Welcome to the Department of Biochemistry and Molecular Biophysics

Washington University in St. Louis
School of Medicine
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.

See more research:

biochem.wustl.edu/spotlight
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.
Barrick S.K., Clippinger S.R., Greenberg L., & Greenberg M.J.

Computational Tool to Study Perturbations in Muscle Regulation and Its Application to Heart Disease.

Congratulations to Dr. Bowman

The Board of Trustees voted at their May 3rd, 2019 meeting to award tenure in the Department of Biochemistry and Molecular Biophysics to Dr. Greg Bowman.
Don't Forget!

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

Don’t forget your keys!

Please remember to take OFF your gloves when leaving the lab.
April Publication

Recent progress on inhibitors of the type II transmembrane serine proteases, hepsin, matriptase and matriptase-2.

Are you backing up your files?

If you are not keeping your files on a network file server, running a local backup client, or utilizing cloud storage, then it is possible that your files are not backed up!

Want to make sure your data is backed up? We provide several backup solutions.

BMBSupport.wustl.edu/backups

Department of Biochemistry and Molecular Biophysics
Washington University in St. Louis • School of Medicine
Science Fridays and Happy Hour: 
EVERY FRIDAY, starting at 4PM.
Tomko E.J. & Galburt E.A.

Single-molecule approach for studying RNAP II transcription initiation using magnetic tweezers.

Your **BMB ID** is used for network files shares, remote VPN access, and BMB WiFi.

You can now change your BMB ID password, reset it if you have forgotten it, or even recover your BMB ID if you don't remember what it is!

Just visit:

**bmbid.wustl.edu**
April 29th, 2019 – Andrea Soranno, PhD, Assistant Professor of Biochemistry and Molecular Biophysics received a new five year grant award from the National Institute on Aging for his research entitled “Conformational and functional analysis of Apolipoprotein E”.
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.

See more research: [biochem.wustl.edu/spotlight](http://biochem.wustl.edu/spotlight)

Cooperative Changes in Solvent Exposure Identify Cryptic Pockets, Switches, and Allosteric Coupling.

<table>
<thead>
<tr>
<th>Holiday</th>
<th>Day</th>
<th>Date Observed at WU</th>
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<tr>
<td>Martin Luther King, Jr. Day</td>
<td>Monday</td>
<td>January 21(^{st}), 2019</td>
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<td>Memorial Day</td>
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<td>May 27(^{th}), 2019</td>
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<td><strong>Independence Day</strong></td>
<td><strong>Thursday</strong></td>
<td><strong>July 4(^{th}), 2019</strong></td>
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<td>Labor Day</td>
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<td>Thanksgiving Day</td>
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<td>November 28(^{th}), 2019</td>
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<td>Friday after Thanksgiving</td>
<td>Friday</td>
<td>November 29(^{th}), 2019</td>
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Farmer’s Market

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

Every Thursday!
10:00 am - 2:00 pm
Identification of druggable small molecule antagonists of the Plasmodium falciparum hexose transporter PfHT and assessment of ligand access to the glucose permeation pathway via FLAG-mediated protein engineering.

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.

See more research: biochem.wustl.edu/spotlight
Are you paid **monthly**?

Please remember that your **time report** is **due by the 5th of each month**.
Congratulations to Josh Rackers for being selected as the 2019 Ceil M. DeGutis Prize Fellow.

Josh is a graduate student in the Computational & Molecular Biophysics program. He is doing his PhD thesis work in the lab of Dr. Jay Ponder. As a graduate student, Josh has developed a novel physics-based model for simulating biomolecules, won multiple fellowships, and contributed to major software projects. He will defend his thesis, entitled, “A Physics-Based Intermolecular Potential for Biomolecular Simulation” on April 26th, 2019.

Visit biochem.wustl.edu/news to read more!
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.

See more research: biochem.wustl.edu/spotlight
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: BMBSupport.wustl.edu

Just send us an email or visit our website and click on *Request Support* to get help!
Jensen D., Manzano A.R., Rammohan J., Stallings C.L., & Galburt E.A.

CarD and RbpA modify the kinetics of initial transcription and slow promoter escape of the Mycobacterium tuberculosis RNA polymerase.

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

See more research: [biochem.wustl.edu/spotlight](http://biochem.wustl.edu/spotlight)
HAVING ISSUES AT WORK?
WE’RE HERE TO HELP.

Contact any of the following for help

Jayma Mikes, Business Manager, jmikes@wustl.edu, 314-362-0262
John Cooper, Department Head, jcooper11@gmail.com, 314-362-3964
Jessica Kennedy – Title IX Director, jwkenney@wustl.edu, 314-935-3118
Jessica Kuchta-Miller – Staff/Postdoc/Graduate Student Ombuds, 314-379-8110
Karen O’Malley – Medical Student Ombuds, 314-660-2089
Jim Fehr – Faculty Ombuds, 314-660-2089
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.

See more research:
biochem.wustl.edu/spotlight
Hailemariam S., Kumar S., & Burgers P.M.

Activation of Tel1ATM kinase requires Rad50 ATPase and long nucleosome-free DNA, but no DNA ends.