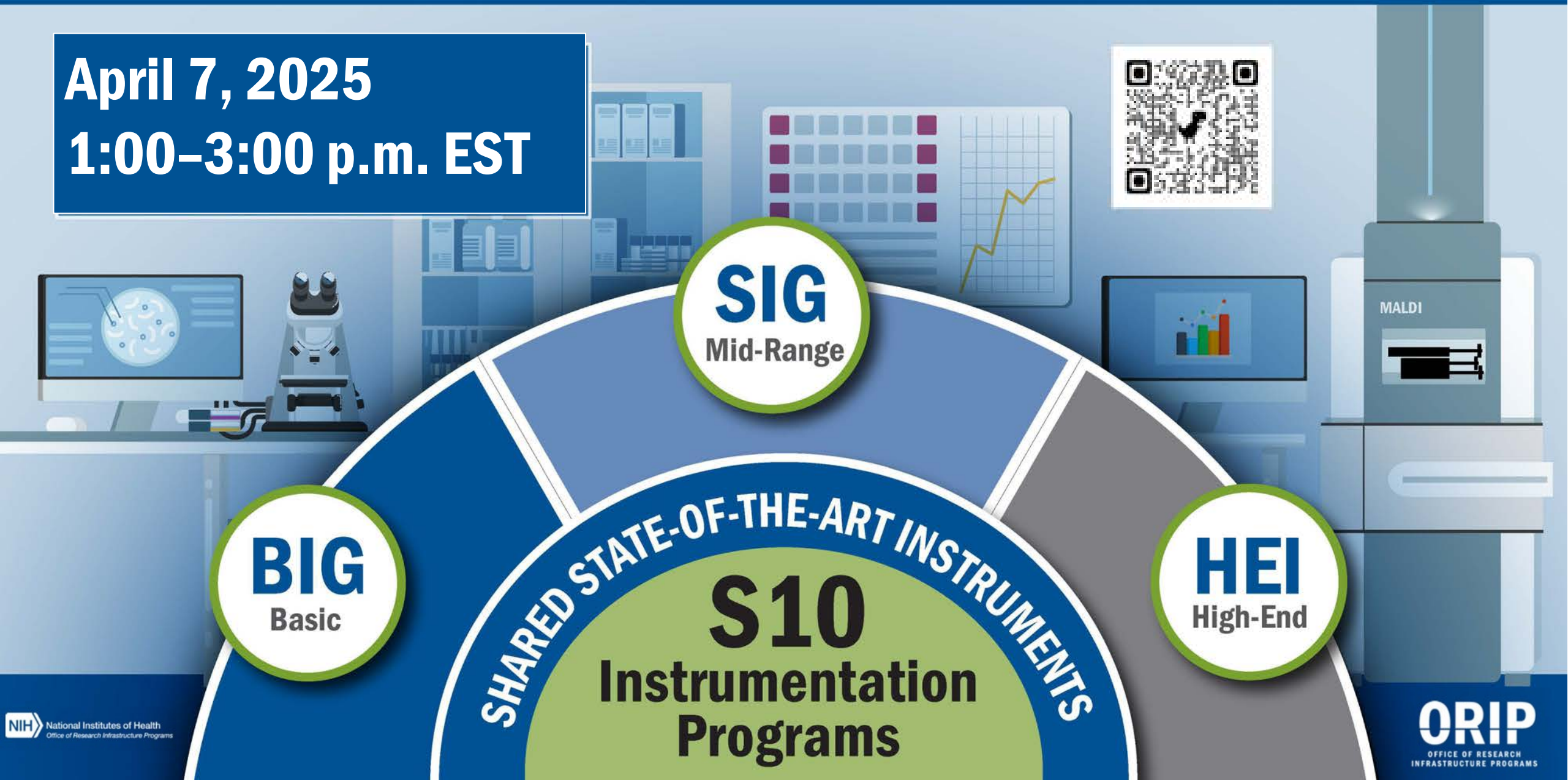
Pre-Application Webinar for an S10 Grant

April 7, 2025
1:00–3:00 p.m. EST



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Pre-Application Webinar for an S10 Grant

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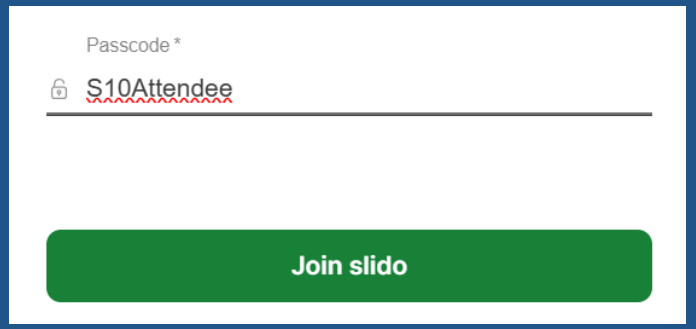

3. Start submitting questions **anonymously, addressing the presenter's name.**

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Program Contact:
s10reports@od.nih.gov

Meeting Logistics Contact:
djohnikin@scgcorp.com

Presenters

Monika Aggarwal, Ph.D.
Program Director
DCI/ORIP/DPCPSI

S10 Experts

Lauren E. Ball, Ph.D.
Associate Professor
Medical University of South Carolina

Susie Huang, M.D., Ph.D.
Associate Professor
Harvard Medical School

Jeffery Caplan, Ph.D.
Associate Professor
University of Delaware

Susan Weintraub, Ph.D.
Professor
UT Health San Antonio

Housekeeping Issues

- Slides will be posted on the Office of Research Infrastructure Program (ORIP) website
- For technical difficulties, please email Danielle at djohnikin@scgcorp.com
- We encourage you to submit your questions throughout the webinar using Slido

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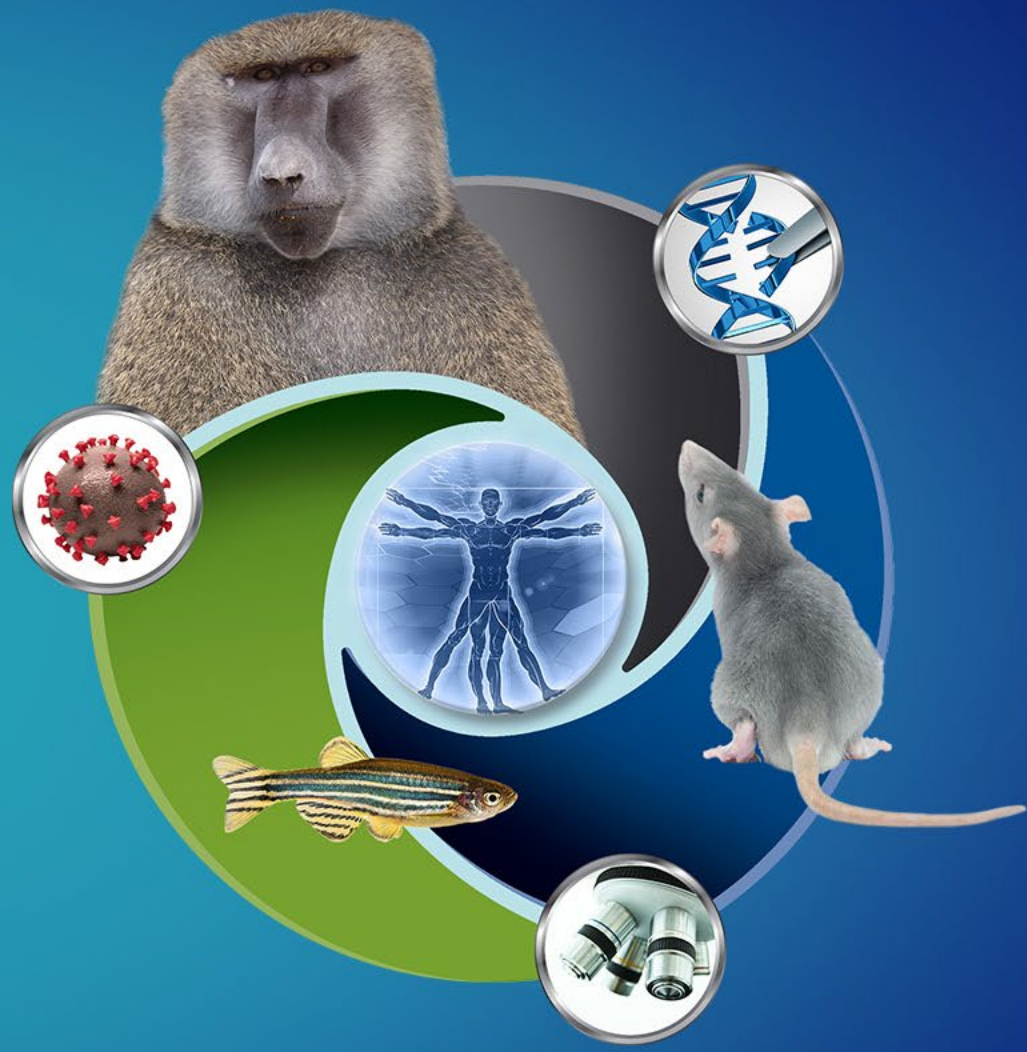
Pre-application Webinar for an S10 Grant

Division of Construction and Instruments

ORIP/DPCPSI/OD/NIH/DHHS

Monika Aggarwal, PhD
Xiang-Ning Li, MD, PhD

April 7, 2025



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Overview of the Webinar

- Introducing NIH Team
- Introduction to S10 Instrumentation Program and Eligibility Information
- Key Elements and Review Criteria for an S10 grant
- Timeline for the Grant Submission, Review, and Award Information
- Learn Best Practices and Gain Insights into Reviewer's Perspectives from Seasoned S10 PI's
- Strengthening Instrument Acquisition, Assembling User Base, and Descriptions of Research Projects
- Q&As – All

Introduction to NIH Team

ORIP/DCI	OGM
Xiang-Ning Li, MD, PhD	Ki-Cha Flash-Zapata
Monika Aggarwal, PhD	Kenneth Holiness
Yong Chen, PhD	Sabrina Oasan
Jeffery Spector, PhD	Rachel Norcio
Cecilia Fox	De Krizia James

ORIP – Office of Research Infrastructure Programs
DCI – Division of Construction and Instruments
OGM – Office of Grants Management

S10 Instrumentation Program

- Support the acquisition of commercially available, state-of-the-art scientific instruments to be used on **shared** basis

- Program requirements:
  - A single PD/PI with skills, knowledge, relevant expertise, and resources necessary to carry out the proposed research. The PD/PI does not need to have an NIH research grant or any other research support or the user of the instrument.
  - An institution must identify at least three Major Users, each with active NIH research award, who can demonstrate a substantial need for the requested instrument. These Major Users can be from the same or different departments, divisions, or schools at the applicant institution, or from nearby or regional institutions.
  - Matching funds are not required but the applicant institution must demonstrate commitment toward continued support for the utilization and maintenance of the requested instrument.

- Eligible institutions include domestic public and private institutions of higher education, as well as nonprofit domestic institutions, such as hospitals, health professional schools, and research organizations

S10 Notices of Funding Opportunities

S10 Programs	Award Budget	Instruments	Additional Eligibility requirements
Basic Instrumentation Grant Program (BIG) (PAR-24-326)	$25,000 to $350,000	Basic cell sorters, confocal microscopes, ultramicrotomes, gel imagers, computer systems	Limited competition program for institutions that have received less than $500K S10 awards in the preceding 3 FYs
Shared Instrumentation Grant Program (SIG) (PAR-24-265)	$50,000 to $750,000	Confocal and light microscopes, cell sorters, flow cytometers, CT/MRI/PET imagers, mass spectrometers, NMR spectrometers, protein & DNA sequencers, surface plasmon resonance instruments, or patch clamp systems	
High-End Instrumentation Grant Program (HEI) (PAR-24-264)	$750,001 to $2,000,000	MRI/PET/CT imagers, cyclotrons, photoacoustic imagers, mass spectrometers, NMR spectrometers, electron microscopes, cryo-electron microscopes, X-ray diffractometers, super-resolution microscopes, or high-performance computing system and data storage infrastructure.	

