

## Biographical sketch

Luis A. Prieto Costas

### Current Status

Ph.D. Student  
Dept. of Chemistry, UPR-RP

**Email:** prietoluis87@gmail.com

### Education:

2005-2012 UPR-RP  
2012 BS Chemistry  
2012- present UPR-RP  
2019 – Ph.D. Chemistry (expected)

### Research Interests:

Stimuli-responsive materials are systems that in the presence of external stimuli like temperature and pH have a response such as change in solubility or color. Most responsive systems are polymeric in nature. We want to develop a sugar-responsive system based on supramolecular G-quadruplexes (SGQs) by addition of a boronic acid moiety to complement polymeric systems. The long-term goal of this research is to develop biomedical applications for the sugar-responsive SGQs (e.g., diabetes treatments). This research will be a stepping-stone for my future postdoctoral endeavors in supramolecular and materials chemistry.

### Other research activities:

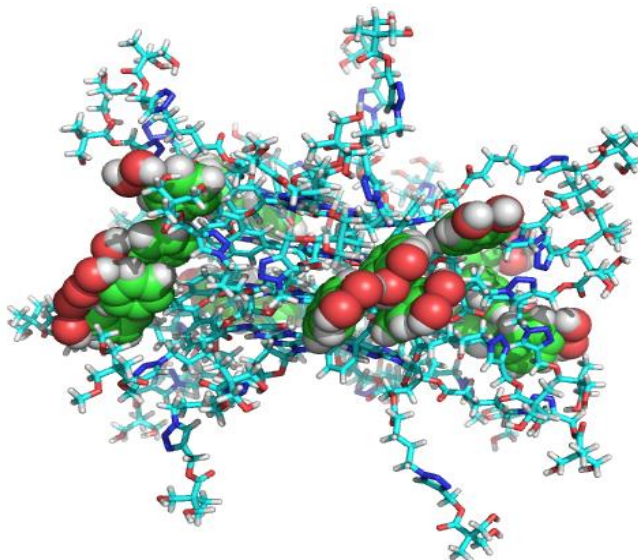
2015 Bruker Advanced 1D and 2D NMR training and Workshop course given by Mike Brown.

### Research Experience:

2011-12 UPR-RP, Organic Chemistry (mentor, Dr. Nestor Carballeira)

### Presentations at Local Meetings:

**Prieto Costas, Luis A.**, Rodriguez, Yanira; Rivera, José M., Ph.D. 34<sup>th</sup> Puerto Rico Interdisciplinary Scientific Meeting and 49<sup>th</sup> ACS Junior Technical Meeting. "Sugar-responsive G-quadruplexes: Initial studies of a sugar-responsive system" Cayey, P.R.



**Prieto Costas, Luis A.**, Rodriguez, Yanira; Rivera, José M., Ph.D. 29<sup>th</sup> annual meeting of the AAAS Caribbean Division. "Initial studies towards sugar-responsive supramolecular G-quadruplexes" Caguas. P.R.

**Prieto Costas, Luis A.**, Rodriguez, Yanira; Rivera, José M., Ph.D. 35<sup>th</sup> Puerto Rico Interdisciplinary Scientific Meeting and 50<sup>th</sup> ACS Junior Technical Meeting. "Synthesis and self-assembly studies of sugar-containing guanosine derivatives" San Juan, P.R.

**Prieto Costas, Luis A.**, Rodríguez, Yanira, García, Adlin, Rivera, José." Synthesis and Development of H<sub>2</sub>O<sub>2</sub>-responsive supramolecular G-quadruplexes", 2016 Junior Technical Meeting; Pontificia Universidad Católica, Ponce, P.R.

**Prieto Costas, Luis A.**, Rodríguez, Yanira, García, Adlin, Rivera, José."Synthesis and Development of H<sub>2</sub>O<sub>2</sub>-responsive supramolecular G-quadruplexes", RISE Area Conference; San Juan, P.R.

**Prieto Costas, Luis A.**, Rodríguez, Yanira, García, Adlin, Rivera, José. "Development of sugar-containing & sugar-responsive supramolecular G-quadruplexes" ACS National Meeting, San Diego, CA., March 14, 2016

**Prieto Costas, Luis A.**, Rodríguez, Yanira, Rivera, José. "Determination of pKa and molecular modeling studies to understand the formation of Sugar-responsive supramolecular G-quadruplexes" 2016 AAAS Caribbean Division Annual Conference, Recinto de Ciencias Médicas.

**Prieto-Costas, Luis A.**, Lui, Nathan M., Rivera, José M. "Hierarchical Assembly of Supramolecular G-quadruplexes via Enzyme Instructed Self-Assembly" 255<sup>th</sup> ACS National Meeting, New Orleans, 2018.