



The Association of  
Biomolecular Resource  
Facilities

# Defining Excellence for Shared Resources Worldwide

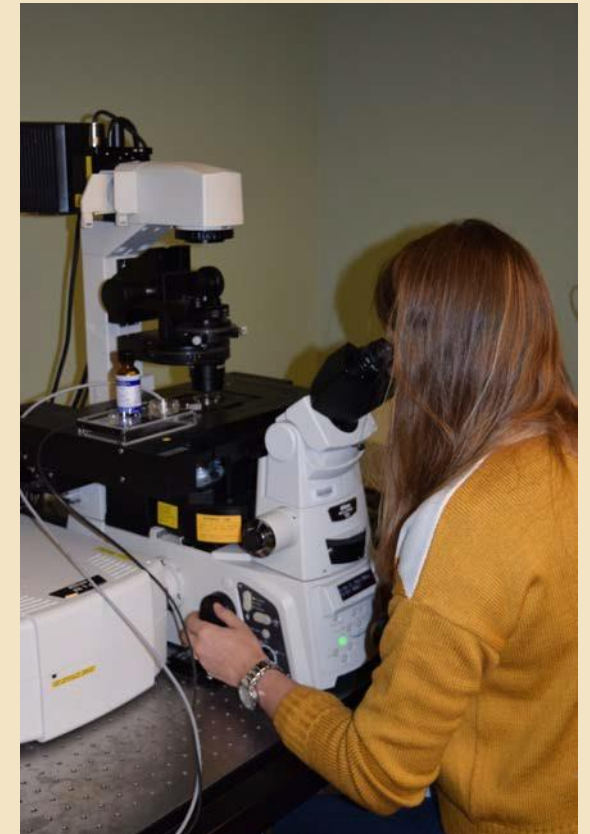
Thayumanasamy Somasundaram  
Florida State University  
President, ABRF  
[president@abrf.org](mailto:president@abrf.org)



