The Association of Biomolecular Resource Facilities

SEASR
Southeastern Association of Shared Resources

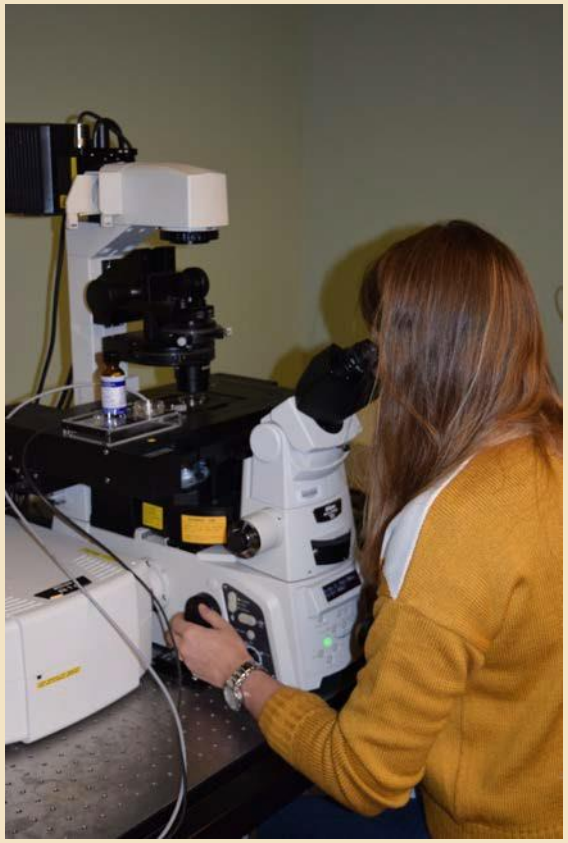
Defining Excellence for Shared Resources Worldwide

The Association of Biomolecular Resource Facilities

What is ABRF?

International scientific society dedicated to advancing technologies, education and communication and reproducible research in operations of shared scientific resources.

- ABRF is a non-profit professional membership organization and member of the Federation of American Societies of Experimental Biology (FASEB)
- Founded in 1989, ABRF currently includes over **2900** members working in biomedical laboratories in **16** countries representing academia, government and industry
- ABRF promotes research, technology, communication and education
- A **member-driven** society that relies on volunteers for ongoing activities
- Members access unique resources and professional opportunities



https://abrf.org

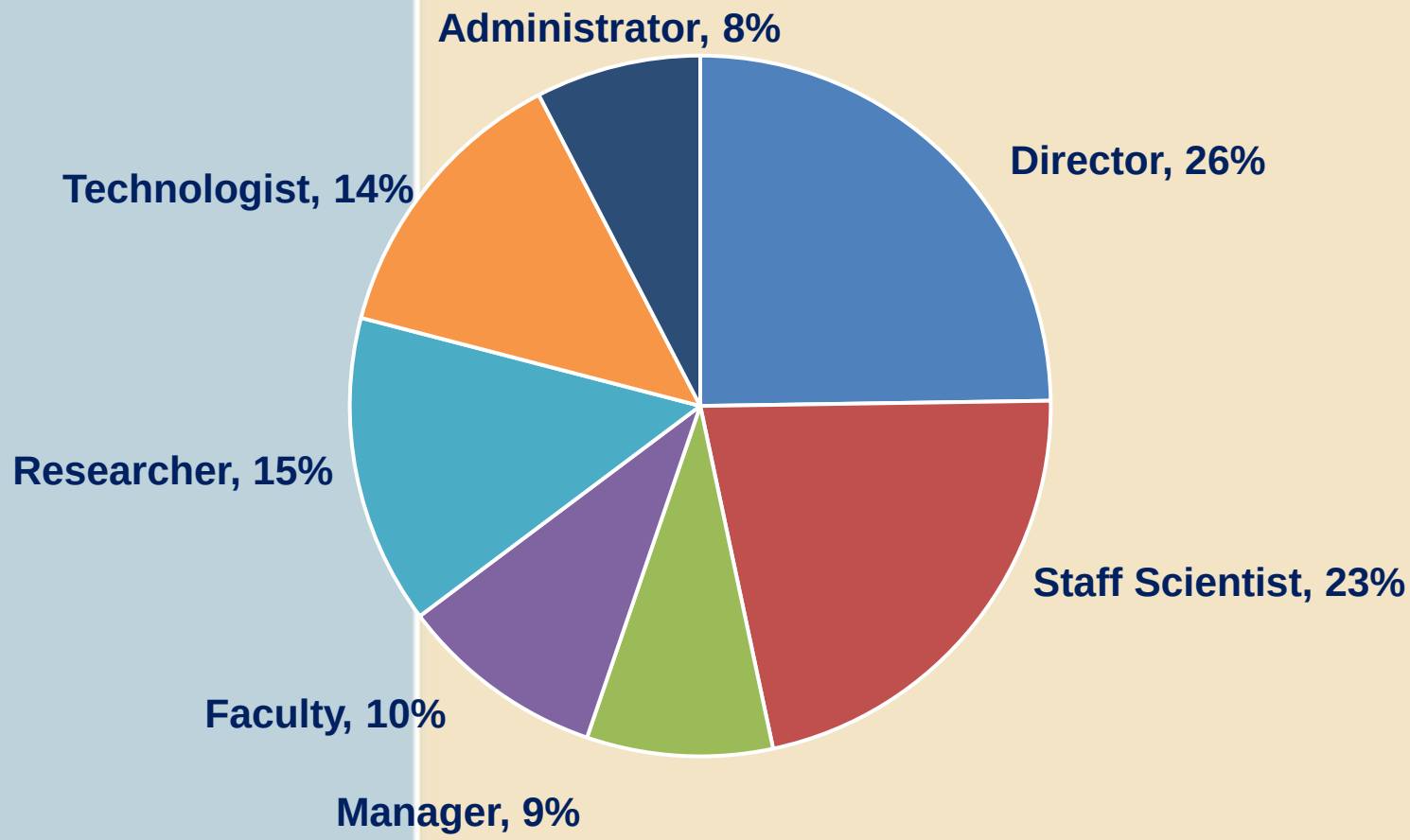
The Association of Biomolecular Resource Facilities

What's Your Role?

- Academic Researcher
- Core Director/ Manager
- Core Facility Technologist
- Corporate Researcher
- Principal Investigator
- Staff Scientist

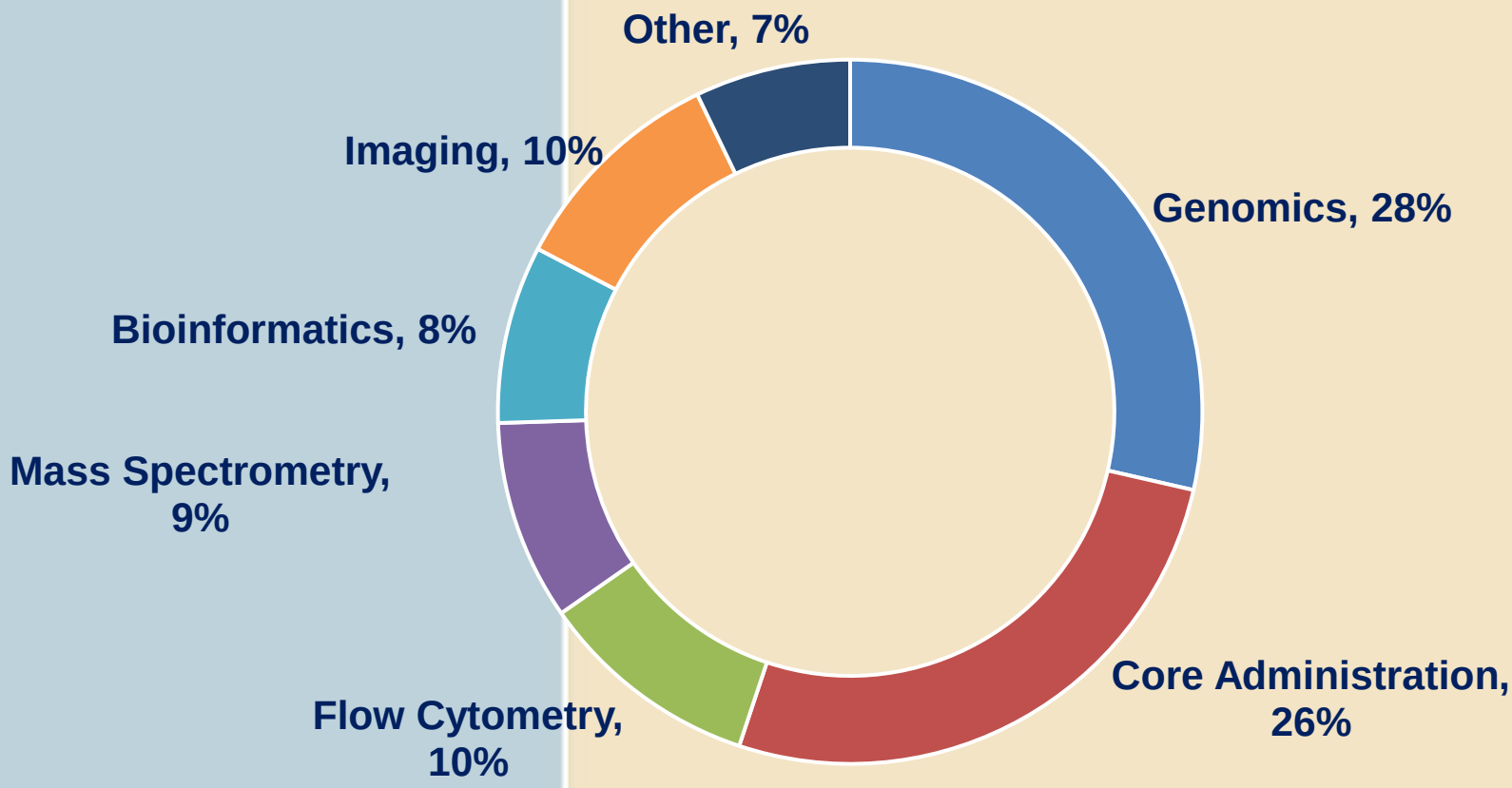
The Association of Biomolecular Resource Facilities

