



ORIP's Strategic Plan 2021 - 2025

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ORIP's Guiding Principle: Infrastructure for Innovation

Components of ORIP's Mission



ORIP awards grants to support research resources, such as animal models for human disease and cutting-edge biomedical instrumentation.

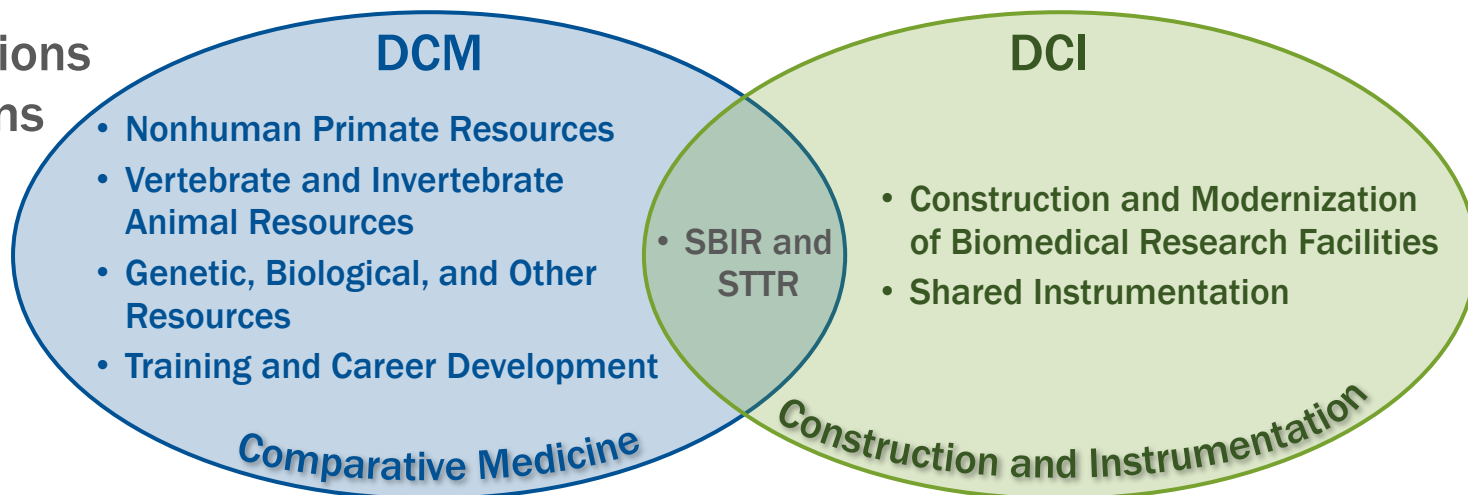


ORIP plans, organizes, and conducts workshops, both independently and in collaboration with NIH ICOs, to identify and pursue scientific opportunities.



ORIP supports research training opportunities for veterinary scientists to capitalize on their expertise in comparative medicine and insight into animal models.

ORIP's Divisions and Programs



ORIP Accomplishments 2016 - 2020

- Examples of ORIP's contributions to fighting the COVID-19 pandemic
- Examples of activities and accomplishments under ORIP's first strategic plan (2016–2020)

2016 - 2020 Strategic Plan



ORIP's Role During the COVID-19 Pandemic

ORIP staff and programs are engaged with NIH's Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV) public-private partnership.

- Promoting use of critical animal models
 - Investigations of viral natural history, pathogenicity, and transmission
 - Development and preclinical testing of vaccines and therapeutics
- Developing coordinated research strategies
 - Reduction of duplicative or overlapping studies
 - Prioritization and assignment of animals and resources for studies
 - Harmonizing standard operating procedures and protocols for NHPs
 - Sharing technical expertise and using core laboratories
 - Establishing an NHP coordinating center to promote data sharing and post-study analyses

These efforts are expected to reduce overall animal use, determine which potential COVID-19 therapeutics are prioritized for testing, promote most promising agents more rapidly, and identify resources required for future pandemics.

ORIP's Role During the COVID-19 Pandemic

Establishment of a “Web-Based” COVID Portal

Focus: Animal Models and Resources for Coronavirus Research

Website: <https://orip.nih.gov/animal-models-and-resources-coronavirus-research>

- Susceptible animal species
- ORIP and other NIH resources (NHPs, rodents)
- Updates from ongoing ORIP-sponsored COVID research
- Other tools and resources



ORIP Activities and Accomplishments for 2016 - 2020

Examples of Accomplishments and Activities under ORIP's First Strategic Plan (2016 - 2020)

- ORIP staff engaged in 80 Trans-NIH working groups.
- ORIP staff organized nine Trans-NIH focused workshops.
- ORIP supported training for veterinary scientists.
- ORIP grant programs had broad impact on biomedical research (two examples: Mutant Mouse Resource and Research Centers and the Shared Instrumentation Program).