IDeA are encouraged to apply

S10 NOFOs (Contd...)

S10 Programs	No. of Applications/Institute	% AUT# for Major Users	Total %AUT for NIH Funded Research
Basic Instrumentation Grant Program (BIG) (PAR-24-326)	One	25	55
Shared Instrumentation Grant Program (SIG) (PAR-24-265)	Multiple*	35	65
High-End Instrumentation Grant Program (HEI) (PAR-24-264)	Multiple*	35	75

*Distinct Types of Instrument
Accessible Usage Time

- One receipt date each year

S10 Shared Instrumentation Grant Programs Fact Sheet

Instruments Not Supported By The S10 Programs

- Instruments that are not commercially available and/or do not have a manufacturer warranty*
- Multiple instruments bundled together unless justifiable as an integrated system
- Multiple stand-alone workstations for data processing or data storage systems
- Equipment such as autoclaves, hoods, equipment to upgrade animal facilities

**Foreign-made instruments are allowed*

Structure of the Application

- Standard SF424 (R&R) Application Guide requirements apply
  - Project Summary/Abstract and bibliography
  - Equipment (manufacturer, model number, specific features, and accessories)
  - An itemized quote (with discounts and warranty terms)
  - Funds for accessory containment equipment for the instrument may be requested if human, animal, or infectious materials are to be analyzed.
  - Biohazards should be addressed if relevant

- Required attachments
  - Instrumentation Plan
  - Letters of Support

Required Attachments (Continued…)

- Instrumentation plan (Upload as a single pdf file)
  - Introduction to resubmission (if applicable)
  - Justification of Need, comparison with other available Instruments, demo Instrument and preliminary data, and the Accessible Usage Time (AUT) calculations
  - Technical Expertise from PI and other key personnel (technical assistant, users and advisory members)
  - Research Projects, including basic, translational, or clinical research
  - Summary Tables re-stating AUT in hours
  - Administration, including
    - location, time allocation between users, strategies to maximize utilization of the instrument, advisory committee, and acknowledgment of S10 in publications
    - Financial Plan, operation, and maintenance of the requested instrument, and anticipated income, if any
  - Institutional Commitment
  - Overall Impact/Benefit

- Letters of Support
  - Institutional Official Committing Proposed Financial Plan, and list of previous S10 awards
  - Biosafety Official

Page Limitations

Section	BIG	SIG	HEI
Introduction to Resubmission (if applicable)	2	2	2
Justification of Need	6	6	6
Technical Expertise	2	2	2
Research Projects	15	20	20
Summary Table(s)	2	6	6
Administration	4	6	6
Institutional Commitment	2	3	3
Overall Impact/Benefit	2	3	3

- Letters of Support and Bibliography Section are not included in the page limitations.
- Be sure to name the attachments and follow page limits per NOFO instructions

Senior/Key Person Profile

- Standard SF424 (R&R) Application Guide Instructions Apply
  - Biosketches for the PD/PI, Major Users, Other Users, and Key Technical Personnel, as applicable.
  - Current & Pending Support for the PD/PI at the time of application submission.

Advisory Committee

- Composition of Advisory Committee (AC) – optimal number of members
  - A senior institutional official
  - Chair
  - Non-users of the instrument
  - Users of the instrument
  - PI cannot be a voting member or a chair of the AC

- Responsibilities of the AC members include,
  - Strategies to maximize the utilization of the instrument
  - Relocation of the instrument within or outside the institution
  - Change of the PI

➢ The PD/PI and the AC should convene meetings and issue annual reports on the instrument status, including their recommendations for the instrument operations.

Funding Restrictions and Lease Agreement

- Matching funds/cost sharing are not required
- Source of the budget required to cover the cost above the ceiling for the S10 Program should be clearly
- Support for technical personnel, service contracts, extended warranties, software, and supplies are NOT allowable
- Disposable devices and renovation of space to house the instruments is NOT allowed
- Lease is NOT recommended
  - Lease with intent to buy will eliminate an applicant from eligibility for an award
  - Justification for NIH support and that the instrument remains state-of-the art
  - Fair market value at the time of JIT

Consult with your PO in advance if leasing is considered. A lease without consultation with Program may not be approved.

S10 Grant Review and Selection Process

Two level review process for an S10 grant

- **Initial peer review and review criteria**
  - Evaluation by Scientific Review Group(s) convened by the Center of Scientific Review, including Justification of Need, Technical Expertise, Research Projects, Administration, and Institutional Commitment
  - Impact score

- **Review by Council of Councils**

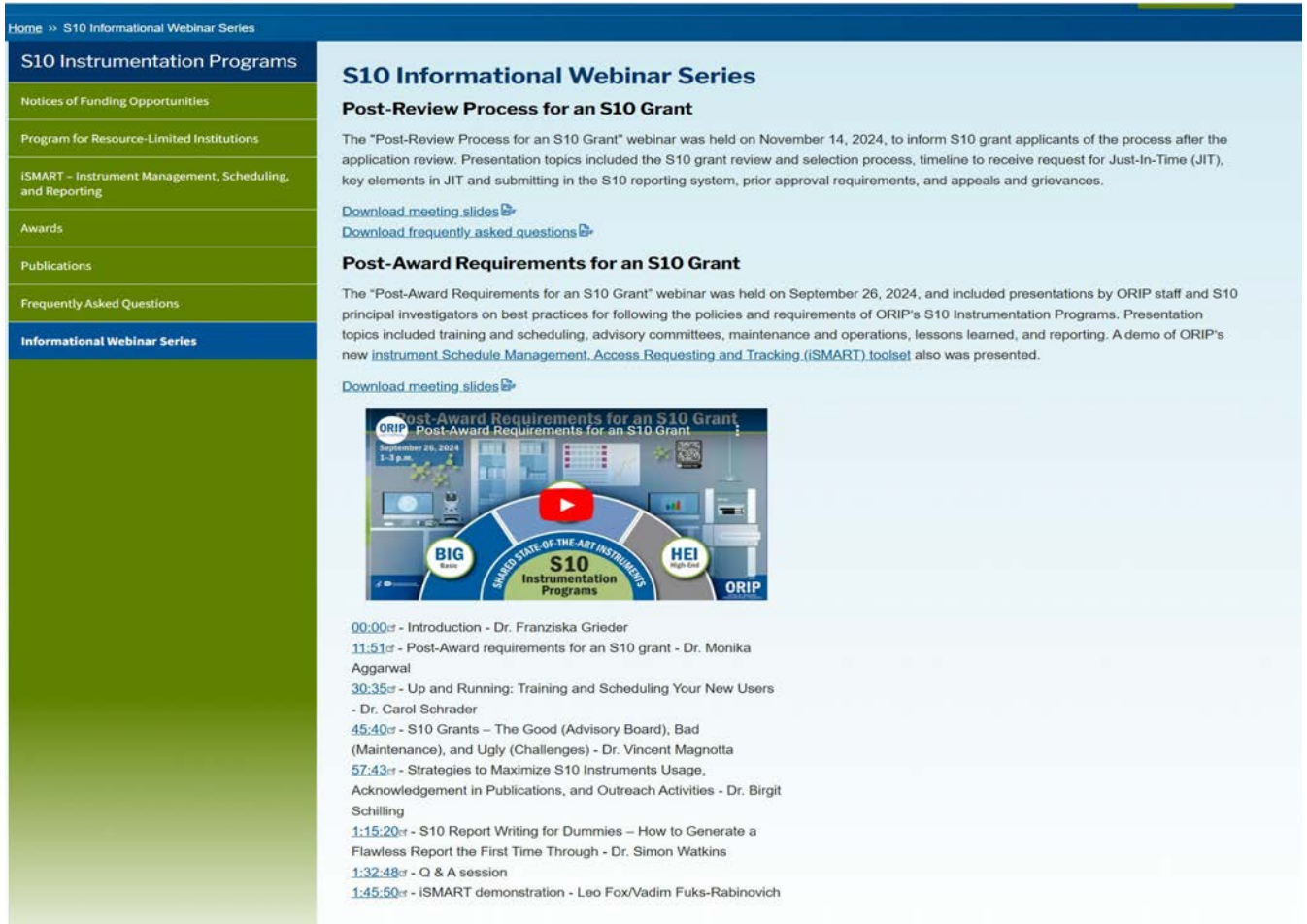
Factors considered for making funding decisions

- Scientific and technical merit of the grant.
- Availability of funds.
- Relevance of the proposed project to program priorities.
- Types of supported instruments and geographical distribution of awards.

A0 vs. A1

- Resubmission (A1) allowed.
- A new (A0) application submission before the issuance of the summary statement for an overlapping A0 or A1 is NOT allowed
- Pros and Cons for a New Vs Resubmission

S10 Informational Webinar Series



https://orip.nih.gov/division-construction-and-instruments/s10-instrumentation-programs/s10-informational-webinar-series

Timeline

• Application Due Date	June 2, 2025
• Scientific Merit Review	October 2025
• Advisory Council Review	January 2026
• Earliest Start Date	February 2026

Thank you!

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Joining as a participant? # S10Grants

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djohnikin@scgcorp.com

National Institutes of Health
Office of Research Infrastructure Programs

Navigating Instrument Acquisition: Best Practices for S10 Grant Success

Jeff Caplan
Associate Professor
Director of Bioimaging
Co-Director of DE-INBRE Centralized Shared Resources

February 11, 2025

Justification of Need: Pick an instrument you really need

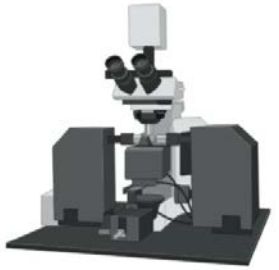
- **Critical:** Make sure your research community actually need the instrument you are proposing in to acquire.
  - Pick the technology that best fits <u>your</u> user base.
  - Don't pick an instrument that has more capabilities than what you need.
  - Don't pick something that lacks the capabilities that you need.

- Justification of need is the most important score driving criteria.
  - It will be hard to justify if only one or two research groups need it.
  - Also, it hard to just if needed by very few NIH researchers, even though it is needed by the broader research community.

Too basic

Just right!

