Welcome to the Department of Biochemistry and Molecular Biophysics

Washington University in St. Louis
School of Medicine

https://biochem.wustl.edu
View these slides online!

1) Go to biochem.wustl.edu

2) Click Media and Newsletters

3) Click Display TV Announcements

**Heteroarylamide smoothened inhibitors: Discovery of N-[2,4-dimethyl-5-(1-methylimidazol-4-yl)phenyl]-4-(2-pyridylmethoxy)benzamide (AZD8542) and N-[5-(1H-imidazol-2-yl)-2,4-dimethyl-phenyl]-4-(2-pyridylmethoxy)benzamide (AZD7254).**

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](http://biochem.wustl.edu/spotlight)
January 17th, 2020 – **Weikai Li, PhD**, Associate Professor of Biochemistry and Molecular Biophysics, along with Laura Schuettpelz, MD, PhD, Associate Professor of Pediatrics, received an Interdisciplinary Research Initiatives grant award from the Children’s Discovery Institute for their work entitled “*Regulation of normal and malignant B cells by the tetraspanin CD53*”. 

**Congratulations to Dr. Li**
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!
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.

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Are you paid monthly?

Please remember that your time report is due by the 5th of each month.
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.
Patrick McConnell, Marlene Mekel, Alex G. Kozlov, Olivia L. Mooren, Timothy M. Lohman, & John A. Cooper

Comparative analysis of CPI-motif regulation of biochemical functions of actin capping protein

bioRxiv. doi.org/10.1101/2020.02.06.936211 (2020)
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)
Maybruck B.T., Lam W.C., Specht C.A., Ilagan M.X.G., Donlin M.J., & Lodge J.K.

The Aminoalkylindole BML-190 Negatively Regulates Chitosan Synthesis via the Cyclic AMP/Protein Kinase A1 Pathway in Cryptococcus neoformans.

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](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, jwkennedy@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
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Just visit: bmbid.wustl.edu
Greenberg Z.J., Monlish D.A., Bartnett R.L., Yang Y., Shen G., Li W., Bednarski J.J., & Schuettpelz L.G.

**The Tetraspanin CD53 Regulates Early B Cell Development by Promoting IL-7R Signaling.**

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A recent publication in PNAS (Clippinger et al.) from the Greenberg lab was highlighted in *Circulation*. The Greenberg lab demonstrated how a mutation that causes genetic heart failure affects not only how the proteins in the heart generate force, but also how heart cells respond to changes in their mechanical environment. This work has important implications for the development of new precision medicine therapies for heart failure.

Visit [biochem.wustl.edu/news](http://biochem.wustl.edu/news) for links!
BMB SCIENCE FRIDAYS

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

Science Fridays and Happy Hour: EVERY FRIDAY, starting at 4PM.
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)
<table>
<thead>
<tr>
<th>Holiday</th>
<th>Day</th>
<th>Date Observed at WU</th>
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<tbody>
<tr>
<td>Martin Luther King, Jr.</td>
<td>Monday</td>
<td>January 20(^{th}), 2020</td>
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<tr>
<td>Memorial Day</td>
<td>Monday</td>
<td>May 25(^{th}), 2020</td>
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<tr>
<td>Independence Day</td>
<td>Friday</td>
<td>July 3(^{rd}), 2020</td>
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<td>Labor Day</td>
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<td>September 7(^{th}), 2020</td>
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<td>Thanksgiving Day</td>
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<tr>
<td>Friday after Thanksgiving</td>
<td>Friday</td>
<td>November 27(^{th}), 2020</td>
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Welty R., Rau M., Pabit S., Dunstan M.S., Conn G.L., Pollack L., & Hall K.B.

**Ribosomal Protein L11 Selectively Stabilizes a Tertiary Structure of the GTPase Center rRNA Domain.**

Farmer’s Market

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

Every Thursday!
10:00 am - 2:00 pm
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](http://biochem.wustl.edu/spotlight)
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.