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Education:

- Postdoc 1998-2003 New York University School of Medicine
- Postdoc 1997 London University, England
- PhD 1996 London University, England
- MSc 1992 Instituto Venezolano de Investigaciones Cientificas
- BSc 1991 Universidad Central de Venezuela

Research Interest:**Cytoskeletal Regulation of Myelin Formation & Repair**

Myelin is a specialized membrane, which wraps around axons in the peripheral (PNS) and central (CNS) nervous systems. In diseases such as Multiple Sclerosis (CNS) and Guillain-Barre Syndrome (PNS), loss of myelin around the nerve cells results in conduction block and underlies the clinical deficit characteristic of these disorders. Remyelination restores nerve conduction and leads to resolution of symptoms. However there are currently no treatments designed to directly target the efficiency of myelin repair and the return of nerve function. Our studies focus on the role of cytoskeletal signaling and its impact on myelinating glial cell differentiation, a fundamental knowledge that is currently lacking in the field. There are two types of specialized myelin-forming glial cells: Schwann cells (SC) in the PNS, and oligodendrocytes (OL) in the CNS. We have found that a cytoskeletal protein: non-muscle myosin II (NMII) regulates the development of myelinating glial cells. NMII inhibition impairs myelin formation in the PNS, but enhances CNS myelination. Our laboratory uses *in vitro* and *in vivo*

models to elucidate the mechanisms behind these observations. The long-term goal of our research is to apply this knowledge to help the development of novel therapeutic tools to treat human demyelinating diseases.

Selected Publications:

Urbanski, M; Kingsbury, L; Moussouros, D; Kassim, I; Mehjabeen, S; Paknejad, N; Melendez-Vasquez, C.V (2016) Myelinating glia differentiation is regulated by extracellular matrix elasticity. *Sci Rep.* Sep 20; 6:33751. doi: 10.1038/srep33751.

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has distinct roles during PNS and CNS myelin sheath formation. *J Cell Biol* 182:1171-84

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maturation, and myelin formation *J.Neurosci* 26: 12174-12185

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Differential expression of proteoglycans at central and peripheral Nodes of Ranvier *Glia*
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contribution).

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