ABRF Members by Professional Role



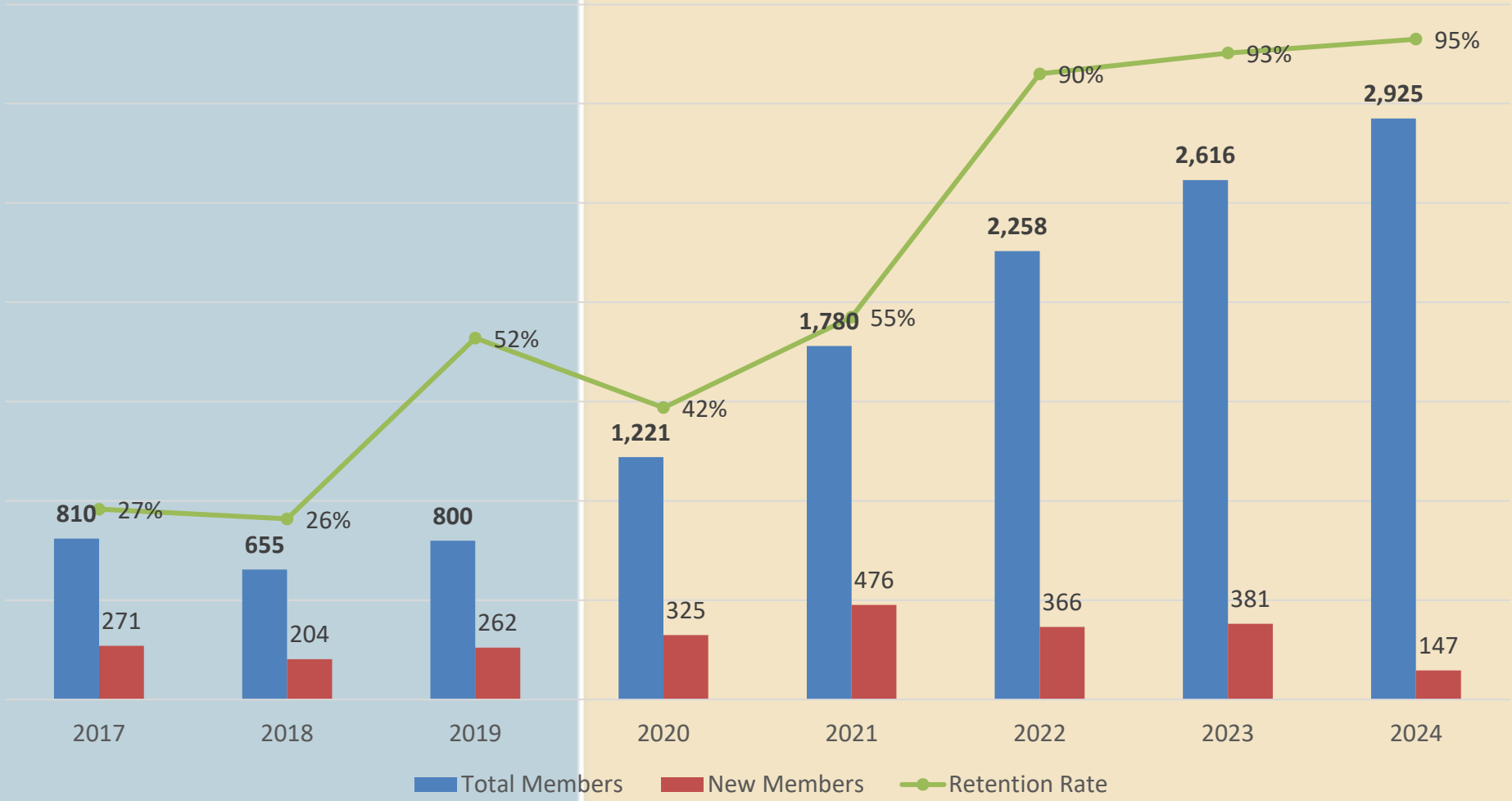
The Association of Biomolecular Resource Facilities

ABRF Members Professional Interests



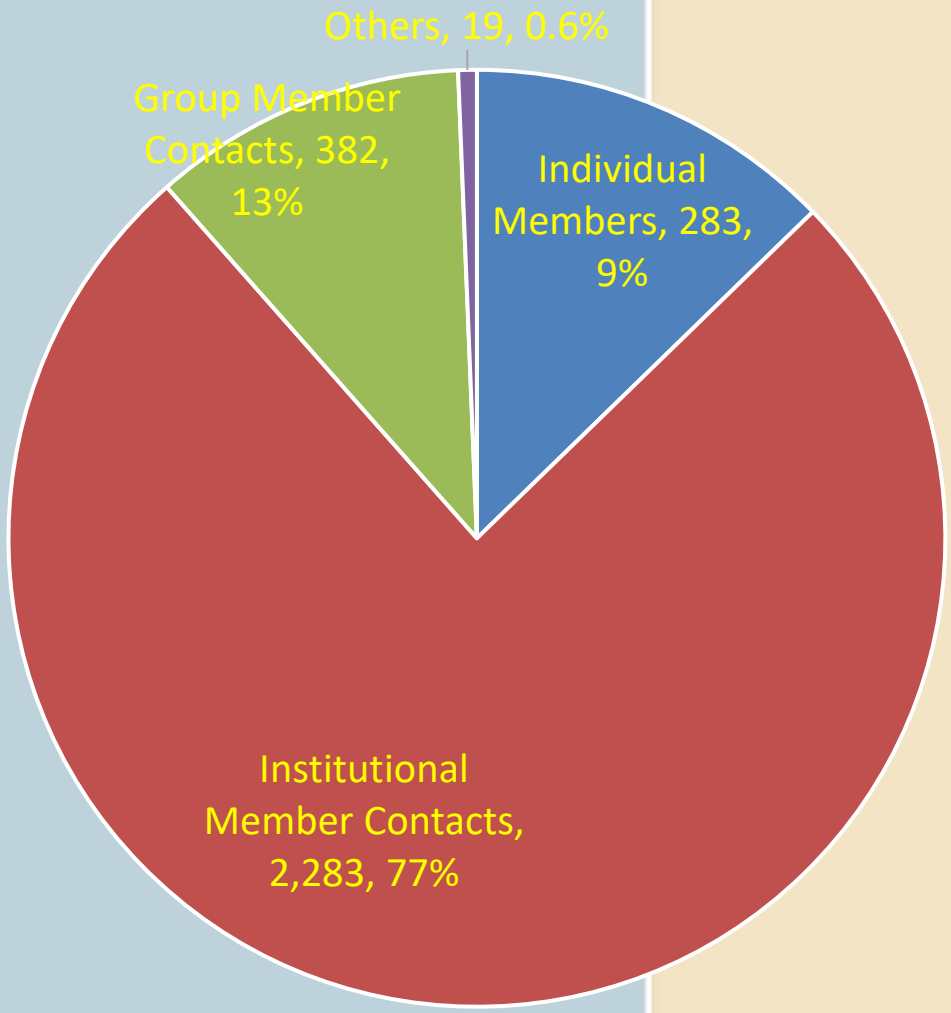
The Association of Biomolecular Resource Facilities

ABRF Member Growth 2017-2024



The Association of Biomolecular Resource Facilities

ABRF Membership Distribution



2,900+
Members

- ✓ 450+ Academic institutions
- ✓ 17 Countries
- ✓ 48/50 top are NIH institutions
- ✓ Member of FASEB (science policy)

The Association of Biomolecular Resource Facilities

ABRF Institutional Members

Cincinnati Children's

SEASR

Emory University School of Medicine

Mayo Clinic

OHSU Oregon Health & Science University

Colorado State University

Fred Hutch Cancer Center

Medical College of Wisconsin

Perelman School of Medicine University of Pennsylvania

Columbia Vagelos College of Physicians and Surgeons

Harvard Medical School

Purdue University

Cornell University

hhmi | janelia Research Campus

Memorial Sloan Kettering Cancer Center

Rutgers

Dartmouth

Duke University

UF ICBR

SEASR

NYU Langone Medical Center

Stanford University

The Association of Biomolecular Resource Facilities

ABRF Institutional Members

Stowers Institute for Medical Research

The University of Alabama at Birmingham

SEASR

University of Ghana

Texas A&M University

The University of Arizona

The University of Iowa

The University of Oklahoma Health Sciences Center

UC Davis University of California

University of Maryland School of Medicine

The Rockefeller University 1901

School of Medicine University of Colorado Anschutz Medical Campus

UMass Amherst

Tufts University

University of Colorado Boulder

Miami

SEASR

The Association of Biomolecular Resource Facilities

ABRF Institutional Members

University of Michigan

University of Nebraska Medical Center
BREAKTHROUGHS FOR LIFE.

