PhD, (University of California, Los Angeles): *"Amyloid Formation: From the Molecular to the Clinical"*
11 a.m.	Break
11:15 a.m.	Lucía Chavez Gutierrez, PHD, (University of Leuven, Belgium): *"Learning by Failing: y-Secretases in Alzheimer's Disease and Beyond"*
12:05 p.m.	Nigel Greig, PhD, (National Institution on Aging): *"Advances in Alzheimer Therapy: Understanding Pharmacological Approaches to the Disease"*
1 p.m.	Lunch and Student Poster Session: Foyer, John Brooks Williams Natural Sciences Center

For directions and a map of campus, go to: **stedwards.edu/map**.



Amyloid β-protein (Aβ) assemblies linked to neuronal death and injury in Alzheimer's disease (AD)



Detailed structural features responsible for the folding and self-assembly of the 42-residue amyloid β-protein (Aβ) linked to Alzheimer's disease (AD)

A putative structure for a higher order oligomer of superoxide dismutase (SOD1), the pathogenic agent for Amyotrophic lateral sclerosis (ALS)

SPEAKERS

Eamonn F. Healy, PhD, is the Brother Lucian Blersch Professor of Science and Professor of Chemistry at St. Edward's University. The general focus of his research involves the use of molecular modeling to design structure-activity probes for the purpose of elucidating enzymatic activity. Recent targets have included HIV-1 integrase, the c-Kit and src-abl proteins associated with tumor development and certain leukemias, and the metalloproteinases. Healy's group has also developed in silico characterizations of the mechanism of action of the Mtb alpha-crystallin protein, and models for the heat shock response of Escherichia coli and the observed suppression of spinocerebellar ataxia by human alphaB-crystallin. He received his doctorate in Chemistry from the University of Texas at Austin.

David B. Teplow, PhD, is a professor of Neurology at the University of California, Los Angeles (UCLA). The Teplow laboratory seeks to understand and treat Alzheimer's disease (AD). Teplow uses a multi-disciplinary approach to determine how the amyloid β-protein (Aβ), implicated as a key pathologic agent in AD, self-associates to form neurotoxic structures. Among Teplow's discoveries are protofibrils and small oligomeric structures termed paranuclei. Teplow received undergraduate training at the University of California, Berkeley; a PhD from the University of Washington; and was a postdoctoral scholar at the California Institute of Technology (Caltech). Before coming to UCLA, Teplow was a faculty member in the Department of Neurology, Harvard Medical School. Teplow was a founding editor of the *Journal of Molecular Neuroscience* and *Current Chemical Biology*, and is currently associate editor-in-chief of the *American Journal of Neurodegenerative Disease*. Teplow is a member of numerous national and international scientific advisory and editorial boards and has been recognized as one of the top 100 Alzheimer's disease researchers in the world.

Lucía Chavez Gutierrez, PhD, received her MD in Physiology from Pablo de Olavide University in Seville, Spain and her doctoral degree from the National University of Mexico. She is currently an assistant professor in the Laboratory for the Research of Neurodegenerative Diseases at the University of Leuven in Belgium. Her research interests are focused on the study of the γ-secretase structure and function in the context of familial Alzheimer's disease. γ-Secretase complexes are intramembrane cleaving proteases. Her studies have shown how pathogenic mutations in γ-secretase affect its kinetic properties and have revealed a dynamic structural–functional interplay in which significant conformational rearrangements dictate protease function.

Nigel Greig, PhD, gained his doctorate from the University of London. He joined the National Institution on Aging (NIA) in 1982, focusing on optimizing the delivery to and action of drugs within the brain. This resulted in the development of drug candidates for the treatment of brain tumors and various cancers, as well as agents for the treatment of drug abuse and technology for the delivery of neuropeptides, antisense oligonucleotides and proteins to the brain. Leaving NIA in 1989, Greig was involved in the initiation of Athena Neurosciences, now Elan Pharmaceuticals. Returning to NIA as a tenured scientist in 1991, his research has evolved into his present interest: the design and development of drugs and diagnostics for the treatment of neurodegenerative diseases, with particular emphasis on Alzheimer's disease and type 2 diabetes. He heads the Drug Design and Development Section of the Laboratory of Neurosciences that extensively collaborates within NIA, academia and industry.