# What is ABRF?

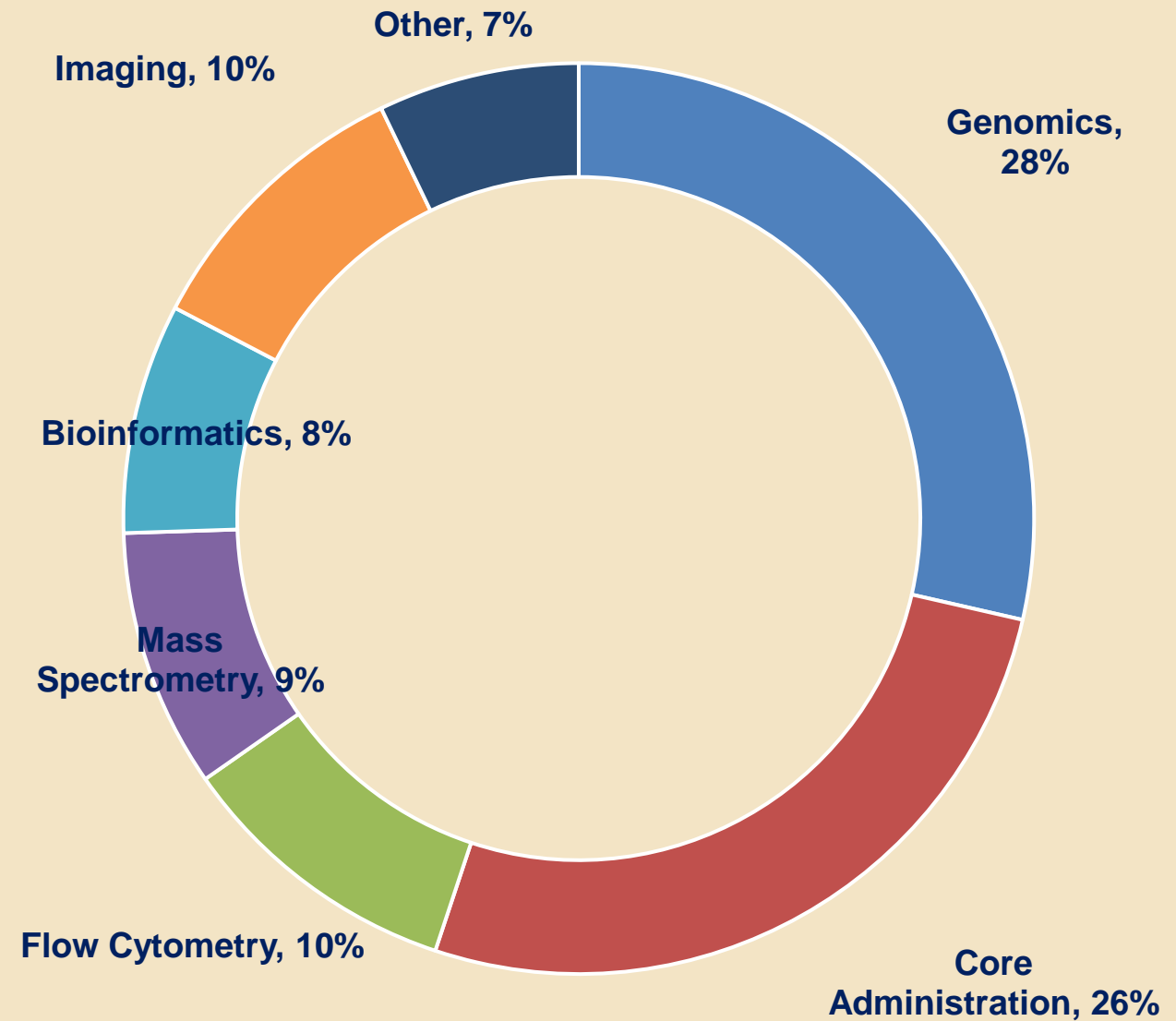
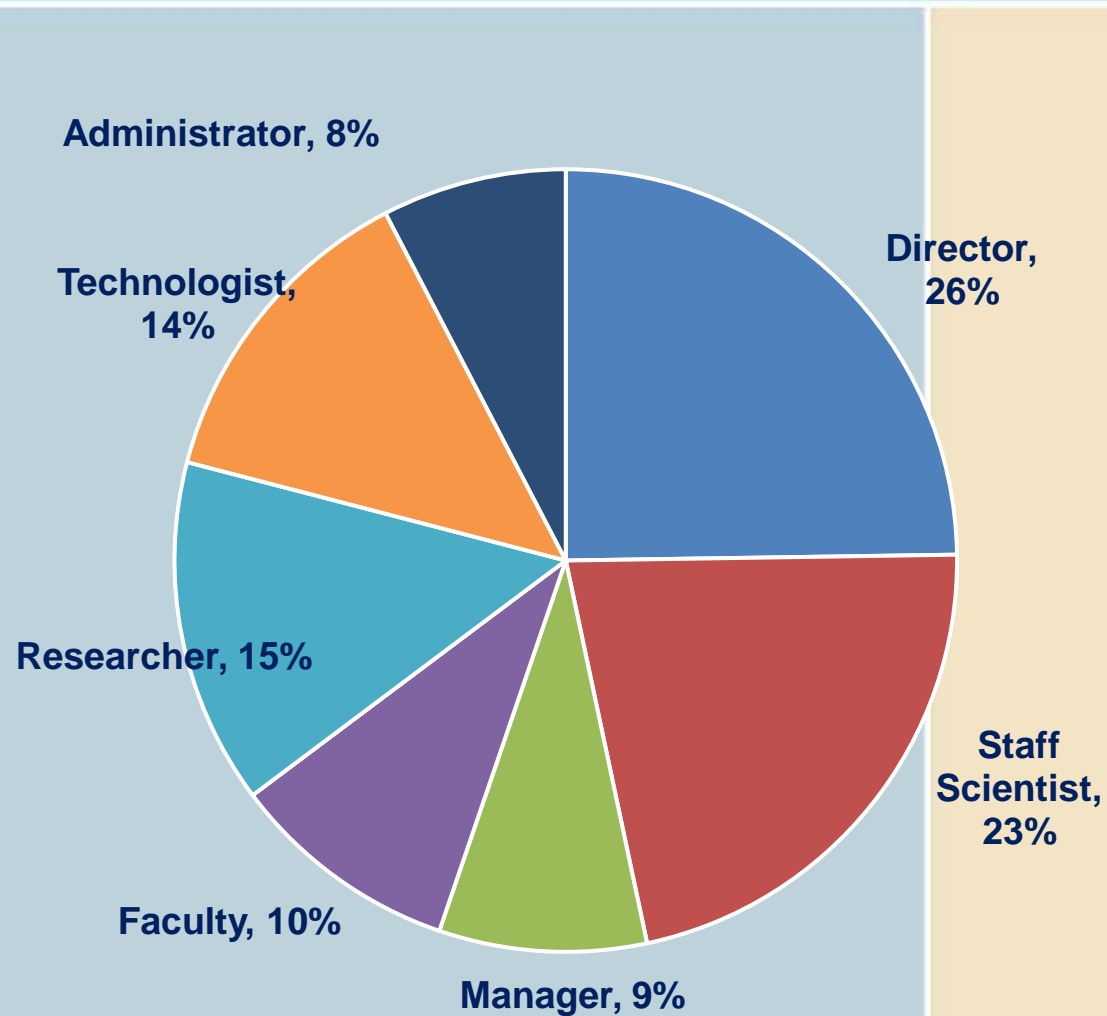
*International scientific society dedicated to advancing technologies, education and communication and reproducible research in operations of shared scientific resources.*

- 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 **2600** 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



