Peer Review Under the Microscope: From Best Practices to Current Challenges

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AHA Scientific Statement

Peer Review Practices for Evaluating Biomedical Research Grants

A Scientific Statement From the American Heart Association

Lucy Liaw, PhD, FAHA, Chair; Jane E. Freedman, MD, FAHA; Lance B. Becker, MD, FAHA; Nehal N. Mehta, MD, FAHA; Laura Liscum, PhD; on behalf of the Peer Review Subcommittee of the American Heart Association National Research Committee; Council on Cardiovascular and Stroke Nursing; Council on Cardiovascular Radiology and Intervention; Council on Cardiovascular Surgery and Anesthesia; Council on Clinical Cardiology; Council on Functional Genomics and Translational Biology; Council on Hypertension; Council on Quality of Care and Outcomes Research; and Stroke Council

Circ Res. 2017 Aug 4;121(4):e9-e19.

Robert Wood Johnson Foundation

American
Heart
Association®

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LEUKEMIA &
LYMPHOMA
SOCIETY®
fighting blood cancers

American Heart Association®

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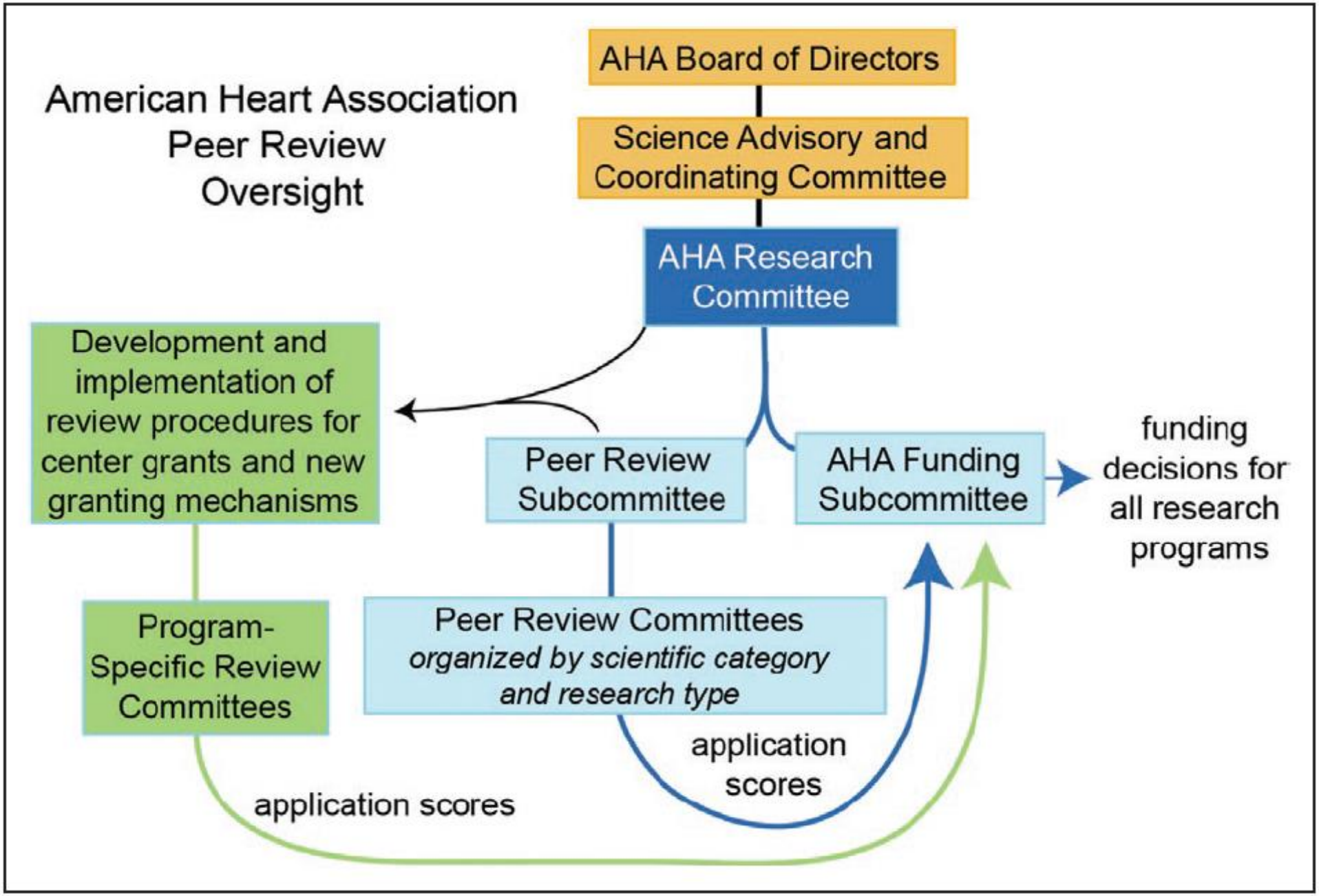
- The Review Panel
- Panel Discussion of Application
- The Grant Itself
- Proposals for Improvement
- Case Study of American Heart Association and other similar foundation practices

