



DECEMBER 2018



Dr. Melike Caglayan's Publication in Nature Communications October 2018 Issue

*Pol μ dGTP mismatch insertion
opposite T coupled with ligation
reveals promutagenic DNA repair
intermediate*

Dr. Caglayan joined the University of Florida this summer as an Assistant Professor in the Biochemistry and Molecular Biology department and as a member of the UF Health Cancer Center.

Congratulations, Dr. Caglayan!

[FULL ARTICLE \(PDF\)](#)

ABSTRACT

Incorporation of mismatched nucleotides during DNA replication or repair leads to transition or transversion mutations and is considered as a predominant source of base substitution mutagenesis in cancer cells. Watson-Crick like dG:dT base pairing is considered to be an important source of genome instability. Here we show that DNA polymerase (pol) μ insertion of 7,8-dihydro-8'-oxo-dGTP (8-oxodGTP) or deoxyguanosine triphosphate (dGTP) into a model double-strand break DNA repair substrate with template base T results in efficient ligation by DNA ligase. These results indicate that pol μ -mediated dGTP mismatch insertion opposite template base T coupled with ligation could be a feature of mutation prone nonhomologous end joining during double-strand break repair.

ALUMNI SPOTLIGHT



Dr. Mayank Aggarwal is a 2013 UF Department of Biochemistry and Molecular Biology graduate of Dr. Rob McKenna's lab where his primary research focused on the structure-based drug design towards carbonic anhydrase inhibition.

Dr. Aggarwal is currently employed as a product manager and application scientist at Formulatrix, Inc. in Bedford, Massachusetts. In his position at Formulatrix, Mayank manages two separate teams, each developing two different software systems, Rock Maker and Rock Imager, which are used in research labs that utilize their company's protein crystallization automation solutions. Regarding his duties, Mayank states, "My major responsibilities entail collecting customer feedback, prioritizing various new features, defining specific requirements for development by the software engineers, and ensuring their implementation in both software systems. I've been releasing at least two newer versions for each of the systems every year. In addition, I also provide online and on-site trainings to customers within and outside the United States."

Upon graduation in 2013, Mayank received the Shull Fellow award and went to work as an independent scientist at the Oak Ridge National Laboratory in Oak Ridge, Tennessee. In June of 2017, he made the transition from the Oak Ridge National Laboratory to Formulatrix, Inc.

With regards to the impact of the Department's contribution to preparing Mayank for his career path, he states, "The beauty of the BMB department is not that it helps you achieve your desired path, but it prepares you to achieve whatever you may desire at whichever phase of your life. I say that because most students don't know what the future holds for them, they just like to go with the flow and take up the usual Ph.D. academic postdoc path, hoping to one day become an assistant professor. But with experience and maturity, as one's mind becomes more informed, desires change."

Dr. Aggarwal also says that his career path has taken him from a Ph.D. student to a non-postdoc position of an independent scientist at a national lab (which he says was amazing and scary at the same time), to a non-research position in industry. He says, "It wouldn't be incorrect to say that I had the opportunity to taste different waters. The knowledge and exposure provided by various highly qualified and helpful professors, journal clubs, seminars, and symposiums at the BMB has helped in an enormous way to develop character within me. It's hard to quantify how much it has helped me, but it is impossible to imagine my present without my past in the BMB."

Mayank grew up in Delhi, India. He reflects that, "I was always a city boy but 10 years of living in small towns in the US changed me completely. Even though it's been a year since I moved to the Boston area,

I'm still not used to the traffic and fast-paced life. My wife, Malvika, and I have a 3-1/2-year-old son, Parth, and he's as naughty as a boy of his age could be; however, I'm told he did NOT get this from me."



BMB Department's Contribution to the Annual Diversity Graduate Research Symposium

Professors and students from the Department of Biochemistry and Molecular Biology contributed in a large part to the success of this year's Diversity Graduate Research Symposium held on October 31st. UF's Black Graduate Student Organization (BGSO), in conjunction with the College of Medicine Diversity Committee, organizes and hosts this annual event.

The diversity symposium featured oral and poster presentations from graduate students, showcasing the quality and diversity of graduate research at UF across all disciplines - biological sciences, computer sciences, engineering, humanities,

mathematics, physical sciences, and social sciences - in addition to the keynote address by Dr. Madhukar Thakur from Thomas Jefferson University in Philadelphia, PA.

Two of our graduate students played a key role in the planning and logistics of this event: (1) Akilah Murray coordinated the sponsorship aspect of the event. She defined the budget, raised funding and coordinated all spending, which also included coordinating a raffle and the prizes as well as prizes for the oral and poster presentation winners. (2) Mam Mboge was involved in the identifying and selecting the keynote speaker, coordinating the itinerary for his visit and making travel arrangements.

BMB student volunteers were Shanan Emmanuel, Carrie Lomelino, Justin Kurian, Andrea Ramirez and Daniel Khokhar. These students assisted with general check-in, served as moderators of the oral

presentations and were poster session monitors.

Representing our department as poster presentation judges were Dr. Robert McKenna, Professor, and Dr. Mario Meitzsch, Postdoctoral Associate.

Our BMB department wishes to thank these who have gone above and beyond and given so generously of their time to make this important symposium such a success!



Biochemistry & Molecular Biology Department Honors Two Retiring Staff Members



Terry Rickey, department accountant, has worked for the University of Florida for 35 years, 29 of which were for the BMB department. Fortunately, Terry will be with us for a bit longer. Terry wears so many different hats, from accountant to physical plant management to furniture and equipment mover!

Elise Feagle, assistant to Dr. Flanagan and the department's graduate administrator, worked for UF for 30 years, 20+ of which were in the BMB

department. Elise's last day was Wednesday, Nov. 21. Her knowledge of the BMB graduate program requirements was expansive, and she will be greatly missed.



SEMINAR ANNOUNCEMENTS

DISSERTATION DEFENSE

Nikea Pittman

UF Biomedical Sciences
Biochemistry and Molecular
Biology Concentration
Dr. Mavis Agbandje-McKenna's
Laboratory



*“Structure and
Function
Investigation of
Anti-tumor
Parvoviruses”*

Wednesday, 12/5/18
9:30am
ARB R4-265

Supported by the Graduate Program
in Biomedical Sciences
College of Medicine

UF Department of Biochemistry
and Molecular Biology
College of Medicine
UNIVERSITY of FLORIDA

CENTER FOR STRUCTURAL BIOLOGY
SEMINAR SERIES

[Dr. Daniel Topgaard](#)

Professor, Physical Chemistry

Lund University, Sweden

Monday, 12/3 - 4:00pm

DeWeese Auditorium/McKnight Brain Institute

CENTER FOR EPIGENETICS

SEMINAR SERIES

Spring 2019 Schedule

Four Speakers coming in March and April

FACULTY RESEARCH DISCUSSIONS

Wednesdays 4:00pm ARB R3-265

[Dr. Kevin Brown](#)

Wed., 12/5

Associate Professor

Department of Biochemistry & Molecular Biology

[Dr. Zhijian Qian](#)

Wed., 12/12

Associate Professor of Medicine

Division of Hematology/Oncology

Department of Medicine

DEPARTMENTAL JOURNAL CLUBS

Biochemistry & Molecular Biology.

Tuesdays 4:00pm ARB R3-265

Dec. 4 Jana Jenquin

Dec. 11 Rotation Talks #2

Structural Biology.

Mondays 3:00pm ARB R3-265

Dec. 3 Jacob Andring

Dec. 10 Joshua Hull

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