Too specialized



Clearly show that you have compared similar instruments

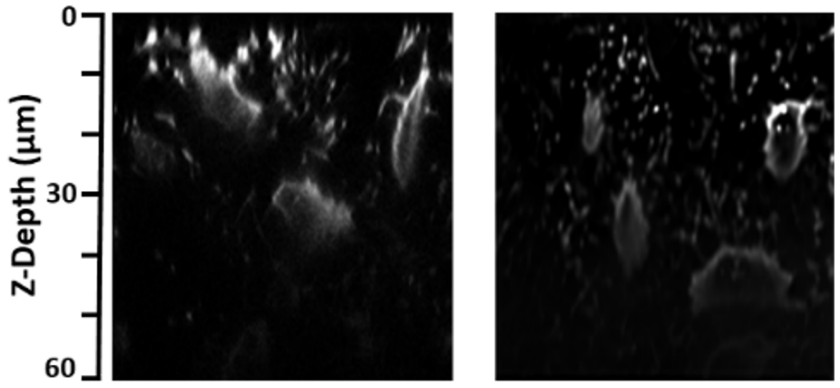
- **Compare at least 2 commercial vendors.**
  - Be kind in the comparison of vendor instruments.
  - Note: mistakes can indicate a low level of technical expertise.
- **Options to evaluate the instrument(s).**
  - Conversations and/or virtual demo with the manufacturers and colleagues.
  - Hands-on demo offsite
    - Manufacturer
    - Colleague
  - 1–2 week onsite demo with your users
  - Long-term onsite loan (rarely an option)

Comparisons to your current capabilities can be compelling additions to your grant proposal

Example: depth comparison of confocals

Current

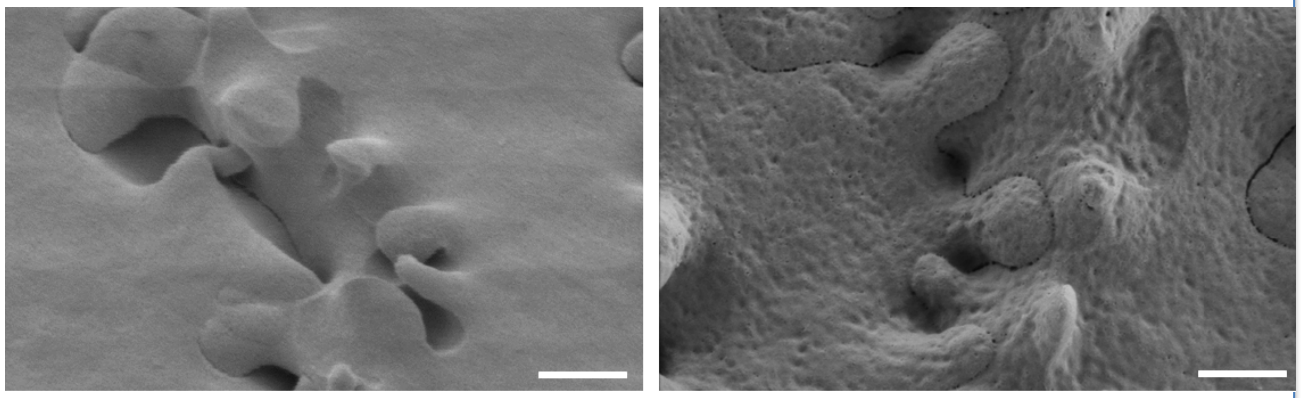
Proposed



Example: resolution of electron microscope on uncoated samples

Current

Proposed



Make it easy for reviewers to find your strengths

- Make a list or table of your strengths for each review criteria.
- This is very useful for panel members not assigned as a reviewer looking for info quickly.

Example

Summary of Justification of Need: The *XXXXXX* microscope will enhance research projects, as described in Section C, and be a great addition to the BIC, for many reasons:

1) It will replace a 12-year-old line-scanning confocal microscope (I***XXXXXX***) that has become obsolete and not suited for Biomedical research (Section A4.1).
2) It will surpass the capabilities of a 9-year-old super-resolution microscope (I***XXXXXX***) that is not up to the standard of modern super-resolution microscopy (Section A4.2).
3) It will further expand our confocal microscopy capacity so older systems can be retired (Section A5.1).
4) It will bring 2 state-of-the-art techniques not currently available to the local research community: SDCM and 3D SMLM.
5) It will enable high speed imaging (>30 fps) (Section A2.2).
6) It will enable the acquisition of larger FOVs (Section A2.2).
7) It will have a greater sensitivity (Section A2.2).
8) It will be gentler for live-cell imaging (Section A2.2).
9) It has a better linearity and dynamic range (Section A2.2).
10) It has a uniform FOV (Section A4.4).

Three common questions

1. Is preliminary data or hands-on evaluation required for the justification of need?

2. What are ways to show technical expertise for a new technology?

3. How is accessible usage time (AUT) properly calculated?

A hands-on evaluation/demo can strengthen or weaken your justification of need

Examples of successful demos:

- **1–2 day hands-on or virtual demo:** >25% of major users with strong preliminary data.
- **1–2 week-long onsite demo:** >50% of major users with strong preliminary data.
- **Long-term onsite loan:** >75% of major users with strong preliminary data.

Examples of unsuccessful demos:

- **1–2 week-long on-site demo:** <25% of major users with strong preliminary data.
- **Long-term onsite loan:** <50% of major users with strong preliminary data.

Neutral: no demo: 0% of major users with preliminary data from no hands-on demo.

A highly competitive grant can be written without preliminary data

- **On-site instrument demos and preliminary data are not required!**

- **Good examples of why an on-site evaluation was not possible.**
    1. It is simply not an instrument you can do a hands-on demo (i.e. a computer cluster).
    2. The vendor was unwilling to bring it on-site.
    3. The vendor does not do onsite evaluations/demos (i.e. small international).
    4. The technology is new, and access is limited.
    5. Live-cell or animal experiments were not possible.

How to compensate for limited preliminary data

1. **Clearly explain why.**
2. **Provide a detailed comparison of equipment.**
    i. Demonstrate you understand the strengths and weakness of the technology.
    ii. Compare it more thoroughly to other technologies you can access and more than 2 vendors, if available.
3. **Get preliminary data from the vendor**, and tailor it to your application.
4. **Provide examples from the literature** using this technology for the research topics of your major users.

Technical Expertise section: Who's Who

You have two pages to describe in detail the technical expertise.

- The PI
  - The PI can be a faculty member who needs the instrumentation.
  - The PI can be a core facility director and does not need a faculty appointment.
  - **Note:** The PI can be an administrator, but this may be considered a weakness.
- The day-to-day operator or manager
  - This is often the PI, especially if the PI is a core director.
  - Or this can be the core facility director.
  - The person may also be a staff scientist in the core facility.
  - **Note:** Avoid having graduate students or postdocs as the day-to-day operator/manager.
- The indirect support personnel and advisors
- The Major and Minor Users

Weaving a description of technical expertise throughout the grant

- Justification of Need Section: Detailed descriptions and comparisons of the technology can really help demonstrate technical expertise.
- Research Projects: Highlight the technical expertise of your user base. Summarize this in the technical expertise 2-pager.
- Admin Plan: If the PI and/or core director lack the required technical expertise, it can be partially addressed here.
  - Add in technical expertise to the Advisory Committee.
  - Describe a training plan for the PI, core director, and manager.
- Letters of Support: Provide letters of support to fill holes in technical expertise.
- Biosketches: Provide biosketches for **all** key personnel providing technical expertise.

Summary Tables: Users, projects, funding and AUT

- "At the beginning of this section, please re-state the AUT in annual hours, as introduced in the Justification of Need Section."

Example

	A	B	C	D
	NAME	**PROJECT TITLE**	**GRANT NUMBER**	**% USE AUT (h)**
	Major Users			
	Caplan, Jeffrey	Role of organelle dynamics and retrograde signaling during plant innate immunity	**NIH R01GM132582** 06/1/19 - 05/31/23	6%
		Molecular mechanism of Ca2+- induced mitochondrial shape transition in metazoans	**NIH R01GM109882** 12/01/18 - 11/30/23	144h
		qRNA-PAINT as a method for high-throughput, quantitative, single molecule analysis of cellular RNAs and their networks	**NSF-IOS1822293** 6/1/18 - 5/31/21	3% 96h
	XXXXXX	Disc mechanics and altered loading in degeneration	**NIH ...*XXXXXX*...** 2/1/05 - 8/31/23	6%
		3-D Visualization and Prediction of Vertebral Fractures	**NIH ...*XXXXXX*...** 9/1/19 - 8/31/24	144h
		Mechanical damage in an in vivo model of tendinosis	**NIH ...*XXXXXX*...** 9/1/19 - 3/31/23	

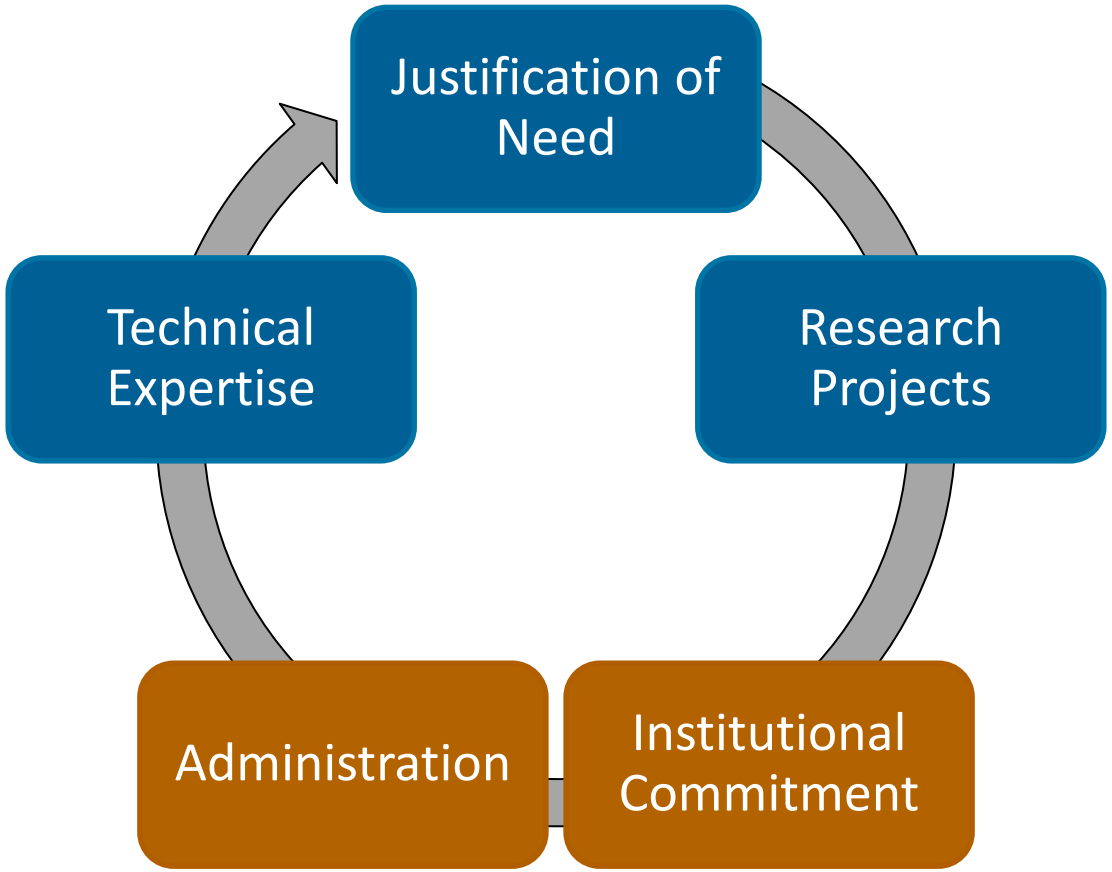
Calculating Accessible Usage Time (AUT)

- **The S10 Program Announcements defines the AUT** as "the number of annual hours the instrument can be used for any research purpose".
- **Check creativity at the door: Use simple, logical calculation.**
- **Ask others who have similar instruments.** What is the maximum hourly usage for the instrument? In essence, that is the AUT.
- **Make sure you don't overestimate or underestimate the AUT.**
  - Overestimation suggests a lack of understanding of how to administer the instrument.
  - Underestimation can undermine your justification of need.
- **Calculate the percent AUT for NIH Investigators**

Other suggestions on AUT

- Make sure the Major and Minor User AUT calculations are proportional. Major users should have a higher AUT than minor users.
- Provide time for new users.
- Having a few investigators without NIH funding is fine and realistic at many institutions, especially iDeA states.
- Ask someone to look over your estimates. Unusual and unclear AUT calculations are a common weakness.