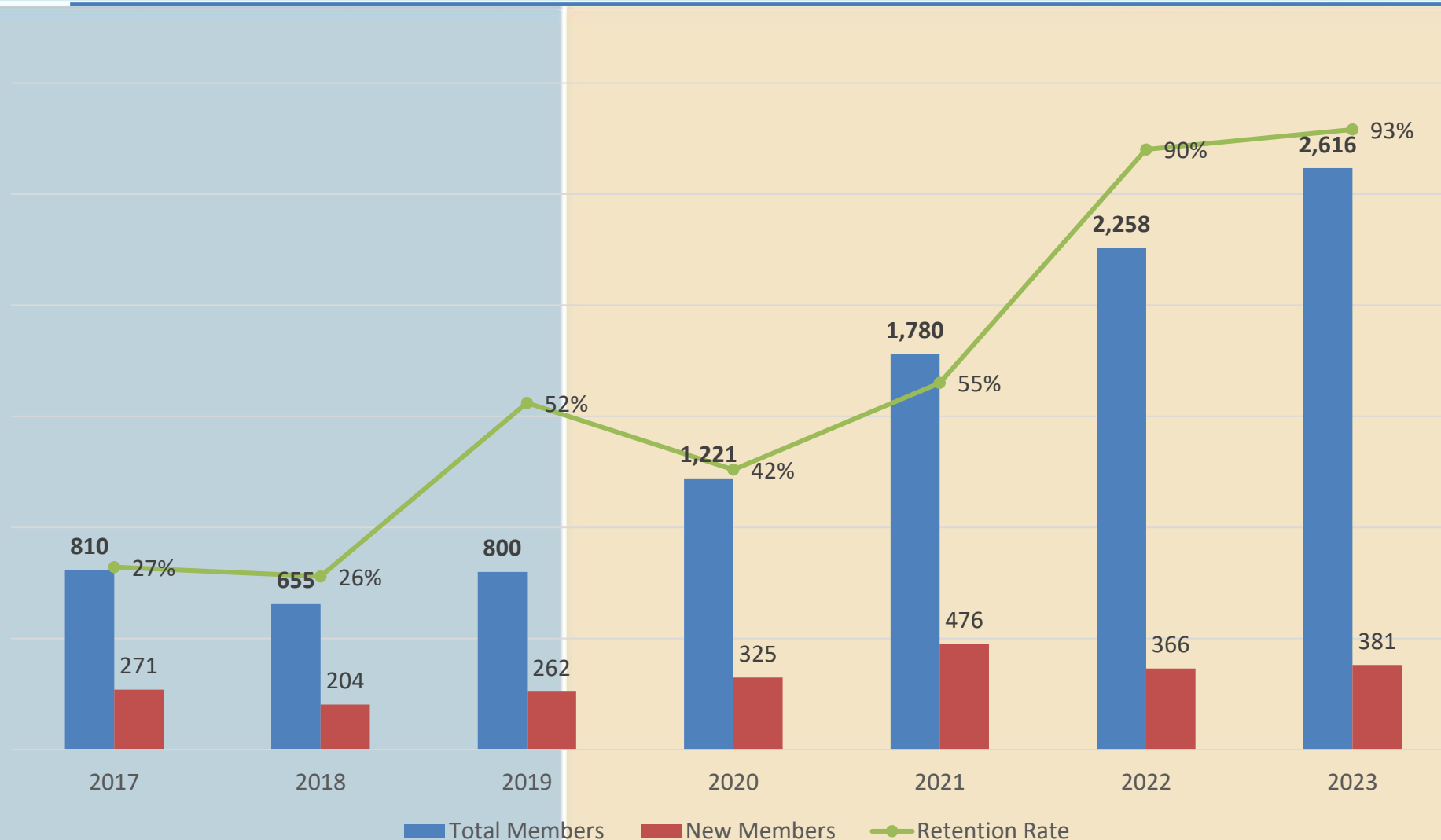


# ABRF Members by Professional Role



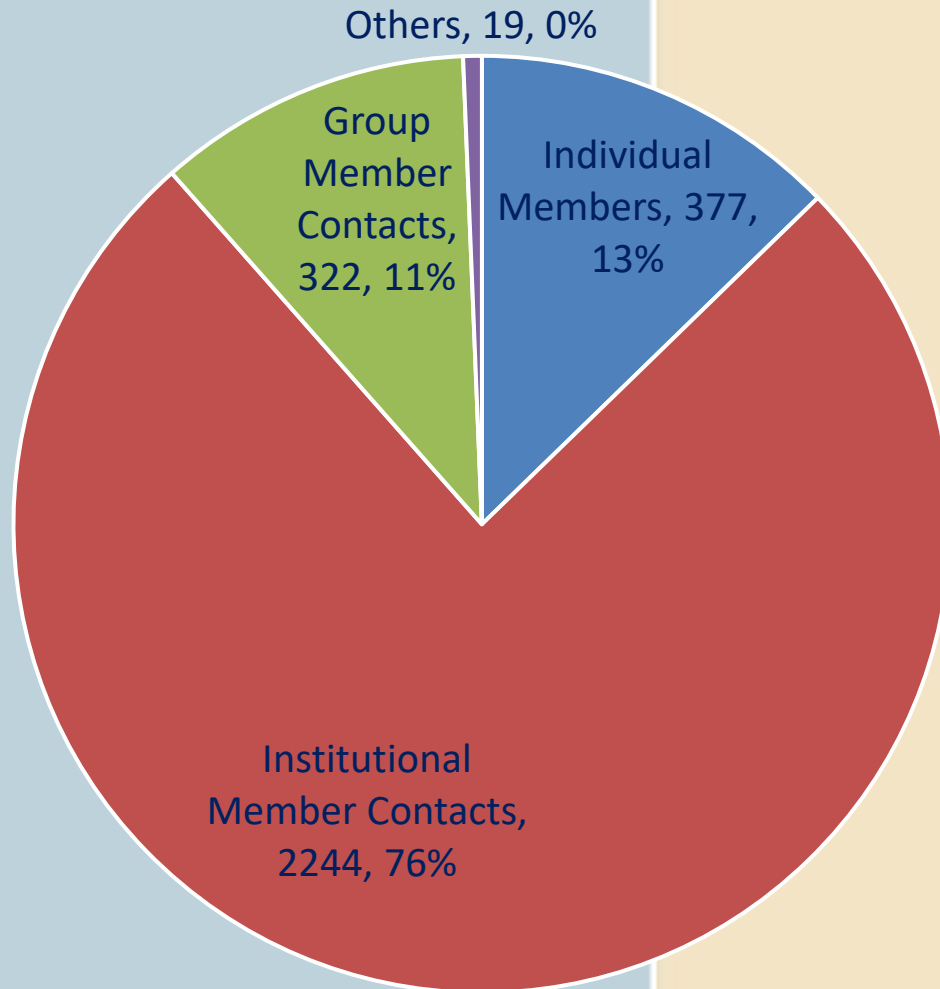


# ABRF Member Growth 2017-2023





# ABRF Membership Distribution



**2,600+**  
Members

