



Maximizing Core Impact with Metrics Integration & Effective Communications

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“Be Brief, Be
Brilliant, Be Gone”



Jeffrey Bluestone
CEO & Co-founder
Sonoma Biotherapeutics



- President Woodrow Wilson
- 8 July 1918



Be Brief: succinctly define the goal to be achieved and be economic with your word choice (less is more for busy executives).

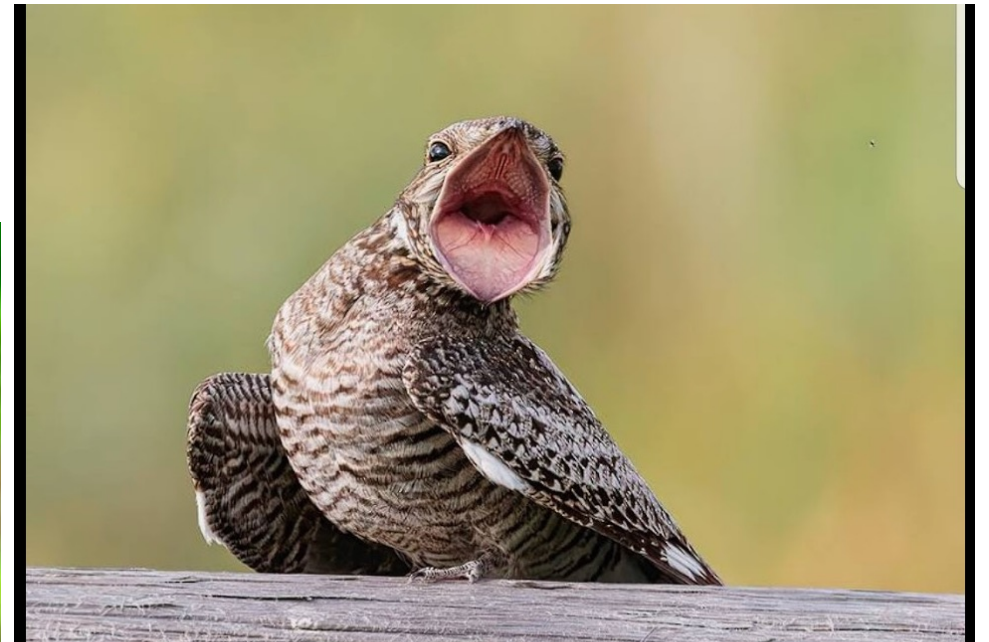
Be Brilliant/Bold: be intentional and select the words that allow you to clearly relay the impact (who and what will benefit).

Use data-driven approaches when appropriate.

Be Gone: don't linger over "what if's"

Who are you appealing to?

- Understand what drives decisions
- Appeal to the goal of the decision maker





What is of specific value to the audience?



Global BioImaging Recommendation for Measuring Imaging Facility Impact

Claire M. Brown, McGill University, BINA Co-Chair

GLOBAL
BIOIMAGING
growing collaboration

AN INTERNATIONAL NETWORK OF CUTTING-EDGE
BIOIMAGING FACILITIES AND COMMUNITIES

globalbioimaging.org

Key Performance Indicators (KPIs)

Top 10 KPIs

INFRASTRUCTURE AND PERSONNEL

1. Personnel
2. Infrastructure (instruments/software/services)

FACILITY PERFORMANCE

3. Facility Users
4. Diversity of Users/Quality of Training
5. User Training
6. User Satisfaction
7. Publications (Facility Staff and Facility Users)
8. Collaborative Publications (Facility Staff and Users)

FINANCIAL PERFORMANCE

9. Charge Back Revenue (User Fees)
10. Grant Funding

Key Performance Indicators (KPIs)

The KPI list is structured to provide a **definition** and **description** of the KPI, along with an **indication of the level of complexity to measure each KPI** from an imaging facility's perspective.

Green - relatively easy to measure or collection information

Yellow - moderate difficulty to measure or collect information

Red - difficult to measure or collect information

FACILITY PERFORMANCE

3 Facility Users

User Base

The main mission of an infrastructure is to give access to users. It is essential to evaluate the evolution of their usage over time. Regular monitoring helps anticipate future planning challenges such as access allocations when use increases or forecasting financial issues should usage decrease.

Measurement Example: number of users month/instrument/service, % time of usage per user/month/instrument, number or different types of users (PIs/industry users/graduate students)

Progression of User Base

It is important to measure how the facility changes/progresses over time.

Measurement Example: measured annually, number of internal academic users (PIs/researchers/graduate students), number of external academic users (PIs/researchers/graduate students), number of industry users (trained on equipment or full service projects)

Top 10 SEIs

RESOURCES

1. Open Data Sharing
2. Standards and Quality Management
3. Education Resources for the Larger Community
4. Expert Advice to Support Public Policies
5. Public Education