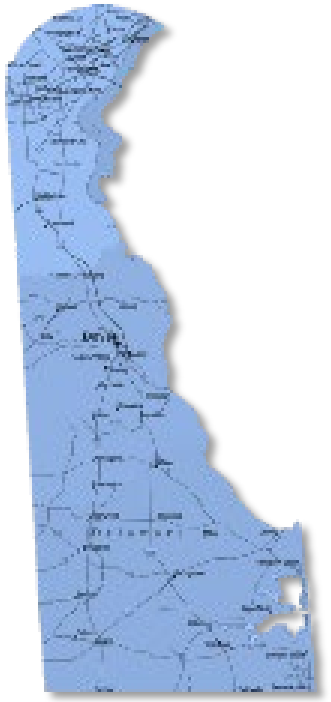
All the sections should be interconnected to create a cohesive grant proposal



Hidden benefits of preparing a shared instrumentation grant proposal

- It is not just about the funding!
- The process forces you to very carefully consider what instrumentation you need.
- You learn the strengths and weaknesses of your capabilities (and administration).
- If you are a faculty member, bringing together other faculty can improve your status.
- If you are a core facility director, you can build your user base before getting the instrument.
- It can help you build your user base on current instruments… " We already can do that, so let's get started now!"
- Often, you can get financial commitments from the institution. This can be easier on a resubmission.

Thank You!



DELAWARE BIOTECHNOLOGY INSTITUTE

DelawareINBRE
Delaware's Biomedical Research Catalyst
(P20 GM103446)

Delaware COBREs

Center for Musculoskeletal Research (P20 GM139760)

Center for Cardiovascular Health (P20 GM113125)

Considerations for the Management Plan and Institutional Support for S10 Instrumentation Grant Proposals

Lauren E. Ball, PhD

Associate Professor, Department of Pharmacology & Immunology
Director Mass Spectrometry Facility, MUSC Proteomics Center
Director, SC COBRE in Oxidants, Redox Balance and Signaling: Redox Proteomics Core
Associate Director, Digestive Disease Research Cores Center: Proteomics Core
Associate Director for University Shared Resources, Office of the VPR
Medical University of South Carolina
Charleston, South Carolina

MUSC

Administration (Management Plan)

- Instrument location/accessibility, space, and infrastructure
- Management of scheduling/usage tracking software/invoicing
- Time allocation among users
- How will new users be enlisted
- Training plan (walk up or dedicated operator?)
- Day-by-day management of the instrument (QA/QC)
- Plan to remind users to cite the S10 award in their publications
- Plan for projects with human subjects, vertebrate animals, or biohazards

MUSC

Administration (Management Plan)

Financial Plan for Years 1–5:

- Enumerate the sources of income: fee structure, grants, institutional support, anticipated income
- Cost of repairs/maintenance (annual service agreements)
- Cost of updates/maintenance of software licenses
- Salary support of personnel with technical expertise
- Supplies needed for operating the instrument

This needs to be very clear and consistent with the letters of support

MUSC

Institutional Support

- Letter(s) of support will reinforce the justification of need and impact on local, state, and national levels
- Space is available (address renovations if needed)
- Financial support will be available if needed. Financial backstop
- Institutional commitment to the financial plan for maintenance and operations for years 1–5
- Describe institutional support for personnel

Matching funds is not required however, strong institutional support indicates the institution is committed to maintaining the instrument and makes for a more competitive application

MUSC

Instrument Advisory Committee

- Includes PI
- Includes non-user members who can resolve disputes
- Includes senior institutional official representing financial commitment
- The Advisory Committee reviews annual usage, prepares annual reports, and provides guidance regarding:
  - Maximizing utilization and managing the instrument
  - Long-term operation and maintenance of the instrument
  - Safe operation of the instrument
  - A plan to ensure users have approval from IRB, IACUC or IBC
  - Relocation of the instrument if needed
  - Recommendation of a new PI if needed

MUSC

Assembling User Base

- New users (survey and/or instrument demo)
- Established user base
- NIH funded projects from grants active through February 2026
- Showcase projects that will clearly benefit
- Choose strong PIs willing to provide a brief project description, biosketch, and that publish in a timely manner
- Minimum of 3 major users
- Project descriptions 20 pages max

MUSC

Acknowledgements

MUSC Proteomics Center

Mass Spectrometry Facility
Lauren Ball, PhD
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Rony Hull, MS
Mi-Hye Lee, PhD

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Richard Drake, PhD
Anand Mehta, PhD
Peggi Angel, PhD

MS Facility Operations supported by:
Vice President for Research
College of Medicine

P30 GM140964 Tew (PI)
NIH/NIGMS SC COBRE in Oxidants, Redox Balance and Signaling: Redox Proteomics Core *(Pilot Project Program)*

P30 DK123704 Rockey (PI)
NIH/NIDDK Silvio O Conte Digestive Diseases Research Core Center: MUSC DDRC: Proteomics Core *(Pilot Project Program)*

P30 CA138313 DuBois (PI)
NIH/NCI Hollings Cancer Center Support Grant
Technology and Equipment Awards; *Pilot Project Program*

U01 CA244303 Reginato & Ball (PI)
NIH/NCI Alliance of Glycobiologists for Cancer Research

NIH/NCATS UL1 TR001450 Brady & Flume (PI)
(Pilot Project and Voucher Program)

NIH Instrumentation Grants (Ball, PI)
HEI S10 OD025126 Orbitrap Exploris 480 ($772,000)
HEI S10 OD028692 Orbitrap Lumos ETD ($990,000)
S10 OD010731 Orbitrap Elite ETD ($989,000)

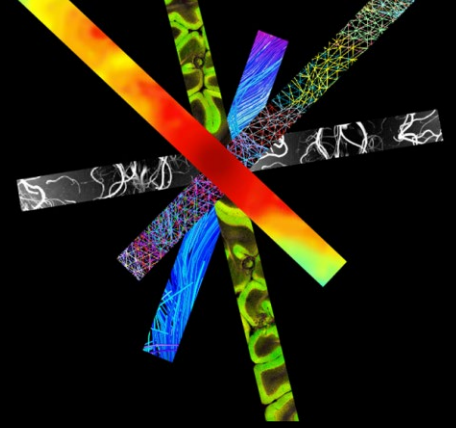
Revenue from Users—Thank you!

MUSC

Thanks for your attention

Best of Luck!

MUSC



Athinoula A. Martinos Center For Biomedical Imaging

MASSACHUSETTS GENERAL HOSPITAL

HARVARD MEDICAL SCHOOL

Massachusetts Institute of Technology

Strengthening the justification of need and considerations for a resubmission

Susie Y. Huang, MD, PhD

Associate Professor of Radiology, Harvard Medical School
Associate Director, Athinoula A. Martinos Center for Biomedical Imaging,
Department of Radiology, Massachusetts General Hospital

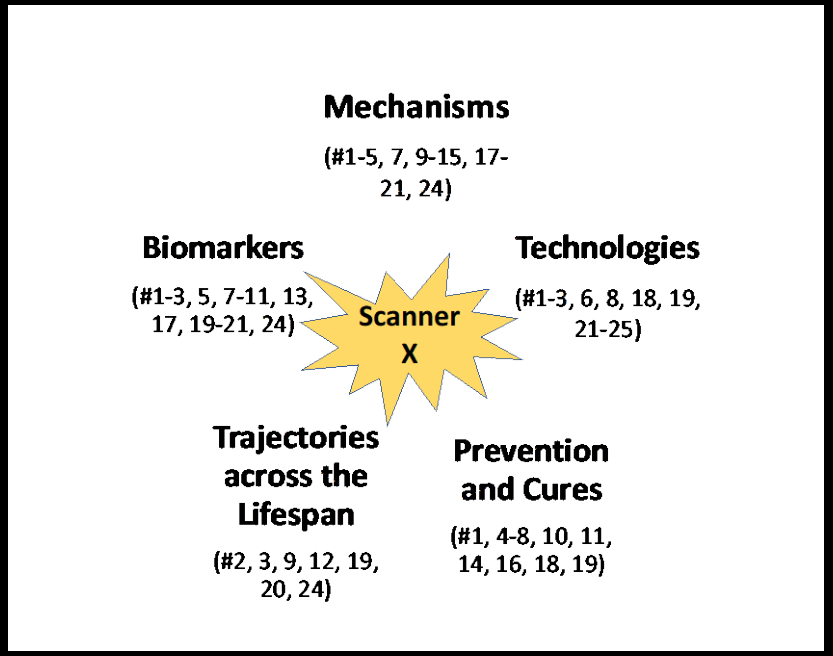
Pre-Application Webinar for an S10 Grant
April 7, 2025

Crafting a compelling justification of need

Athinoula A. Martinos Center For Biomedical Imaging

Know your instrument

- Provide an overview of relevant commercially available options.
- Detail the specific capabilities that make the chosen instrument ideal for your users' research needs.



Understand your users

- Identify all potential users and their research requirements.
- Demonstrate how the instrument's capabilities directly support NIH-funded research projects.

Gather preliminary data

- Contact colleagues with similar equipment to gain insights on performance and capabilities.

Connect capabilities to projects

- Cross-reference the instrument's technical specs with specific user projects.

Technical capabilities: Why this instrument?

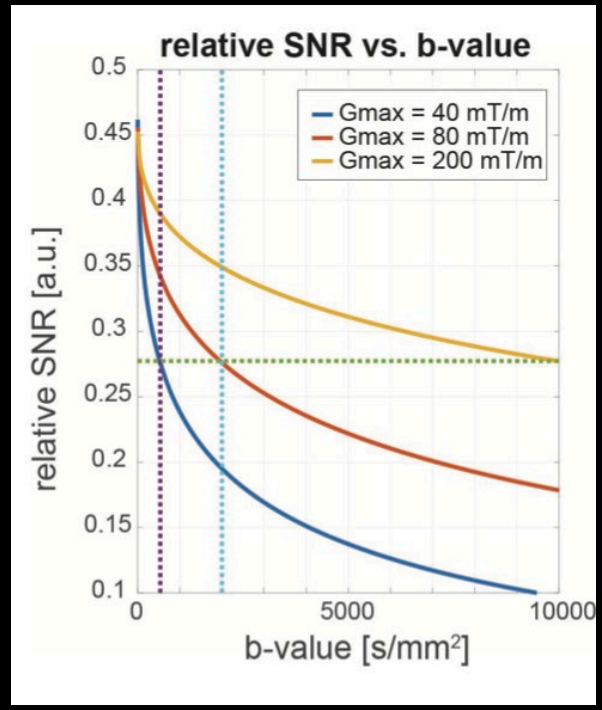
Athinoula A. Martinos Center For Biomedical Imaging

Hardware specifications

- Provide technical details about resolution, sensitivity, throughput, and other critical parameters that distinguish this instrument from alternatives.
- Include direct comparisons with other available models, highlighting specific advantages that address your users' research needs.

Software capabilities

- Describe software features that enable specific research applications relevant to your users.
- Emphasize integration capabilities with existing systems and potential for data sharing across research teams.



Demonstrating critical need: Why now?

