Carbon-dots: novel material with potential to treat bone diseases

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Dr. Isaac Skromne
Assistant Professor
Biology Department
University of Richmond

Abstract
Carbon dots (C-dots) are a new emerging class of nanoparticles with numerous potentially important biological applications including drug delivery due to their superior chemical properties. Our work in zebrafish has identified a particular class of C-dots that bind with high affinity and specificity to bones, without binding to other tissues, including non-mineralized cartilage. The presentation will discuss the emergent properties of this specific type of C-dots and how they will be used in the design and development of drug delivery systems to bones, thus bypassing side effects associated with traditional drug delivery systems. This innovative drug delivery system will allow the development of novel therapeutic methods for the prevention and treatment of bone related diseases.

Biography
Isaac Skromne is an Assistant Professor of Biology at the University of Richmond. He obtained his B.S. in Biomedical Research from the Institute of Basic Biomedical Research at the National Autonomous University of Mexico in 1994, and his M. Sci (1995), M. Phil. (1996), and Ph.D. (2000) in the Department of Development and Genetics at Columbia University. Dr. Skromne was a Visiting Research Fellow in the Department of Molecular Biology at Princeton University (2000), and a Post-doctoral Researcher in the Department of Organismal Biology and Anatomy at the University of Chicago (2001-2008). Dr. Skromne was an Assistant Professor in the Department of Biology at the University of Miami from 2008-2017 before moving to the Department of Biology at the University of Richmond in 2017. His lab aims to understand the cellular and molecular mechanisms that coordinate segmentation and patterning processes during embryonic development, and understand their contribution to vertebrate evolution and human health.