ORIP Contributions to NIH Goals and Mission

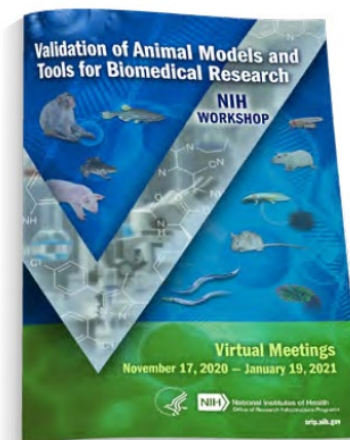
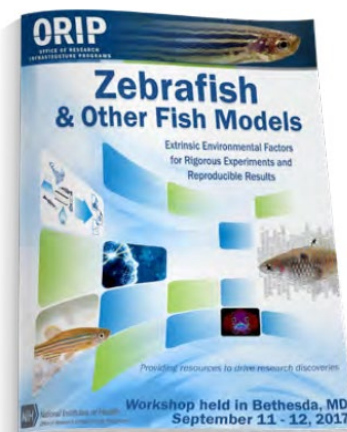
Accomplishments under ORIP's First Strategic Plan (2016–2020)

ORIP staff engaged in 80 Trans-NIH and other working groups.

- Entrepreneurial Workforce Diversity Working Group of the Small Business Program
- Cryo-EM Working Group
- Down Syndrome Working Group (INCLUDE)
- KOMP2 Working Group
- Nonhuman Primates Resource Planning Working Group

ORIP staff organized 9 Trans-NIH focused workshops.

- Zebrafish and Other Fish Models: Description of Extrinsic Environmental Factors for Rigorous Experiments and Reproducible Results
- Expert Panel Forum on Challenges in Assessing Nonhuman Primate Needs and Resources for Biomedical Research
- Workshop on Validation of Animal Models and Tools for Biomedical Research



ORIP Contributions to NIH Goals and Mission

ORIP supports training for veterinary scientists.

Institutional Training Awards, Veterinary Students (T35) or Graduate Veterinarians (T32)

- T35 – Professional student short-term summer research training
- T32 (post-DVM) – Three-year post-DVM research training for highly qualified veterinarians

Average Number of Training Grants and Trainees Per Year, 2016-2020

- T35 – 19 grants, 163 trainees
- T32 (post-DVM) – 14 grants, 61 trainees

ORIP also funds individual training awards for post-graduate veterinarians to become independent biomedical scientists.



