SPRING 2022

Biochemistry and Molecular Biology Brown Bag Series

S. Dean Rider, Jr., Ph.D.

Research Assistant Professor

"Breaking down break induced replication"

Tuesday, February 22, 2022

11:00 AM

Location 135 Oelman Hall

Lab:
Michael Leffak, Ph.D.

Boonshoft School of Medicine
WRIGHT STATE UNIVERSITY

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https://science-math.wright.edu/biochemistry-and-molecular-biology

Abstract

Our laboratory studies unstable DNA structures that represent barriers to the progression of DNA replication. These structures are thought to induce a phenomenon known as break induced replication (BIR). BIR is a hypermutagenic repair mechanism of last resort when a replication fork encounters an unresolvable barrier. We wish to determine the signatures associated with DNA breakage and repair that can be attributed to a particular type of unstable DNA. We also wish to determine which repair mechanisms are utilized when specific types of unstable sequences are encountered. I will briefly cover (i) our cell model for studying break induced replication, (ii) bioinformatics we are using to understand what happens during replication and repair near unstable sites, and (iii) preliminary results from an shRNA library screen to identify genes that may be involved in break-induced replication.