HIGHLY QUALIFIED PERSONNEL

6. Imaging Scientists
7. Career/Job Creation

COLLABORATION

8. Collaboration with Industry/Intellectual Property
9. Industry Investments

PUBLIC VISIBILITY

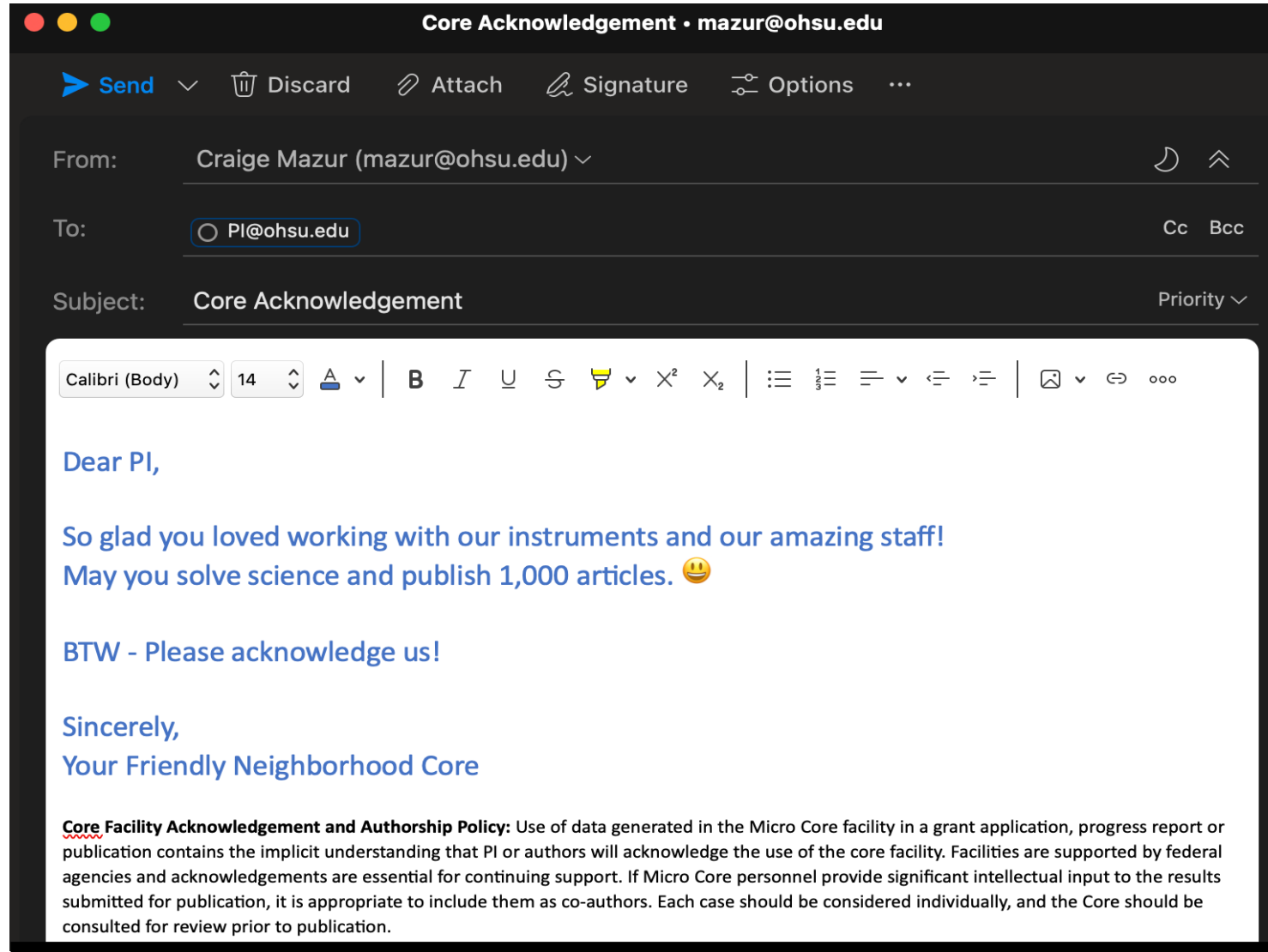
10. Media

Publications

The Story of Elusive Acknowledgements



The Requestor Approach



The Simplified Approach



Research Resource Identifiers (RRID)

RRIDs are unique numbers assigned to research resources including core facilities, antibodies, model organisms, etc. They help researchers simplify proper citation and authentication for resources utilized, and help to improve transparency of research methods.

University Shared Resource Cores support this initiative and have assigned an RRID to every Core.

In recognition to USR Cores' contributions, we request researchers include Core Names and associated RRIDs in your manuscript's "Acknowledgements Section."



Please copy and paste the Core Name and RRID

Advanced Computing Center (RRID: SCR_009959)

Advanced Imaging Research Center (RRID: SCR_009960)

Advanced Light Microscopy Core (RRID: SCR_009961)

Bioanalytical Shared Resource/Pharmacokinetics Core (RRID: SCR_009963)

Biostatistics and Design Program (RRID: SCR_022741)

Biophysics Core (RRID: SCR_022744)

Center for Radiochemistry Research (RRID: SCR_022745)

The Incentivized Approach

Acknowledge Our Core

and get...



The Authoritative Approach



Dear Principal Investigator,

We hereby inform you that all award funds will be withheld unless every core utilized for your research is acknowledged.

*Sincerely,
The Management*

Why Don't Authors Acknowledge Cores?

1. Requires mindset & culture change?
2. Incentives are not enough incentive?
3. Insensitivity?
4. Forgetful?
5. Your reason here: _____
6. Another reason here: _____
7. _____

The Reframe

Publications

A Believable Story of Core-Supported Published Articles



The Bold *(and potentially controversial)* Proclamation

When a core is used during the course of an investigation for generating data, images, samples, sequences, analyses, etc., the resulting science “products” provide valuable publication contributions, even if they are not directly used in published articles.

And thus, the core *may* be considered a publication contributor.

The Bold *(and potentially controversial)* Proclamation

In other words:

If a core collaborates with researchers on a project that results in a published article, the core may reasonably conclude that their efforts have provided valuable scientific input to the article.



Consider and evaluate: Core services MAY have been relevant!

- Was core experiment successful or a bust?
- Did the researcher only purchase supplies?
- Did researcher only spend \$40 in the Massively Parallel Sequencing Core?
- Etc.

The OHSU Data Journey

From Awards to Cores to Publications

1. Agency Award Number
2. Finance department issues in
3. Core services paid via Alias i
4. Data exported from iLab (cor
5. Join iLab dataset with Agenc
6. Scopus Query: Select article
7. **SCOPUS RESULTS:** Publish
8. Join Scopus results with iLak
 1. Published articles + award num
9. Provide result set to Core Dir
 1. Set reasonable minimum dollar
 2. Verify & validate
 3. Include in metrics



criteria)

Titles, Agency Award Number

The DATA!

Tableau - Award Analysis and Pubs 100523

Tableau toolbar with icons for data manipulation and visualization. Includes a 'Standard' view selector and a 'Show Me' button.

Tableau Columns and Rows shelves. The Columns shelf is empty. The Rows shelf contains the following fields: INDEX, Core Name, Doi, Pubmed Id, Author Names, Publication Name, Title, and YEAR(Cover Date).

Publications All Cores

Core Name	Doi	Pubmed Id	Author Names	Publication Name	Title	Year of Cov..	
Advanced Light Microsc.	https://doi.org/10.1073/pnas.1317528110	24127608	Chai, Sunghee;Cambronne, Xiaolu A.;E...	Proceedings of the National Acad...	MicroRNA-134 activity in somatostati..	2013	\$2,525
Advanced Light Microsc.	https://doi.org/10.1073/pnas.1411713112	25775507	Sun, Xiao Xin;He, Xia;Yin, Li;Komada, ..	Proceedings of the National Acad...	The nucleolar ubiquitin-specific prote..	2015	\$101
Advanced Light Microsc.	https://doi.org/10.1073/pnas.1612835113	27791031	Fu, Xiaoyong;Jeselsohn, Rinath;Pereir..	Proceedings of the National Acad...	FOXA1 overexpression mediates endo..	2016	\$510
Advanced Light Microsc.	https://doi.org/10.1073/pnas.1802932115	30305424	Suna, Xiao Xin;Chen, Yingxiao;Sua, Y...	Proceedings of the National Acad...	SUMO protease SFNP1 deSUMOylates...	2018	\$5,447
Advanced Light Microsc.	https://doi.org/10.1073/pnas.1808626115	30518560	Doh, Julia K.;White, Jonathan D.;Zane,..	Proceedings of the National Acad...	VIPER is a genetically encoded peptid..	2018	\$11,915
Advanced Light Microsc.	https://doi.org/10.1073/pnas.1821227116	31085654	Hendricks, William D.;Westbrook, Gar..	Proceedings of the National Acad...	Early detonation by sprouted mossy fi..	2019	\$1,520
Advanced Light Microsc.	https://doi.org/10.1073/pnas.2018770118	33972422	Lin, Tzu Huai;Bis-Brewer, Dana M.;She..	Proceedings of the National Acad...	TSG101 negatively regulates mitocho..	2021	\$558
Advanced Light Microsc.	https://doi.org/10.1073/pnas.2209565119	36306331	Hong, Hui;Zeppenfeld, Douglas;Trusse..	Proceedings of the National Acad...	Electrical signaling in cochlear efferen..	2022	\$9,078
Advanced Light Microsc.	https://doi.org/10.1074/jbc.M113.533109	24403071	Li, Yuhuang;Sun, Xiao Xin;Elferich, Joh..	Journal of Biological Chemistry	Monoubiquitination is critical for ovar..	2014	\$101
Advanced Light Microsc.	https://doi.org/10.1074/jbc.M114.634576	25637631	Devaraneni, Prasanna K.;Olson, Erik M..	Journal of Biological Chemistry	Structurally distinct ligands rescue bi..	2015	\$5,556
Advanced Light Microsc.	https://doi.org/10.1074/jbc.RA119.008781	31471317	Melly, Geoff C.;Stokas, Haley;Dunaj, J..	Journal of Biological Chemistry	Structural and functional evidence th..	2019	\$502