The University of North Carolina at Chapel Hill

University of Rochester Medical Center

The University of Utah

University of Wisconsin–Madison Biotechnology Center

Van Andel Institute

Vanderbilt University Medical Center

SEASR

Yale University

The Association of Biomolecular Resource Facilities

ABRF Institutional Members by Chapter

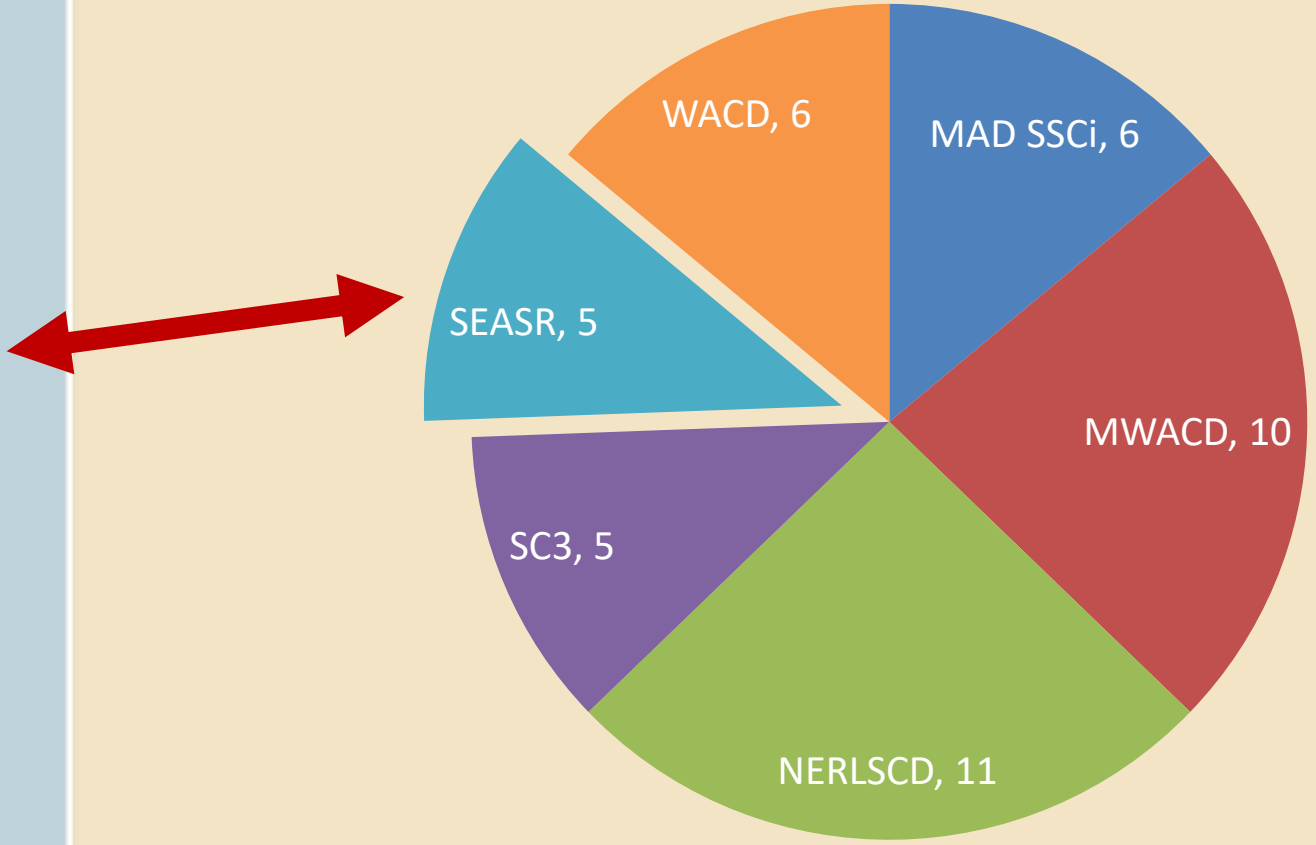
EMORY UNIVERSITY SCHOOL OF MEDICINE

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

UF ICBR

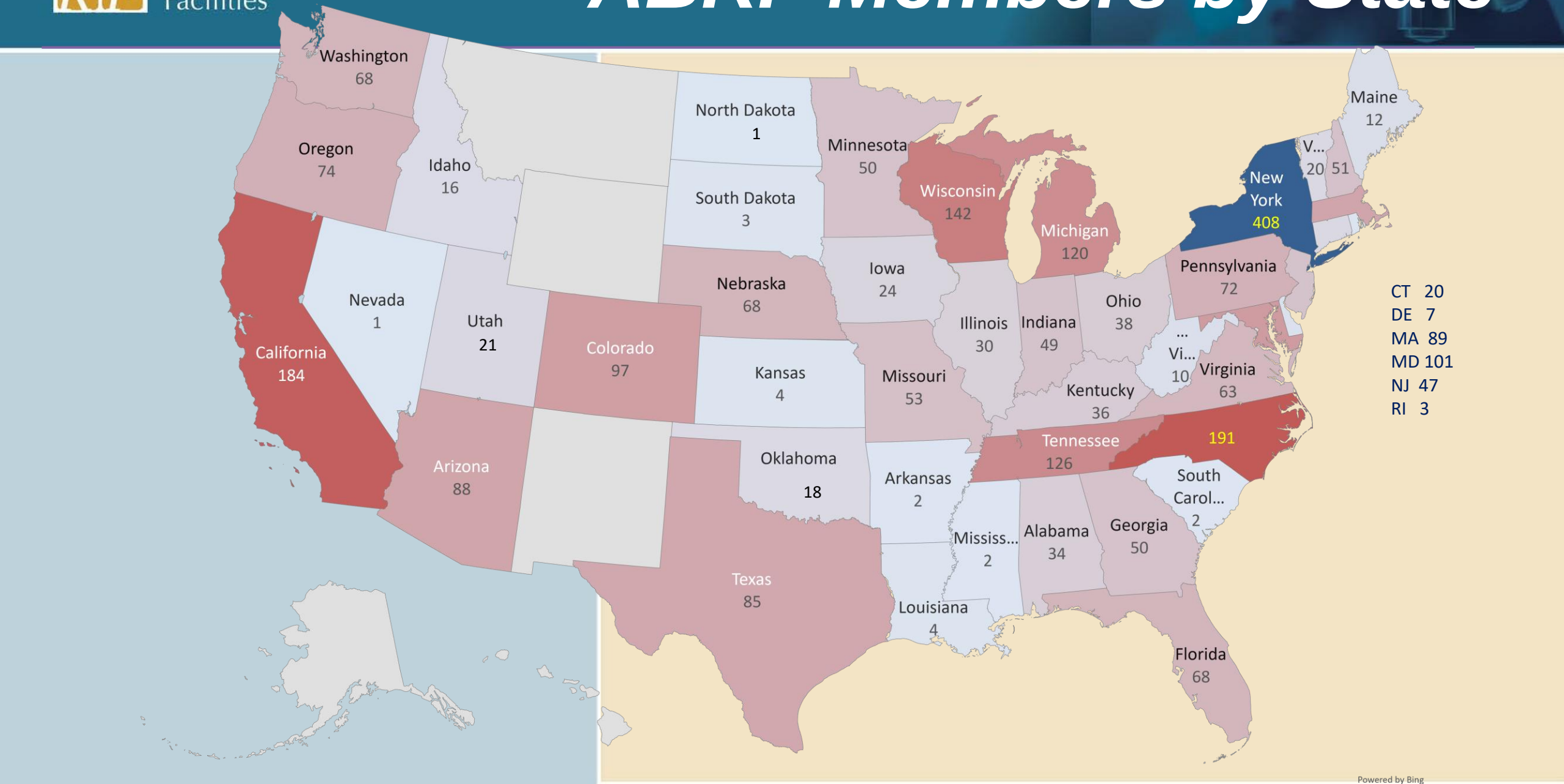
MIAMI

VANDERBILT UNIVERSITY MEDICAL CENTER



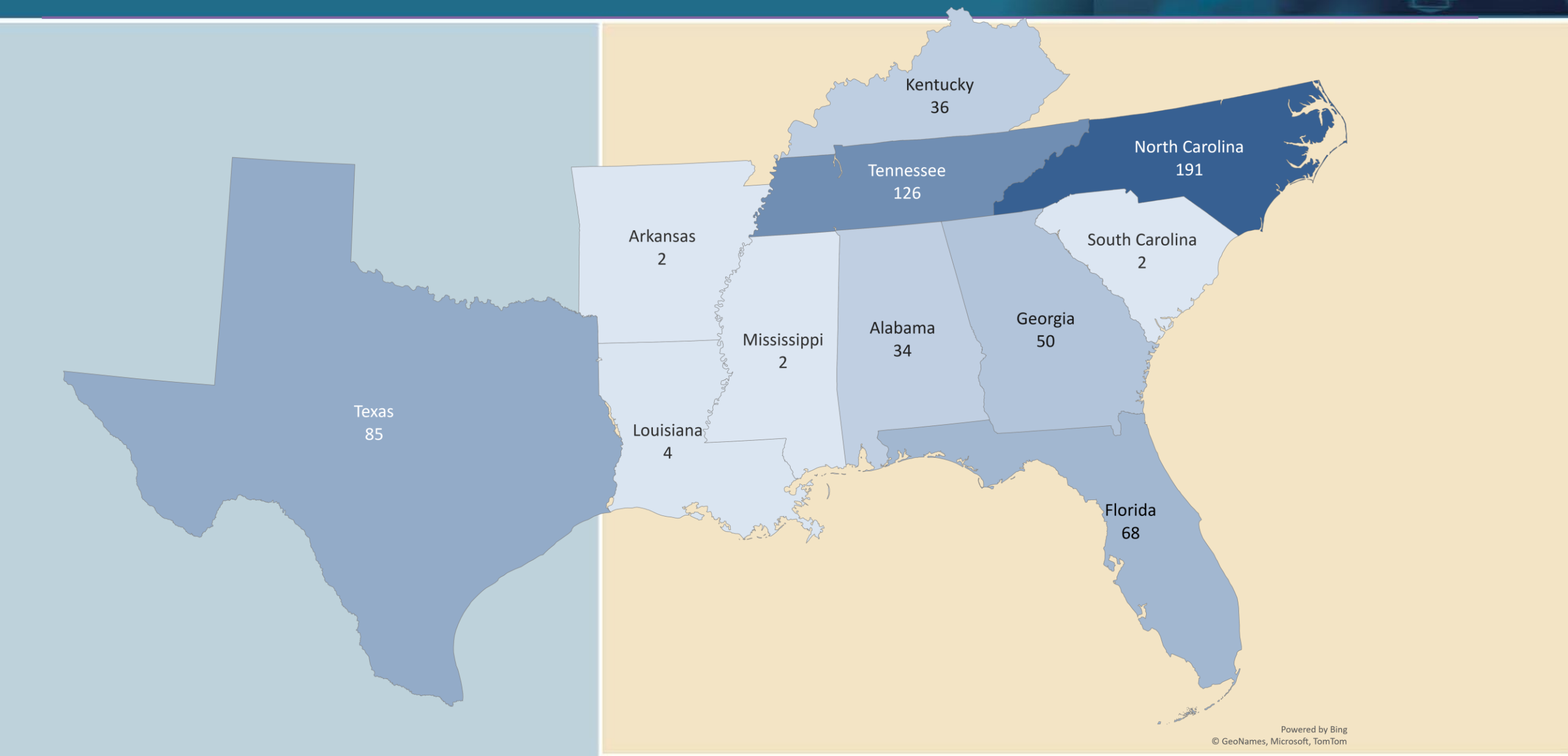
The Association of Biomolecular Resource Facilities

