Welcome to the Department of Biochemistry and Molecular Biophysics

Washington University in St. Louis
School of Medicine

December Publication

Galburt E.A. and **Rammohan J.**

A Kinetic Signature for Parallel Pathways: Conformational Selection and Induced Fit. Links and Disconnects between Observed Relaxation Rates and Fractional Equilibrium Flux under Pseudo-First-Order Conditions.

Biochemistry. 7014-7022. (2016)

BMB Holiday Party

The 2016 BMB Holiday Party was held on January 8th at the McDonnell Center at the St. Louis Zoo.

Visit **biochem.wustl.edu/photos** to see even more pictures!

Back Up Your Stuff!

Don’t let your important files and data go up in flames!

If you are not putting your important files on our servers (such as BMBCore), then it is possible that they are NOT getting backed up!

ARE YOU OK WITH LOSING ALL YOUR RESEARCH DATA?

Make sure that your computer is running a backup program!

Want to make sure your computer is backed up?
We provide several backup solutions.
Just send an email: support@biochem.wustl.edu

Department of Biochemistry and Molecular Biophysics
Washington University in St. Louis • School of Medicine

Congratulations to Jim Janetka!

A story about **Jim Janetka's** research on antibiotic-sparing therapeutics, prompted by his new paper in J Med Chem, has just published in **The Record**.
His research group has developed small molecules that prevent bacteria from sticking to the bladder wall, halting development of urinary tract infections in mice.

You can read more at **biochem.wustl.edu/news**

Coming "Soon"

WashU Phones to Be Upgraded to VoIP

* Current handsets will be replaced with Voice over IP (VoIP) phones.
(The new phones will have all the same features as the old phones but will be connected through the data network.)

* This project is expected to be finished by July 2017.
(More info will be provided as the project moves forward.)

* This project does not affect faxes, emergency lines or elevator phones, and you will keep your current phone number.

For more info: https://voip.med.wustl.edu

December Publication

Reddy D.R., **Ballante F.**, Zhou N.J., and **Marshall G.R.**

Design and synthesis of benzodiazepine analogs as isoform-selective human lysine deacetylase inhibitors.

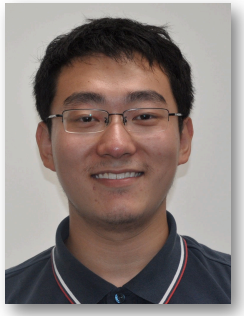
Eur J Med Chem. (2016)

Farmer's Market

Every Thursday, 10:00 am - 2:00 pm

Inside the McDonnell Pediatric Research Building
or
Outside on the Plaza
(weather permitting)

December Publication



Shen G., Cui W., Zhang H., **Zhou F.**, Huang W., Liu Q., **Yang Y.**, **Li S.**, **Bowman G.R.**, Sadler J.E., Gross M.L., and **Li W.**