ORIP Grant Programs with Broad Impact

Mutant Mouse Resource and Research Centers Consortium



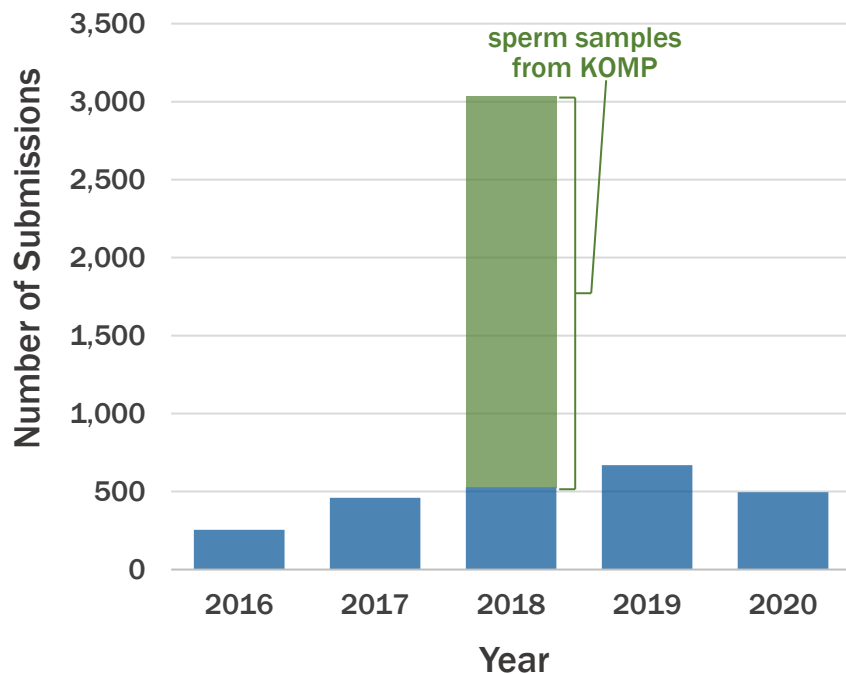
Shared Instrumentation Program



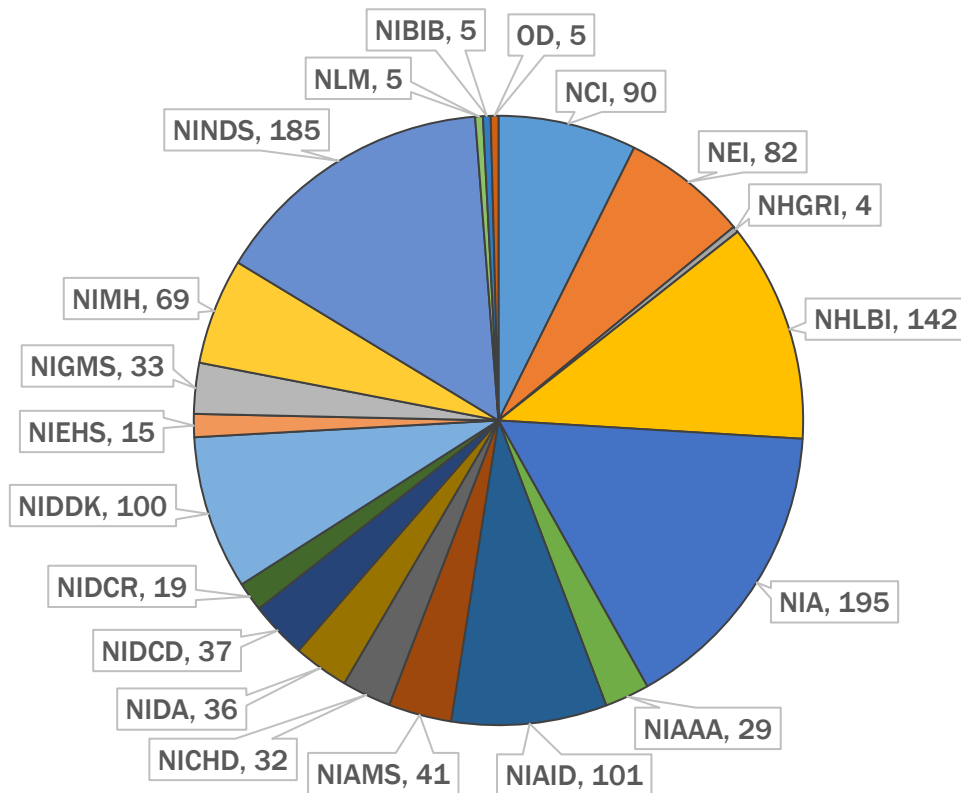
Mutant Mouse Resource and Research Centers (MMRRCs) include more than 60K unique mutant alleles in one or more forms*

*live mice, frozen germplasm, or ESCs

Curated Accessions Each Year
(Live Animals or Frozen Sperm)

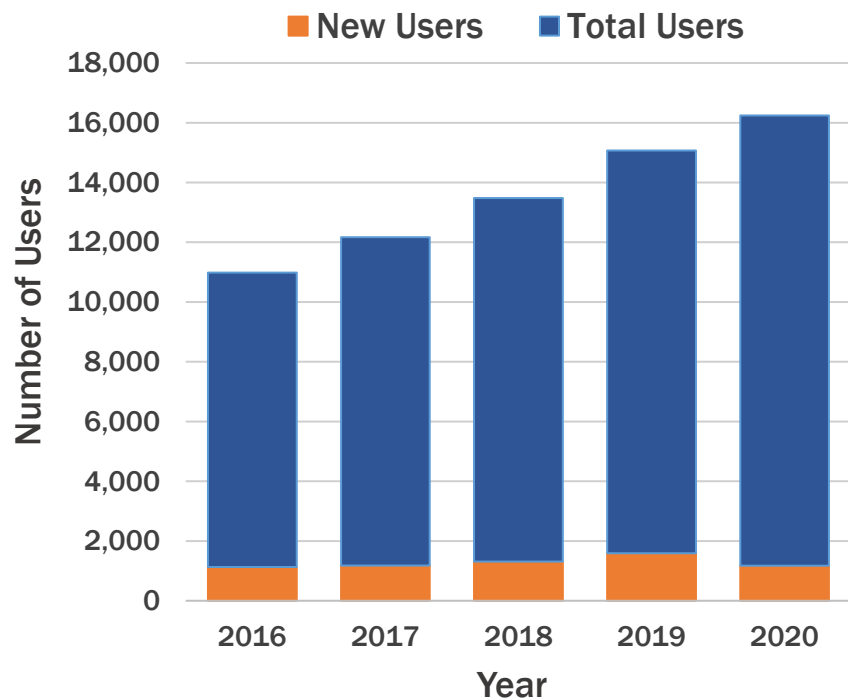


Number of NIH Grants that Used the MMRRCs
(2016–2020 Combined)