The DATA!

394 rows → Show aliases Show all fields Copy Export All

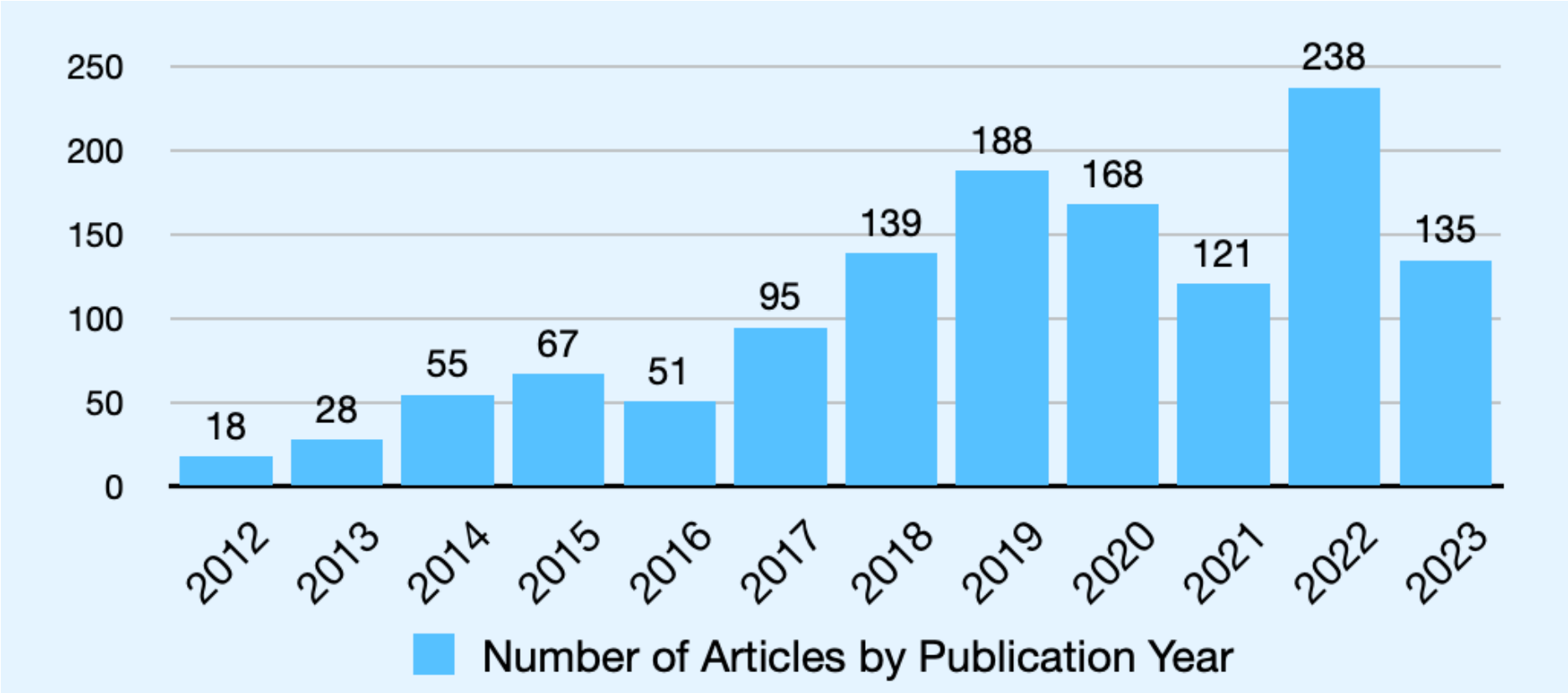
Payment Information	PI Email	...	Project Number - iLab	Purchase Date	P...	R...	Service ID	Service Name
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	11/25/2020		...	ALM-AS-10421	Spinning Disk - Zeiss/Yokogawa CSU-X1 Setup
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	11/25/2020		...	ALM-AS-10421	Stefanie Kaech Petrie (Stefanie Kaech Petrie)
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	12/2/2020		...	ALM-AS-10477	Spinning Disk - Zeiss/Yokogawa CSU-X1 Setup
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	12/7/2020		...	ALM-AS-10477	Spinning Disk - Zeiss/Yokogawa CSU-X1 Setup
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	12/9/2020		...	ALM-AS-10477	Spinning Disk - Zeiss/Yokogawa CSU-X1 Setup
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	12/21/2020		...	ALM-AS-10477	Spinning Disk - Zeiss/Yokogawa CSU-X1 Setup
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	12/22/2020		...	ALM-AS-10477	Spinning Disk - Zeiss/Yokogawa CSU-X1 Setup
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	12/2/2020		...	ALM-AS-10477	Hannah Bronstein (Hannah Bronstein)
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	12/7/2020		...	ALM-AS-10477	Hannah Bronstein (Hannah Bronstein)
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	12/9/2020		...	ALM-AS-10477	Hannah Bronstein (Hannah Bronstein)
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	2/24/2021		...	ALM-AS-10841	Spinning Disk - Zeiss/Yokogawa CSU-X1 Setup
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	3/2/2021		...	ALM-AS-10951	Spinning Disk - Zeiss/Yokogawa CSU-X1 Setup
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	3/2/2021		...	ALM-AS-10951	Spinning Disk - Zeiss/Yokogawa CSU-X1 Setup
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	3/3/2021		...	ALM-AS-10951	Spinning Disk - Zeiss/Yokogawa CSU-X1 Setup
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	3/19/2021		...	ALM-AS-10951	Spinning Disk - Zeiss/Yokogawa CSU-X1 Setup
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	3/25/2021		...	ALM-AS-10951	Spinning Disk - Zeiss/Yokogawa CSU-X1 Setup
90256172 - GBMEN0308D-GBMEN0308D	beattyk@ohsu.edu		GBMEN0308D	3/25/2021		...	ALM-AS-10951	Spinning Disk - Zeiss/Yokogawa CSU-X1 Setup

The DATA!