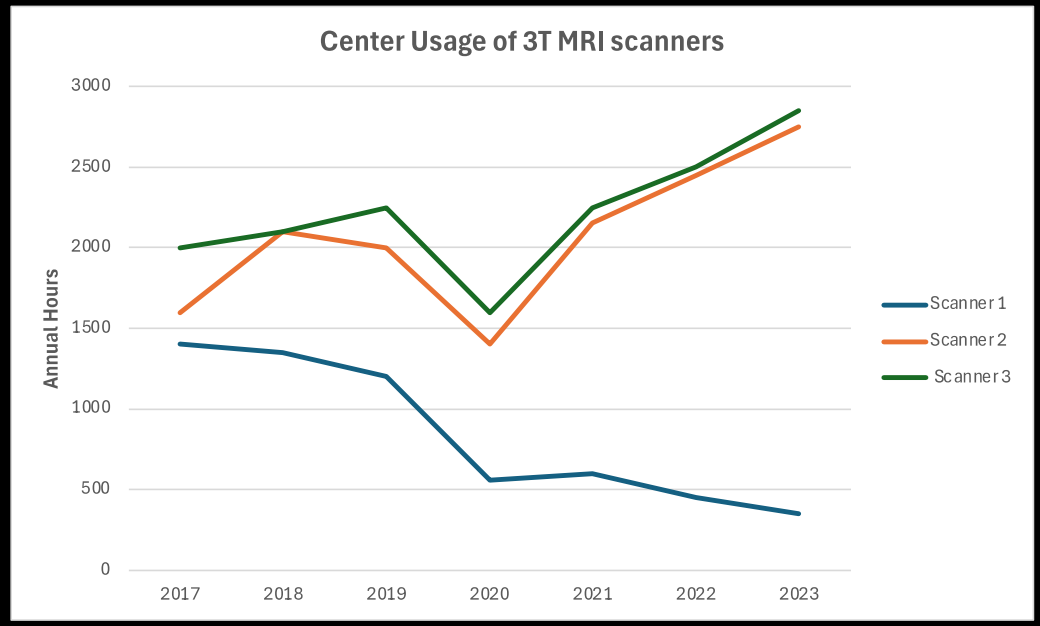
Athinoula A. Martinos Center For Biomedical Imaging

Document current limitations

- For replacement requests, provide evidence that existing equipment is obsolete, unreliable, or inadequate for current research needs.
- Include repair history, downtime statistics, and maintenance costs that justify replacement.

Demonstrate increasing demand

- Present usage data showing growing research needs that current infrastructure cannot support



Demonstrating critical need: Why now?

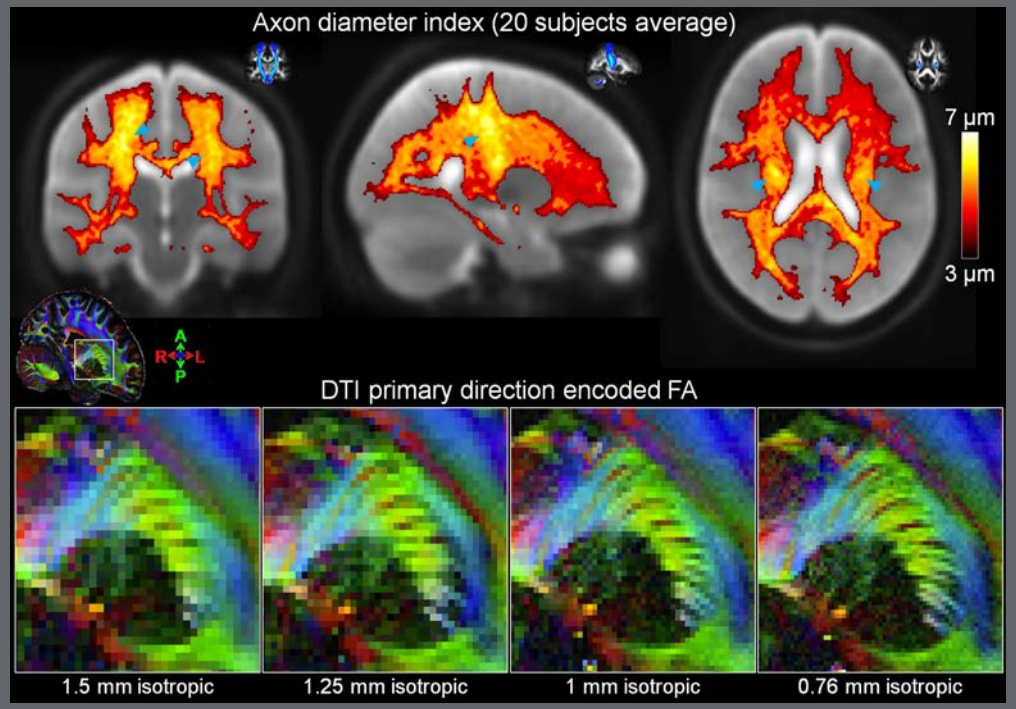
Athinoula A. Martinos Center For Biomedical Imaging

Highlight complementary capabilities

- For new instruments, explain how the requested equipment complements existing infrastructure.
- Show how new capabilities enable novel research approaches unattainable with current resources.

Connect to research advances

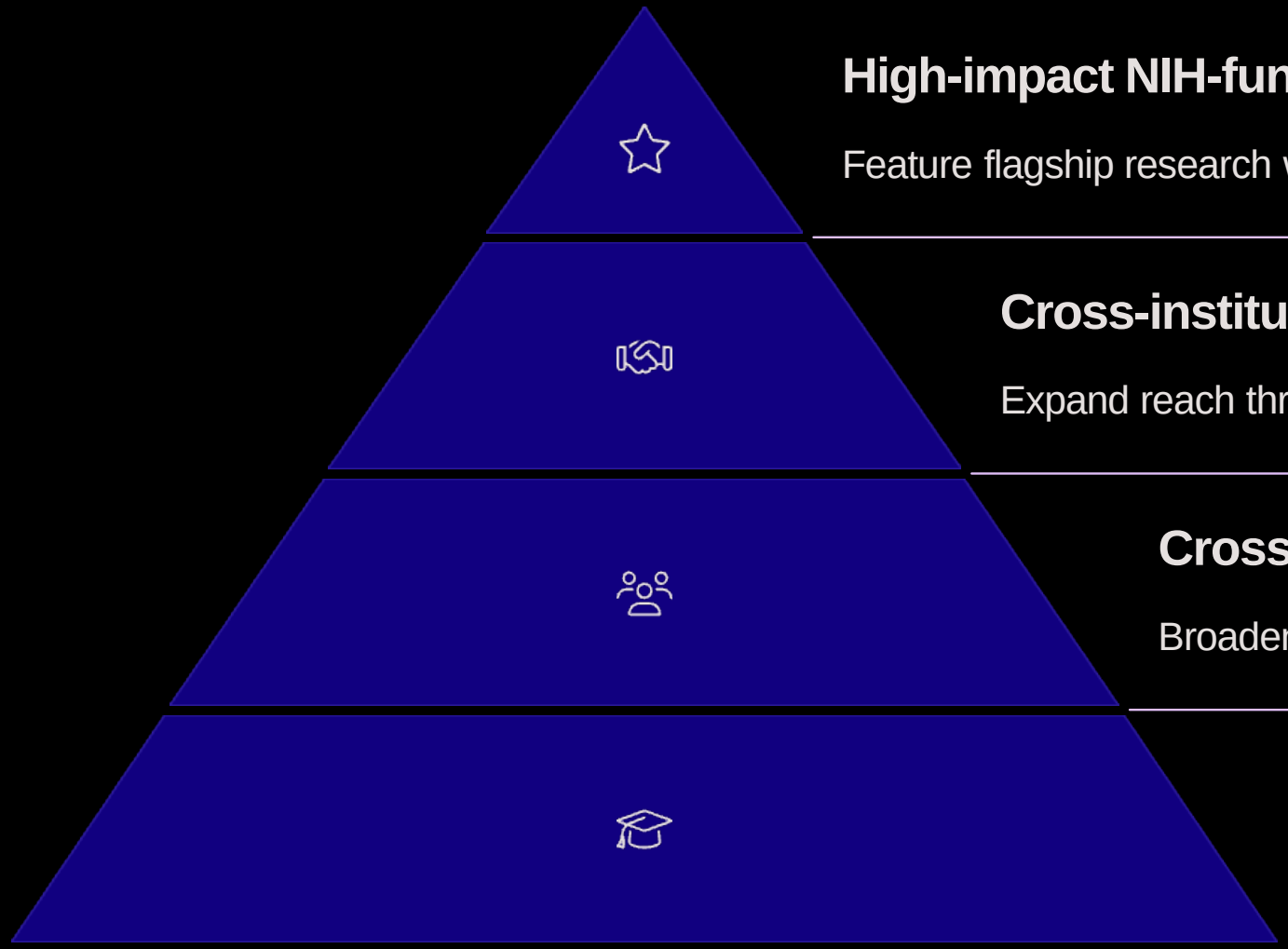
- Link the instrument acquisition to specific scientific advances that will directly result from its capabilities.



Stronger, faster gradients will enable axon diameter mapping and high-resolution diffusion tractography in the living human brain

Maximizing user base and research impact

Athinoula A. Martinos Center For Biomedical Imaging



High-impact NIH-funded projects

Feature flagship research with significant funding and impact

Cross-institutional collaborations

Expand reach through regional partnerships

Cross-departmental utilization

Broaden user base across multiple disciplines

Training and education applications

Develop next generation of skilled researchers

Resubmission strategy: Learning from feedback

Athinoula A. Martinos Center For Biomedical Imaging

Analyze review comments

- Identify specific concerns and opportunities for improvement.
- Group comments into categories:
  - Technical specs
  - User projects
  - Administration
  - Institutional support

Reassess instrument selection

- Does the proposed instrument truly meet your research needs?
- Would an alternative better address concerns?
- Be willing to pivot to a more appropriate instrument if indicated.

Address all concerns

- Respond to each reviewer comment with specific, actionable changes to your proposal.
- Highlight changes in your introduction to make improvements immediately visible to reviewers.
- Intro to the resubmission: 2 pages are allowed.

Strengthen weak areas

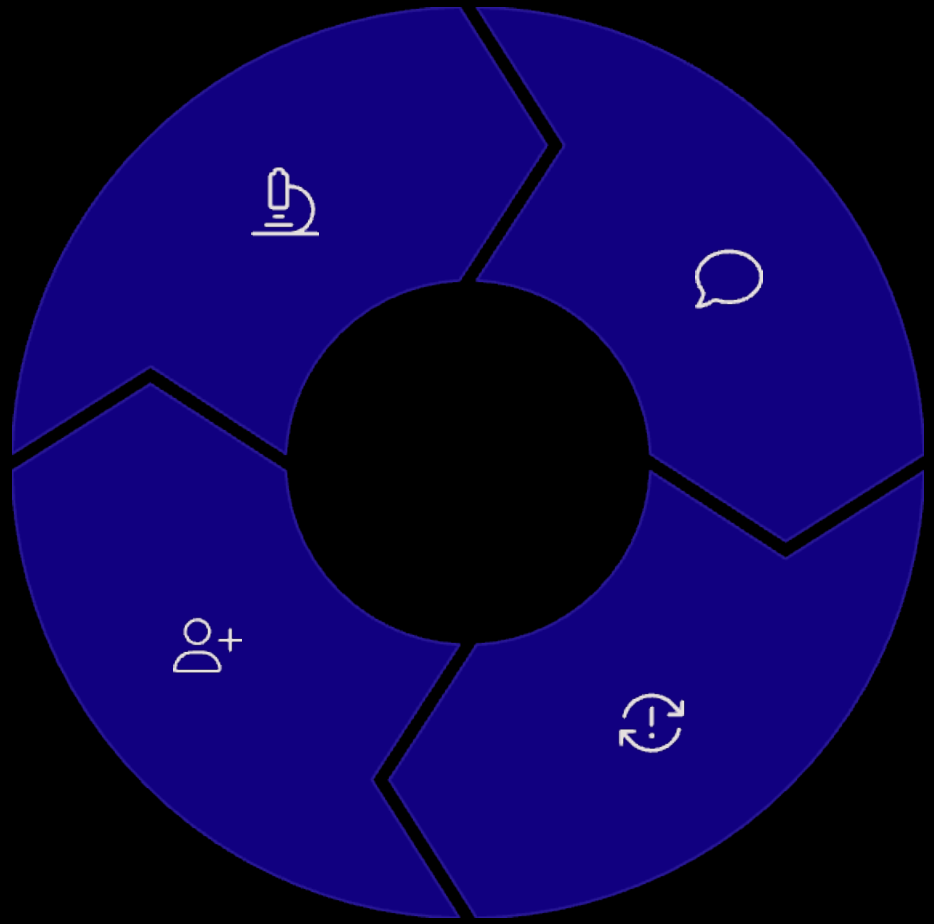
Add preliminary data, expand user projects, and/or increase institutional commitment to address any perceived weaknesses in the original submission.