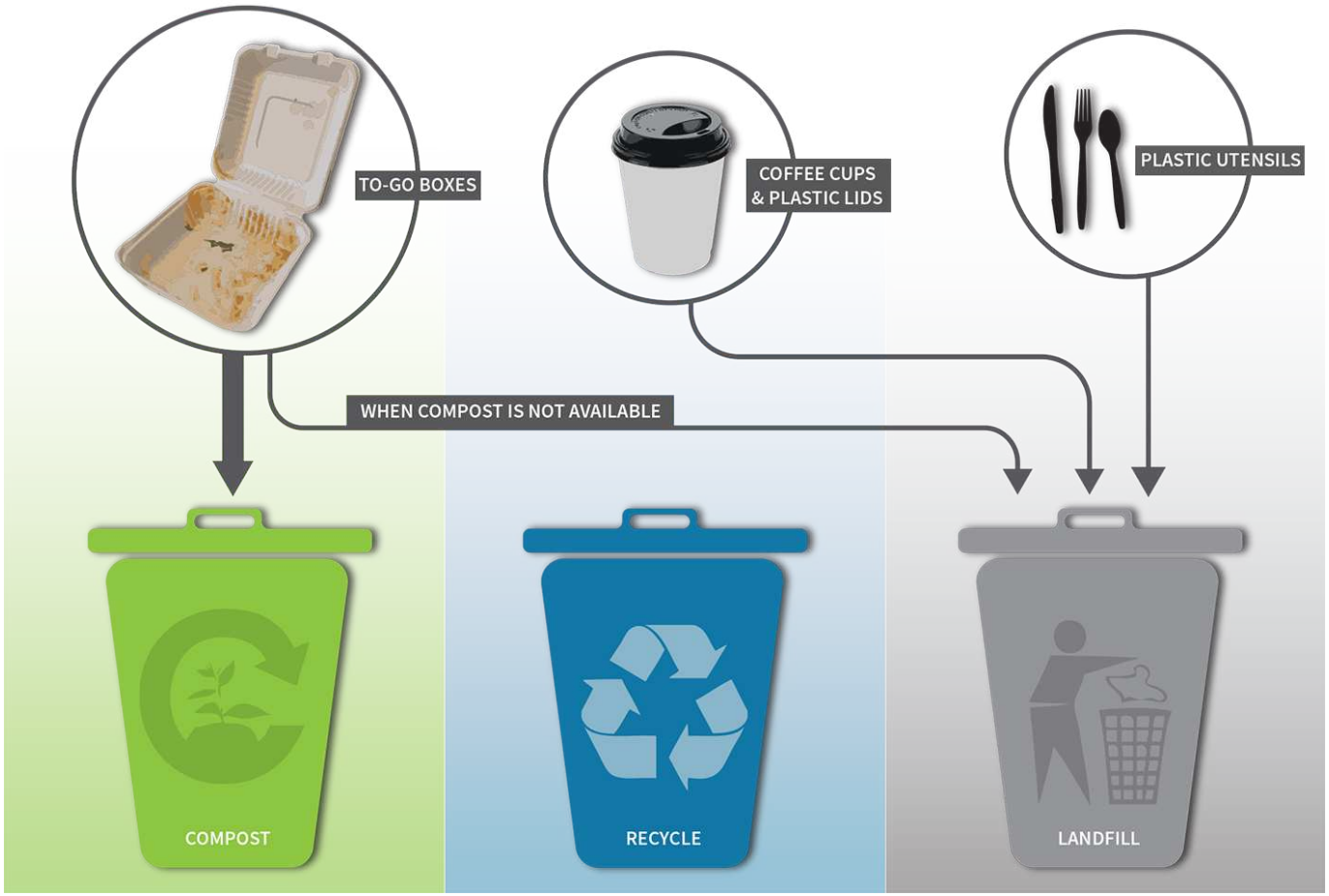
Warfarin traps human vitamin K epoxide reductase in an intermediate state during electron transfer.

Nature Structural & Molecular Biology 24, 69–76 (2017).

NEW WASTE SORTING GUIDELINES

ALWAYS EMPTY FOODS AND LIQUIDS BEFORE RECYCLING CONTAINERS

Sustainability
Washington University in St. Louis



RECYCLE

WASTE SORTING GUIDE : 2-STREAM

METAL & GLASS

PLASTICS
NO #6 OR BAGS

PAPER, CARTONS
& CARDBOARD

NO
FOOD/LIQUIDS
TO-GO BOXES
PAPER CUPS

FOOD CONTAMINATES RECYCLING

LANDFILL

FOOD/LIQUIDS
TO-GO BOXES

PLASTIC UTENSILS

PLASTIC #6
PAPER CUPS
STYROFOAM

SNACK WRAPPERS
SOFT PLASTICS & BAGS

QUESTIONS? SUSTAINABILITY.WUSTL.EDU

Sustainability

Department of Biochemistry and Molecular Biophysics

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January Publication

Istvan E.S., Mallari J.P., Corey V.C., Dharia N.V., **Marshall G.R.**, Winzeler E.A., and Goldberg D.E.

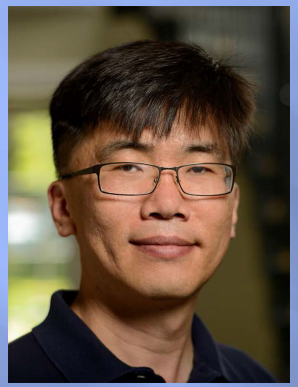
Esterase mutation is a mechanism of resistance to antimalarial compounds.