Unit of Measure	Usage Type	User Login Email	Core ID	Price	Quantity	Total Price
hour	Training	suyama@ohsu.edu	Null	96.2400	1.00000	96.240
hour	Weekdays	suyama@ohsu.edu	Null	0.0000	1.00000	0.000
hour	Training	suyama@ohsu.edu	Null	96.2400	1.00000	96.240
hour	Training	suyama@ohsu.edu	Null	96.2400	1.00000	96.240
hour	Peak Hours	suyama@ohsu.edu	Null	29.5000	1.50000	44.250
hour	Off Peak Hours	suyama@ohsu.edu	Null	9.8300	2.00000	19.660
hour	Off Peak Hours	suyama@ohsu.edu	Null	9.8300	2.00000	19.660
hour	Training	suyama@ohsu.edu	Null	0.0000	1.00000	0.000
hour	Training	suyama@ohsu.edu	Null	0.0000	1.00000	0.000
hour	Training	suyama@ohsu.edu	Null	0.0000	1.50000	0.000
hour	Off Peak Hours	suyama@ohsu.edu	Null	9.8300	1.50000	14.750
hour	Off Peak Hours	suyama@ohsu.edu	Null	9.8300	1.00000	9.830
hour	Peak Hours	suyama@ohsu.edu	Null	29.5000	1.00000	29.500
hour	Off Peak Hours	suyama@ohsu.edu	Null	9.8300	1.75000	17.200
hour	Peak Hours	suyama@ohsu.edu	Null	29.5000	2.75000	81.130


The Metrics

OHSU USR Cores Contributions
Unique Articles Found: 1,302



The Metrics

Article Totals by Core

Core	Article Count 
Advanced Imaging Research Center Count	328
Advanced Light Microscopy Count	604
APOM Service Facility Count	38
Bioanalytical Shared Resource/Pharmacokinetics Core Count	165
Biophysics Shared Resources Core Count	13
Center for Radiochemistry Research Count	17
Flow Cytometry Count	613
Gene Profiling/RNA and DNA Services Shared Resource Count	759
Histopathology Shared Resource Count	252
Massively Parallel Sequencing Shared Resource Count	419
Medicinal Chemistry Core Count	23
Multiscale Microscopy Core (MMC) Count	259
Proteomics Shared Resource Count	456
Small Animal Research Imaging Core Count	143
Transgenic Mouse Models Core Count	248
Grand Count	4337

It Takes a Village...

1. iLab
2. Excel
3. Tableau
4. Scopus
5. Python
6. Patient Humans

The Acknowledgements

- Hope Anderson – USR Cores Operations Manager
- Marijane White – OHSU Librarian
- Andy Chitty - Believer





Cores and Impact - Communication Ideas

Oregon Health and Sciences University

DATE: October 13, 2023 PRESENTED BY: Andy Chitty, Director, University Shared Resources

Our messaging

- We are good at talking about what we can do for the community
- Not so good at communicating our impact

Examples of impact statements

OHSU Economic Impact Fact Sheet- 2019

Economic impact of Oregon Health & Science University

At OHSU, we deliver breakthroughs for better health and energize Oregon's economy.

ohsu.edu/impact

As Oregon's only public academic health center, OHSU has a track record of transforming human health locally and globally. As we serve our mission through saving lives, contributing to scientific discovery, pioneering new treatments and educating the next generation of clinicians, OHSU operations also have a direct economic impact for Oregon. OHSU attracts money into the state, creates jobs with high livable wages and supports multiple sectors of industry. At OHSU, we never settle for how things have been done before. Our singular focus on health and sciences creates a unique environment that provides strong economic benefit to the state.

\$7.2 billion	🏠	Total annual economic output
42,639	👥	Total annual jobs supported
\$75,610	💰	Average annual wage of OHSU employees



An engine for Oregon's economic growth

OHSU spending on day-to-day operations, including payroll and supply chain, supported people and services across 34 total counties in Oregon, half of which received over \$1 million in payroll and supply chain spending.

OHSU's dynamic growth attracts investment

\$3.93 billion
OHSU's annual operating budget

OHSU's total economic impact

2007	\$2.43 billion
2012	\$4.3 billion
2019	\$7.2 billion

OHSU's total economic impact grew 196 percent over the last 12 years. As an academic health center, OHSU brought substantial money into Oregon by providing specialty health services and conducting leading-edge research.

What would happen to Oregon's economy if OHSU didn't exist?

Without OHSU, some economic activity driven by patients and students would go to other hospitals or schools outside of Oregon. Economic activity that would leave the state in the absence of OHSU is OHSU's net economic impact.



Creating jobs and public resources for Oregon

OHSU produces a wide range of family-wage jobs

20,335
OHSU's workforce (number of people employed by OHSU in CY 2019)

OHSU was the largest employer in the City of Portland in 2019.

OHSU creates a wide range of jobs in the health field – physicians, dentists, nurses, physician assistants, dietitians, scientists and lab technicians. We also provide family-wage jobs and opportunities for career growth in such diverse job areas as accounting, carpentry, information management, interpreting, logistics, office management, public safety, transportation and many others. Including an average of \$21,645 in benefits, 56 percent of OHSU employees earn between \$50,000-\$150,000 in income. With activities throughout the state, OHSU employees earning family-wage jobs live in nearly every part of Oregon.

OHSU supports jobs in other sectors

In addition to OHSU employees, OHSU's purchasing from other industries further supports and creates jobs. OHSU employees and students also spend their money at other businesses, supporting even more jobs. These jobs would disappear in the absence of OHSU.

Total net economic impacts by major industry sector

Accommodations and food services	1,182
Administrative and waste services	603
Arts, entertainment, and recreation	341
Construction	437
Finance and insurance	501
Government	293
Health care, education, research and other professional services	14,952
Information services	170
Management of companies	114
Manufacturing	149
Natural resources	90
Real estate and rental and leasing	602
Retail trade	1,701
Transportation and warehousing	303
Utilities	42
Wholesale trade	249
Other services	979
Net jobs	22,707

SOURCES: Pinnacle Economics using detailed OHSU data and 2018 IMPLAN model of Oregon.

OHSU Economic Impact Fact Sheet - 2019

Keeping health care and health care spending in Oregon

OHSU Hospital
 29,481 inpatients
 37,484 surgeries

Access to advanced care keeps patients in Oregon

OHSU is the sole provider of many highly specialized services between Seattle and San Francisco. As the regional hub for specialty care, OHSU helps Oregonians stay closer to home to get the health care they need. Through telehealth networks, consultation and embedded clinicians, OHSU experts frequently assist non-OHSU providers on complex cases, helping patients throughout the state stay in their home communities.