Case study: Successful high-end S10 resubmission

Athinoula A. Martinos Center For Biomedical Imaging

Initial application

Standard whole-body MRI scanner to replace a 15+ year-old system



User consultation

Gathered feedback from potential users on specific needs

Strategic pivot

High-performance gradient whole-body MRI scanner identified as better fit

Expanded user base

Recruited additional users while maintaining existing research continuity

Developing comprehensive training and support plans

Athinoula A. Martinos Center For Biomedical Imaging

Structured onboarding

- Outline a training curriculum for new users that progresses from basic operation to advanced applications.
- Include both conceptual and hands-on sessions with experienced operators.

Technical support

- Dedicated support team with clear roles and responsibilities.
- Outline standard operating procedures, troubleshooting strategies, and applications expertise to cover common research protocols.

Ongoing education

- Schedule regular training sessions to ensure continuing education and skills development.
- Pair experienced with new users to facilitate knowledge transfer and build instrument expertise across research teams.

Administrative framework for instrument management

Athinoula A. Martinos Center For Biomedical Imaging

Allocation policies

- Establish transparent criteria for instrument time allocation based on research priority, funding source, and alignment with institutional goals.
- Create scheduling systems that balance accessibility with efficient utilization.

Dispute resolution

- Form an impartial Advisory Committee composed primarily of non-users who can objectively resolve conflicts.

Cost recovery model

- Develop a sustainable fee structure that covers operational costs while remaining accessible to all qualified users.

Securing strong institutional support

Athinoula A. Martinos Center For Biomedical Imaging

Maintenance coverage

Secure full institutional commitment for service contracts

Space allocation

Dedicated space beyond minimum requirements

Technical staff

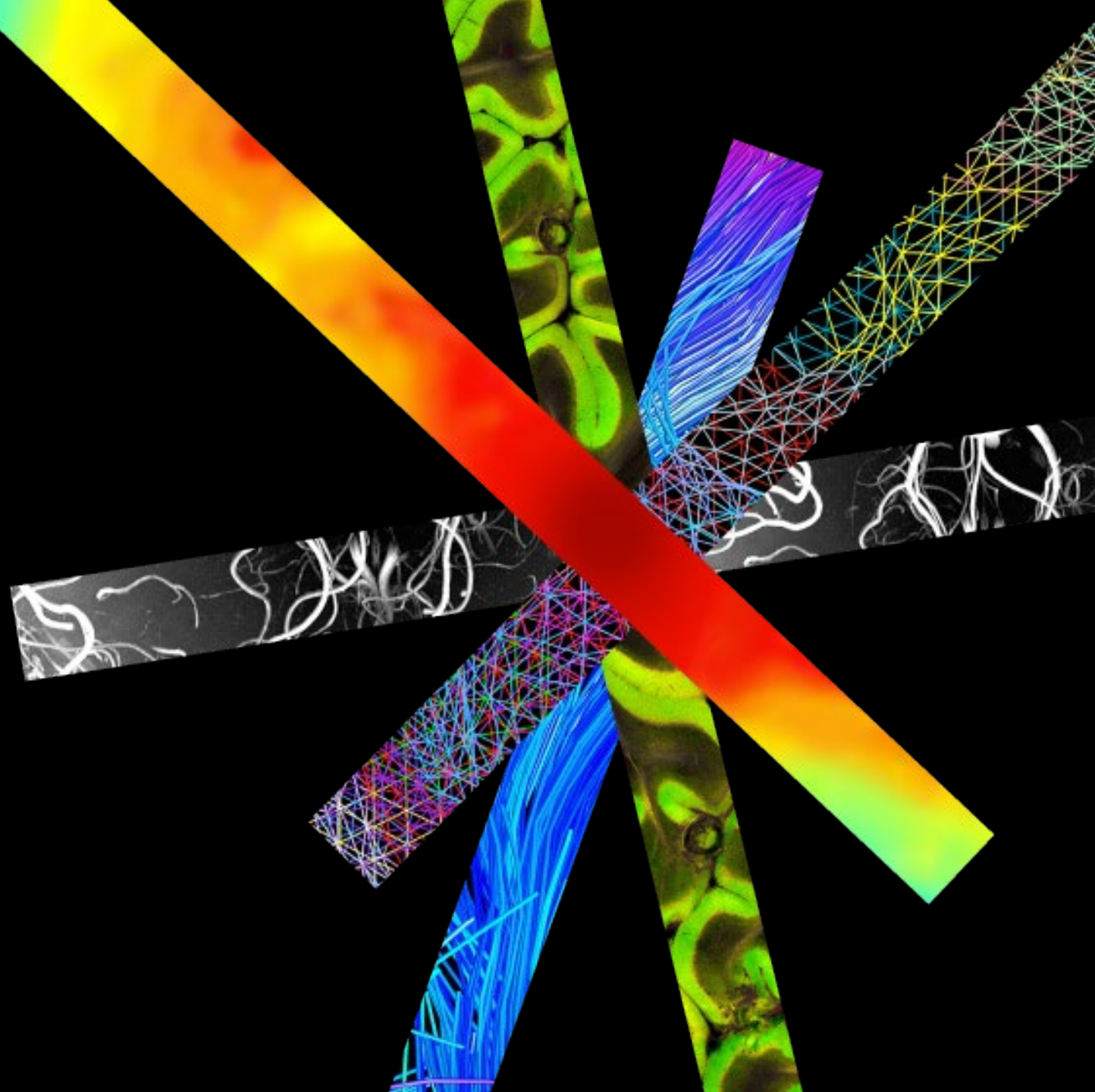
Committed personnel positions for instrument operation

Financial commitment

Extended institutional funding guarantee for operations

- Quantify institutional commitments whenever possible.
- Obtain formal letters of support from leadership that detail concrete resources being allocated.

Athinoula A.
Martinos
Center
For Biomedical Imaging



Thank you for your attention!

Grant support:

NIBIB P41EB030006
NIH S10OD32184
NIH S10MH133576

S10 Review Process

[Reviewers are your (*overworked*) friends]

Susan T. Weintraub, Ph.D.
Professor
UT Health San Antonio
Department of Biochemistry & Structural Biology

April 7, 2025

NIH Shared Instrumentation Grants

What is the goal?

Fund instruments for biomedical research

Let’s be sure to avoid this!

“He’s right. We screwed up.”

and instead end up with this!

Where do you start?

Writing the grant application

Where do you start?

Writin cation

Department of Health and Human Services

PAR-24-326

Part 1. Overview Information

Participating Organization(s)	National Institutes of Health (NIH)
Components of Participating Organizations	Division of Program Coordination, Planning and Strategic Initiatives, Office of Research Infrastructure Programs (ORIP) National Institute of General Medical Sciences (NIGMS)
Funding Opportunity Title	Limited Competition: Basic Instrumentation Grant (BIG) Program (S10 Clinical Trial Not Allowed)
Activity Code	
Announcement Type	
Related Notices	
Funding Opportunity Number (FON)	
Companion Funding Opportunity	
Number of Applications	
Assistance Listing Number(s)	

Department of Health and Human Services

PAR-24-265

Part 1. Overview Information

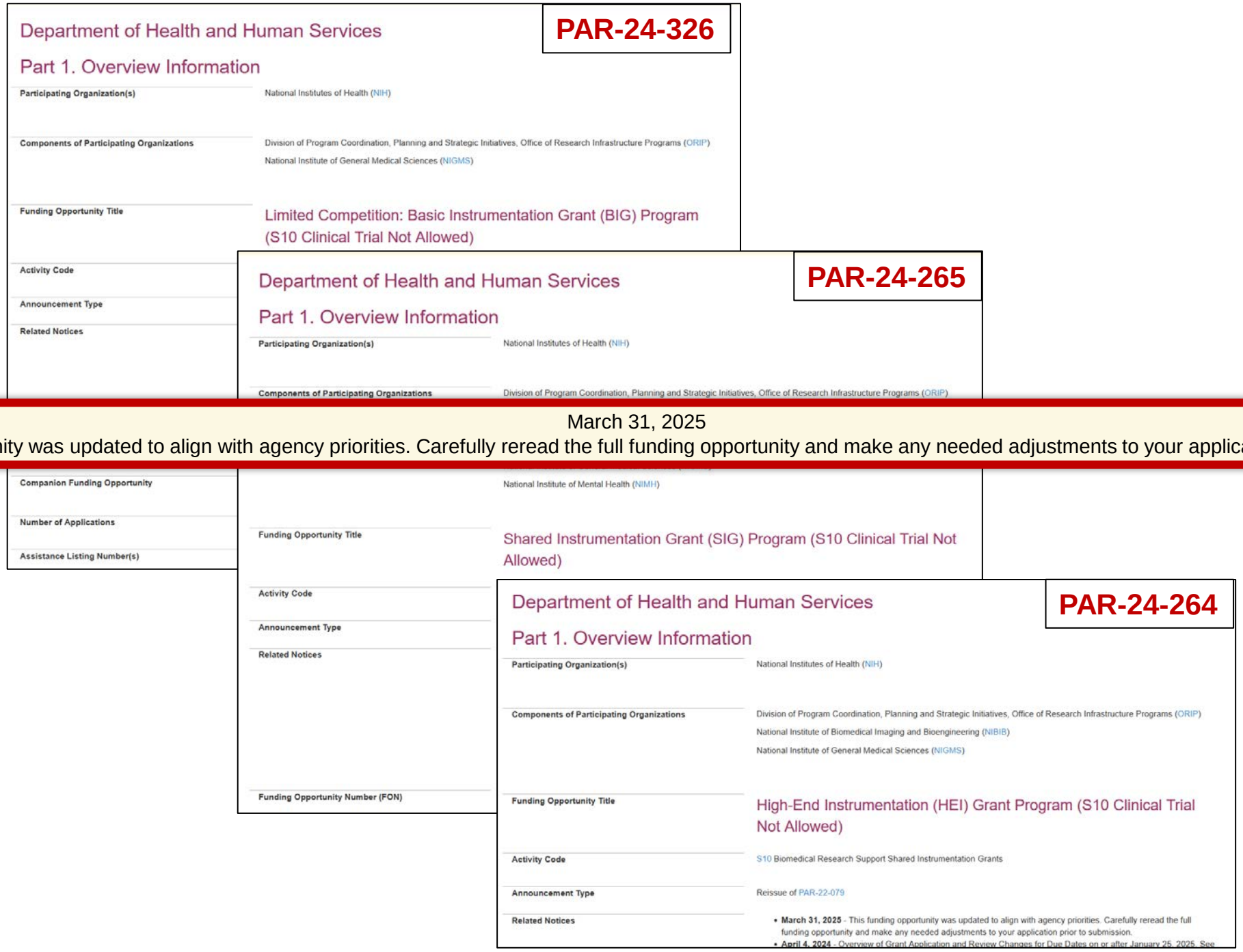
Participating Organization(s)	National Institutes of Health (NIH)
Components of Participating Organizations	Division of Program Coordination, Planning and Strategic Initiatives, Office of Research Infrastructure Programs (ORIP) National Eye Institute (NEI) National Institute on Aging (NIA) National Institute of Biomedical Imaging and Bioengineering (NIBIB) National Institute of General Medical Sciences (NIGMS) National Institute of Mental Health (NIMH)
Funding Opportunity Title	Shared Instrumentation Grant (SIG) Program (S10 Clinical Trial Not Allowed)
Activity Code	
Announcement Type	
Related Notices	
Funding Opportunity Number (FON)	