Nat Commun. (2017)

Department of Biochemistry and Molecular Biophysics

Washington University in St. Louis • School of Medicine

Carl and Gerty Cori Lecture



"Single Molecule Chromatin Biophysics and Cellular Mechanics"

Dr. Taekjip Ha

Bloomberg Distinguished Professor of Biophysics and Biophysical Chemistry, Biophysics, Biomedical Engineering

Investigator, Howard Hughes Medical Institute

Johns Hopkins University

Tuesday, February 28th, 2017
4:00 pm
Connor Auditorium
Farrell Learning
and Teaching Center

Reception immediately following seminar in atrium.

December Publication

Hayatshahi H.S., Roe D.R., Galindo-Murillo R., **Hall K.B.**, and Cheatham T.E.

Computational Assessment of Potassium and Magnesium Ion Binding to a Buried Pocket in the GTPase-Associating Center RNA.

J Phys Chem B. (2016)

TEA TIME

for Faculty, Staff, Postdocs & Students

Tuesdays & Thursdays
3:00-4:00 pm

Biochemistry Break Room
201 McDonnell Sciences Building

Coffee, tea and cookies are served.

Investments in basic science are fundamental to biomedical discovery.

(Linda J. Pike, PhD, Phyllis I. Hanson, MD, PhD, and Tamara L. Doering, MD, PhD.)

"School of Medicine investigators are harnessing new technologies to create precision and personalized approaches to diseases — advances that could not occur without prior investments in basic research."

...

In keeping with the medical school's commitment to basic research, three outstanding women scientists recently were awarded endowed professorships.

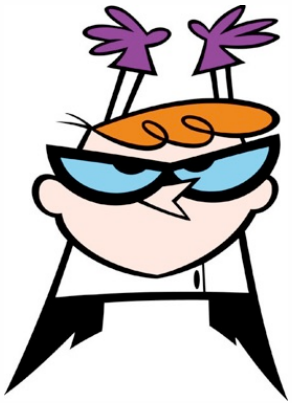
Read more at biochem.wustl.edu/news!

Don't Forget!

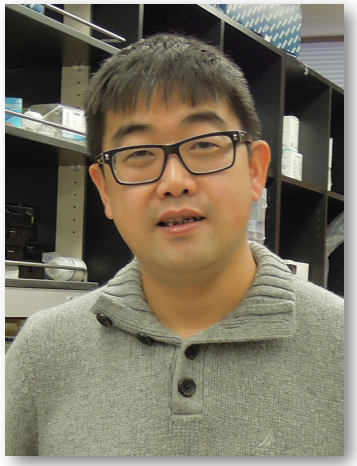
Please keep your lab locked if no one is in the lab when you leave.

And take your keys with you!

Please remember to take your gloves off when leaving the lab.



Congratulations to Weikai Li!



The January 2017 issue of **Nature Structural & Molecular Biology** is now available, and it features a News and Views piece highlighting **Dr. Weikai Li**'s recent publication, *Warfarin traps human vitamin K epoxide reductase in an intermediate state during electron transfer*.

Visit our site at **biochem.wustl.edu/news** to find links to the publication and commentary!

BMB Support

Computer not working?
Not getting email on your smartphone?

We are here to help with the many computing issues that may pop up in your day-to-day operations.

Support email: support@biochem.wustl.edu

Support website: BiochemSupport.wustl.edu

Just send us an email or visit our website and click on *Request Support* to get help!

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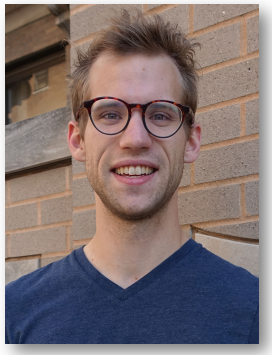
December Publication



Garner A.L., **Rammohan J.**, Huynh J.P., Onder L.M., Chen J., Bae B., **Jensen D.**, Weiss L.A., **Ruiz Manzano A.**, Darst S.A., Campbell E.A., Nickels B.E., **Galburt E.A.**, and Stallings C.L.