OHSU's health care footprint in rural Oregon is profound. OHSU hosted inpatient hospital stays for citizens of every Oregon county in 2019. Twelve counties had at least 500 inpatient visits. Six counties — all rural — had greater rates of hospitalization at OHSU compared to Multnomah County where OHSU Hospital and Doernbecher Children's Hospital are located.

OHSU has more than 80 primary and specialty care clinics, and clinical outreach programs throughout the state. By offering multiple ways to connect — brick and mortar clinics, telephone, real-time video conferencing — OHSU improves accessibility and efficiency in health care.

OHSU inpatient visits by county per 1,000 people

OHSU attracts new money to Oregon

OHSU's important role in funding the Oregon Health Plan

The OHSU Intergovernmental Transfer (IGT) Medicaid Partnership with the State of Oregon plays a crucial role in meeting OHSU's mission to serve Oregonians. This program has been very successful for the State of Oregon, leveraging over \$1 billion per biennium in federal funds for Oregon's Medicaid program. Without this partnership, Oregon would have had \$894.4 million fewer Medicaid dollars to provide health care to low-income Oregonians in 2019. The partnership also provided \$116 million in fiscal year 2019 in critical support to OHSU's research and education missions. Every dollar of this support for research and education programs leverages an additional two dollars in funds from grants, gifts and tuition to ensure we can train health care providers and perform cutting-edge research to find breakthroughs for better health.

OHSU researchers attract new money to Oregon

OHSU's scientists bring new money into Oregon by receiving research grants. In 2019, OHSU received \$279 million from the National Institutes of Health alone. These funds create jobs and purchase supplies and services.

Federal Medicaid matching funds leveraged by the OHSU IGT and allocated to Oregon counties

Research awards in millions

Fiscal Year	Federal (Millions)	Non Federal (Millions)	Total (Millions)
FY14	~100	~100	~200
FY15	~100	~100	~200
FY16	~100	~100	~200
FY17	~100	~100	~200
FY18	~100	~100	~200
FY19	~100	~179	~279

SOURCES: Pinnacle Economics using OHSU's IGT Funding and Federal Medicaid matching rates for 2019, and the Oregon Health Authority, Office of Health Analytics, "Medicaid Population Report."

Training the next innovators in health care

OHSU statewide educational locations FY19

- Medical Student Training
- Dental Student Rotations
- School of Nursing and Nursing Student Rotations
- Physician Assistant Student Rotations
- Rural Campus

OHSU alumni by Oregon county of residence FY19

- 1-49
- 50-99
- 100-499
- 500-4,999
- More than 5,000

2,999 Students in Oregon

22,000 Alumni in Oregon

OHSU trains thousands of health care professionals each year in Portland and in satellite programs that serve rural areas throughout the state. In 2018-19, OHSU programs conferred 1,500 degrees and certificates. Though many students are Oregonians, OHSU attracts students from throughout the country and internationally, bringing outside dollars to the state.

Our alumni stimulate the economy

OHSU has a long tradition of preparing learners to lead future advancements in human health. Almost 22,000 OHSU alumni live in Oregon, contributing economically to their home communities.

Audience: state government, general public

FASEB Capitol Hill Day Fact Sheets

2022 FEDERAL RESEARCH FUNDING

OREGON

Federal funding provides support for researchers and trainees who conduct biological and biomedical research in this state.

NATIONAL INSTITUTES OF HEALTH (NIH)
NIH is the nation's primary funder of biomedical research, leading to advances in scientific knowledge, better health, and economic growth.

NATIONAL SCIENCE FOUNDATION (NSF)
NSF is the only federal agency that supports research and education across all scientific disciplines, underwriting scientific training and promoting discovery.

U.S. DEPARTMENT OF AGRICULTURE (USDA)*
The USDA National Institute of Food and Agriculture funds competitive grants for nutritional and agricultural research, bringing cutting-edge science to complex challenges.

U.S. DEPARTMENT OF ENERGY (DOE)
The DOE Office of Science is the nation's largest funder of basic physical sciences research and manages 10 national laboratories that provide scientists with cutting-edge facilities.

FASEB
Federation of American Societies for Experimental Biology

*2022 NIFA funding data was unavailable as of February 25, 2023. NIFA data is for FY 2021.

Learn more & join the conversation! [FASEB.org](https://www.faseb.org) [@FASEBorg](https://twitter.com/FASEBorg) [f@FASEB.org](https://www.facebook.com/FASEB.org) [@FASEB](https://www.linkedin.com/company/FASEB)

NATIONAL SCIENCE FOUNDATION

OREGON

2022 Federal Research Funding

The National Science Foundation (NSF) supports research in science, mathematics, and engineering; integration of knowledge across these fields; and development of the nation's STEM workforce. In this way, NSF promotes the nation's health, economy, security, and global leadership.

NSF FUNDING IN OREGON	TOP NSF-SUPPORTED SITES
<p>\$149M OBLIGATED FUNDING</p> <p>271 NEW AWARDS</p> <p>38 RESEARCH SITES</p>	<p>OREGON STATE UNIVERSITY</p> <p>UNIVERSITY OF OREGON</p> <p>PORTLAND STATE UNIVERSITY</p> <p>REED COLLEGE</p> <p>OREGON HEALTH & SCIENCE UNIVERSITY</p> <p>WILLAMETTE UNIVERSITY</p> <p>TEACHERS DEVELOPMENT GROUP</p> <p>OREGON MUSEUM OF SCIENCE AND INDUSTRY</p> <p>PACIFIC UNIVERSITY</p> <p>LEWIS & CLARK COLLEGE</p> <p>INSTITUTE FOR LEARNING INNOVATION</p>

9 Major Research Instrumentation (MRI) Grants
1 Nat. Ecological Observatory Field Site (NEON)

SCIENTIFIC RESEARCH IN OREGON

- 43 NSF Graduate Research Fellowship Program awards offered in FY 2021-22 to students who completed their bachelors in Oregon
- 453 Science and engineering doctoral degrees awarded in Oregon in 2021 (Survey of Earned Doctorates, NCSES)
- Awarded to 12 Oregon businesses in FY 2021-22 through the NSF "America's Seed Fund" program for R&D of technologies with potential commercial application
- Total science and engineering R&D expenditures in Oregon across all sectors—industry, biotech, academia, and government—in 2020 (National Patterns of R&D Resources, NCSES)

FASEB
Federation of American Societies for Experimental Biology

Learn more & join the conversation! [FASEB.org](https://www.faseb.org) [@FASEBorg](https://twitter.com/FASEBorg) [f@FASEB.org](https://www.facebook.com/FASEB.org) [@FASEB](https://www.linkedin.com/company/FASEB)

NATIONAL INSTITUTES OF HEALTH

OREGON

2022 Federal Research Funding

The National Institutes of Health (NIH) is the nation's primary funder of biomedical research, leading to advances in scientific knowledge, better health, and economic growth.