ABRF Members by State



The Association of Biomolecular Resource Facilities

ABRF Members in SEASR by State



The Association of Biomolecular Resource Facilities

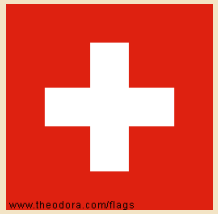
ABRF's Global Reach

ABRF includes members from each of these countries:

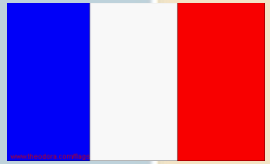
2 

2 

1 

6 

1 

3 

3 

1 

3 

3 

3 

10 

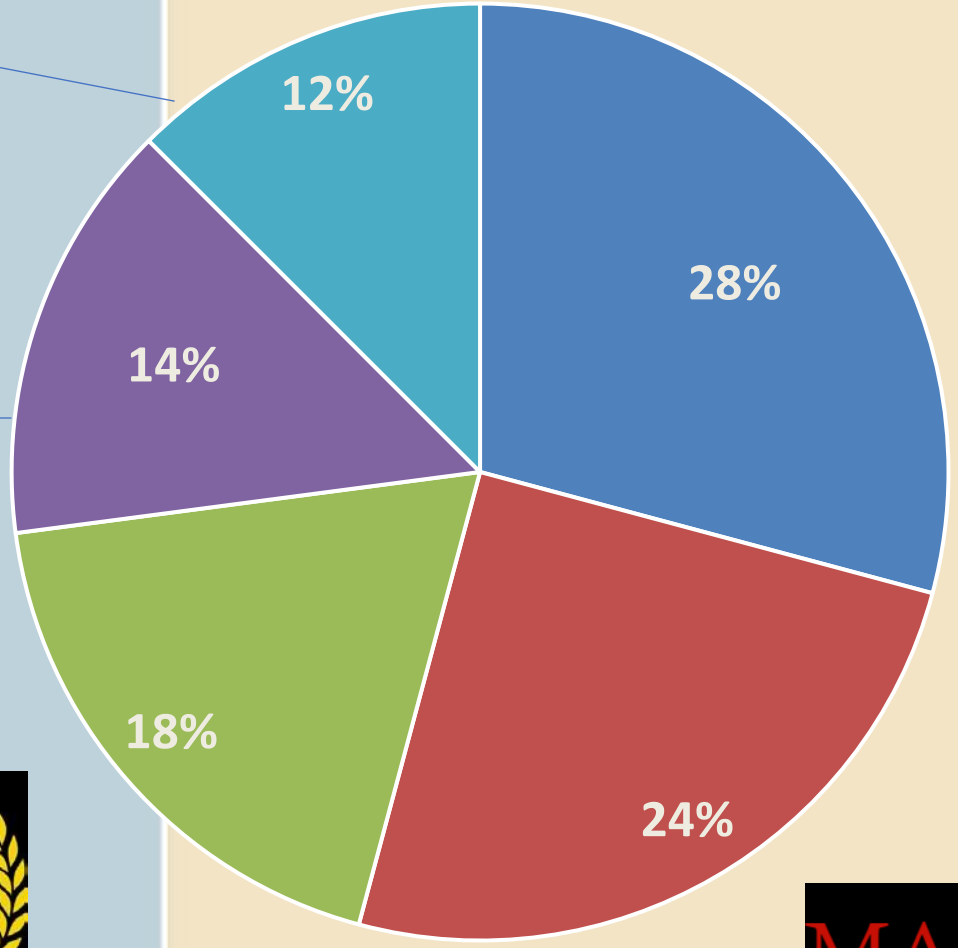
4 

19 

The Association of Biomolecular Resource Facilities

ABRF Members by Regional Chapter

WESTERN Association of Core Directors



NORTHEAST REGIONAL Laboratory Staff & Core Directors

MWACD

THE MIDWEST ASSOCIATION OF CORE DIRECTORS

SEASR Southeastern Association of Shared Resources

MAD SSCI Mid-Atlantic Directors and Staff of Scientific Cores

The Association of Biomolecular Resource Facilities

ABRF - Helping You Make the Most of Your Commitment to Shared Resource Facilities

Institution's Goals (1)

- Improve Funding and Business Operations for Shared Resource Facilities
- Increase the Discoverability and Access of Shared Resources
- Better Meet Evolving Resource Needs
- Professionalize Careers in Shared Resources

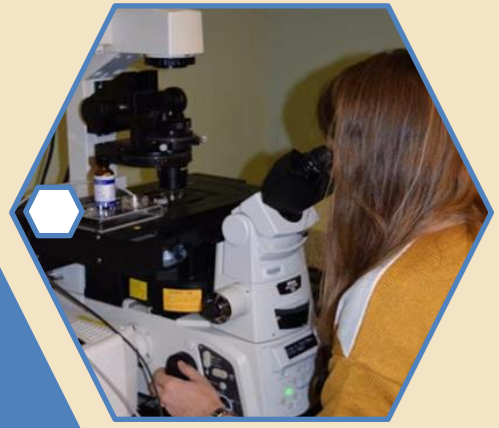
Source: Maximizing Shared Research Resources, FASEB, 2017

ABRF's Role

- Access a global network of core facilities leaders
- Advocacy and engagement with federal policy makers to make the case for increased funding
- Outreach and collaboration with allied scientific societies; convene industry partners and research officers to identify future directions
- Create a professional development curriculum for core facilities personnel

The Association of Biomolecular Resource Facilities

ABRF: Where do you fit?



Research Groups

Committees

National and Chapter Meetings

The Association of Biomolecular Resource Facilities

How Can ABRF Help You?

Meet Your Needs

Education – *learn more about the latest scientific and technology advances*
Benchmarking – *understand how other core facilities operate*
Problem-Solving – *connect with peers to ask questions*
Professional Development – *add experience to advance your career*
Networking – *find your peers in the core facilities community*

ABRF Opportunities/Resources

- Year-round content on today's key developments
- Articles and presentations developed by ABRF members
- Committees, working groups, and discussion forums to engage with colleagues
- Speaking, publishing, and leadership opportunities

The Association of Biomolecular Resource Facilities

Mentoring-Networking-Career Navigation

- ***Enroll*** in the ABRF Mentoring Program
- ***Explore*** Career Center
- ***Advertise*** Take Advantage of ABRF Core Marketplace
- ***Drive Science Policy*** with our Umbrella Organization FASEB
- ***Post*** questions to ABRF Core Community

The Association of Biomolecular Resource Facilities

ABRF Activities

- Annual Meetings (national and regional)
- Research Groups
- Education Workshops
- Leadership Opportunities
- Peer Mentoring Groups
- Virtual Town Halls

https://abrf.org

The Association of Biomolecular Resource Facilities

ABRF Committees

Match your interests with an ABRF Committee

- Career Development
- Communications
- Core Administrators' Network
- Core Rigor and Reproducibility
- Corporate Relations
- Education
- Membership

ABRF Council

- Diversity, Equity, Inclusion and Belonging

The Association of Biomolecular Resource Facilities

ABRF Research Groups

Often referred to as the heart and soul of the ABRF, ***Research Groups*** *(RGs) are organized by ABRF members to advance specific biotechnologies and analytical techniques for the benefit of core and research laboratories.*

The Association of Biomolecular Resource Facilities

Research Groups

Genomics	Proteomics, Metabolomics & Mass Spectrometry	Imaging/ Flow	Bioinformatics
DNA Sequencing	Metabolomics	Flow Cytometry	Genomics Bioinformatics
Genome Editing	Proteome Informatics	Light Microscopy	
Genomics	Proteomics		
Metagenomics & Microbiome			
	HistoImmunoChemistry		

The Association of Biomolecular Resource Facilities

Sample Research Group activities:

- New studies
- Posters
- Presentations
- Publications

Cross Site Evaluation of Sanger Sequencing Dye Chemistries

DNA Sequencing Research Group

Molly J. Zeller[1], Fred W. Kolling[2], Jessica W. Podnar[3], Yanping Zhang[4], Jyothi Thimmapuram[5], Yuriy O. Alekseyev[6], Alex Deiulio[4], Jeremy Niece[1], Heather Deiderick[3], Jun Fan[7], Xiaoling Xuei[8], Lorena Pantano[9], Jan Kieleczawa[10], Stuart S. Levine[11], Zachary T. Herbert[12], Marie Adams[13]

1. University of Wisconsin Biotechnology Center 2. Geisel School of Medicine 3. UT Austin 4. University of Florida 5. Purdue University 6. Boston University 7. Marshall University 8. Indiana University School of Medicine 9. Harvard T.H. Chan School of Public Health 10. Wyzer Biosciences 11. Massachusetts Institute of Technology 12. Dana-Farber Cancer Institute 13. Van Andel Institute

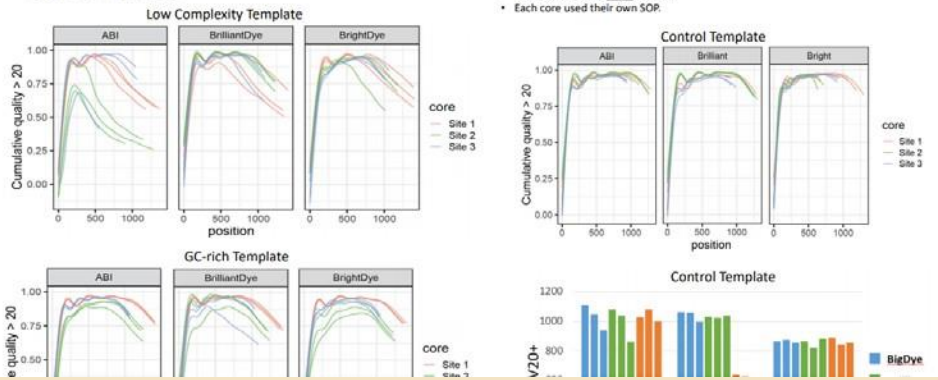
Abstract

Sanger sequencing remains an essential tool utilized by researchers. Despite competition from commercial providers, many sequencing core facilities continue to offer Sanger sequencing services to their customer base. By reducing costs and providing rapid turnaround times, in-house Sanger sequencing remains a viable core service, often helping to subsidize more costly services such as next generation sequencing. While Applied Biosystems' BigDye™ Terminator chemistry was once the only solution available for Sanger DNA sequencing, several new products employing novel dye chemistries and reaction configurations have entered the market. Currently, it is unclear how these new chemistries perform on various DNA templates, including difficult templates or their amenability to commonly employed cost-saving measures such as dye dilution and reaction miniaturization. With this goal in mind, we compared the quality of Sanger sequencing data produced by kits available from several vendors using control and difficult-to-sequence DNA templates under various reaction conditions. This study will serve as a valuable resource to core facilities conducting Sanger sequencing, providing guidelines on appropriate protocols to use with each kit and determining the most cost effective solutions for Sanger sequencing while maintaining high quality results.

Experimental Variables

Difficult to Sequence Templates

- Protocol 1 from Kieleczawa et al*

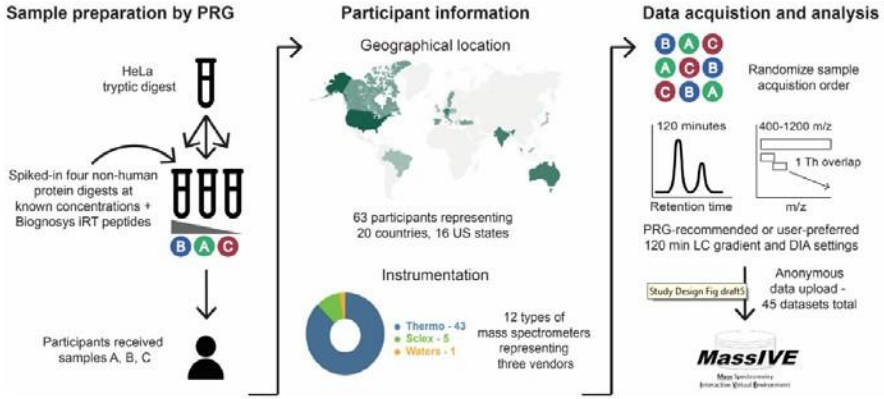


Drop In Ready

- Each site swapped **ONLY** the dye!
- Each core used their own SOP.

Current Study: 2018 Evaluation of Data-Independent Acquisition (DIA) for Protein Quantification in Academic and Core Facility Settings.

2018



2020: Empowering Team Science

February 29 - March 3 | Palm Springs, CA

COMMUNICATION

ABRF Proteome Informatics Research Group (iPRG) 2016 Study: Inferring Proteoforms from Bottom-up Proteomics Data

Joon-Yong Lee,[1] Hyungwon Choi,[2] Christopher M. Colangelo,[3] Darryl Davis,[4] Michael R. Hoopmann,[5] Lukas Käll,[6] Henry Lam,[7] Samuel H. Payne,[1] Yasset Perez-Riverol,[8] Matthew The,[6] Ryan Wilson,[1] Susan T. Weintraub,[9] and Magnus Palmblad[10,]*

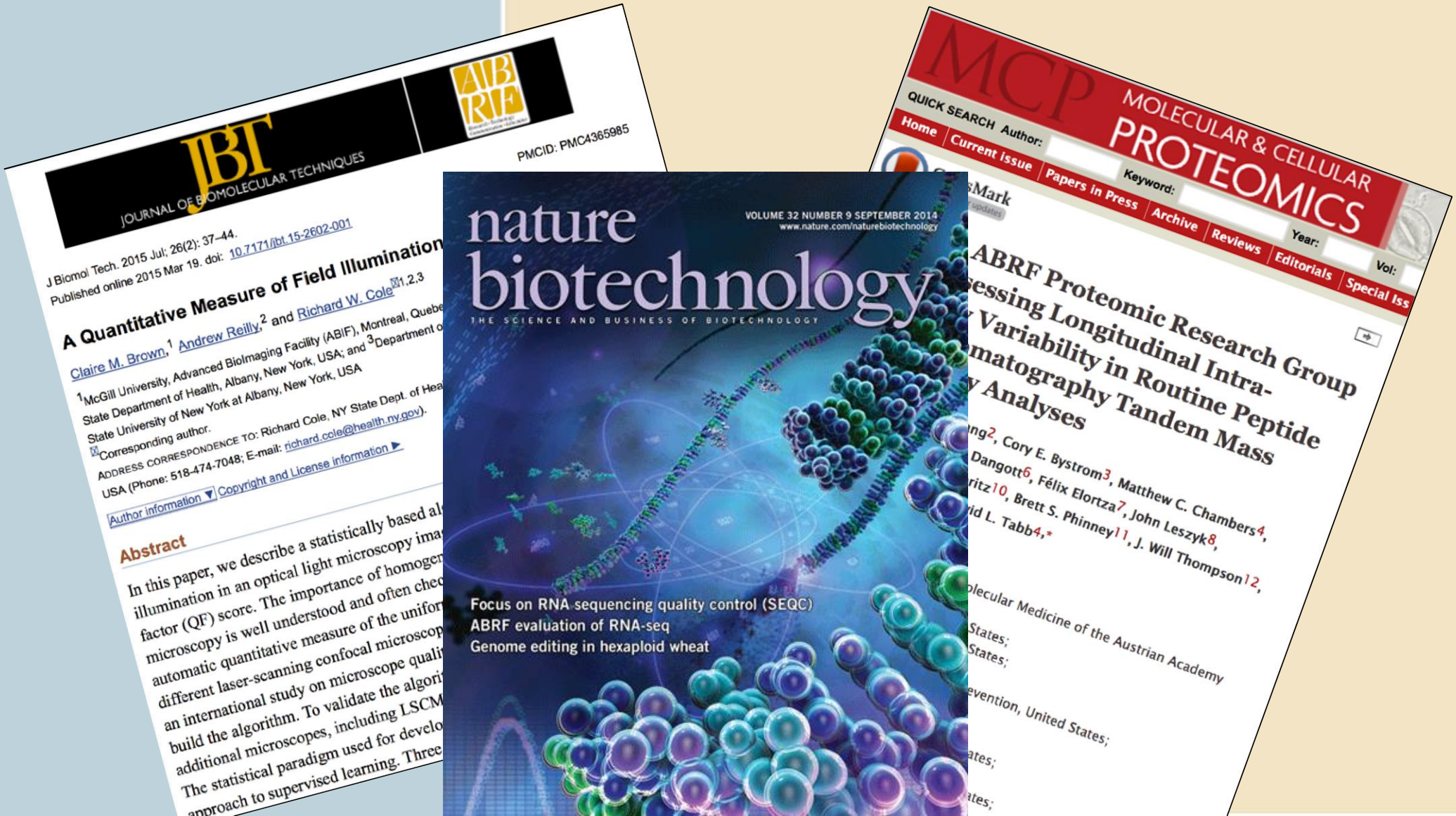
[1]*Pacific Northwest National Laboratory, Richland, Washington 99352, USA;* [2]*National University of Singapore, 117547 Singapore, Singapore;* [3]*Agilent Technologies, 121 Hartwell Ave., Lexington, MA 02421;* [4]*Janssen Research and Development, LLC, Spring House, Pennsylvania 19087, USA;* [5]*Institute for Systems Biology, Seattle, Washington 98109, USA;* [6]*Science for Life Laboratory, KTH - Royal Institute of Technology, 171 65 Solna, Sweden;* [7]*Department of Chemical and Biological Engineering, The Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong, China;* [8]*European Molecular Biology Laboratory, European Bioinformatics Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 1SD, United Kingdom;* [9]*Department of Biochemistry and Structural Biology, The University of Texas Health Science Center, San Antonio, Texas 78229, USA; and* [10]*Center for Proteomics and Metabolomics, Leiden University Medical Center, 2300 RC Leiden, The Netherlands*