Effects of Increasing the Affinity of CarD for RNA Polymerase on Mycobacterium tuberculosis Growth, rRNA Transcription, and Virulence.

J Bacteriol. 2016

BMB Length of Service

The 2016 Department Service Awards were announced at the Holiday Party on January 8th, 2017.

We would like to thank all members of the department for their service, especially the following:

Carrie Stith - 15 Years

Darrell Baldwin - 20 Years

Jennifer Obermann - 15 Years

Congratulations to Jim Janetka!

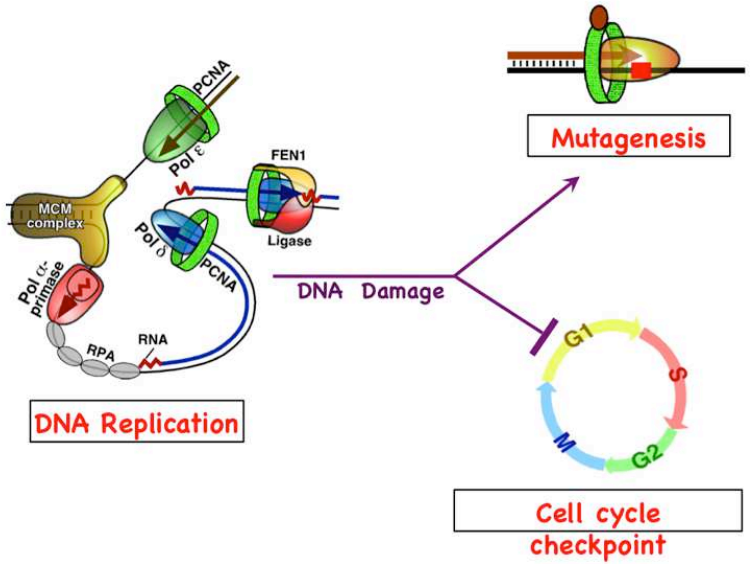
Jim Janetka, Ph.D., Associate Professor of Biochemistry and Molecular Biophysics and Chemistry Adjunct, along with Scott Hultgren, PhD, Helen L. Stoever Professor of Molecular Microbiology, and David Hunstad, MD, Associate Professor of Pediatrics and Molecular Microbiology; Chief, Division of Pediatric Infectious Diseases received and a four year grant award from the National Institute of Diabetes and Digestive and Kidney Diseases for his research entitled **"Small Molecule Bacterial Lectin Antagonists for UTI Treatment and Prevention"**.

WUSM Holiday Schedule

Holiday	Day	Date Observed at WU
Christmas Day	Sunday	Monday, December 26th, 2016
New Year's Day	Sunday	Monday, January 2nd, 2017
Martin Luther King, Jr. Day	Monday	January 16th, 2007
Memorial Day	Monday	May 29th, 2017
Independence Day	Tuesday	July 4th, 2017
Labor Day	Monday	September 4th, 2017

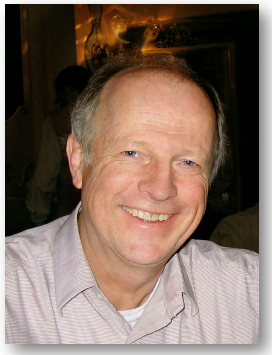
Spotlight on Research

The Burgers Lab studies DNA replication and DNA damage response in eukaryotic cells. Using yeast as a model organism, the lab integrates the biochemical analysis of DNA-protein interactions in purified model systems with the genetic analysis of targeted yeast mutants. Specific areas of interest are lagging strand DNA replication and Okazaki fragment maturation, damage induced mutagenesis, and DNA damage cell cycle checkpoints.



Right: DNA replication fork and Okazaki fragment maturation

December Publication



Kochenova O.V., **Bezalel-Buch R.**, Tran P., Makarova A.V., Chabes A., **Burgers P.M.**, and Shcherbakova P.V.