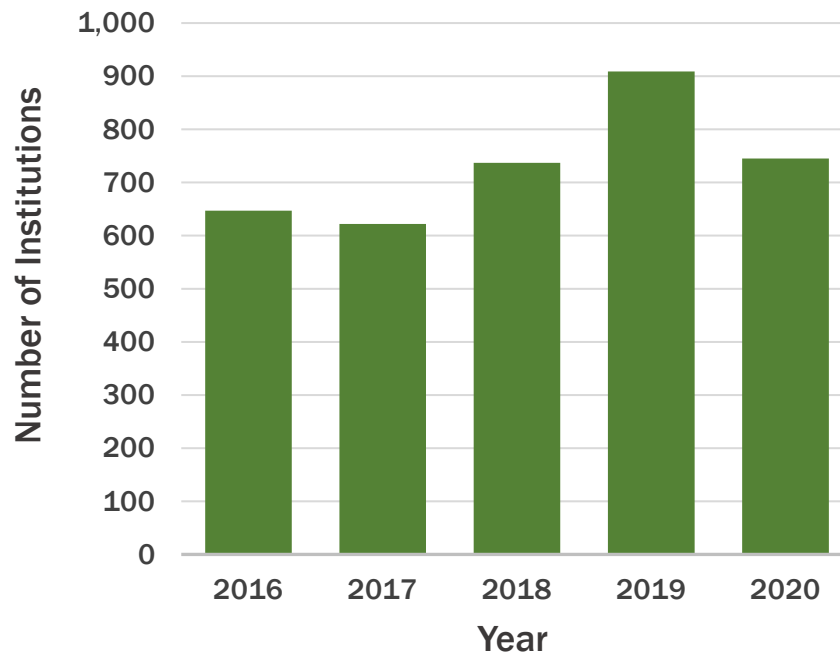


MMRRCs serve an increasing number of users

MMRRC Users Each Year



Institutions that Used the MMRRCs Each Year



ORIP Grant Programs with Broad Impact

Mutant Mouse Resource and Research Centers Consortium



Shared Instrumentation Program



Broad Impact of Shared Instrumentation Program

Shared Instruments FY16–20

#Appl – 2,000

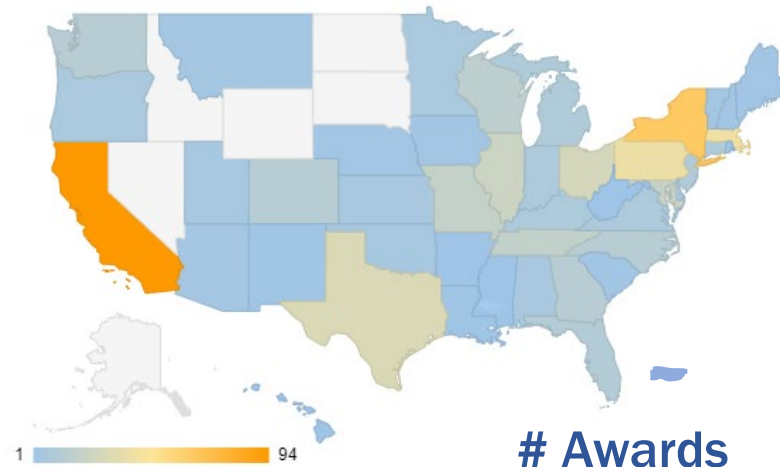
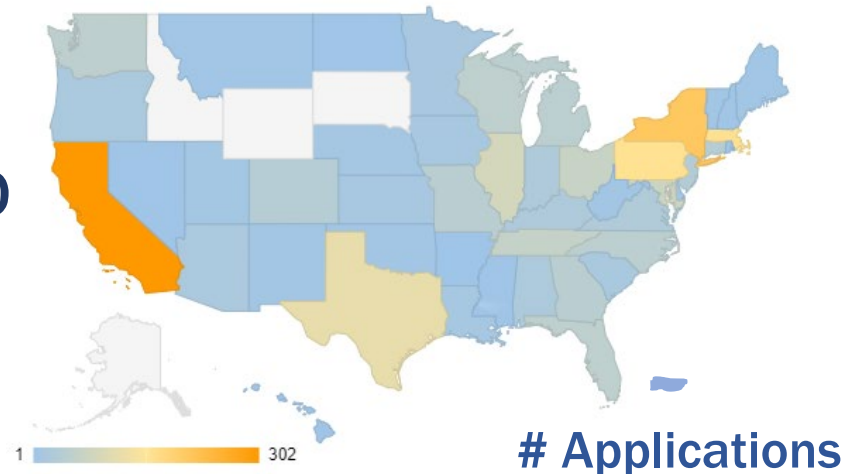
#Awards – 590