NIH FUNDING IN OREGON	NIH FUNDING AT SELECT SITES
<p>\$400M TOTAL FUNDING</p> <p>753 GRANTS & CONTRACTS</p> <p>5 CONGRESSIONAL DISTRICTS*</p> <p>46 RESEARCH SITES</p>	<p>\$289M OREGON HEALTH AND SCIENCE UNIVERSITY</p> <p>\$43.1M UNIVERSITY OF OREGON</p> <p>\$23.3M OREGON STATE UNIVERSITY</p> <p>\$7.49M OREGON SOCIAL LEARNING CENTER</p> <p>\$7.38M PORTLAND STATE UNIVERSITY</p> <p>\$2.28M NORTHWEST PORTLAND AREA INDIAN HEALTH BOARD</p> <p>\$2.16M OREGON RESEARCH INSTITUTE</p> <p>\$1.36M LEGACY EMANUEL MEDICAL CENTER</p> <p>\$1.11M PROVIDENCE PORTLAND MEDICAL CENTER</p>

1 NCI-DESIGNATED CANCER CENTER

BIOMEDICAL RESEARCH IN OREGON

- \$10.1M** NIH funding for workforce training and development grants in Oregon, which help prepare the scientific leaders of the future
- \$16.9M** NIH funding to 26 Oregon businesses for research and development of technology offering potential commercial applications
- 17.4K** Bioscience industry jobs in Oregon, which offer an average annual wage \$26.1K higher than the total private sector (2022 TEconomy/BIO Report)
- 1,664** Bioscience industry business establishments in Oregon operating in 2021 (2022 TEconomy/BIO Report)

FASEB
Federation of American Societies for Experimental Biology

*Reflects congressional districts of the 117th Congress

Learn more & join the conversation! [FASEB.org](https://www.faseb.org) [@FASEBorg](https://twitter.com/FASEBorg) [f@FASEB.org](https://www.facebook.com/FASEB.org) [@FASEB](https://www.linkedin.com/company/FASEB)

Audience: Lawmakers

University of Arizona Center for Innovation

Audience

State government
Potential startups
Investors



University Shared Resources Fact Sheet (Draft)

Audience:

- Core users
- Executive leadership
- Finance

Publications Supported by Cores

1,302 articles were retrieved from the [Scopus](#) database that directly link to USR core services. The [Scopus](#) query matches Agency Award Numbers used for core service payments with [Scopus](#) records. Note that only a subset of Award Numbers could be used for this query, so the count of publications may be an underestimate.

University Shared Resources FY 2023 Impact Report



Research cores provide essential instruments and expertise, enabling investigators to expand their research by utilizing technologies that would otherwise be both prohibitively expensive and challenging to access. Funding for operating costs is sustained through a combination of researchers being charged a reduced rate for services which is made possible by financial investments provided by the institution.

OHSU is committed to ensuring USR Core services are sustainable for the long term as evidenced by significant investments throughout the years. These investments provide assistance with:

- Capital Equipment Purchases
- Equipment Maintenance
- Software and Hardware Purchases
- Administrative Support
- Laboratory Supplies
- Service Contracts
- Equipment Maintenance
- Construction Expenses
- Payroll

USR Core Metrics - FY23

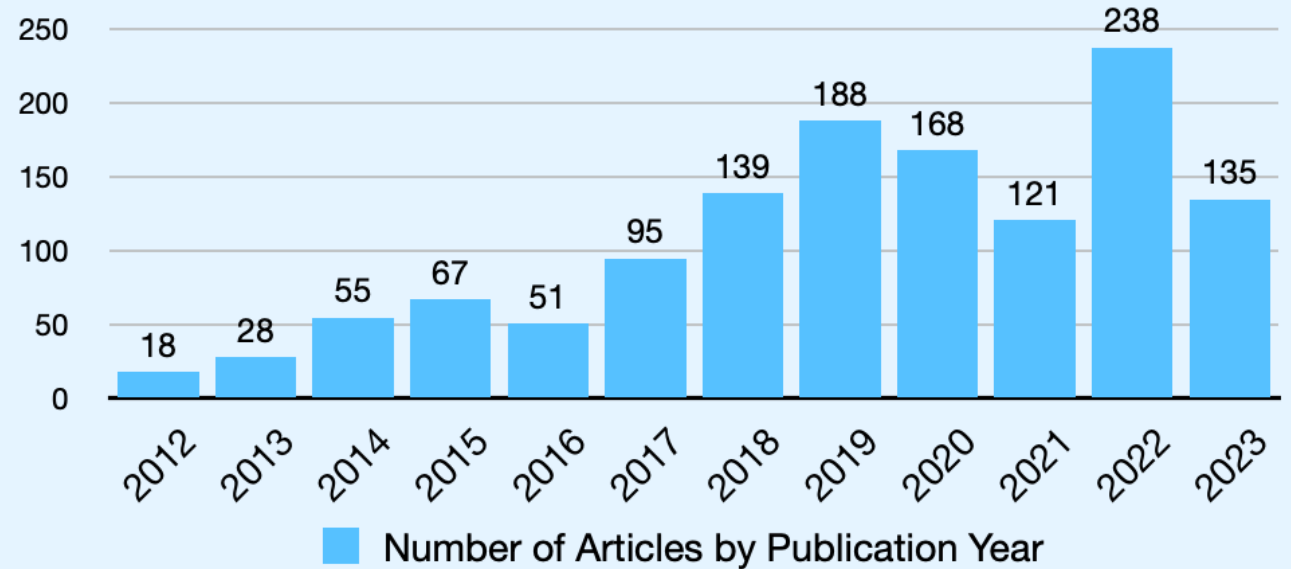
OHSU wet labs utilizing cores: 368	Value of grants supported: \$378M
USR managed operating expenses: \$10M	Researchers utilizing cores: 935
Capital goods value: > \$50M	Annual cost of service contracts: \$\$\$
Approximate cumulative core staff: 85	Number of awards supported: 1,426
Average researchers served/yr: 915	Average projects serviced/yr: 6,813

USR Cores

Comprised of 18 service centers across OHSU, member cores include:

- Advanced Computing Center *
- Advanced Imaging Research Center
- Advanced Light Microscopy Core
- Bioanalytical/Pharmacokinetics
- Biophysics Core
- Biostatistics and Design Program
- Center for Radiochemistry Research
- DNA Services
- Elemental Analysis Core
- Flow Cytometry
- Gene Profiling Shared Resource
- Histopathology
- Massively Parallel Sequencing
- Medicinal Chemistry Core

University Shared Resource Cores





Individual Core (Draft)