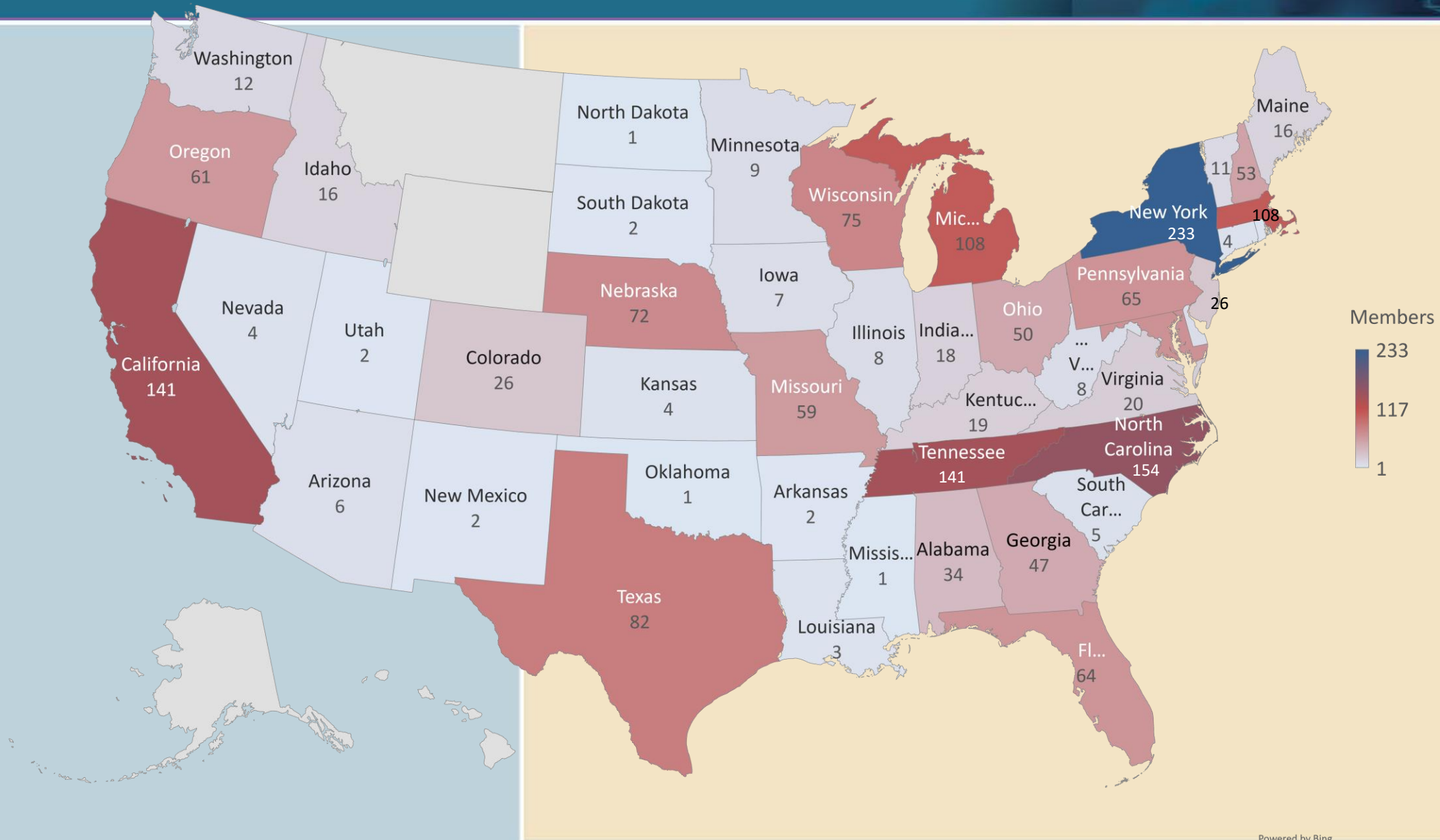
- ✓ 450+ Academic institutions
- ✓ 17 Countries
- ✓ 48/50 top are NIH institutions
- ✓ Member of FASEB (science policy)





