

Welcome to the Department of Biochemistry and Molecular Biophysics

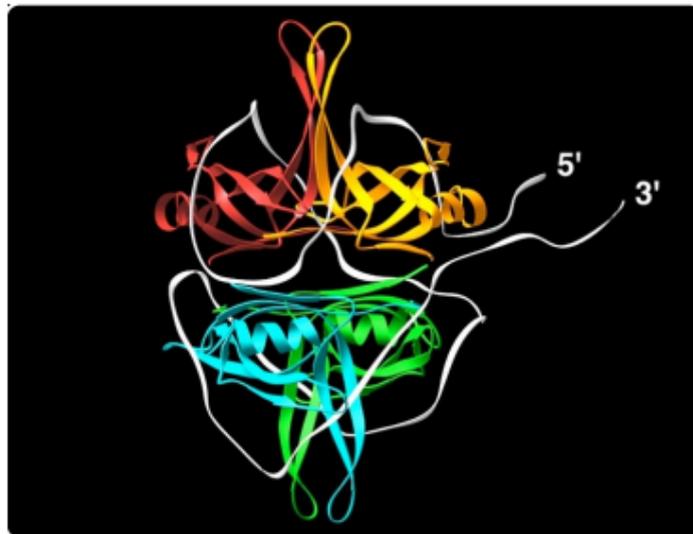


Washington University in St. Louis
School of Medicine

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.



Holiday Schedule

Holiday	Day	Date Observed at WU
Independence Day	Tuesday	July 4 th , 2017
Labor Day	Monday	September 4 th , 2017
Thanksgiving	Thursday	November 23 rd 2017
Day After Thanksgiving	Friday	November 24 th , 2017
Christmas	Monday	December 25 th , 2017
New Year's Day	Monday	January 1 st , 2018

September Publication



Wang H., Rempel D.L., Giblin D., **Frieden C.**, and Gross M.L.

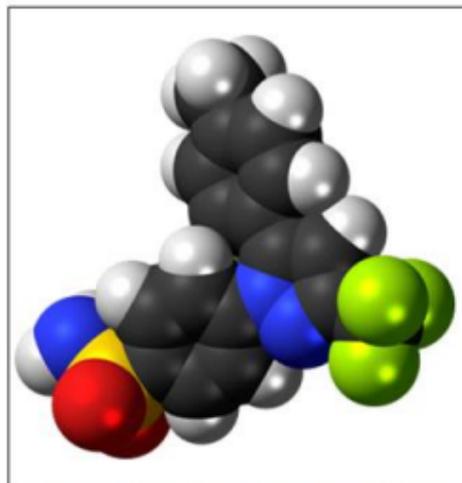
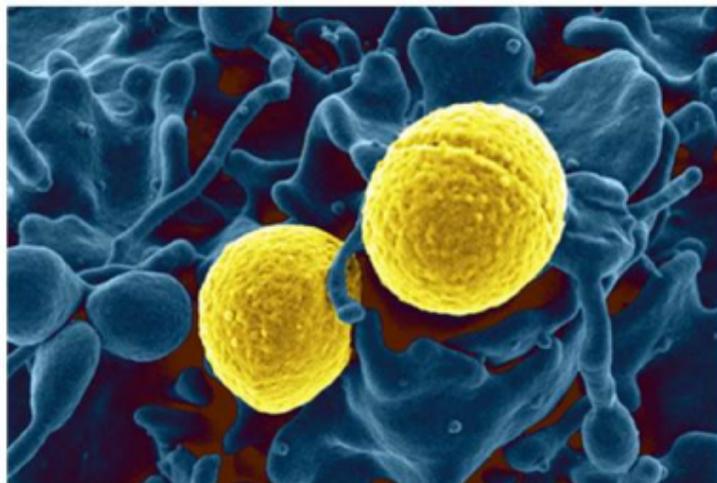
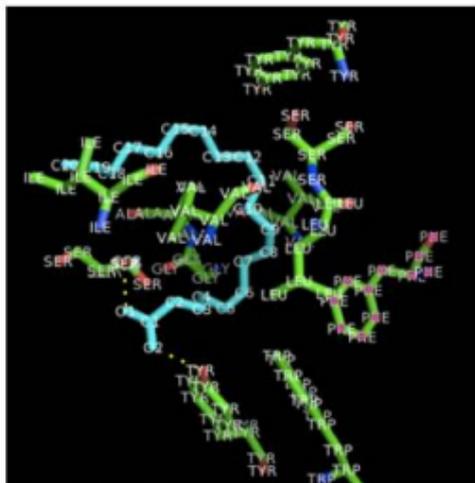
Peptide-Level Interactions between Proteins and Small-Molecule Drug Candidates by Two Hydrogen-Deuterium Exchange MS-Based Methods: The Example of Apolipoprotein E3.