Circ Res. 2017 Aug 4;121(4):e9-e19.

Peer Review Subcommittee of the National Research Committee


American Heart Association
Peer Review
Oversight
AHA Board of Directors
Science Advisory and Coordinating Committee
AHA Research Committee
Development and implementation of review procedures for center grants and new granting mechanisms
Peer Review Subcommittee
AHA Funding Subcommittee
funding decisions for all research programs
Program-Specific Review Committees
Peer Review Committees
organized by scientific category and research type
application scores
application scores

Cardiorenal - Clinical

Cardiorenal - Clinical

Cardiorenal -BSci

Cardiorenal - BSci 1
Cardiorenal - BSci 2

Peer Review Committees
organized by scientific category and research type

Cell Transport BSc

Cell Transport BSc 1
Cell Transport BSc 2

Collaborative Sciences Award

Collaborative Sciences Award
Collaborative Sciences Award Letter of Intent

Competitive Catalyst Renewal Grant

Competitive Catalyst Renewal Grant

Genomics and Translational Biology Epidemiology / Observational-Epidemiology - Clinical

Genomics and Translational Biology Epidemiology / Observational-Epidemiology - Clinical

Genomics and Translational Biology Epidemiology / Observational-Epidemiology - Population

Genomics and Translational Biology Epidemiology / Observational-Epidemiology - Population 1

https://professional.heart.org/professional/ResearchPrograms/PeerReview/UCM_423732_Peer-Review-Committees.jsp

Program-Specific Review Committees

Merit Award

Merit Award

Merit Award Letter of Intent

Collaborative Sciences Award

Collaborative Sciences Award

Collaborative Sciences Award Letter of Intent

Strategically Focused Research Network

Strategically Focused Research Network

Strategically Focused Research Network - Childrens

The Review Panel

"Is it just me or are these review panels getting a lot tougher?"