Department of Health and Human Services

PAR-24-264

Part 1. Overview Information

Participating Organization(s)	National Institutes of Health (NIH)
Components of Participating Organizations	Division of Program Coordination, Planning and Strategic Initiatives, Office of Research Infrastructure Programs (ORIP) National Institute of Biomedical Imaging and Bioengineering (NIBIB) National Institute of General Medical Sciences (NIGMS)
Funding Opportunity Title	High-End Instrumentation (HEI) Grant Program (S10 Clinical Trial Not Allowed)
Activity Code	S10 Biomedical Research Support Shared Instrumentation Grants
Announcement Type	Reissue of PAR-22-079
Related Notices	• **March 31, 2025** - This funding opportunity was updated to align with agency priorities. Carefully reread the full funding opportunity and make any needed adjustments to your application prior to submission. • **April 4, 2024** - Overview of Grant Application and Review Changes for Due Dates on or after January 25, 2025. See


Department of Health and Human Services
PAR-24-326
Part 1. Overview Information
Participating Organization(s)
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Components of Participating Organizations
Division of Program Coordination, Planning and Strategic Initiatives, Office of Research Infrastructure Programs (ORIP)
National Institute of General Medical Sciences (NIGMS)
Funding Opportunity Title
Limited Competition: Basic Instrumentation Grant (BIG) Program (S10 Clinical Trial Not Allowed)
Activity Code
Announcement Type
Related Notices
Companion Funding Opportunity
Number of Applications
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Department of Health and Human Services
PAR-24-265
Part 1. Overview Information
Participating Organization(s)
National Institutes of Health (NIH)
Components of Participating Organizations
Division of Program Coordination, Planning and Strategic Initiatives, Office of Research Infrastructure Programs (ORIP)
National Institute of Mental Health (NIMH)
Funding Opportunity Title
Shared Instrumentation Grant (SIG) Program (S10 Clinical Trial Not Allowed)
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Announcement Type
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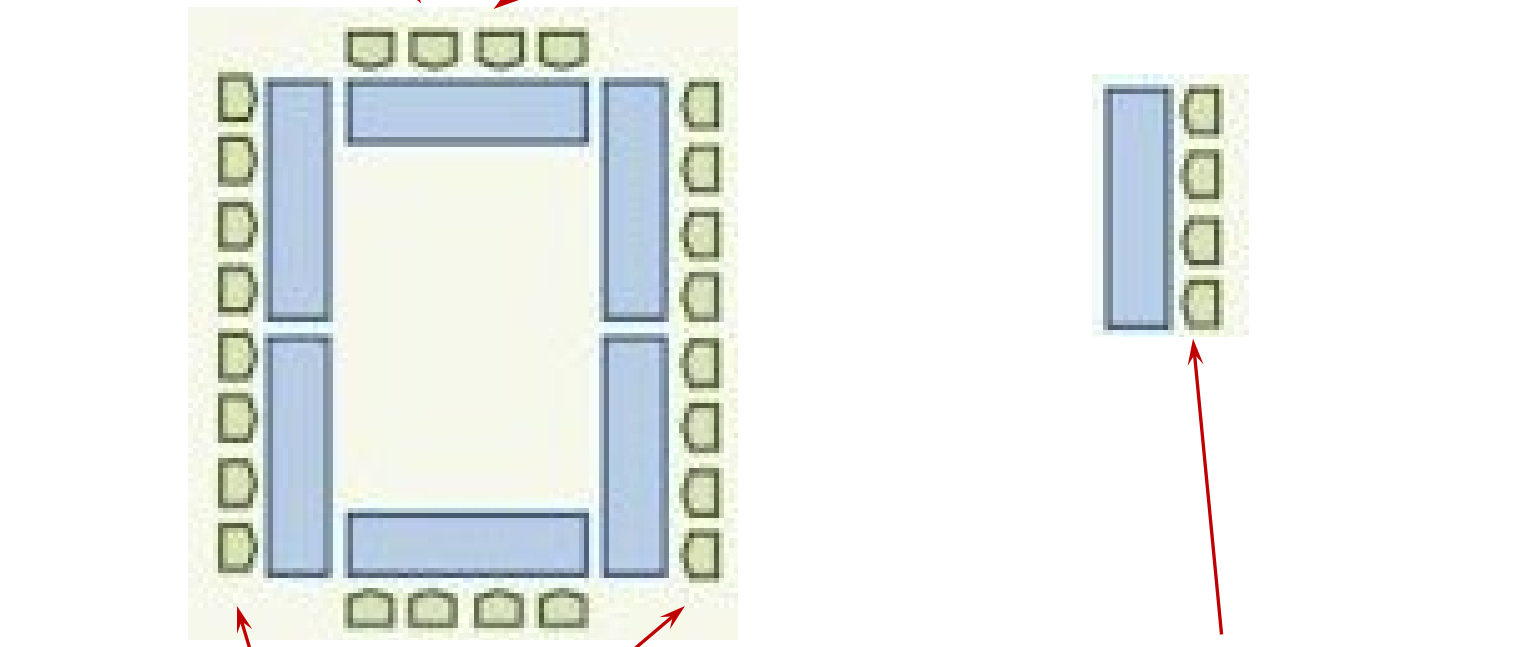
NIH Review Panel (in-person)



NIH Review Scoring

Overall Impact or Criterion Strength	Score	Descriptor
High	1	Exceptional
	2	Outstanding
	3	Excellent
Medium	4	Very Good
	5	Good
	6	Satisfactory
Low	7	Fair
	8	Marginal
	9	Poor

Proposals that rank in the bottom half (i.e., high numbers) based on pre-meeting preliminary scores of the assigned reviewers are not discussed at the meeting and are not scored by the other panel members.

Integer scores for discussed proposals are entered by each panel member.

The final score is the average of the scores.

NIH Review Panel

The goal is to assess the scientific merit of the proposal and the potential impact of the requested instrument on the research projects of the user group. There is no comparison of one proposal to another.

Review process

Chair gives the name of the applicant (and maybe the title of the proposal)
Preliminary scores of assigned reviewers
Reviewer 1

- **summary of proposal**
  - **applicant, affiliation, requested instrument, types of analyses**
  - **location (e.g., core laboratory or shared space for a few investigators)**
- **justification of need**
- **research projects**
  - **overview of types of research of investigators in user group**
  - **may give a brief description of selected projects illustrating use of proposed instrument**
  - **other scorable areas (e.g., expertise, administration, financial plan, institutional commitment)**

focus is on strengths and weaknesses - not details

NIH Review Panel

The goal is to assess the scientific merit of the proposal and the potential impact of the requested instrument on the research projects of the user group. There is no comparison of one proposal to another.

Review process (cont.)

Reviewers 2 and 3

- **additional comments as needed**

Discussion by all panel members

Final scores of assigned reviewers

Private scoring by panel members

Budget

- **comments about justification of requested accessories**
- **any concerns about funding source for costs higher than program limit**

Blunders – DON’T DO THIS!

Instrumentation Plan

- Missing information or entire sections
- Poor/confusing organization (be sure to follow the order listed in the PAR)
- Instrument location issues
  - not clearly specified
  - instrument to be placed in the laboratory of the PI (or a user) without explanation of access for others
- Instrument operations
  - not clear how usage will be requested or managed
    - open-access or designated operators only
    - no information about time reservation or sample submission

Blunders – DON’T DO THIS!

Instrumentation Plan (cont.)

- Project descriptions
  - PI affiliation missing
  - Funding not listed
  - Justification of need not aligned with the requested instrument
  - Impact of requested instrument on (NIH) funded research not clearly evident
  - DO NOT just provide the specific aims page of an investigator’s grant
- Issues with the table of users
  - PI names do not match project descriptions
  - Missing information
    - grant titles and/or numbers
    - usage details (hours and percentage AUT)
    - percent need for requested accessories

Blunders - DON'T DO THIS!

Financial Plan

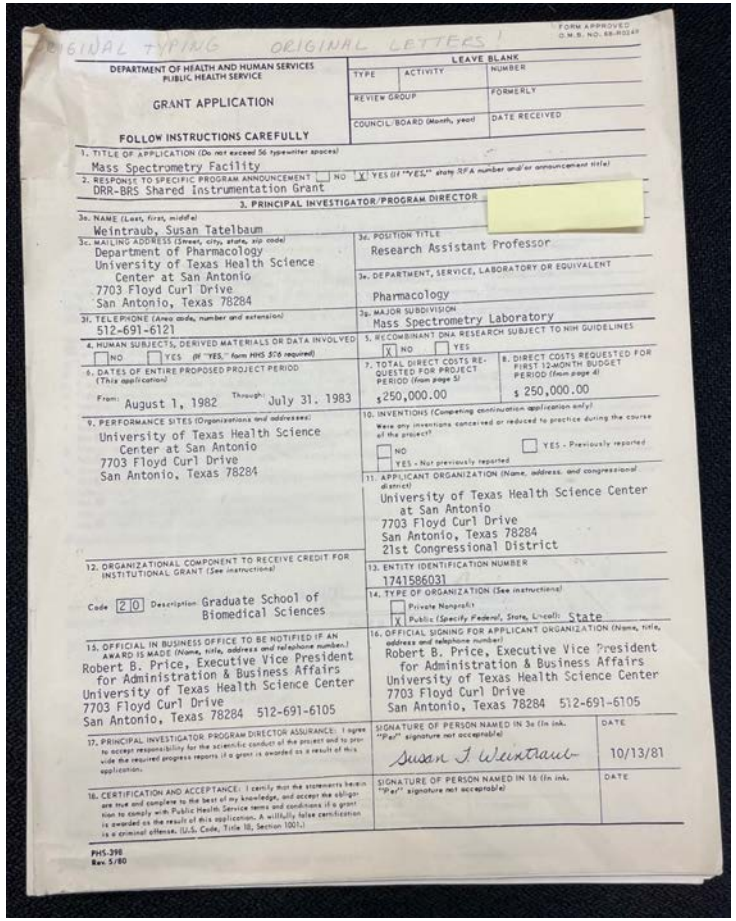
- Instrument cost is above the program limit but no information provided about the source for the additional $$
- Missing or incomplete budget table
- Unclear or unrealistic AUT
- Missing or unclear explanation of funding for instrument maintenance
- Request for additional years of a service contract in the S10 budget
  - a warranty can be for more than one year if that's standard for all purchases of that instrument
  - additional years of service can be included on the quote, but the source of funds to pay for the additional years needs to be provide
    - *Recommendation — don't include extra years of maintenance in the quote that's included in the proposal*
- Lack of agreement between details in the financial plan text and in the institutional support letter(s)

Blunders - DON'T DO THIS!

Support letters

- Lack of specifics of institutional support/augmentation (e.g., staff salaries, instrument maintenance)
- Lack of convincing statement from an appropriate administrative official/officials that funds will be available to cover operations shortfalls
- No table of status of previous S10-awarded instruments (the past five years)

NIH S10 Proposal - submitted 10/31/1981



ORIGINAL TYPING ORIGINAL LETTERS!

