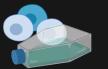
# The Drosophila Research and Screening Center-Biomedical Technology Research Resource (DRSC-BTRR) at the DRSC/TRiP

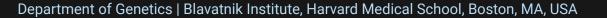
DRSC-BTRR & DRSC-TRiP team: Gabriel Birchak, Justin Bosch, Cooper Cavers, Ryan Colbeth, Aram Comjean, Ben Ewen-Campen, Yuan Feng, Corey Forman, Ah-Ram Kim, Grace Kim, Shannon Knight, Raphael Lopes, Enzo Mameli, Kelly Reap, Jonathan Rodiger, Emily Stoneburner, Raghuvir Viswanatha, Baolong Xia, Jun Xu, Grace Zhang DRSC-BTRR & DRSC/TRiP leaders: Stephanie E. Mohr (poster presenter & Co-I), Claire Yanhui Hu, Jonathan Zirin, Nobert Perrimon (PI)







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## About the DRSC-BTRR

Most labs focus on a topic and use multiple techniques to address it. We flip that model--we focus on technology research & development, and empower others to use the technologies to study diverse topics.

> Technology R&D at the DRSC

**Biomedical Projects** by collaborators

Mature tech (cells, libraries, flies): Deposited to distribution facilities, e.g. Addgene, DGRC, BDSC

### **DRSC-BTRR Technology Areas:**

Genome-wide Screens in Insect Cells Gene Pertubation in vivo in Drosophila (see 509 B) Protein Binding & Labeling in vivo in Drosophila

We have three Technology R&D (TRD) projects, as outlined above. The TRDs interact with Driving Biomedical Projects (DBPs), which are independently funded research projects in collaborating labs that can benefit from our technologies. Iterative cycles of R&D at the DRSC-BTRR and testing by DBPs leads to technology improvements and acheivement of experimental goals. In addition, we have a Community Engagement component, which includes conducting Collaboration and Service Projects with other labs, using mature technologies; dissemination of our technologies to distributors; and training. Finally, an administrative component ties things together, tracks interactions, and provides us with oversight by an executive advisory committee

Check out this page for a more detailed overview: https://fgr.hms.harvard.edu/drsc-btrr

Contact DRSC-BTRR Director/Co-I Dr. Stephanie Mohr for info.



## Tech Highlight: Cell Screens



We have developed reagent libraries and methods for RNAi & CRISPR screening in Drosophila cells, and have begun development of cell lines and libraries for CRISPR screening in mosquito cell lines.

Arrayed Screens High-content imaging,

luminescence, and fluorescence assays RNAi libraries

CRISPR knockout

Example published projects: Nicholson et al. (2019) PMID: 31575731

Viswanatha et al. (2018) PMID: 30051818; Okamoto et al. (2018) PMID 30293839.

Viswanatha et al. "CRISPR cell screens in insect cells'

Learn more at Poster 550 A



Viability, resistance, and FACS assays CRISPR knockout CRISPR activation Flv cells Mosquito cells

**Pooled Screens** 

Cell mechanisms

### **COVID-19 Shutdown Activities**

Like so many labs, we have shut down wet-bench activities and transitioned to work by remote. To continue to contribute to the Drosophila community, we have been working on the following.



Curation of info about antibodies (collaboration with FlyBase and with

PabMabs.com)

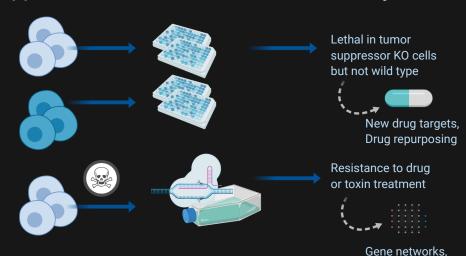


Curation of info about RNAi fly stocks for RSVP (collaboration with FlyBase)



Curation of info from & about scRNAseg studies (collaboration with FlyCellAtlas)

# Application of Screens to Biomedical Projects



## Resources & Protocols

We have recently published protocols and deposited cell lines, plasmids, and reagent libraries to distribution facilities.

GFP-tagged Cell Lines Resource Find them at the DGRC https://dgrc.bio.indiana.edu

Protocols published in Bosch et al. (2020) Curr Protoc Mol Biol. 2020 PMID: 31869524.

**CRISPR Pooled Screen Resources** Find plasmids and libraries at Addgene https://www.addgene.org/browse/article/28206945/



Don't miss our suite of online resources:

or more info

Protocols published in Viswanatha et al. (2019) Curr Protoc Mol Biol. 2019. PMID: 31763777

### Acknowledgements & Funding

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