Diversity

- Gender
- Faculty level
- Geographical

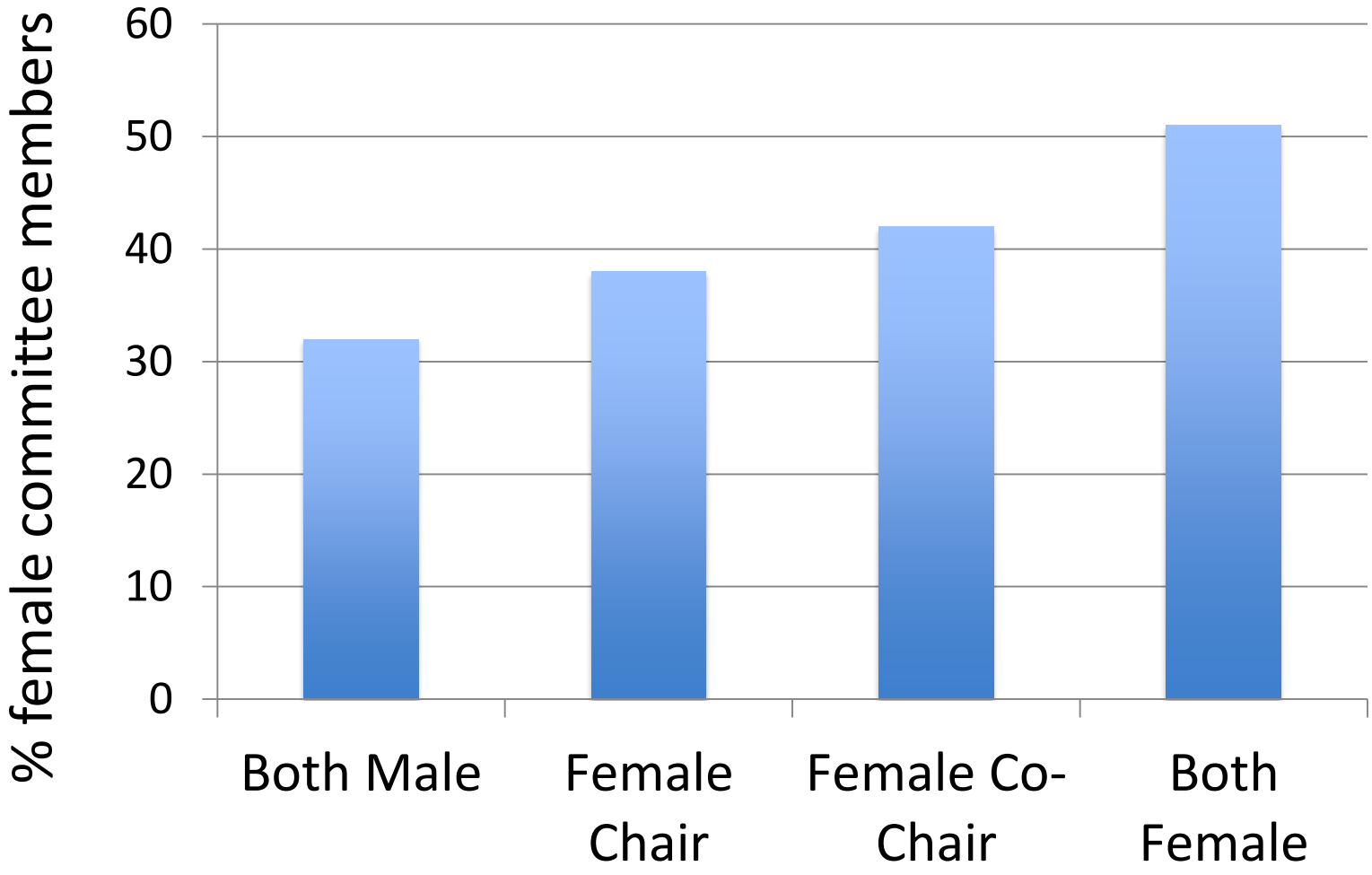
Diversity
- Gender
- Faculty level
- Geographical

Goals:

35% female reviewers across committees
10% underrepresented minorities across committees
Equal distribution among faculty levels