Analytical Chem. doi: 10.1021/acs.analchem.7b01121. (2017)

Department of Biochemistry and Molecular Biophysics



Washington University in St. Louis • School of Medicine



MATCHING MICRO GRANTS

offered by

THE CENTER FOR DRUG DISCOVERY (CDD)

Additional Information and 2-page application form @ <http://cdd.wustl.edu>

Up to \$7,500 in matching funds

deadline: November 15, 2017

Department of Biochemistry
and Molecular Biophysics



Joint Seminar with: Biomedical Engineering and Developmental Biology

Manu Platt, Ph.D.

Georgia Institute of Technology and Emory University



"Quantitative Dissection of Proteolytic Networks Governing Tissue Remodeling in Health and Disease"

Tuesday, October 31st, 2017

10:30 am

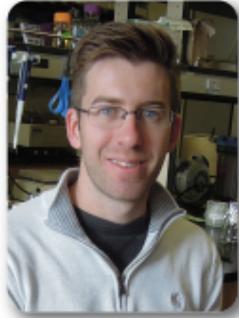
Erlanger Auditorium

McDonnell Sciences Building

Host: John Cooper

(Refreshments provided)

June Publication



Hart K.M., Moeder K.E., Ho C.M.W., Zimmerman M.I., Frederick T.E., and Bowman G.R.

Designing small molecules to target cryptic pockets yields both positive and negative allosteric modulators.

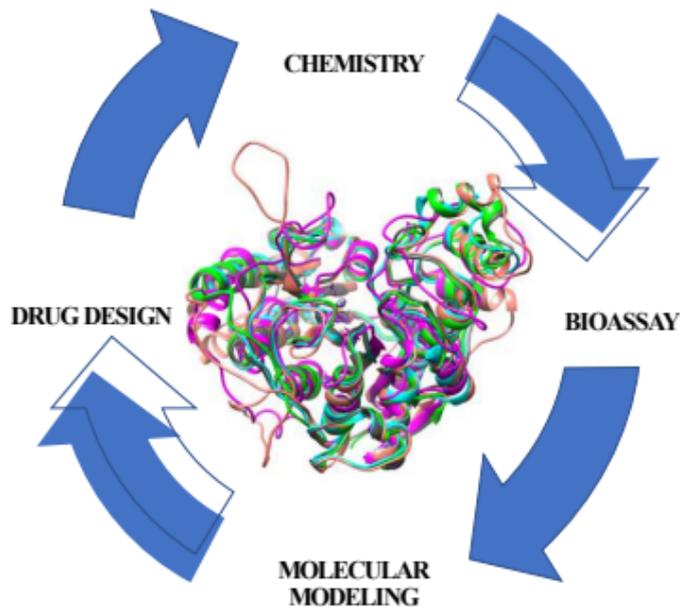
PLoS One. 12(6):e0178678. doi: 10.1371/journal.pone.0178678. eCollection. (2017)

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Spotlight on Research



The [Marshall Lab](#) performs a synergistic application of organic synthesis (solution- and solid-phase chemistry), enzymatic assays (electrophoretic mobility shift assays (EMSA) and surface plasmon resonance (SPR)), and computational chemistry techniques (homology modeling, molecular docking, molecular dynamics simulations, QSAR and 3D QSAR models) to rationally develop novel isoform-selective Lysine Deacetylases Inhibitors (KDACIs) as new therapeutics for the treatment of cancer, HIV-1, schistosomiasis and malaria.

BMB SCIENCE FRIDAYS

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

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

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Why didn't I get my flu vaccine?

Influenza ("the flu") can be a very serious disease. Even healthy adults can get sick and miss work. If you get the flu, you can spread it to family, friends or co-workers.

DON'T GET THE FLU. DON'T SPREAD THE FLU.
GET VACCINATED.

2017 WUSM Employee Seasonal Flu Vaccinations

4444 Forest Park, Room 1540 and 1540E

October 10: 8:00 a.m. - 12:00 p.m.

**Barnes-Jewish Hospital South Campus,
Queeny Tower, 17th Floor, Conference Room B**

September 18: 7:00 a.m. - 11:00 a.m.