#States with Appl – 48

#States with Awards – 46

#Insts with Appl – 248

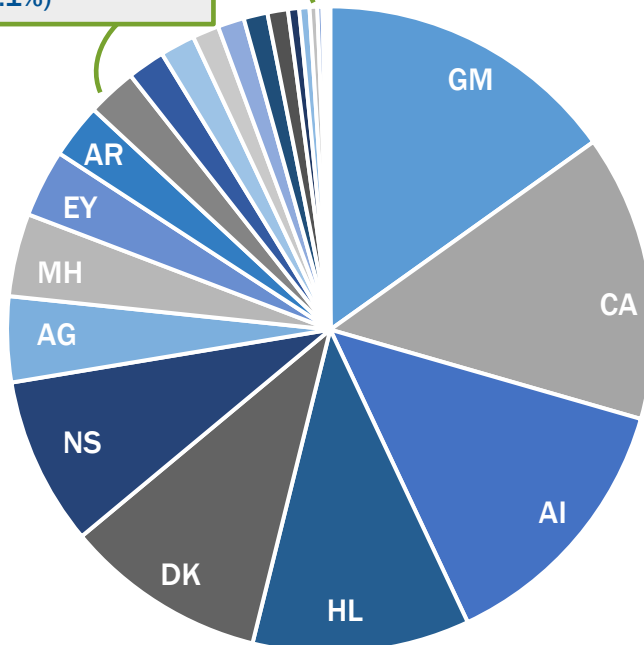
#Insts with Awards – 176



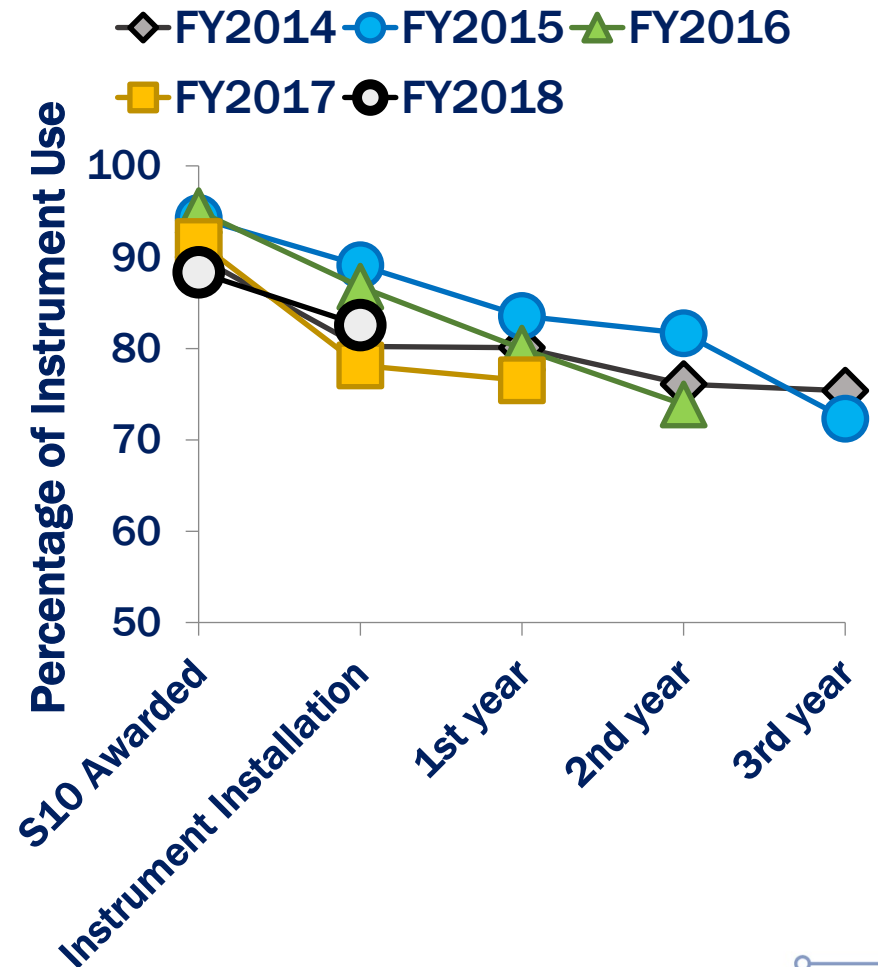
Broad Impact of Shared Instrumentation Program