This report presents the results from the 2016 Association of Biomolecular Resource Facilities Proteome Informatics Research Group (iPRG) study on proteoform inference and false discovery rate (FDR) estimation from bottom-up proteomics data. For this study, 3 replicate Q Exactive Orbitrap liquid chromatography-tandom mass spectrometry datasets were generated from each of 4 *Escherichia coli* samples spiked with different equimolar mixtures of small recombinant proteins selected to mimic pairs of homologous proteins. Participants were given raw data and a sequence file and asked to identify the proteins and provide estimates on the FDR at the proteoform level. As part of this study, we tested a new submission system with a format validator running on a virtual private server (VPS) and allowed methods to be provided as executable R Markdown or IPython Notebooks. The task was perceived as difficult, and only eight unique submissions were received, although those who participated did well with no one method performing best on all samples. However, none of the submissions included a complete Markdown or Notebook, even though examples were provided. Future iPRG studies need to be more successful in promoting and encouraging participation. The VPS and submission validator easily scale to much larger numbers of participants in these types of studies. The unique "ground-truth" dataset for proteoform identification generated for this study is now available to the research community, as are the server-side scripts for validating and managing submissions.

The Association of Biomolecular Resource Facilities

The Association of Biomolecular Resource Facilities

Publications



JBT JOURNAL OF BIOMOLECULAR TECHNIQUES

PMCID: PMC4365985

J Biomol Tech. 2015 Jul; 26(2): 37–44.
Published online 2015 Mar 19. doi: 10.7171/jbt.15-2602-001

A Quantitative Measure of Field Illumination

Claire M. Brown,[1] Andrew Reilly,[2] and Richard W. Cole[1,2,3]

[1]McGill University, Advanced BioImaging Facility (ABIF), Montreal, Quebe
State Department of Health, Albany, New York, USA; and [3]Department o
State University of New York at Albany, New York, USA

Corresponding author.
ADDRESS CORRESPONDENCE TO: Richard Cole, NY State Dept. of Hea
USA (Phone: 518-474-7048; E-mail: richard.cole@health.ny.gov).

Author information ▼ Copyright and License information ▶

Abstract

In this paper, we describe a statistically based al
illumination in an optical light microscopy ima
factor (QF) score. The importance of homogen
microscopy is well understood and often chec
automatic quantitative measure of the unifor
different laser-scanning confocal microscop
an international study on microscope quali
build the algorithm. To validate the algori
additional microscopes, including LSCM
The statistical paradigm used for develo
approach to supervised learning. Three

nature biotechnology

VOLUME 32 NUMBER 9 SEPTEMBER 2014
www.nature.com/naturebiotechnology

THE SCIENCE AND BUSINESS OF BIOTECHNOLOGY

Focus on RNA sequencing quality control (SEQC)
ABRF evaluation of RNA-seq
Genome editing in hexaploid wheat

MCP MOLECULAR & CELLULAR PROTEOMICS

QUICK SEARCH Author: Keyword: Year: Vol:

Home | Current Issue | Papers in Press | Archive | Reviews | Editorials | Special Iss

sMark

ABRF Proteomic Research Group
sessing Longitudinal Intra-
Variability in Routine Peptide
matography Tandem Mass
Analyses

ng[2], Cory E. Bystrom[3], Matthew C. Chambers[4],
Dangott[6], Félix Elortza[7], John Leszyk[8],
ritz[10], Brett S. Phinney[11], J. Will Thompson[12],
id L. Tabb[4,*]

olecular Medicine of the Austrian Academy
States;
States;
evention, United States;
ates;
ates;

The Association of Biomolecular Resource Facilities

Professional Development

- Publishing in ABRF's *Journal of Biomolecular Techniques (JBT)*
  - Offers a platform for publication of research pertaining to core facilities
  - Provides an opportunity for publication of best practices in core facility management and operations
- Annual Education Programs
  - Learn from peers and experts on the latest best practices for core facilities management, including financial benchmarking and staff leadership
  - Hear from researchers about new and emerging scientific advances
  - Engage with corporate partners to understand how to maximize the return on investment for core facilities technology

https://abrf.org

The Association of Biomolecular Resource Facilities

Engage with Corporate Technology Partners

- ABRF members collaborate with leading biotechnology instrumentation providers to make the most of their investments in shared resources. Partners share current and upcoming technology advances and want to hear from ABRF members about their needs and challenges.

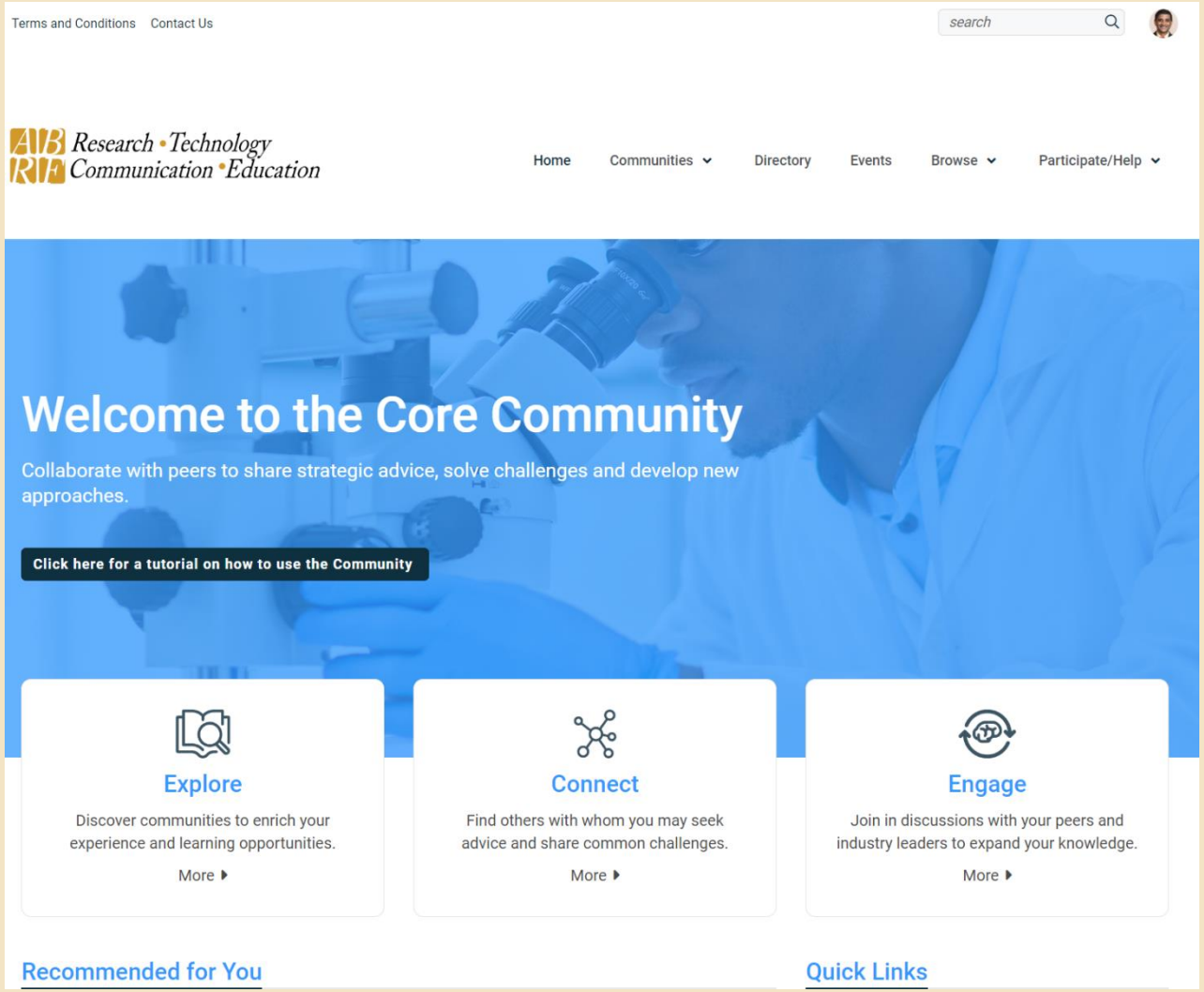
The ABRF **Corporate Relations Committee** manages these vital connections. Contact them (abrf@abrf.org) to learn how to get involved.