Yeast DNA polymerase ζ maintains consistent activity and mutagenicity across a wide range of physiological dNTP concentrations.

Nucleic Acids Res. (2016)

Are you paid monthly?

Please remember that your time report is due by the 5th of each month.

Congratulations to Tim Lohman!

Tim Lohman, Ph.D., professor of biochemistry and molecular biophysics received a four year grant award from the National Institute of General Medical Sciences for his research entitled **"Helicase Catalyzed DNA Unwinding"**.

BMB SCIENCE FRIDAYS

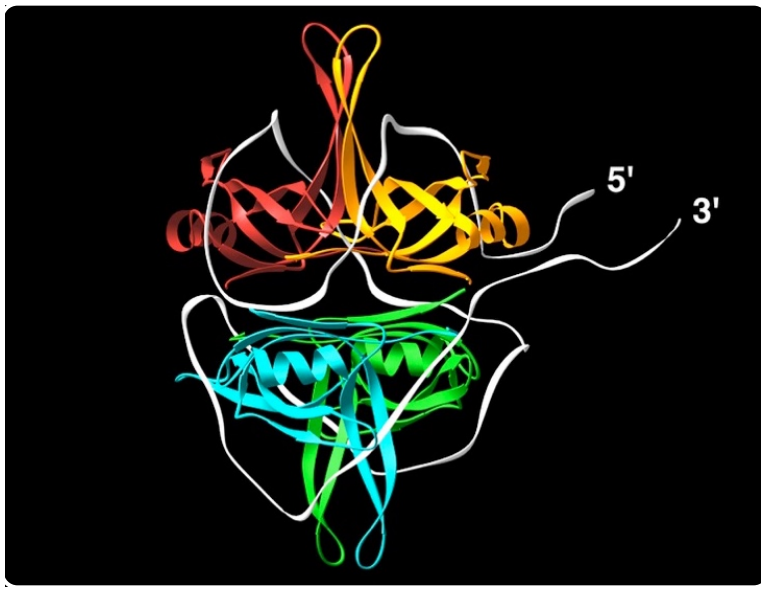
a forum for new data, new ideas
and works in progress

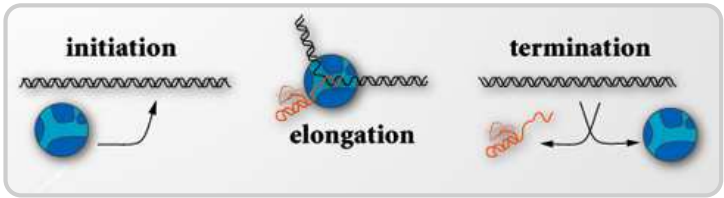
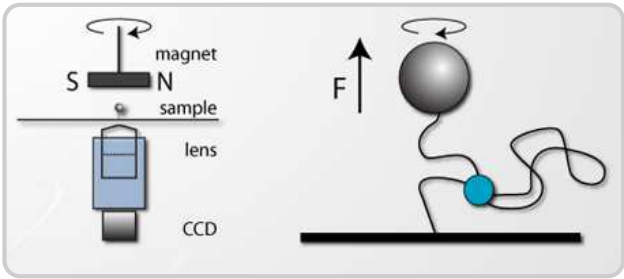
Science Fridays and Happy Hour:
EVERY FRIDAY, starting at 4PM.

Spotlight on Research

Research in the Lohman Lab focuses on obtaining a molecular understanding of the mechanisms of protein-nucleic acid interactions involved in DNA metabolism, in particular, DNA motor proteins (helicases/translocases) and single stranded DNA binding proteins. Thermodynamic, kinetic, structural and single molecule approaches are used to probe these interactions at the molecular level.

Right: SSB



Spotlight on Research

The Galburt Lab studies the detailed molecular mechanisms of transcription initiation across the three domains of life. The lab specializes in using single-molecule and ensemble biophysical techniques including optical and magnetic trapping and fluorescence to monitor initiation in real-time. These techniques allow for the quantification of the rates and magnitudes of conformational transitions in RNA polymerase, its associated transcription initiation factors, and the promoter DNA template that ultimately underlie gene expression and its regulation.