NIH-funded Researchers Representing FY2019

DA(1.9%), EB (1.8%),
DC (1.3%), ES (1.3%),
DE (1.2%), AA (1.0%),
OD (0.6%), HG (0.5%),
AT (0.4%), TR (0.3%),
LM (0.2%), NR (0.2%),
MD (0.1%)

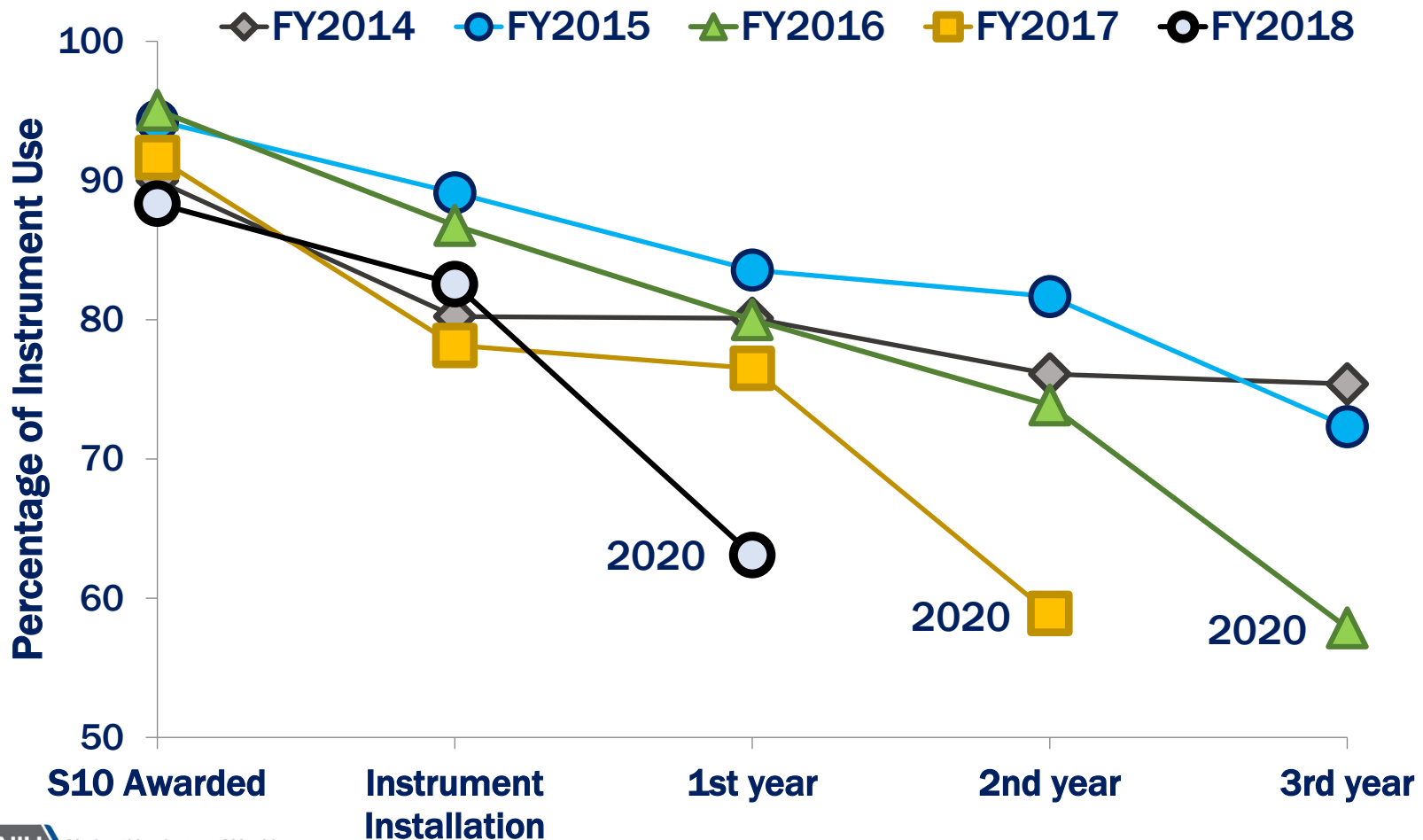


Actual Usage over Time



Broad Impact of Shared Instrumentation Program

Actual Usage over Time – COVID effects



Strategic planning was informed by the extramural research community and trans-NIH stakeholders