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MOB 1, G-06**

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2nd Floor, HCI Kitchen**

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**Center for Advanced Medicine,
Farrell Conference Rooms, Third Floor**

September 26: 8:00 a.m. - 1:00 p.m. (Conference Room 2)

October 5: 11:30 a.m. - 4:30 p.m. (Conference Room 1)

October 17: 10:00 a.m. - 3:00 p.m. (Conference Room 1)

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**Center for Advanced Medicine South County,
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**Northwest Tower, 10th Floor,
Conference Room 10A**

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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 COMFORTABLE 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



TEA TIME

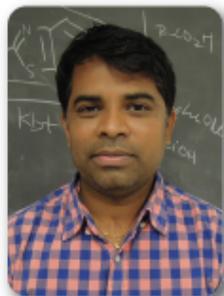
for Faculty, Staff, Postdocs & Students

Tuesdays & Thursdays
3:00-4:00 pm

Biochemistry Break Room
201 McDonnell Sciences Building

Coffee, tea and cookies are served.

September Publication



Rutaganira F.U., Barks J., Dhason M.S., Wang Q., Lopez M.S., Long S., Radke J.B., Jones N.G., **Maddirala A.R.**, **Janetka J.W.**, El Bakkouri M., Hui R., Shokat K.M., and Sibley L.D.

Inhibition of calcium dependent protein kinase 1 (CDPK1) by pyrazolopyrimidine analogs decreases establishment and reoccurrence of central nervous system disease by *Toxoplasma gondii*.

J Med Chem. doi: 10.1021/acs.jmedchem.7b01192. (2017)

Department of Biochemistry and Molecular Biophysics



Washington University in St. Louis • School of Medicine

Structural Dynamics of Biomolecules

The 5th Annual Single Molecules Workshop

Schedule of Events:

10:00 am:	Welcome & Opening Remarks Enrico Di Cera, M.D. Saint Louis University School of Medicine	
	Session I:	
10:10-10:40 am:	"Single molecule FRET reveals conformational dynamics of K channel gating and ion selectivity" Colin Nichols, Ph.D. Washington University School of Medicine	
10:40-11:10 am:	"Hibernation and activation of the Staphylococcus aureus 100S ribosome" Frances Yap, Ph.D. Saint Louis University School of Medicine	
11:10-11:30 am:	Coffee Break	
	Session II:	
11:30 am-12:00 pm:	"Direct observation of structure-function relationships in nucleic acid binding proteins with 'next-generation' single-molecular techniques" Yann Chemla, Ph.D. University of Illinois	
12:00-1:30 pm:	Complimentary Lunch	
	Session III:	
1:30-2:00 pm:	"Watching RNA fold by stopped-flow fluorescence" Kathleen Hall, Ph.D. Washington University School of Medicine	
2:00-2:30 pm	"Alba-STED: A novel microscope using FastFLIM and the Phosors Plots" Beniamino Barbieri, Ph.D. ISS, Inc.	
2:30-3:00 pm:	Coffee Break	
	Frontiers in Molecular Medicine and 34th Robert E. Olson Lecture:	
3:00-4:00 pm:	"Solution NMR spectroscopy: Why bother? A tale about p97" Lewis Kay, Ph.D. University of Toronto	

Info and Free Registration: biochem.slu.edu/event/smw-annual/

Wednesday, December 6, 2017
10:00 am-4:00 pm

Education Union Auditorium
1312 Carr Lane

Department of Biochemistry
and Molecular Biophysics



Joint Seminar with: Biomedical Engineering and Developmental Biology

Manu Platt, Ph.D.

Georgia Institute of Technology and Emory University



"Quantitative Dissection of Proteolytic Networks Governing Tissue Remodeling in Health and Disease"

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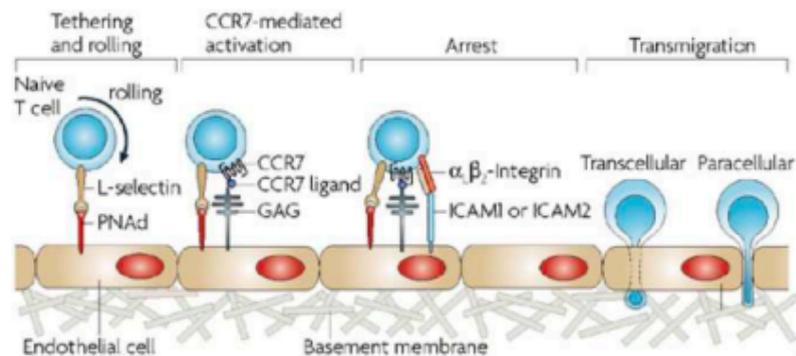


Are you paid **monthly**?

