

# Laura H. Arias Chavez, Ph.D.

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## Education

Ph.D., Chemical & Environmental Engineering, Yale University, 2014.

*Re-Designing Membranes: Electrospun Nanofibers for Control of Structure and Material Properties*

## Research Interests

- Application of membrane technologies, esp. forward osmosis, pressure-retarded osmosis, and reverse osmosis, to sustainable waste and water reclamation and green energy production.
- Fundamental investigation of membrane structure formation at the nanoscale to inform fabrication of membranes with reduced fouling propensity and improved water flux.
- Fabrication of high-performance membranes using non-hazardous materials.

## Key Publications

Lu, X.; **Arias Chavez, L. H.**; Romero-Vargas Castrillón, S.; Ma, J.; Elimelech, M. Influence of Active Layer and Support Layer Surface Structures on Organic Fouling Propensity of Thin-Film Composite Forward Osmosis Membranes. *Environmental Science & Technology* **2015**, *49* (3), 1436-1444.

Shaffer, D. L.; **Arias Chavez, L. H.**; Ben-Sasson, M.; Romero-Vargas Castrillón, S.; Yip, N. Y.; Elimelech, M. Desalination and Reuse of High-Salinity Shale Gas Produced Water: Drivers, Technologies, and Future Directions. *Environmental Science & Technology* **2013**, *47* (17), 9569-9583.

**Hoover, L. A.**; Schiffman, J. D.; Elimelech, M. Nanofibers in Thin-Film Composite Membrane Support Layers: Enabling Expanded Application of Forward and Pressure Retarded Osmosis. *Desalination* **2013**, *308*, 73-81.

**Hoover, L. A.**; Phillip, W. A.; Tiraferri, A.; Yip, N. Y.; Elimelech, M. Forward with Osmosis: Emerging Applications for Greater Sustainability. *Environmental Science & Technology* **2011**, *45* (23), 9824-9830.

Yip, N. Y.; Tiraferri, A.; Phillip, W. A.; Schiffman, J. D.; **Hoover, L. A.**; Kim, Y. C.; Elimelech, M. Thin-Film Composite Pressure Retarded Osmosis Membranes for Sustainable Power Generation from Salinity Gradients. *Environmental Science & Technology* **2011**, *45* (10), 4360-4369.