

## Conferencia: Distorted Tricoordinate Phosphorus Compounds as Biphilic Catalysts

**Alexander Radosevich**

Department of Chemistry –  
Pennsylvania State University - USA

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XUNTA DE GALICIA

CONSELLERÍA DE CULTURA, EDUCACIÓN  
E ORDENACIÓN UNIVERSITARIA

*Title:* “Distorted Tricoordinate Phosphorus Compounds as Biphilic Catalysts.”

*Abstract:* My research group is invested in the discovery of phosphorus-based catalysts that make and break bonds via two-electron changes in formal oxidation state. By enforcing nontrigonal geometries on tricoordinate P(III) compounds, we attempt to create structural and electronic conditions that facilitate catalytic cycling in the  $P(III) \rightleftharpoons P(V)$  redox couple. This approach has resulted in the development of diverse catalytic atom transfer and bond activation methods based on inexpensive, nonmetal phosphorus catalysts. The synthetic and mechanistic aspects of these reactions and their connection to other organophosphorus catalyzed methods will be described.

*Biographical statement:* Alex Radosevich obtained a Ph.D. from UC Berkeley (2007) working with Prof. Dean Toste on organic reaction method development. Following postdoctoral research in molecular inorganic chemistry at MIT with Prof. Dan Nocera, he joined the department of chemistry at Penn State in 2010 as an assistant professor, where his research has focused on the design, development, and implementation of new catalytic synthetic methodology based on redox active main group compounds.