- Fall 2019: Dr. Magnuson and Dr. Lairmore volunteered to serve as Council liaisons for ORIP's strategic planning process

Dec
2019

- Strategic planning announced internally at EPMC
- Senior program officials from several ICOs asked to participate in the planning process
- Released RFI ([NOT-OD-20-050](#))

- 2 focus group meetings with 28 reps. from 22 ICOs provided input on infrastructure needs and opportunities for ORIP resources

Jan -
Feb
2020

Apr -
May
2020

- 3 research community panel discussions with 56 scientists provided input on resource challenges, opportunities, and new directions

- Reviewed and distilled input from the RFI, focus groups, and extramural panels
- Formulated a draft Strategic Plan
- Developed a stewardship and accountability approach for the new Strategic Plan

May -
Aug
2020

Aug -
Dec
2020

- Internal review/refinement

Draft Strategic Plan



The new ORIP Strategic Plan is ready for your review

Themes

Strategies

1



Animal Models to Advance
the Study of Human Disease

1.1

1.2

2



Innovative Instruments and
Equipment to Accelerate
Research Discoveries

2.1

2.2

3



Specialized Research
Training in Animal Models
and Related Resources

3.1

3.2

3.3

4



Awareness of ORIP
Resources and Programs

4.1

4.2

Theme 1. Animal Models to Advance the Study of Human Disease

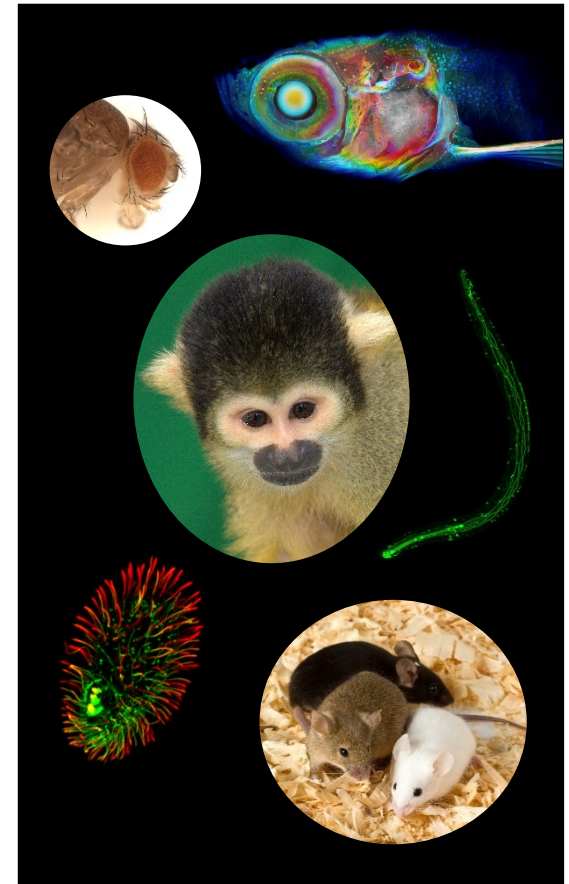
Strategies

1.1 Foster development of and provide support for animal models and research-related resources that meet emerging public health needs, prevent disease, promote health, and drive foundational science.

- Advance new technologies to support research resources
- Invest in methods and tools to enhance reproducibility
- Implement assessments to identify resource gaps
- Solicit applications for SBIR/STTR programs to enhance validation technologies

1.2 Enhance access to a broad range of animal models with robust veterinary care and well-defined genomic and phenotypic data.

- Support and enhance well characterized animal research resources
- Strengthen research capacity and infrastructure, incl. ABSL 3 and 4 facilities
- Consider nontraditional animal models
- Solicit applications for SBIR/STTR programs for new animal care technologies



Theme 2. Innovative Instruments and Equipment to Accelerate Research Discoveries



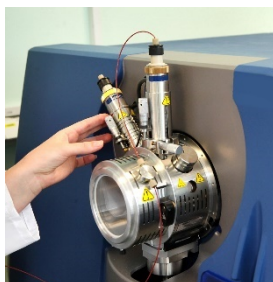
Strategies

2.1 Support acquisition of modern scientific instrumentation.

- Facilitate access to advanced instruments used across any disciplines
- Respond to evolving instrumentation needs
- Address special modern instrumentation demands of investigators across a broad spectrum of applications
- Support emerging novel instrumentation technologies

2.2 Modernize the research infrastructure of laboratories and animal research facilities.

- Provide advanced laboratory equipment
- Promote specialized tools for animal facility management for high-quality models and robust science.