Spring 2017 reviewer data

926 reviewers in 60 review committees



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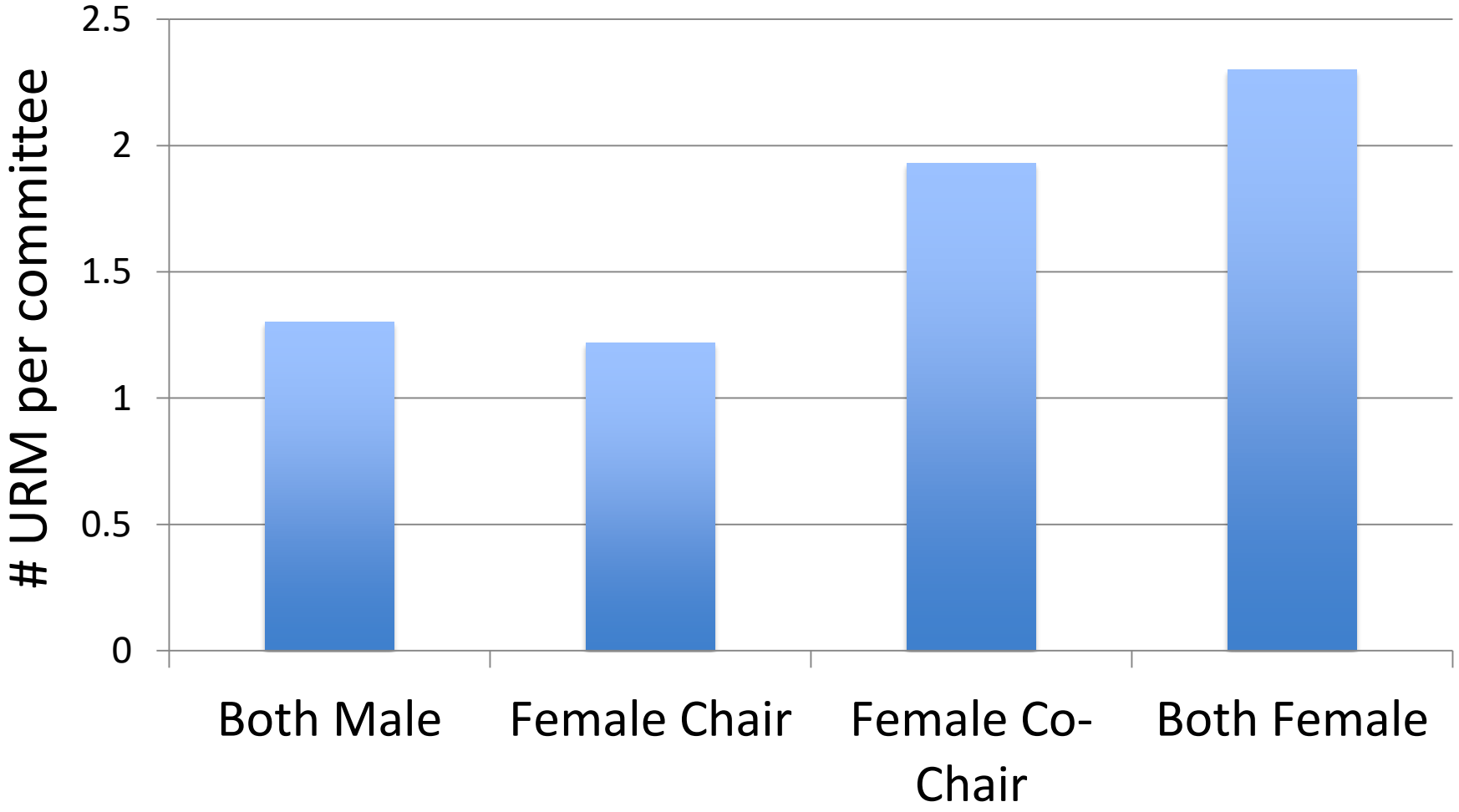

Spring 2017 reviewer data

926 reviewers in 60 review committees

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No apparent association of distribution of faculty level , e.g. assistant, associate, or full professor level with gender of committee leadership.

Diversity

- Gender
- Faculty level
- Geographical

The Review Panel → Lay Reviewer

Lay Stakeholder in Science Initiative

Lay person description in grant applications

2013 Pilot program to place lay reviewers in selected committees

2015- Identified 7 key characteristics of lay committee members

Lay Stakeholder in Science Initiative

1. Connection with the topic
2. Level of interest and experience evaluating research applications or science materials (based on professional experience)
3. Level of education, relates to critical thinking and writen and oral competencies
4. AHA volunteer experience, preferably at board or leadership level
5. Knowledge of the AHA, commitment to its mission
6. Familiarity with heart disease and stroke
7. Basic knowledge of scientific method and peer review

Lay Stakeholder in Science Initiative

- Strategic Program Review Committees
- The Institute for Precision Medicine Review Committees
- Guidelines for Writing Groups
- Research Committees and Subcommittees

Since 2016- 2017	
1. Lay Stakeholders **interviewed** for potential placement on science and research committees is up from last year.	↑ 112%
2. Lay Stakeholders are continually being **trained** to participate in science and research activities. Staff is testing new platforms to deliver training (i.e. Adobe Connect).	↑ 19%
3. The projected number of Lay Stakeholders who will have **participated** in science and research activities before the end of the fiscal year is greater than projected. Recruitment is on-going, and many are ready to serve on peer review, writing groups and other committees.	↑ 13%

