

The Red Planet and The Blue Planet: Past, Present and Future Symposium Speakers

Chemical Space Through Transition Metal Catalysis

Presented by:

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Professor Elias Picazo was born and raised in California. He attended USCB for his undergraduate studies and worked on trifluoromethylation chemistry with Armen Zakarian. He then moved to UCLA to pursue his doctoral degree with Neil Garg. As an NIH F31 fellow, Professor Elias developed total syntheses for various akuammiline alkaloids that had no prior syntheses. Upon completing his doctoral degree at UCLA, Professor Elias moved to Massachusetts to expand his skill set. At Harvard University, he studied hydrogen-bond-donor organocatalysts for their application in enantioselective transformations. He was awarded the NIH K99/R00 fellowship and began his independent career at USC in January of this year (2022). The Picazo Group is interested in reaction development and synthesis. In the realm of reaction development, the Picazo Group is involved in transition metal catalysis and enantioselective catalysis. As for synthesis, the Picazo Group is pursuing the synthesis of photoswitchable molecules and complex natural products.

Abstract:

Iron-catalyzed reactions, enantioselective reactions, Donor-Acceptor Stenhouse Adducts (DASAs), and strategies for the syntheses of biologically active indole alkaloid natural products are being developed. The significance of these goals cannot be overstated as the discovery of new chemical space leads to improved human health as it enables breakthroughs in biology, medicine, and industry. Further, nearly half of approved drugs come from natural products, derivatives, or mimics. Given the early-stage nature of the group, strategies, logic, and preliminary results will be discussed.