

INTRODUCTION

Welcome back for another installment of the quarterly Center for Molecular Interactions in Cancer (CMIC) Newsletter. Quite a lot has happened since July. The season of ghosts, goblins, and RPPRs has passed with nary a scare, and I am happy to report that our first in-person Advisory Committee (AC) meeting in September was a great success. I am very grateful for the service of the AC members. Their guidance is instrumental in moving the CMIC towards Phase 2 and beyond. Also, a giant "Thank you!" to our Research Program Director, Veronica Overton, for not only making sure the AC Meeting ran smoothly but also for her efforts in assembling the materials for the Year 1 RPPR to NIH. Bettie Cook, Heather Garringer, and Kimberly Tarkington were also very helpful in getting the RPPR submitted on time. Teamwork makes the dreamwork!

Cheers,



Robert L. Eoff, PhD
Professor & Vice Chair of
Biochemistry & Molecular Biology
CMIC Director



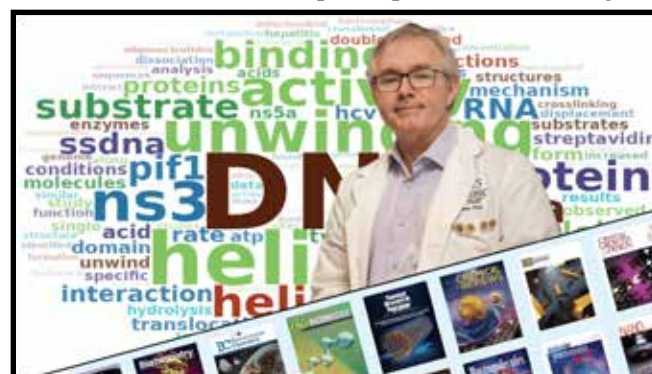
OUR MISSION

Cancer affects the health of millions of Americans. Studying molecular mechanisms that endow cells with malignant properties is an essential component of advancing pre-clinical studies and a key part of efforts to improve patient outcomes. The purpose of this NIH COBRE grant is to establish the CMIC at the UAMS. The mission of the CMIC is to study molecular features and functional properties of biomolecules that drive cancer. The unifying theme of research among Center members is the coupling of structural biology and high-resolution imaging with precise, quantitative analysis of biochemical and cellular processes to understand how molecular interactions govern the initiation, progression and treatment of cancer. Our long-term goal is to leverage faculty mentoring, strategic recruitment, and cutting-edge core resources to develop a critical mass of investigators that will support a self-sustaining center in which research advances our knowledge of cancer through precise and comprehensive analyses of molecular events that impact malignant pathogenesis.

PLEASE CITE Grant P20 GM152281 if you receive COBRE support or use CMIC core services/instrumentation

CENTER NEWS & UPDATES

• **CMIC AC Meeting.** The first, in-person AC Meeting was held on Wednesday, September 25th in the Betsy Blass Boardroom on the 10th floor of the Winthrop P. Rockefeller Cancer Institute (WPRCI). The day began with breakfast and an overview of Center activities by Dr. Eoff, followed by oral presentations from RPLs, Drs. Jamsen, Miah, Rahman, and Ryan, as well as a report from Dr. Kirk West, one of the Pilot Project awardees. After a nice lunch and a brief tour of the facilities, Drs. Raney and Enemark (with the help of Dr. Jay Marecki) treated us all to updates and plans for advancing the CMIC Research Cores. At the end of the day, the AC provided feedback to Center leadership at the executive session. The insights on Center progress from the AC formed the basis of the evaluation letter attached to our first RPPR. All things considered, the day went off without a hitch (thanks to Veronica!). Thank you again to all who were able to attend and participate in the meeting.



• **Research Milestone & Accolades for Dr. Kevin Raney.** Dr. Raney published his 100th paper indexed by PubMed at the National Library of Medicine. The paper was published in *Nature Communications* and reports on the structure and function of the Pif1 helicase on G-quadruplex DNA. Also, Dr. Raney was the keynote speaker for the Frontiers in Nucleic Acids session at the 75th Annual Southeast Regional Meeting of the American Chemical Society in Atlanta, GA (October 23-26). Congratulations to Dr. Raney for his outstanding accomplishment and well-deserved recognition!

• **Grant Review and Mock Study Section participation.** Crafting a competitive Research Project Grant (RPG)-level application takes time and hard work. CMIC RPLs should talk with their mentors about using the Grant Review and Mock Study Section service offered by the UAMS Translational Research Institute (TRI). This service is a valuable resource that can help improve your grant submissions. For questions about the process, please contact Dr. Paul Drew by e-mail at DrewPaulD@uams.edu or by phone at (501) 231-2248.

RECENT PUBLICATIONS

(Center publications from August-October 2024)

Van Matre S, Huq S, Akana L, Eldridge DE, Zuniga O, Rodriques H, **Wolfe AR** (2024) “Enhanced radiosensitivity of pancreatic cancer achieved through inhibition of Cyclin-dependent kinase 1” *Radiother Oncol.*, 200:110531 (PMID: 39270987).

Hong Z, Byrd AK, Gao J, Das P, Tan VQ, Malone EG, Osei B, **Marecki JC**, Protacio RU, **Wahls WP**, **Raney KD**, Song H (2024) “Eukaryotic Pif1 helicase unwinds G-quadruplex and dsDNA using a conserve wedge” *Nat Commun.*, 19, 6104 (PMCID: PMC11275212).

Center members are listed in bold

A cartoon representation of the ScPif1-G4 DNA structure reported in the publication from Dr. Raney and his collaborators is shown to the right (PDB ID Code 8XAK).



THE STRUCTURE OF DETERMINATION

The “12-second” rule is a principle taught to motorcyclists as part of the Motorcycle Safety Foundation (MSF) Basic Rider Course. The general notion is that keeping your eyes and brain moving between what’s happening within your immediate (4-second) path and what’s happening 12-seconds down the road will allow riders to make decisions that avoid danger. This “Rider Radar” is an essential skill for motorcyclists, but as we all know, it’s easy to get distracted or let your mind wander in traffic. Just like maintaining your focus on the road, losing focus on short-term and long-term goals in science can impact your productivity and career trajectory. Using a “12-month” rule to plan ahead is one way to help prioritize strategic decisions about the direction of your research program, keeping you and your team on track for success. Communicating these plans with your mentors and those in the lab is key to “enjoying the ride”.

