Welcome to the Department of Biochemistry and Molecular Biophysics

Washington University in St. Louis
School of Medicine
The 2017 BMB Holiday Party was held on December 16th at the McDonnell Center at the St. Louis Zoo.

Visit biochem.wustl.edu/photos to see even more pictures!
Congratulations to John Cooper who was elected as a 2017 AAAS Fellow
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.
Membrane protein structure in live cells: Methodology for studying drug interaction by mass spectrometry-based footprinting.

The Washington University Danforth Campus Dr. Martin Luther King, Jr. Commemoration Committee cordially invites you to:

**The 31st Annual Dr. Martin Luther King, Jr. Commemorative Celebration**

**Theme:** “50 Years Later: Where Do We Go from Here?”

**Monday, January 15, 2018**
7:00 pm – 8:30 pm, Graham Chapel
Washington University Danforth Campus

Please visit [biochem.wustl.edu/links](http://biochem.wustl.edu/links) for more information.
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
The following individuals were recently recognized for their years of service!

Jayma Mikes – 10 Years  Binh Nguyen – 5 Years
<table>
<thead>
<tr>
<th>Holiday</th>
<th>Day</th>
<th>Date Observed at WU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thanksgiving</td>
<td>Thursday</td>
<td>November 23\textsuperscript{rd} 2017</td>
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<tr>
<td>Day After Thanksgiving</td>
<td>Friday</td>
<td>November 24\textsuperscript{th}, 2017</td>
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<tr>
<td>Christmas</td>
<td>Monday</td>
<td>December 25\textsuperscript{th}, 2017</td>
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<tr>
<td>New Year's Day</td>
<td>Monday</td>
<td>January 1\textsuperscript{st}, 2018</td>
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<tr>
<td>Martin Luther King, Jr. Day</td>
<td>Monday</td>
<td>January 18\textsuperscript{th}, 2018</td>
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<tr>
<td>Memorial Day</td>
<td>Monday</td>
<td>May 28\textsuperscript{th}, 2018</td>
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14th Annual Postdoc Symposium

KEYNOTE SPEAKER
Elizabeth L. Travis, Ph.D.
Women & Minority Faculty Inclusion Assoc. Vice President, MD Anderson

PANEL DISCUSSION
“THE STORIES BEHIND A CV”

ABSTRACT SUBMISSION
All WashU Postdocs in STEM fields
NOV. 27 – DEC. 22, 2017
http://dbbs.wustl.edu/Postdocs/PostdocSymposium

POSTER SESSION  POSTDOCS TALKS
Michael Kinch is featured in a new article "Cutting NIH budget could cripple drug development".

"A proposal to slash funding for the National Institutes of Health (NIH) could severely impair the development of new, life-saving drugs, according to a new analysis by researchers at Washington University School of Medicine in St. Louis."

You can read more at biochem.wustl.edu/news
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.
Maxwell I. Zimmerman, Kathryn M. Hart, Carrie A. Sibbald, Thomas E. Frederick, John R. Jimah, Catherine R. Knoverek, Niraj H. Tolia, and Gregory R. Bowman

Prediction of New Stabilizing Mutations Based on Mechanistic Insights from Markov State Models

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

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Want to make sure your computer is backed up? We provide several backup solutions.
Just send an email: support@biochem.wustl.edu
Shuang Li, Guo-Min Shen, and Weikai Li

Intramembrane thiol oxidoreductases: evolutionary convergence and structural controversy.

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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.
October Publication


Mechanistic Basis for ATP-Dependent Inhibition of Glutamine Synthetase by Tabtoxinine-β-lactam.

14th Annual Postdoc Symposium

**SAVE DATE**
MARCH 22, 2018
Eric P. Newman (EPNEC)

**KEYNOTE SPEAKER**
Elizabeth L. Travis, Ph.D.
Women & Minority Faculty Inclusion
Assoc. Vice President, MD Anderson

**PANEL DISCUSSION**
“THE STORIES BEHIND A CV”

**POSTER SESSION**
**POSTDOCS TALKS**

**ABSTRACT SUBMISSION**
All WashU Postdocs in STEM fields

NOV. 27 – DEC. 22, 2017

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Washington University in St. Louis
Gill K., Macdonald-Obermann J.L., and Pike L.J.

Epidermal growth factor receptors containing a single tyrosine in their C-terminal tail bind different effector molecules and are signaling-competent.

Are you paid monthly?

Please remember that your time report is due by the 5th of each month.
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.
Wang H., Shu Q., Rempel D.L., Frieden C., and Gross M.L.

Understanding Curli Amyloid-Protein Aggregation by Hydrogen-Deuterium Exchange and Mass Spectrometry.

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.
Farmer’s Market

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

Every Thursday!
10:00 am - 2:00 pm
Tomko E.J., Fishburn J., Hahn S., and Galburt E.A.

TFIIH generates a six-base-pair open complex during RNAP II transcription initiation and start-site scanning.

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.
October Publication


Endogenous retinoid X receptor ligands in mouse hematopoietic cells.

NEW WASTE SORTING GUIDELINES
ALWAYS EMPTY FOODS AND LIQUIDS BEFORE RECYCLING CONTAINERS

TO-GO BOXES

COFFEE CUPS & PLASTIC LIDS

PLASTIC UTENSILS

WHEN COMPOST IS NOT AVAILABLE

COMPOST
RECYCLE
LANDFILL
RECYCLE
WASTE SORTING GUIDE: 2-STREAM

- METAL & GLASS
- PLASTICS
  NO #6 OR BAGS
- PAPER, CARTONS & CARDBOARD
- 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

Department of Biochemistry and Molecular Biophysics
Washington University in St. Louis • School of Medicine
Bartels P.L., Stodola J.L., **Burgers P.M.J.**, and Barton J.K.

A Redox Role for the [4Fe4S] Cluster of Yeast DNA Polymerase δ.

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.
Computer not working?
Not getting email on your smartphone?

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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!
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.

Large domain movements upon UvrD dimerization and helicase activation.