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

Spotlight on Research

The [Cooper Lab](#) is interested in how cells migrate, in particular how cells cross the endothelium as they move into or out of the blood stream. Immune cell migration is important for fighting infection, and cancer cell migration is important for combatting cancer metastasis. These cells use their actin cytoskeletons to accomplish this movement.



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 Jim Janetka

Jim Janetka, PhD, Associate Professor of Biochemistry and Molecular Biophysics and Chemistry Adjunct received a two year, Career Catalyst Research (CCR) Competitive Renewal Grant Program award from Susan G. Komen for the Cure for his research entitled **“Multifunctional inhibitors of MET/RON signaling and cross-talk with EGFR/HER2”**.

The work is focused on developing new drugs to treat breast cancer by dual targeting of the tumor and its microenvironment.



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2017 Total Eclipse



On Monday, August 21st, 2017, Jayma invited members of the BMB Department out to her house to get a good view the total eclipse of the sun.

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

Farmer's Market

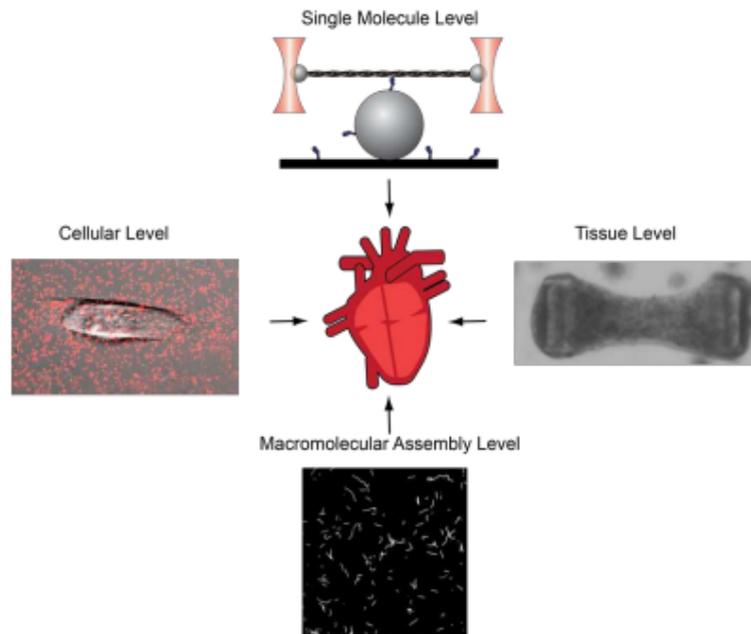
**Inside the McDonnell Pediatric
Research Building
OR
Outside on the Plaza
(weather permitting)**

**Every Thursday!
10:00 am - 2:00 pm**



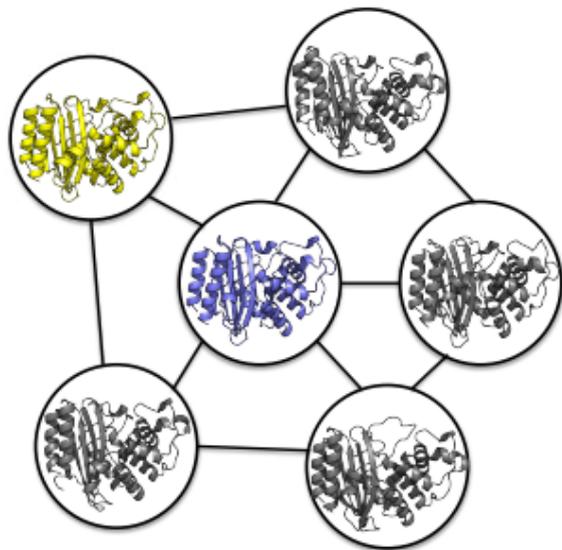
Spotlight on Research

The [Greenberg Lab](#) focuses on how cytoskeletal motors function in both health and disease. Currently, the lab is studying mutations that cause familial cardiomyopathies, the leading cause of sudden cardiac death in people under 30 years old. The lab uses an array of biochemical, biophysical, and cell biological techniques to decipher how these mutations affect heart contraction from the level of single molecules to the level of engineered tissues. Insights into the disease pathogenesis will guide efforts to develop novel therapies.



Spotlight on Research

The [Bowman Lab](#) seeks to understand the distribution of different structures a protein adopts and how this ensemble determines a protein's function. Examples of ongoing research projects include 1) understanding how mutations in the enzyme beta-lactamase change its specificity without changing the protein's crystal structure, 2) designing allosteric drugs, and 3) developing algorithms for quickly building models of the different structures a protein adopts.