The Association of Biomolecular Resource Facilities

Core Community

https://abrf.connectedcommunity.org

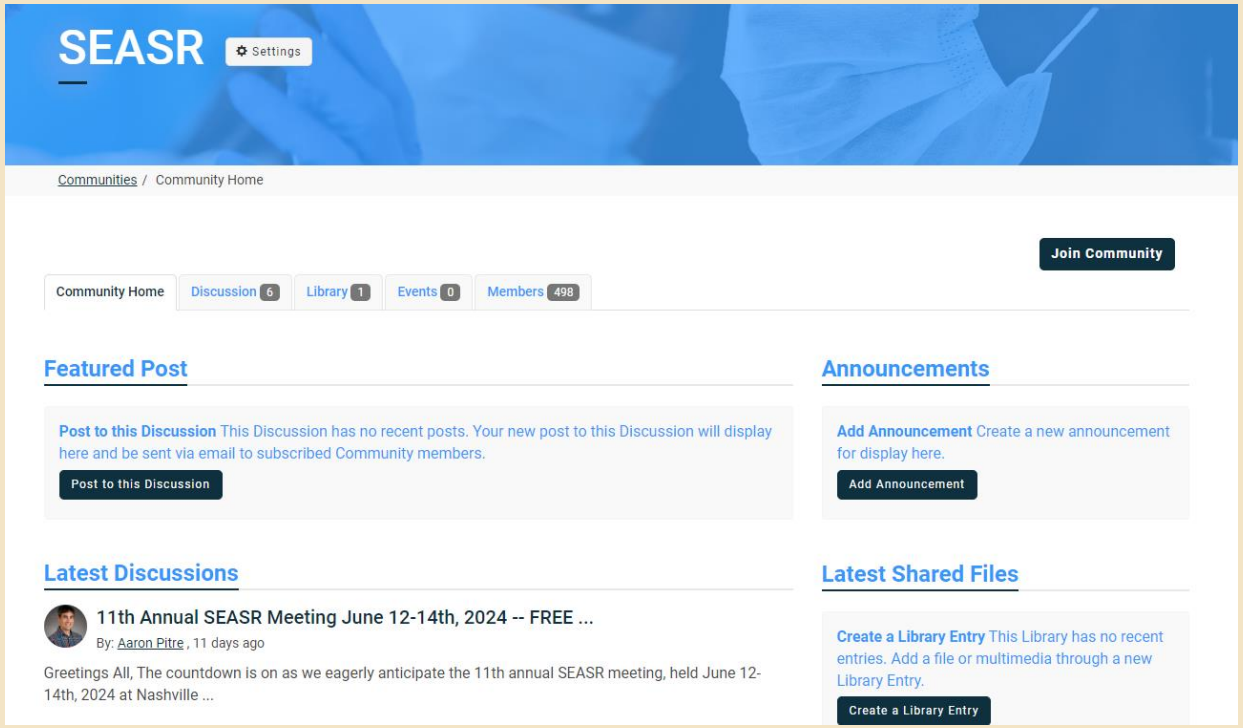
- Connect with peers
- Exchange information
- Library resources
- Engagement
- Q & A
- Recommendations



The Association of Biomolecular Resource Facilities

SEASR Community

- Connect instantly with **500** regional colleagues
- Post questions and contribute to online discussions
- Share and access resources in online library
- All members in the SEASR region are automatically included in the SEASR Community



The Association of Biomolecular Resource Facilities

ABRF Compensation Survey Report

- Benchmark your salary and benefits
- Details available for:
  - Administrators
  - Bioinformaticians
  - Directors
  - Staff Scientists
  - Research Staff
- Data cover over 1600 positions from more than 200 core facilities across 26 states
- Review key staff recruitment and retention concerns
- Identify regional variations in compensation and benefits for your role
- Report is **complimentary** for ABRF members

https://www.abrf.org/abrf-compensation-survey-report

The Association of Biomolecular Resource Facilities

Access to Meeting Content

Session Recordings

Sunday, April 21 Session

- Welcome & Keynote: Generative AI, from Ideation, through Research and Experimentation, to Production

Monday, April 22 Sessions

- 10:30am: Creative Core Staffing: Graduate Student Staff in Core Facilities
- 10:30am: LMRG - Image Processing World-Wide Challenge
- 10:30am: Collaborative Research Group Studies: Evaluation of Whole Genome DNA Methylation Protocols and Updates for Single Cell RNA-seq Preservation Methods
- 10:30am: The Role of Societies and Cores in Promoting Bold, Forward-Looking Action for an Inclusive Future
- 10:30am: Think Tanking ABRF's Revenue Diversification
- 10:30am: Embracing Disruption and New Opportunities in the Evolution of Proteomics Technologies
- 2pm: ABRF Award Presentation: The Ongoing Evolution of Biomedical Resource Facilities: Building Networks from Patchworks
- 3:00pm: What Will a Shared Resource Core Laboratory Look Like in 10 Years?
- 3:00pm: Science & Sustainability: Green Lab Actions for Impact and the Important Role of Researchers and Shared Research Resources
- 3:00pm: Coordinating and Facilitating Cross-Core Projects
- 3:00pm: Focus on Flow
- 3:00pm: Unlocking the Secrets to Animal Core Growth and Success: Perspectives Through a Preclinical Imaging Lens

The Association of Biomolecular Resource Facilities

Meeting Your Needs

Have you asked yourself these questions?

- *How do I connect with other people who work in Cores?*
- *What's the best way to evaluate new technology options for my facility?*
- *How can my Core be recognized in publications or research reports?*
- *Whom can I turn to for help to manage my Core's business operations?*
- *Are there any standard rates for shared resource services?*
- *Where can I learn more about how to advance my career?*

The Association of Biomolecular Resource Facilities

ABRF Regional Chapters

- Connect with colleagues in your area
- Exchange ideas and network with peers
- Identify local resources and technology partners

MAD SSCI
Mid-Atlantic Directors and Staff of Scientific Cores

MWACD
THE MIDWEST ASSOCIATION OF CORE DIRECTORS

NORTHEAST REGIONAL
Laboratory Staff & Core Directors

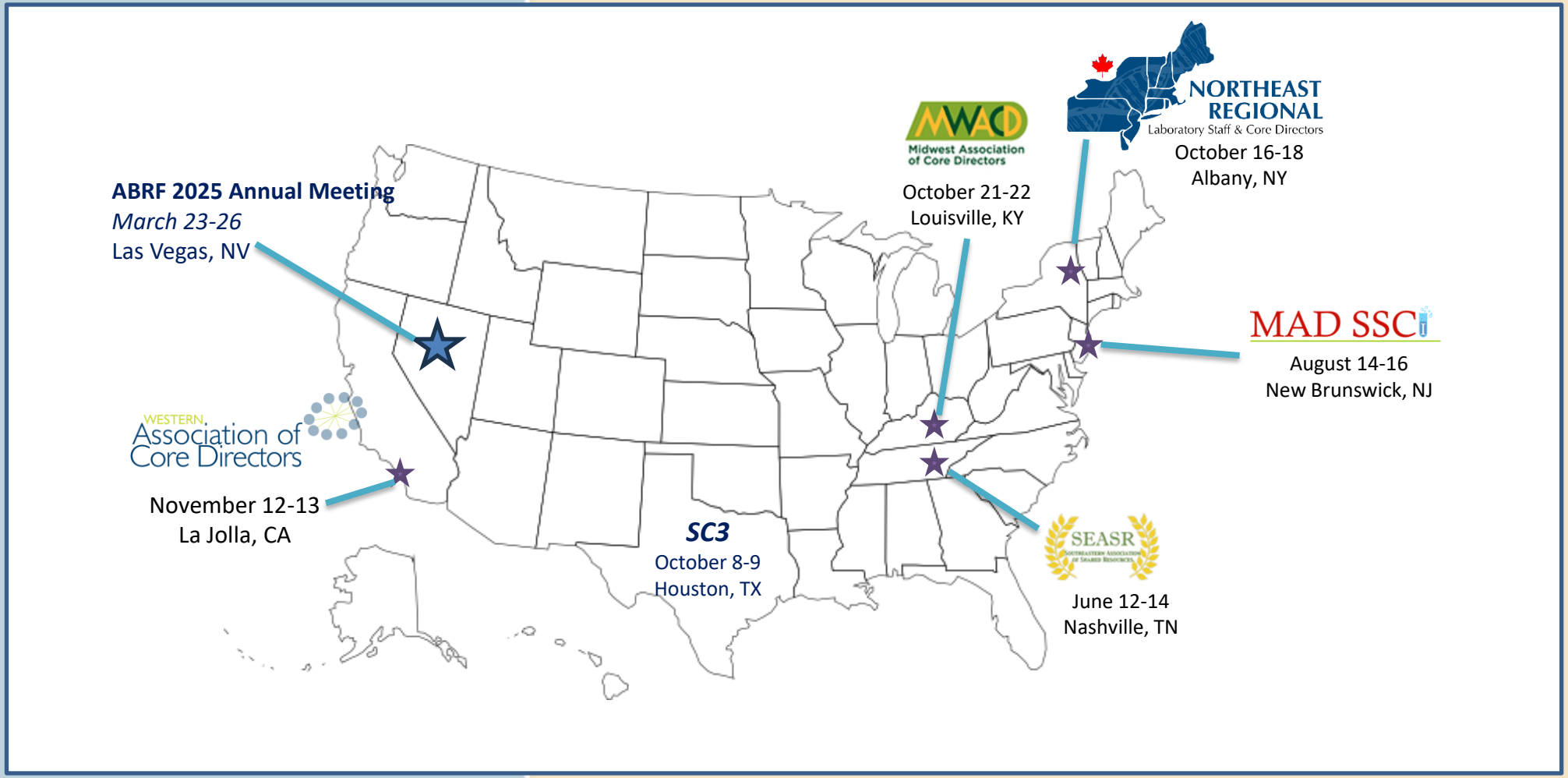
SEASR
Southeastern Association of Shared Resources