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# ABRF Members by State



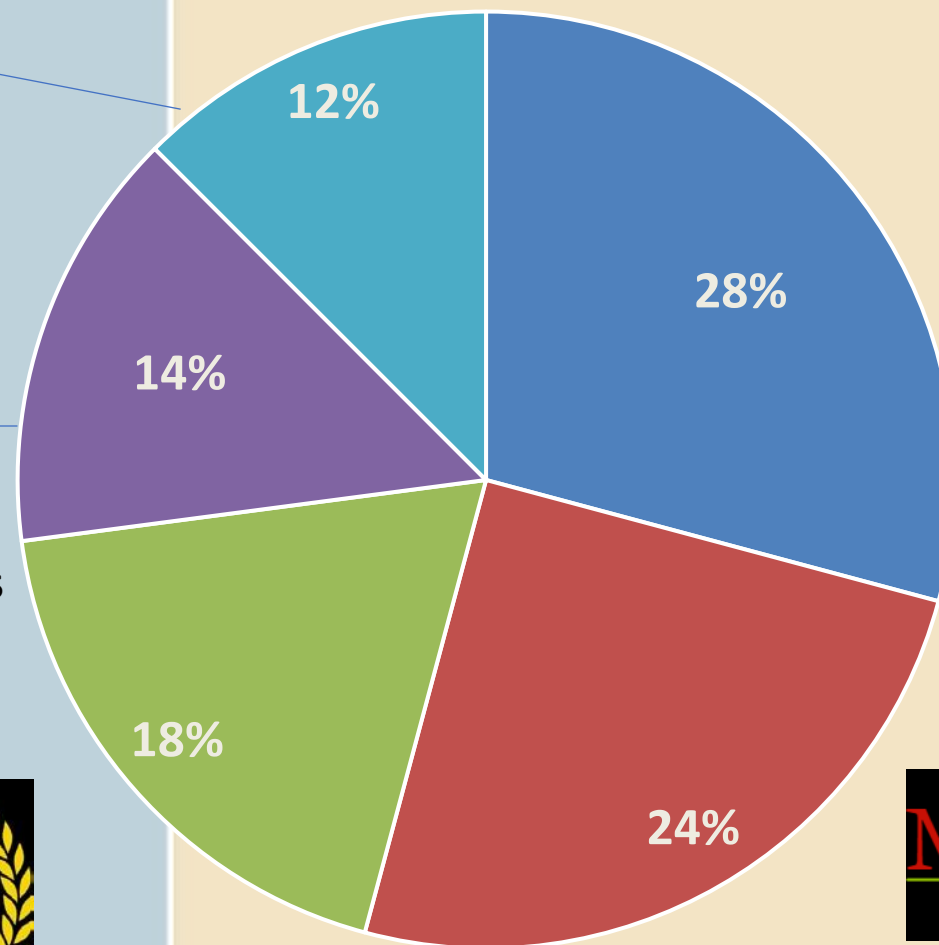
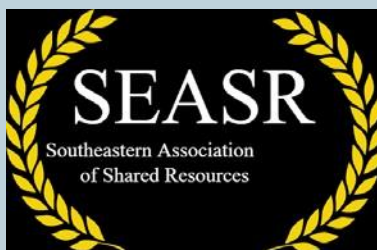


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# ABRF Members by Regional Chapter



THE MIDWEST ASSOCIATION OF CORE DIRECTORS



South Central Core Collective  
SC3



## Institution's Goals <sup>(1)</sup>

- 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

## 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





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# ABRF: Where do you fit?





