Maximizing Core Impact with Metrics Integration & Effective Communications

Julie Auger, Salk Institute for Biological Studies
Craige Mazur, Oregon Health & Science University
Andy Chitty, Oregon Health & Science University
“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 BiolImaging Recommendation for Measuring Imaging Facility Impact

Claire M. Brown, McGill University, BINA Co-Chair
Key Performance Indicators (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 collect 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 usage 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)
Socio-Economic Indicators (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
9. Industry Investments

PUBLIC VISIBILITY
10. Media
Publications
The Story of Elusive Acknowledgements
The Requestor Approach

Core Acknowledgement - mazur@ohsu.edu

From: Craige Mazur (mazur@ohsu.edu)
To: PI@ohsu.edu
Subject: Core Acknowledgement

Dear PI,

So glad you loved working with our instruments and our amazing staff!
May you solve science and publish 1,000 articles.

BTW - Please acknowledge us!

Sincerely,
Your Friendly Neighborhood Core

Core Facility Acknowledgement and Authorship Policy: Use of data generated in the Micro Core facility in a grant application, progress report or publication contains the implicit understanding that PI or authors will acknowledge the use of the core facility. Facilities are supported by federal agencies and acknowledgments are essential for continuing support. If Micro Core personnel provide significant intellectual input to the results submitted for publication, it is appropriate to include them as co-authors. Each case should be considered individually, and the Core should be consulted for review prior to publication.
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...

Coffee ON US!
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
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.
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.
1. Agency Award Number
2. Finance department issues internal fund number, Alias, to investigator
3. Core services paid via Alias in iLab software
4. Data exported from iLab (core name, service name, lab/PI, $ amount, alias)
5. Join iLab dataset with Agency Award Number
6. Scopus Query: Select articles where citation includes Award Numbers (additional criteria)
7. Scopus Results: Published articles with DOI, Pubmed IDs, Authors, Publication, Titles, Agency Award Number
8. Join Scopus results with iLab dataset: Published articles + award number + core services + $ amount spent
9. Provide result set to Core Directors for verification
   1. Set reasonable minimum dollar amount threshold
   2. Verify & validate
   3. Include in metrics

The OHSU Data Journey

From Awards to Cores to Publications
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The Metrics

OHSU USR Cores Contributions
Unique Articles Found: 1,302
# The Metrics

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</tr>
</tbody>
</table>
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

OHSU Economic Impact Fact Sheet - 2019

Keeping health care and health care spending in Oregon

Access to advanced care brings patients to Oregon

OHSU is the only provider of many highly specialized services between Seattle and San Francisco. As the recipient hub for specialty care, OHSU Helen Hayes Hospital in New York treats patients referred by physicians from across the region. OHSU’s expansive network of specialist physicians, hospitals and research facilities across Oregon and in Multnomah County, means that patients throughout the state stay in their home communities.

OHSU’s health care footprint in rural Oregon is profound. OHSU hosted on-campus hospital care for 86% of every Oregon county in 2019. Twenty counties had at least 100 hospital visits in 2019 — all of them had at least one visit that day. Despite these challenges, OHSU Hospital in Medford/Deschutes Children’s Hospital is located.

OHSU has more than 6000 physicians and specialty care clinicians, and clinical outreach programs throughout the state. By offering multiple ways to connect — brick and mortar clinics, telehealth, real-time video conferencing — OHSU’s reach is efficiency and accessibility in health care.

OHSU attracts new money to Oregon

OHSU’s impact is felt in its ability to attract new money to Oregon. The OHSU Developmental Therapeutics (DCT) program has been involved with more than 100 research grants in Oregon. The program has invested over $2 million in Oregon’s health care system. OHSU’s impact is felt in a way that is both immediate and long-term.

OHSU researchers attract new money to Oregon

OHSU’s status as a research institution has been recognized by the National Institutes of Health. Their work has led to funding from the National Institutes of Health. These funds not only support research but also support the people who conduct the research.

OHSU training and research attract new money to Oregon

OHSU is a leader in training the next generation of health care professionals. OHSU’s commitment to training includes scholarships for students. OHSU’s impact is felt in the real-world outcomes of its research and training programs.

Tracing the next innovators in health care

OHSU trains and educates medical students, medical residents, and postdoctoral fellows in a variety of disciplines. OHSU provides opportunities for students to develop and hone their skills in a variety of fields.

Audience: state government, general public
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.
## Individual Core (Draft)

### Audience
- Core Advisory Committee
- Core users

### Advanced Light Microscopy Core FY 2023 Impact Report

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 imaging of different biological specimens.

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, Arminex 2, Zeiss LSM 980 Arminex 3, Zeiss LSM 980 Fan-Airy)
- Structured Illumination Super-Resolution (Zeiss Eliza 7)
- Spinning Disk Confocal Microscopes (Yokogawa CSU-X1 or CSU-W1)
- Multiphoton Laser Scanning Setups (Zeiss LSM 710 and Zeiss LSM 800 Paar-Airy)
- Light Sheet Microscope (Zeiss Lightsheet Z1)
- Incubator Microscope (Essam Incubate Z10CM)
- Automated Multiscanners (Zeiss Accessor Z1)
- Image Restoration by Deconvolution Microscope (EEAPI Core)
- Automated Fluorescence and Transmitted Light Microscope (Zeiss Aps T2)

### Financial Breakdown

<table>
<thead>
<tr>
<th>Year</th>
<th>Recharges from OHSU Labs</th>
<th>External Customer Revenue</th>
<th>OHSU Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY18</td>
<td>$318,000</td>
<td>$2,000</td>
<td>$159,000</td>
</tr>
<tr>
<td>FY19</td>
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</tr>
<tr>
<td>FY23</td>
<td>$455,000</td>
<td>$5,000</td>
<td>$300,000</td>
</tr>
</tbody>
</table>
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?