SouthCentral Core Collective
SC3

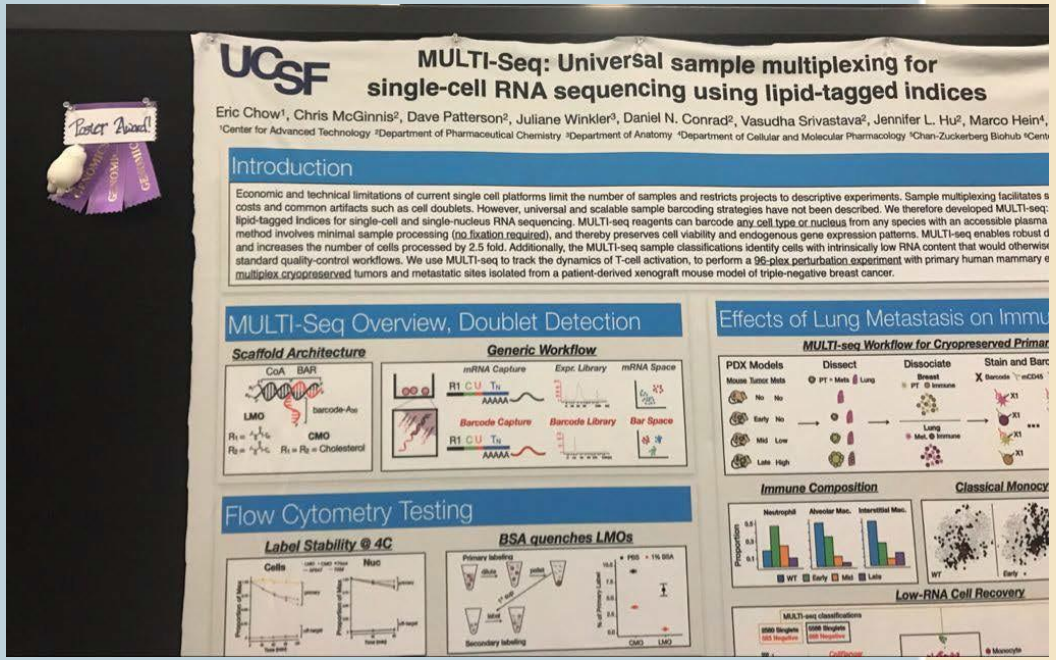
WESTERN
Association of Core Directors

The Association of Biomolecular Resource Facilities

ABRF Calendar of Events



The Association of Biomolecular Resource Facilities



The Association of Biomolecular Resource Facilities

Finding A Voice in Our Own Institutions

New: FASEB Maximizing Shared Research Resources Report Part III

Identifies five key areas to sustain shared research resources:

- Improve institutional stewardship
- Expand access
- A diverse, equitable and inclusive workforce
- Increase investment
- Prioritize sustainability in decision-making

https://bit.ly/34BilLB

The Association of Biomolecular Resource Facilities

2023 FEDERAL RESEARCH FUNDING

TENNESSEE

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.

$770M TOTAL FUNDING TO 32 RESEARCH SITES

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.

$89.4M AWARDED FUNDING TO 29 RESEARCH SITES

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.

$54.8M* TOTAL FUNDING TO 8* RESEARCH SITES

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.

$16.1M* TOTAL FUNDING TO 4* RESEARCH SITES

FASEB
Federation of American Societies for Experimental Biology

*FY 2023 NIFA and DOE SC funding data was unavailable as of February 15, 2024. Data is for FY 2022.

Learn more & join the conversation! FASEB.org @FASEBorg @FASEB.org @FASEB

The Association of Biomolecular Resource Facilities

How Can You Get Involved?

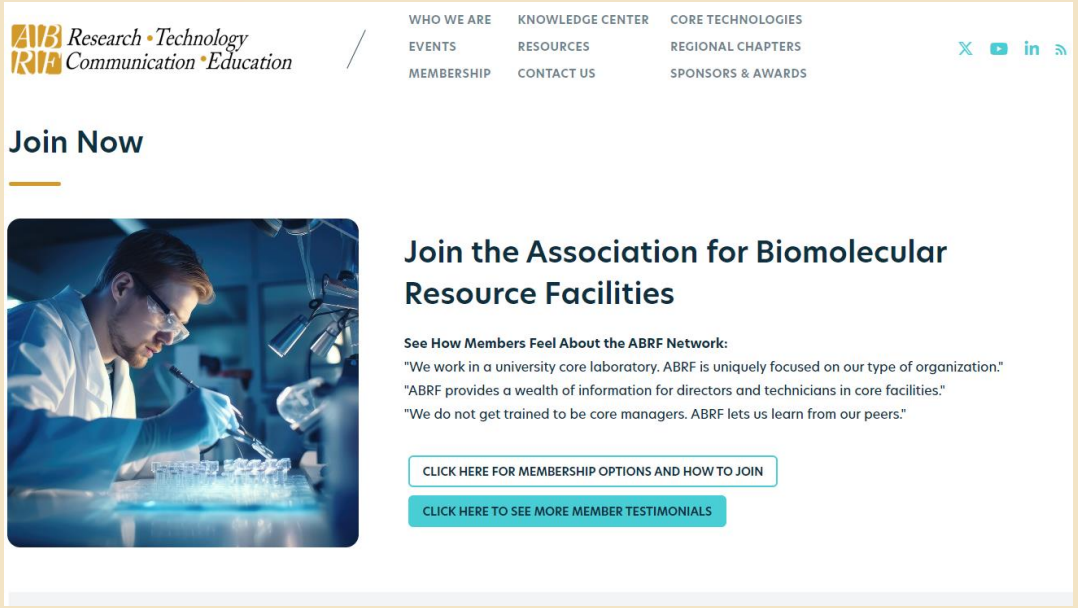
- ***Join*** a Research Group or Committee
- ***Attend*** a Regional Chapter or Annual Meeting
- ***Register*** for an Education session
- ***Post*** questions to ABRF Discussion Forums or social media
- ***Enroll*** in the ABRF Mentoring Program

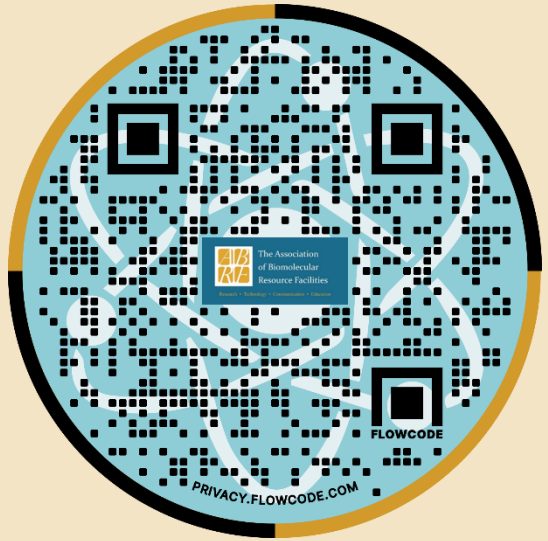
https://abrf.org

The Association of Biomolecular Resource Facilities

ABRF Membership for all SEASR Attendees

- All SEASR Annual Meeting attendees who are not yet ABRF members are eligible for ***complimentary*** membership through 2024
- To activate your membership, select **Join Now** on the ABRF web site
- Enter the code: **SEASR24** at checkout
- Once your membership is activated, you'll receive a set of welcome messages highlighting the range of features and opportunities available through ABRF. You'll also have access to exclusive ABRF member resources and preferred rates at other ABRF events.
- Contact us (abrf@abrf.org) with any questions.





The Association of Biomolecular Resource Facilities

ABRF: Your Professional Community

POWERed by Members…

The Association of Biomolecular Resource Facilities

ABRF: Your Professional Community

...to EmPOWER Team Science

The Association of Biomolecular Resource Facilities

Save the Date

ABRF 2025

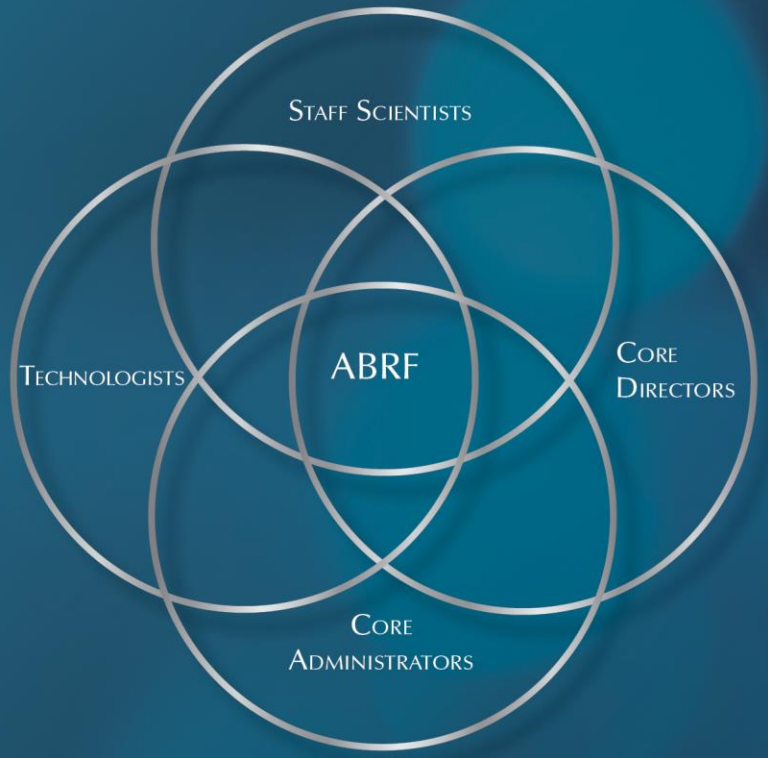
Annual MEETING

WHAT HAPPENS IN CORES
DOESN'T STAY IN CORES

MARCH 23 - MARCH 26

Horseshoe Las Vegas Hotel, Las Vegas, NV

The Association of Biomolecular Resource Facilities



ABRF: at the Core of Research Excellence and Sustainability (CORES)