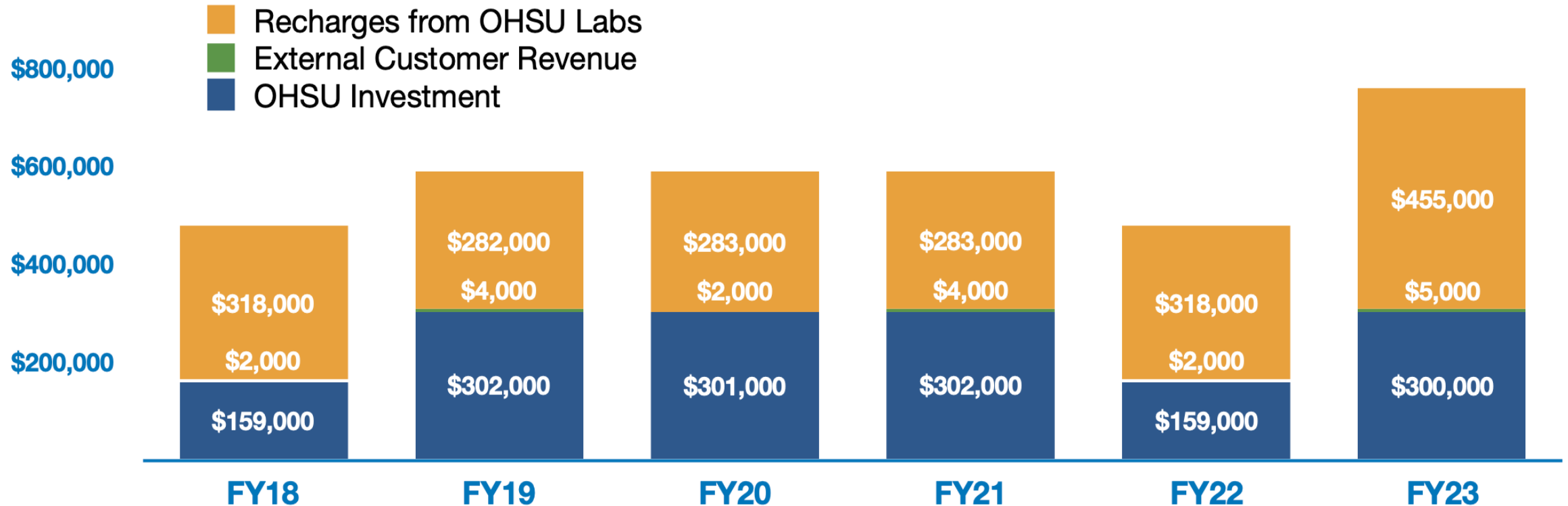
Audience

- Core Advisory Committee
- Core users

The ALM Core helps the biomedical research community at OHSU take advantage of current methods in fluorescence microscopy. We train users on instruments best suited for their applications and sample preparations and support them in their efforts to quantify and analyze the acquired digital images. Our line-up of instrumentation and expertise covers a wide spectrum of applications, including imaging at the highest resolution possible and

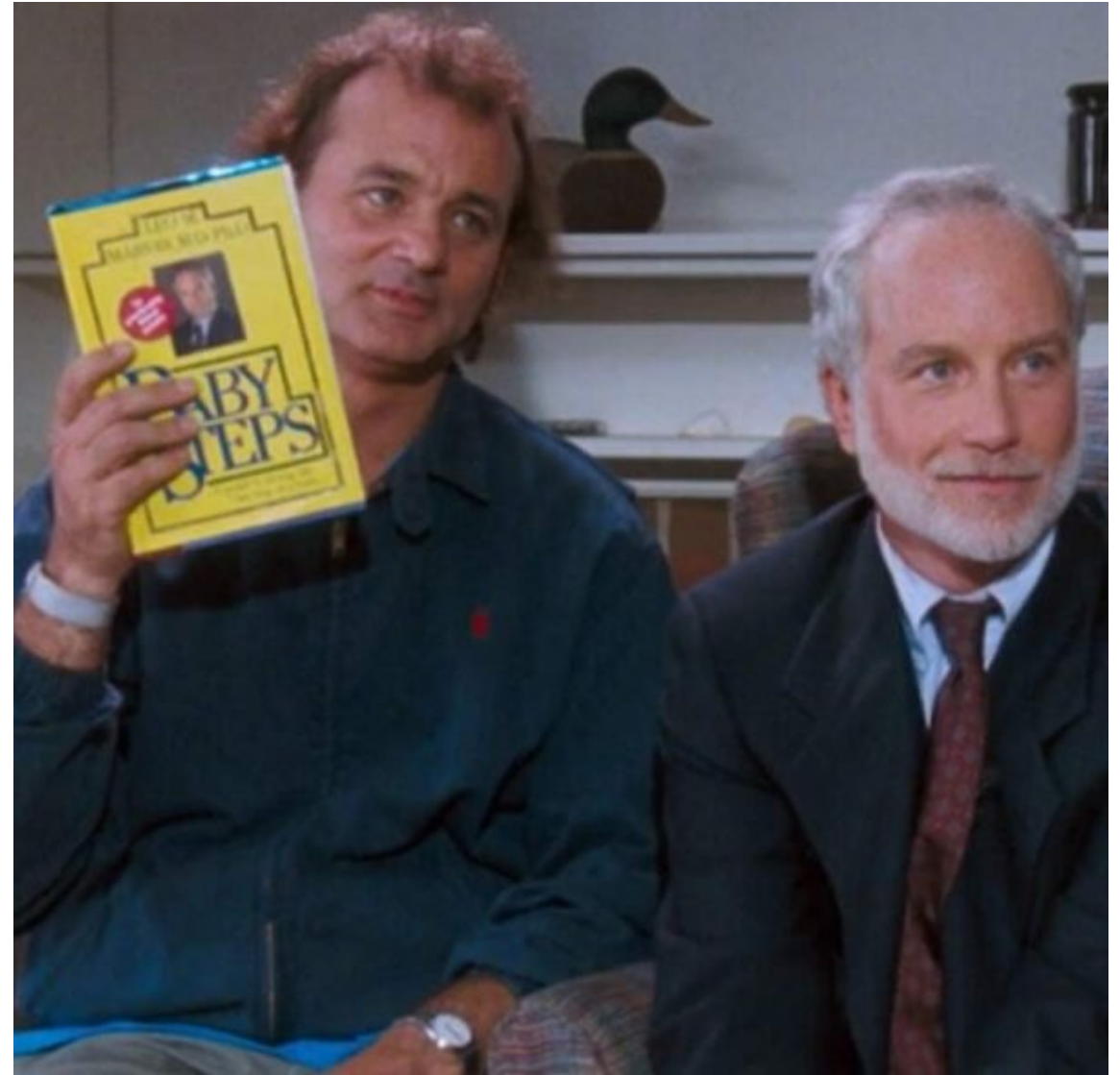
The Advanced Light Microscopy Core has a number of different imaging setups that excel at different applications. We are largely a Zeiss microscope shop but are diversifying our instruments for FY24.