NEW WASTE SORTING GUIDELINES

ALWAYS EMPTY FOODS AND LIQUIDS BEFORE RECYCLING CONTAINERS



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
WASHINGTON UNIVERSITY IN ST. LOUIS



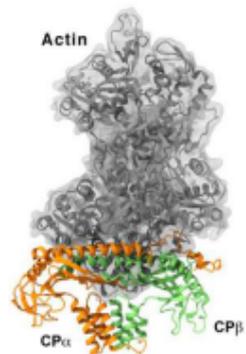
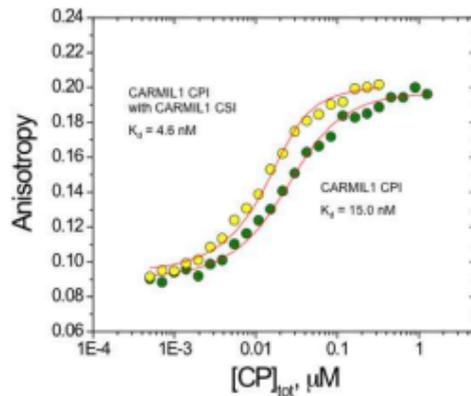
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Spotlight on Research

The [Cooper Lab](#) is interested in how the actin filaments in cells assemble and how that assembly controls cell shape and movement. One focus is an actin-binding protein called "capping protein," which caps one end of the actin filament. Capping protein is in turn regulated by intrinsically disordered regions of the CARMIL family of proteins, which exhibit positive linkage in their binding interactions.





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2017 WUSM Employee Seasonal Flu Vaccinations

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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

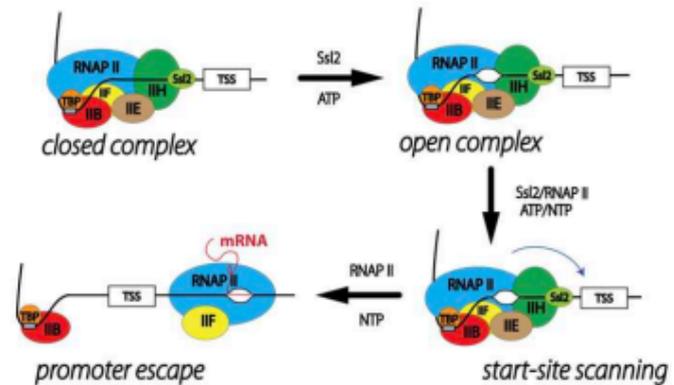
Support website: BiochemSupport.wustl.edu

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



Spotlight on Research

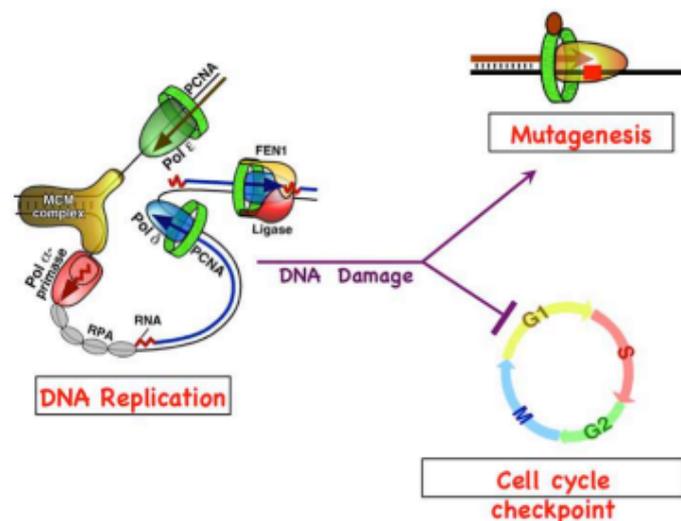
The [Galburt Lab](#) strives to understand the physical mechanisms of transcription initiation and other important DNA-protein interactions. More specifically, we use a variety of single-molecule and ensemble biophysical techniques including both optical and magnetic tweezers and fluorescent microscopy to investigate how the assembly of initiation complexes on gene promoters leads to DNA unwinding and transcription. Our work is currently focused on the mechanisms of basal transcription initiation in Eukaryotes and on factor-regulated transcription in *Mycobacterium tuberculosis*.



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



October Publication



Eric J. Tomko and **Timothy M. Lohman**

Modulation of Escherichia coli UvrD Single-Stranded DNA
Translocation by DNA Base Composition

Biophysical Journal, Volume 113, Issue 7 (2017)

Department of Biochemistry and Molecular Biophysics



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