# 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



# ABRF Activities

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

<https://abrf.org>







## 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





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# 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.*







# 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	Proteomics Standards		

<https://abrf.org/research-groups>

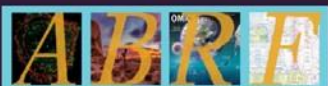
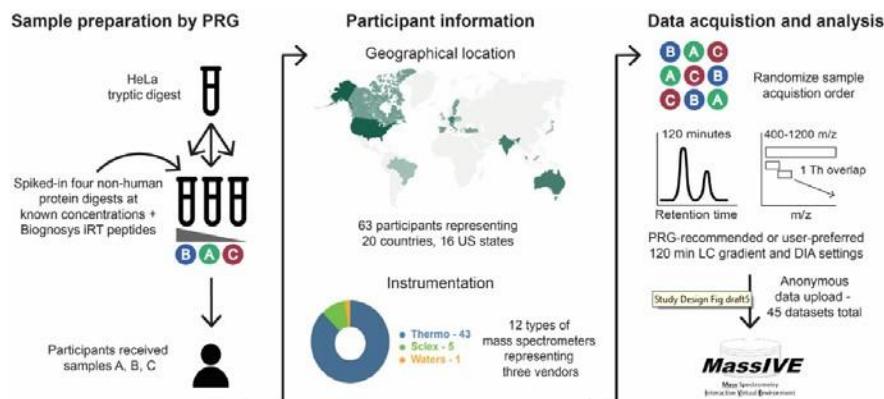


## Sample Research Group activities:

- New studies
- Posters (Flash Talks)
- Presentations (Meetings)
- Publications (JBT)

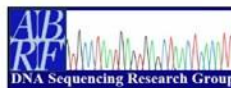
## Current Study: 2018 Evaluation of Data-Independent Acquisition (DIA) for Protein Quantification in Academic and Core Facility Settings.

2018



2020: Empowering Team Science

February 29 - March 3 | Palm Springs, CA



## Cross Site Evaluation of Sanger Sequencing Dye Chemistries



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

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

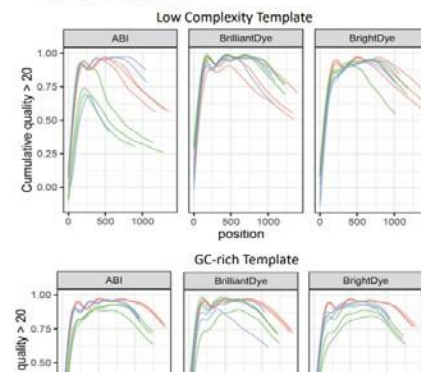
Sanger sequencing remains an essential tool utilized by researchers. Despite competition from commercial providers, many sequencing core facilities continue to offer Sanger sequencing services to their customer base. By reducing costs and providing rapid turnaround times, in-house Sanger sequencing remains 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



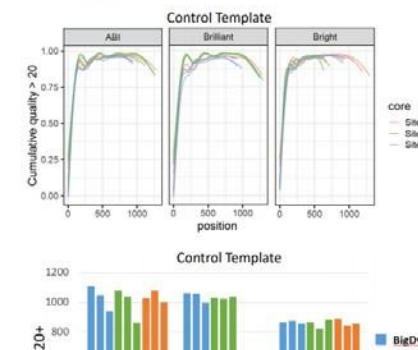
### Difficult to Sequence Templates

• Protocol 1 from Kieleczawa et al\*



### Drop In Ready

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



## COMMUNICATION

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

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

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



- 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





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# 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](mailto:abrf@abrf.org)) to learn how to get involved.







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# Core Community

<https://abrf.connectedcommunity.org>

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

Terms and Conditions Contact Us

**AIB RIF** Research • Technology  
Communication • Education

Home Communities ▾ Directory Events Browse ▾ Participate/Help ▾

## Welcome to the Core Community

Collaborate with peers to share strategic advice, solve challenges and develop new approaches.

[Click here for a tutorial on how to use the Community](#)

### Explore

Discover communities to enrich your experience and learning opportunities.

[More ▶](#)

### Connect

Find others with whom you may seek advice and share common challenges.

[More ▶](#)

### Engage

Join in discussions with your peers and industry leaders to expand your knowledge.

[More ▶](#)

[Recommended for You](#) [Quick Links](#)





