



Welcome to Biomedical Research Cores

The Perelman School of Medicine's 23 biomedical research cores offer a wide variety of services including access to state-of-the-art equipment and instrumentation, technical expertise and training and education all designed to support your research.

In this edition of our newsletter, and in future newsletters, we will be highlighting exciting news and developments across our research cores. Thank you for reading and providing feedback!

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Dr. Jorge Henao Mejia

Dr. Jean Richa

Double Feature Cores Spotlight:

CRISPR Cas 9 Mouse Targeting Core and Transgenic and Chimeric Mouse Facility

Our newest PSOM core established in early 2017, the CRISPR Cas9 Mouse Targeting Core, is led by Dr. Jorge Henao-Mejia, Assistant Professor of Pathology and Laboratory Medicine, and works in close partnership with the existing PSOM Transgenic and Chimeric Mouse Facility of which Dr. Jean Richa is the technical director. This exciting partnership provides the research community with access to the latest technologies available for editing the genome of one-cell mouse embryos for the purpose of producing novel models such as knock-out (KO), conditional KO, and knockin (KI) mice.

The CRISPR/Cas9 technology has revolutionized the way genome editing is performed. This technology significantly reduces the time and the cost required to generate genetically engineered mice, allowing scientists to test more precise hypotheses in vivo. The CRISPR core, in partnership with the Transgenic and Chimeric Mouse Facility, will offer a variety of services including targeting design, sgRNA preparation, Cas9 mRNA generation, DNA repair template preparation, microinjection, and genotyping/screening for targeted mice.

The Transgenic and Chimeric Mouse Facility provides a centralized service to efficiently produce infection-free transgenic, chimeric, and genome-edited strains of mice. These mice carry randomly inserted transgenes and/or site-specific alterations in the mouse genome of specific interest to Penn researchers. The Facility offers services including DNA pronuclear injection into fertilized oocytes (along with genotyping of transgenic founders), ES cell

researchers. The Facility offers services including DNA pronuclear injection into fertilized oocytes (along with genotyping of transgenic founders), ES cell injection into blastocysts, cytoplasmic/pronuclear injections into fertilized oocytes of CRISPR-Cas9 mix (gRNA, Cas9RNA, ssDNA/dsDNA templates), embryo and sperm cryopreservation, in vitro fertilization, and re-derivation of live and cryopreserved lines.

For further information about the services provided by this new partnership, please contact <u>Dr. Jorge Henao-Mejia</u> or <u>Dr. Jean Richa</u>.



iLab Update

iLab is an enterprise web-based management tool designed to support operations for Core facilities and other shared resources. Currently, iLab is successfully utilized at 34 of the top 50 NIH funded institutions in the US and at 33 NCI-designated cancer centers. Their infrastructure helps more than 170 research institutions world-wide serve tens of thousands of researchers via the iLab platform.

This system offers streamlined billing and invoicing, usage tracking, equipment reservations, service requests, and reporting for facility operators and internal and external researchers. Importantly, we have successfully completed the process to allow CAMS to send lab user and account information to iLab to allow for this essential interface with our Penn systems. To date, we have five cores that are online with iLab with three more facilities to go live this Spring, all listed below.

Online Now

- CRISPR Cas9 Mouse Targeting
- Gnotobiotic Mouse Facility
- High Throughput Screening
- Neurobehavior Testing Core

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- Neurobehavior Testing Core
- Quantitative Proteomics Resource Core

Coming Online in Spring 2018

- Cell and Vaccine Production Facility
- Molecular Profiling Facility
- Stem Cell and Xenograft Core

It is our goal that iLab integration will provide greater convenience and efficiency in accessing our wealth of core services. <u>Further information about</u> the software can be found here.

Announcements

- Joint Cores Fair Save the Dave for September 13th 2018 Our 2018 Cores Fair date has been set! Please mark your calendar and join us on Thursday, September 13th from 10am-2pm. This second annual event is a joint venture with PSOM, CHOP and Wistar in an effort to showcase the many outstanding services available and foster further collaboration between the institutions. The event will span the BRB II/III Lobby and the Abramson Research Center Lobby with an outdoor tent on the pavilion between the two buildings.
- Have you used any core products, services or facilities? We encourage you to <u>complete a survey</u> to provide us feedback on your experience.

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