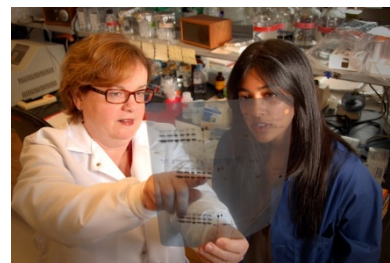


Theme 3. Specialized Research Training in Animal Models and Related Resources

Strategies

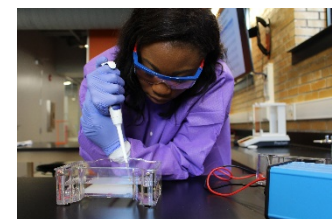
3.1 Promote innovative approaches to training and developing the careers of veterinarians working in biomedical research.

- Invest in training and mentorship of veterinary scientists as independent researchers
- Support training of graduate veterinarians to pursue research that expands knowledge in areas critical to human health



3.2 Support training and career development programs that promote diversity in health-related research.

- Sustain development of the next generation of diverse and interdisciplinary scientists
- Invest in students and postdocs from underrepresented groups



3.3 Promote career development of researchers and support staff skilled in the use and oversight of disease model and research resources.

- Maintain the highest integrity of animal resource training and operations
- Promote available resource-related training at ORIP-supported programs



Theme 4. Awareness of ORIP Resources and Programs

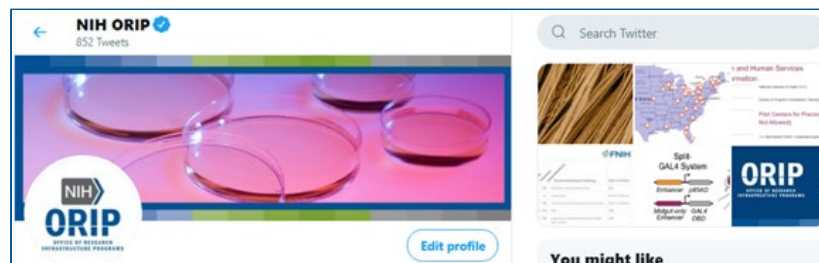
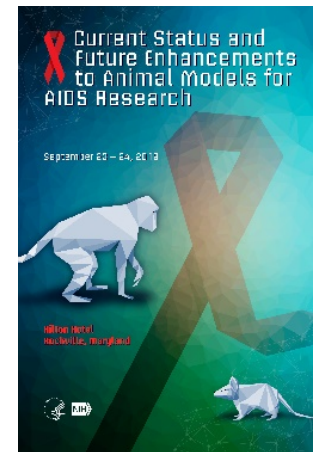
Strategies

4.1 Foster collaborative research opportunities between ORIP-supported resources and NIH ICOs and other federal agencies.

- Increase awareness of ORIP's programs through workshops
- Outreach to NIH program staff - benefits of ORIP resources and gains from investments by ICOs
- Engage with ICOs to identify and provide resources addressing trans-NIH needs
- Engage with ORIP research centers to cultivate opportunities to improve their efficiency and quality

4.2 Expand outreach to the biomedical research community to raise awareness and dissemination of ORIP-supported resources and programs.

- Connect with the research community through outreach activities
- Strengthen the marketing of ORIP's SBIR/STTR programs
- Promote the shared use of instruments and expand the user pool
- Promote the accomplishments of ORIP programs to the public and the research community



"Thanks" to the many contributors

Extramural Strategic Planning Participants

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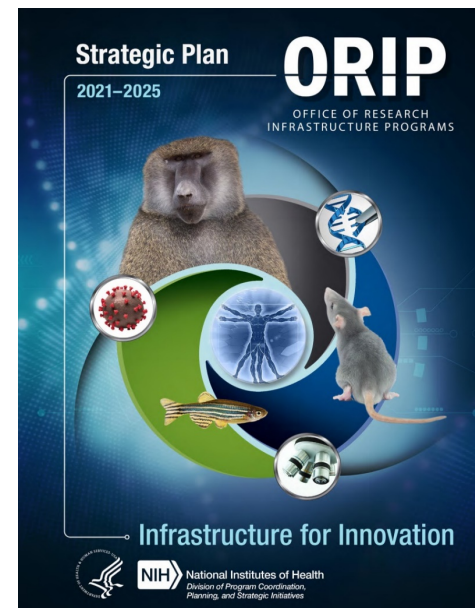
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