# 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?*



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# ABRF Regional Chapters

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



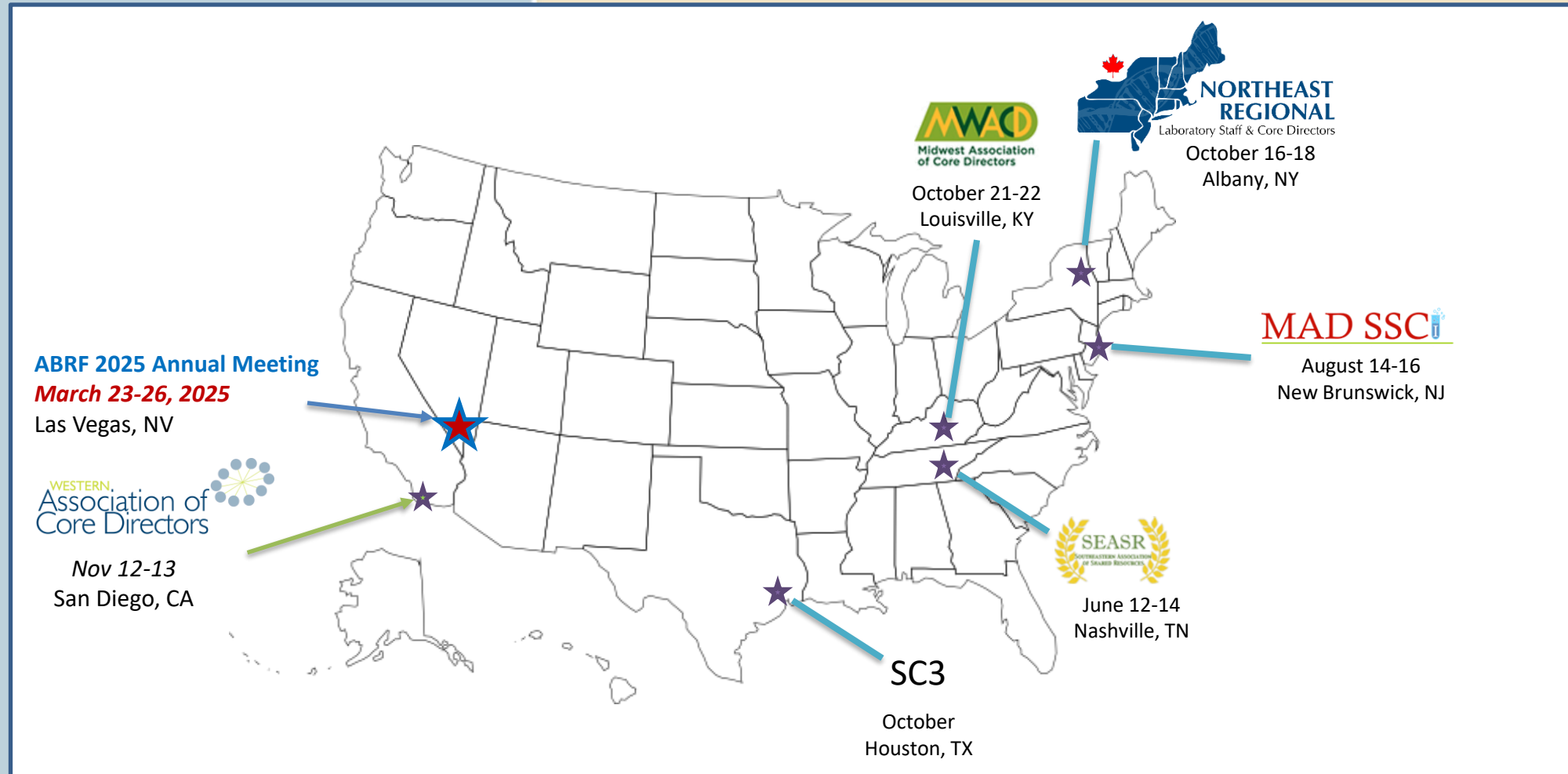
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# ABRF Calendar of Events





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# Save the Date: ABRF 2025 Annual Meeting



**MARCH 23 - MARCH 26**

Horseshoe Las Vegas Hotel, Las Vegas, NV



# Finding A Voice



## ***FASEB Maximizing Shared Research Resources Report Part III***

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



- Benchmark your salary and benefits
  - Administrators
  - Bioinformaticians
  - Directors
  - Staff Scientists
  - Research Staff
- Data cover over 1600 positions from more than 200 core facilities across 26 states
- Report is **complimentary** for ABRF members





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# 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 Connected Community or Social Media



<https://abrf.org>



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# ABRF: Your Professional Community

***POWERed by Members...***



***...to EmPOWER Team Science***

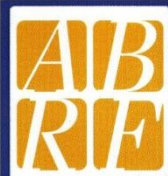






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# ABRF 2013



The Association  
of Biomolecular  
Resource Facilities

[www.abrf.org](http://www.abrf.org)

EDUCATION  
RESEARCH  
TECHNOLOGY  
COMMUNICATION

The Association of Biomolecular Resource Facilities is an international society dedicated to advancing core and research biotechnology laboratories through research, communication and education.



#### Research Groups

Advancing Core Technologies and Standards

ABRF Research Groups advance core biomolecular technologies by sponsoring research studies that help researchers and facilities evaluate analytical techniques and methodologies, as well as help establish good laboratory practices.



**FASEB**

Federation of American Societies  
for Experimental Biology

Stay informed with science policy. ABRF is a FASEB member society and participates in FASEB's activities in science advocacy, policy and government affairs.

#### Connect to the World

The ABRF Electronic Discussion Forum

Share your expertise and seek answers from fellow researchers on technical subjects. Core administrative topics are also addressed through the ABRF Core Administrators Network. They are both free and Friendly to use!