- Laser Scanning Confocal Microscopes (Zeiss LSM 980 Airyscan.2, Zeiss LSM 900 Airyscan.2, Zeiss LSM 880 Fast Airy)
- Structured Illumination Super-Resolution (Zeiss Elyra 7)
- Spinning Disk Confocal Microscopes (Yokogawa CSU-X1 or CSU-W1)
- Multiphoton Laser Scanning Setups (Zeiss LSM 7MP and Zeiss LSM 880 Fast Airy NLO)
- Lightsheet Microscope (Zeiss Lightsheet.Z1)
- Incubator Microscope (Essen IncuCyte ZOOM)
- Automated Slide Scanners (Zeiss Axioscan.Z1)
- Image Restoration by Deconvolution Microscope (GE/API CoreDv)
- Automated Fluorescence and Transmitted Light Microscope (Zeiss ApoTome.2)



Baby Steps: Start somewhere

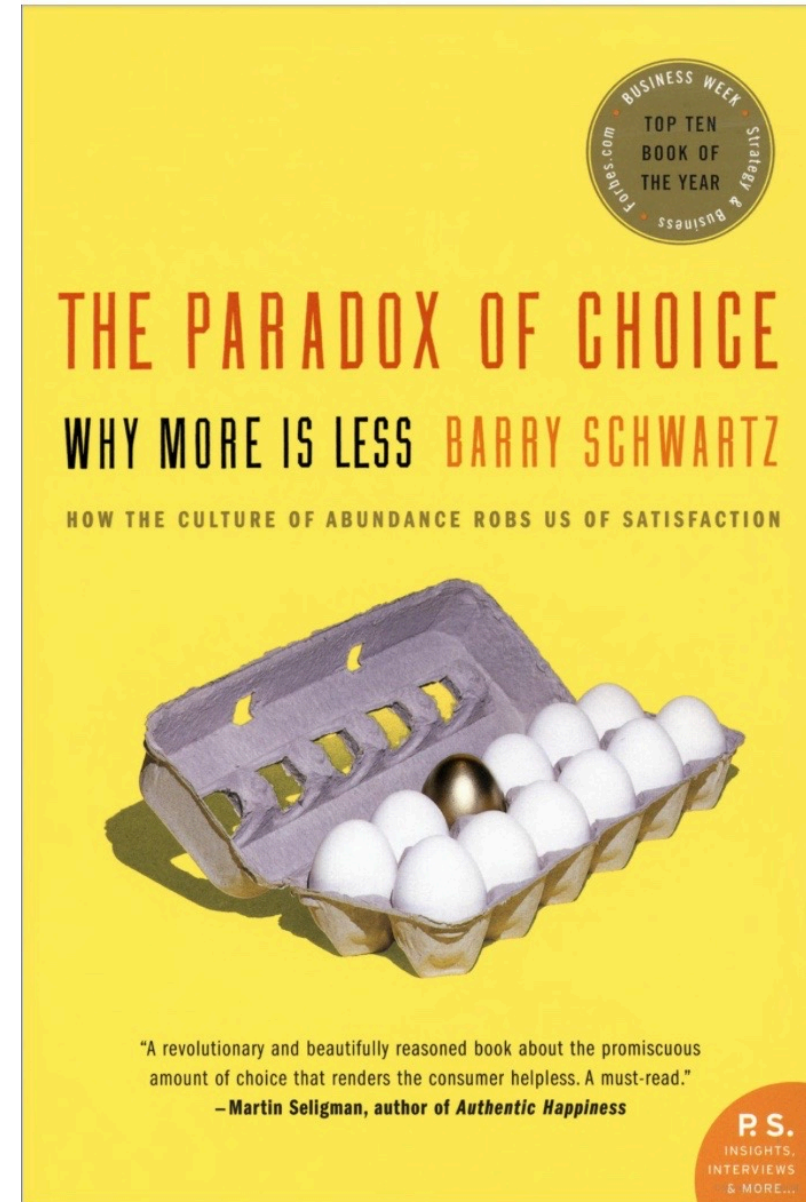
- What can you show now?
 - iLab reports
 - Available user data
 - Central support information
- What can you find next that is low hanging fruit?
- What is your ultimate set of KPIs, Impact metrics?



Dr. Leo Marvin and Bob

Paradox of Choice analogy

- Maximizer: an individual who seeks out the most optimal (maximum utility) outcome when making a decision.
- This can lead to indecision, and buyers remorse.
- When it comes to data collection, we might be maximizers.
- We tend to want all the data to be completely verifiable, perfect.
- This can lead to paralysis!

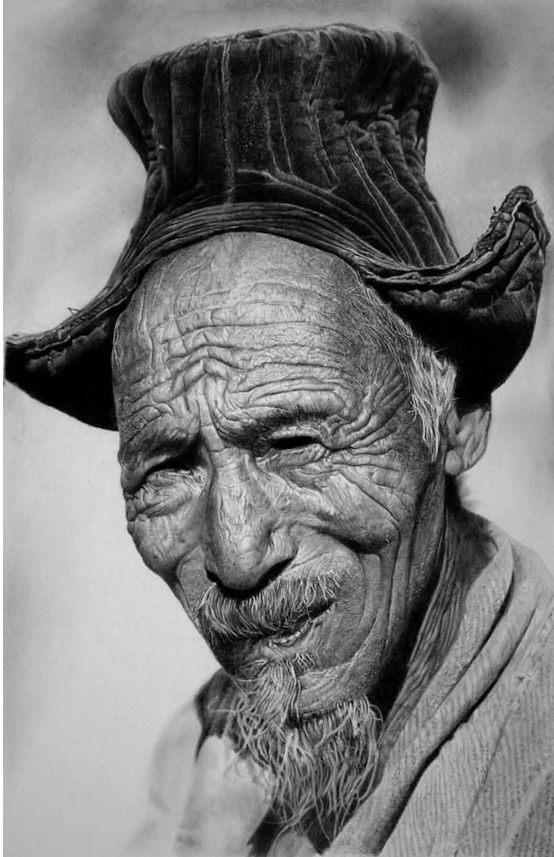


Don't let perfect be the enemy of good

Statements that allow for qualification:

- We were able to find 1302 publications in our search for PI activities utilizing cores
- At least \$50 million in capital, with an estimated replacement value of...
- Value of grants that utilized cores – \$378 Million

Hyperrealism vs. Impressionism



Diego Koi

vs.



Claude Monet

Communication Methods

- Fact sheets
- News articles
- Web site
- Email outreach
- Town halls
- Presentations
- Educational activities
- Video
- Other?



And don't forget, who is your customer/audience?

Thank you!

Questions? Thoughts? Ideas?