FORM APPROVED O.M.B. NO. 68-R0249

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE

GRANT APPLICATION

FOLLOW INSTRUCTIONS CAREFULLY

LEAVE BLANK

TYPE	ACTIVITY	NUMBER
REVIEW GROUP		FORMERLY
COUNCIL/BOARD (Month, year)		DATE RECEIVED

1. TITLE OF APPLICATION (Do not exceed 56 typewriter spaces)
Mass Spectrometry Facility

2. RESPONSE TO SPECIFIC PROGRAM ANNOUNCEMENT ☐ NO ☒ YES (If "YES," state RFA number and/or announcement title)
DRR-BRS Shared Instrumentation Grant

3. PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR

3a. NAME (Last, first, middle)
Weintraub, Susan Tatelbaum

3b. POSITION TITLE
Research Assistant Professor

3c. MAILING ADDRESS (Street, city, state, zip code)
Department of Pharmacology
University of Texas Health Science
Center at San Antonio
7703 Floyd Curl Drive
San Antonio, Texas 78284

3d. DEPARTMENT, SERVICE, LABORATORY OR EQUIVALENT
Pharmacology

3e. MAJOR SUBDIVISION
Mass Spectrometry Laboratory

3f. TELEPHONE (Area code, number and extension)
512-691-6121

4. HUMAN SUBJECTS, DERIVED MATERIALS OR DATA INVOLVED
☐ NO ☐ YES (If "YES," form HHS 576 required)

5. RECOMBINANT DNA RESEARCH SUBJECT TO NIH GUIDELINES
☒ NO ☐ YES

6. DATES OF ENTIRE PROPOSED PROJECT PERIOD (This application)
From: August 1, 1982 Through: July 31, 1983

7. TOTAL DIRECT COSTS REQUESTED FOR PROJECT PERIOD (from page 5)
$250,000.00

8. DIRECT COSTS REQUESTED FOR FIRST 12-MONTH BUDGET PERIOD (from page 4)
$ 250,000.00

9. PERFORMANCE SITES (Organizations and addresses)
University of Texas Health Science
Center at San Antonio
7703 Floyd Curl Drive
San Antonio, Texas 78284

10. INVENTIONS (Competing continuation application only)
Were any inventions conceived or reduced to practice during the course of the project?
☐ NO
☐ YES - Not previously reported
☐ YES - Previously reported

11. APPLICANT ORGANIZATION (Name, address, and congressional district)
University of Texas Health Science Center
at San Antonio
7703 Floyd Curl Drive
San Antonio, Texas 78284
21st Congressional District

12. ORGANIZATIONAL COMPONENT TO RECEIVE CREDIT FOR INSTITUTIONAL GRANT (See instructions)
Code 20 Description: Graduate School of
Biomedical Sciences

13. ENTITY IDENTIFICATION NUMBER
1741586031

14. TYPE OF ORGANIZATION (See instructions)
☐ Private Nonprofit
☒ Public (Specify Federal, State, Local): State

15. OFFICIAL IN BUSINESS OFFICE TO BE NOTIFIED IF AN AWARD IS MADE (Name, title, address and telephone number)
Robert B. Price, Executive Vice President
for Administration & Business Affairs
University of Texas Health Science Center
7703 Floyd Curl Drive
San Antonio, Texas 78284 512-691-6105

16. OFFICIAL SIGNING FOR APPLICANT ORGANIZATION (Name, title, address and telephone number)
Robert B. Price, Executive Vice President
for Administration & Business Affairs
University of Texas Health Science Center
7703 Floyd Curl Drive
San Antonio, Texas 78284 512-691-6105

17. PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR ASSURANCE: I agree to accept responsibility for the scientific conduct of the project and to provide the required progress reports if a grant is awarded as a result of this application.

SIGNATURE OF PERSON NAMED IN 3a (In ink. "Per" signature not acceptable)
Susan T. Weintraub
DATE: 10/13/81

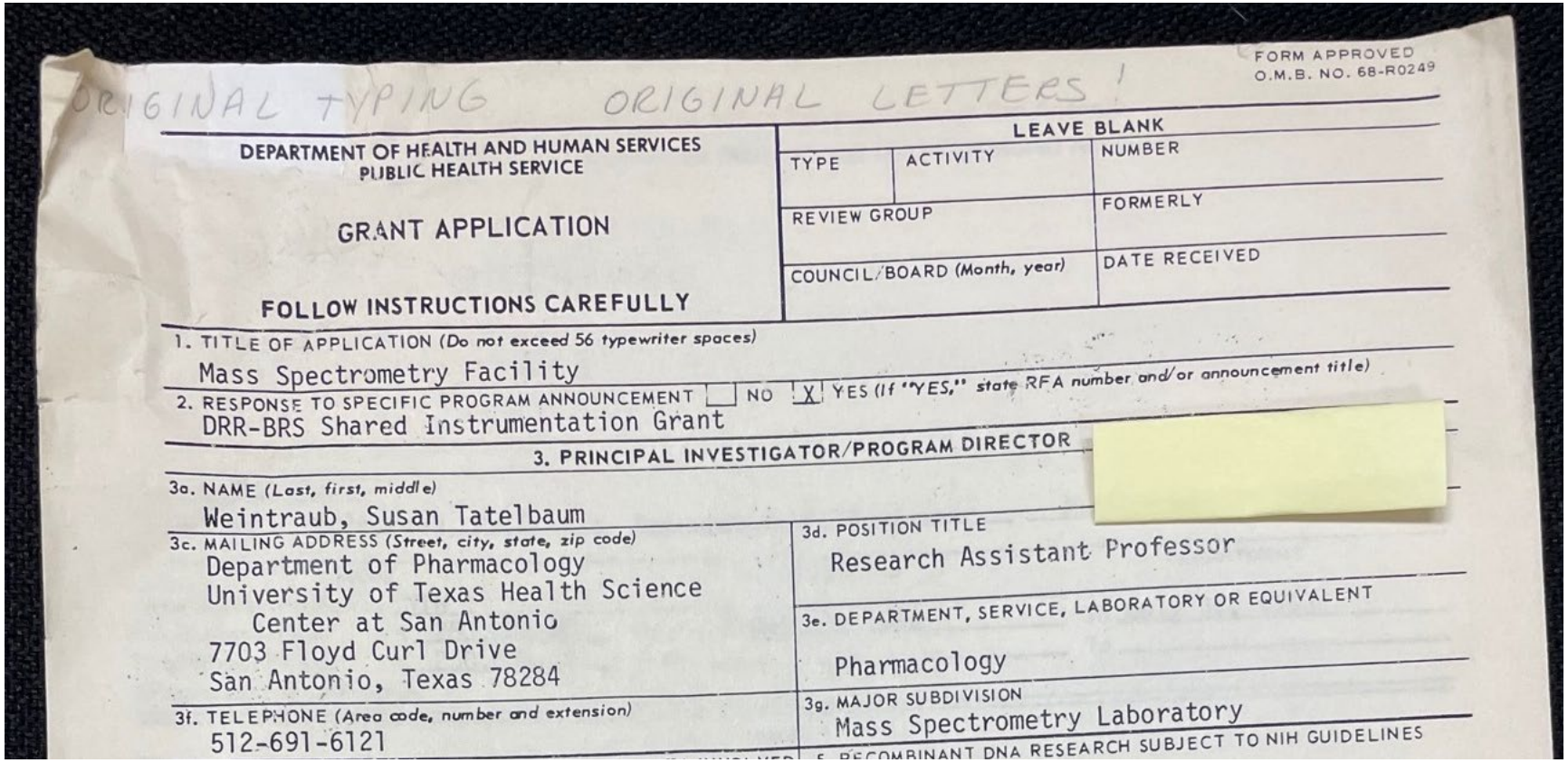
18. CERTIFICATION AND ACCEPTANCE: I certify that the statements herein are true and complete to the best of my knowledge, and accept the obligation to comply with Public Health Service terms and conditions if a grant is awarded as the result of this application. A willfully false certification is a criminal offense. (U.S. Code, Title 18, Section 1001.)

SIGNATURE OF PERSON NAMED IN 16 (In ink. "Per" signature not acceptable)
DATE

PHS-398
Rev. 5/80

The first year of the NIH S10 program
Proposal prepared using an IBM Selectric typewriter, with typos corrected using “Wite-Out”

NIH S10 Proposal - submitted 10/31/1981



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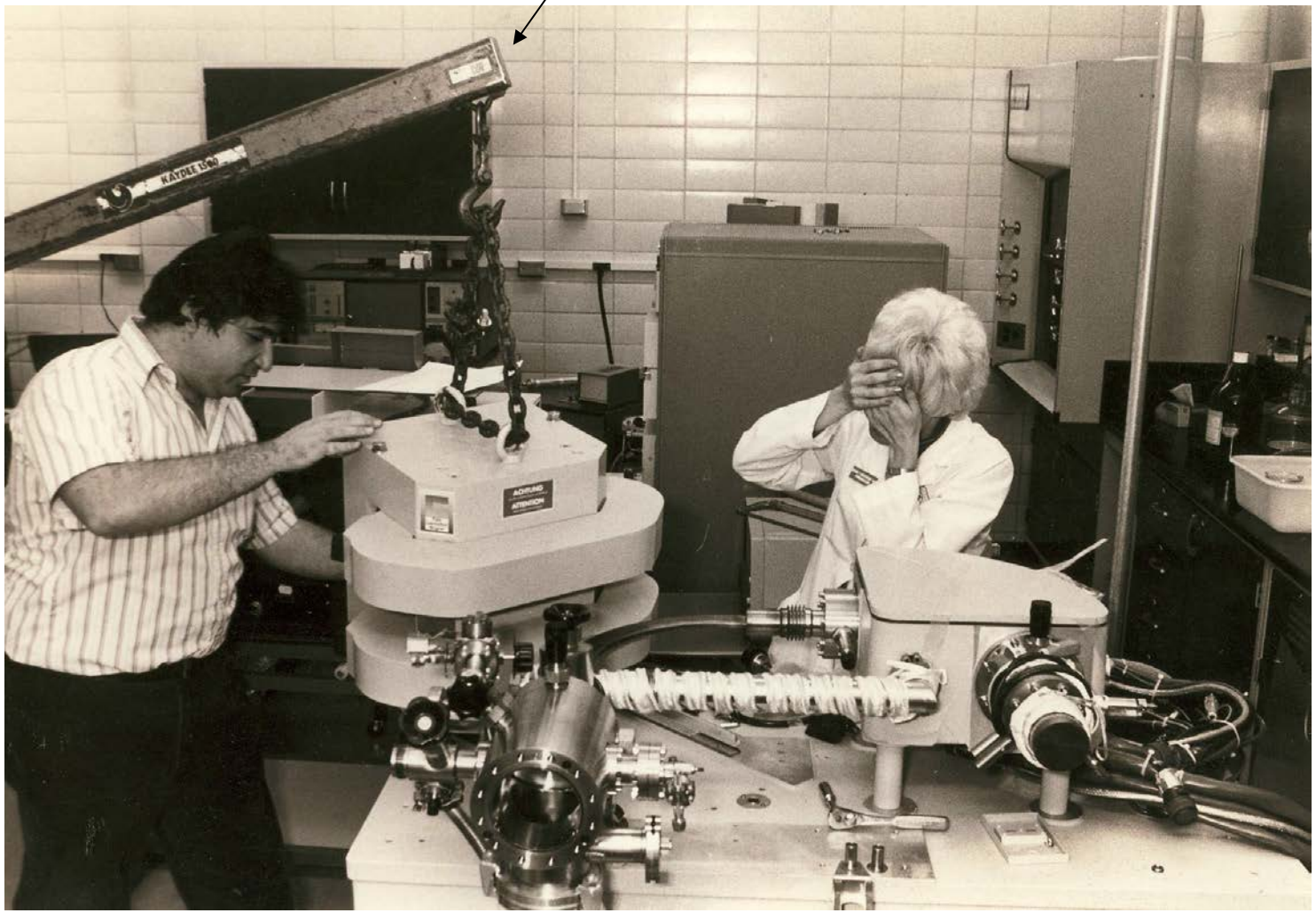

Finnigan-MAT 212 (double focusing magnetic sector mass spectrometer)

UTHSCSA - 1982


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CAN
DO
it
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Office Hours

- Wednesday — 2 – 3 pm EST
- Friday — 2:30 – 3:30 pm EST

Program Contacts and Emails

Monika Aggarwal, PhD, monika.Aggarwal@nih.gov

Yong Chen, PhD, yong.chen@nih.gov

Jeffery Spector, PhD, jeffery.spector@nih.gov