**ABRF Core MarketPlace**  
Powered By Vermont Genetics Network  
[coremarketplace.abrf.org](http://coremarketplace.abrf.org)

List your core facilities services and get noticed when researchers are looking for quality core services. Find core facilities that provide the services you want. Post your needs for services or experiments. Offer limited-time services and reagents. It's free to use, and ABRF members get priority listing.

Experience the ABRF annual conferences, where science, education, core administration and a vibrant vendor exhibition all come together for 3+ days of networking and communication.

25  
YEARS  
1988  
2013

[conf.abrf.org](http://conf.abrf.org)  
ALBUQUERQUE CONVENTION CENTER  
ALBUQUERQUE, NM

TEAM SCIENCE AND BIG DATA:  
CORES AT THE FRONTIER  
MARCH 22-25, 2014

**Upcoming Annual Meetings**

**ABRF 2014**  
March 22-25  
Albuquerque, New Mexico

**ABRF 2015**  
March 28 -31  
St. Louis, Missouri

**2013 Executive Board**

David Friedman President	Brett Phinney Secretary/Treasurer Univ. California - Davis
George Grills Cornell Univ.	Thomas Neubert New York Univ.
Anoja Perera Stowers Institute	Timothy Hunter Univ. of Vermont
Paula Turpen Univ. Nebraska	William Hendrickson Univ. Chicago

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**Become a  
Member  
Today!**

Join at  
[www.abrf.org](http://www.abrf.org)

2013 - 2014

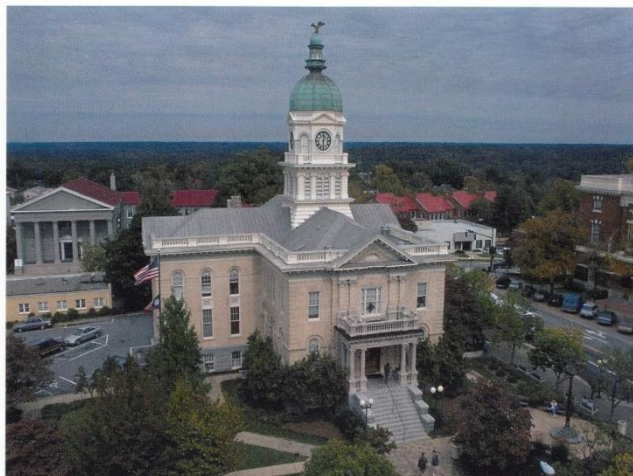


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# SEASR 2013



**SouthEastern Association  
of Shared Resources**



**UGA Hotel and Conference Center**  
First Annual Meeting | June 13-15, 2013

Program and Abstracts  
[seasr.my.abrf.org](http://seasr.my.abrf.org)



## SAVE the DATE

**November 6-8, 2014**

SEASR is proud to join the  
MidWestern Association of Core Directors (MWACD)  
to host a joint meeting in

**Nashville, TN**



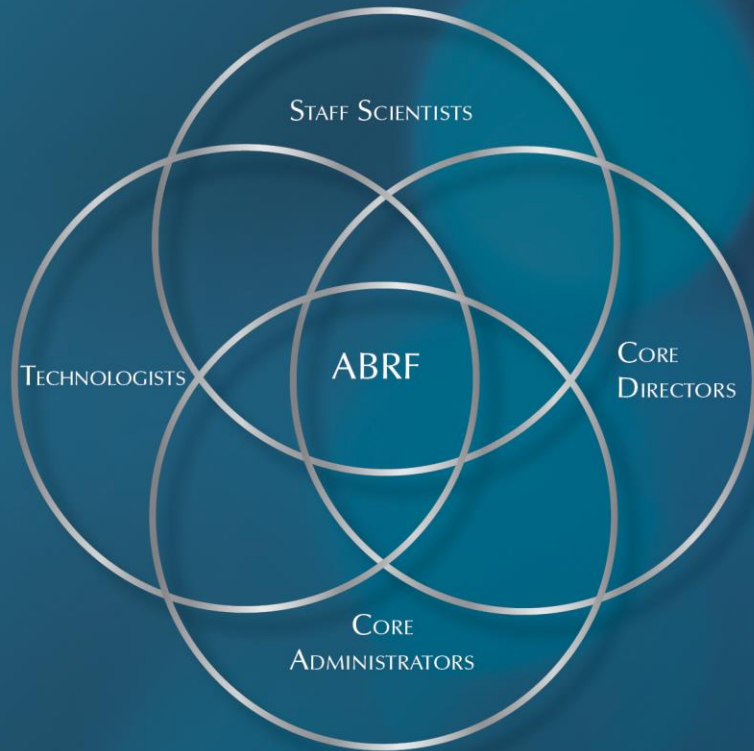








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**ABRF: at the Core of Research  
Excellence and Sustainability  
(CORES)**