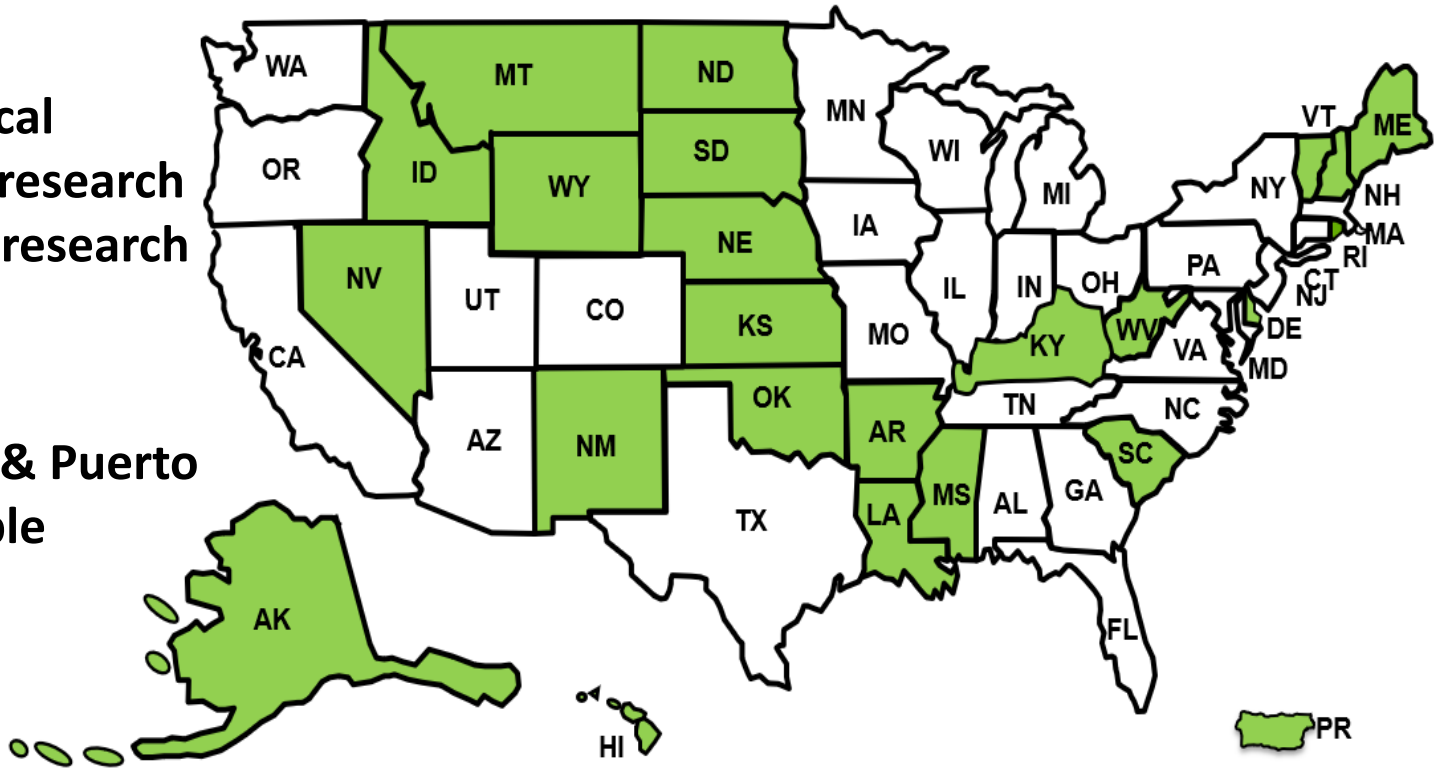
Significance and potential impact on the AHA mission

Institutional Development Award (IDeA) Program

Congressional authorization
1993 NIH Revitalization Act

Enhance geographical distribution of NIH research funds and increase research capacity

Currently 23 states & Puerto Rico are IDeA-eligible



NIH National Institute of General Medical Sciences

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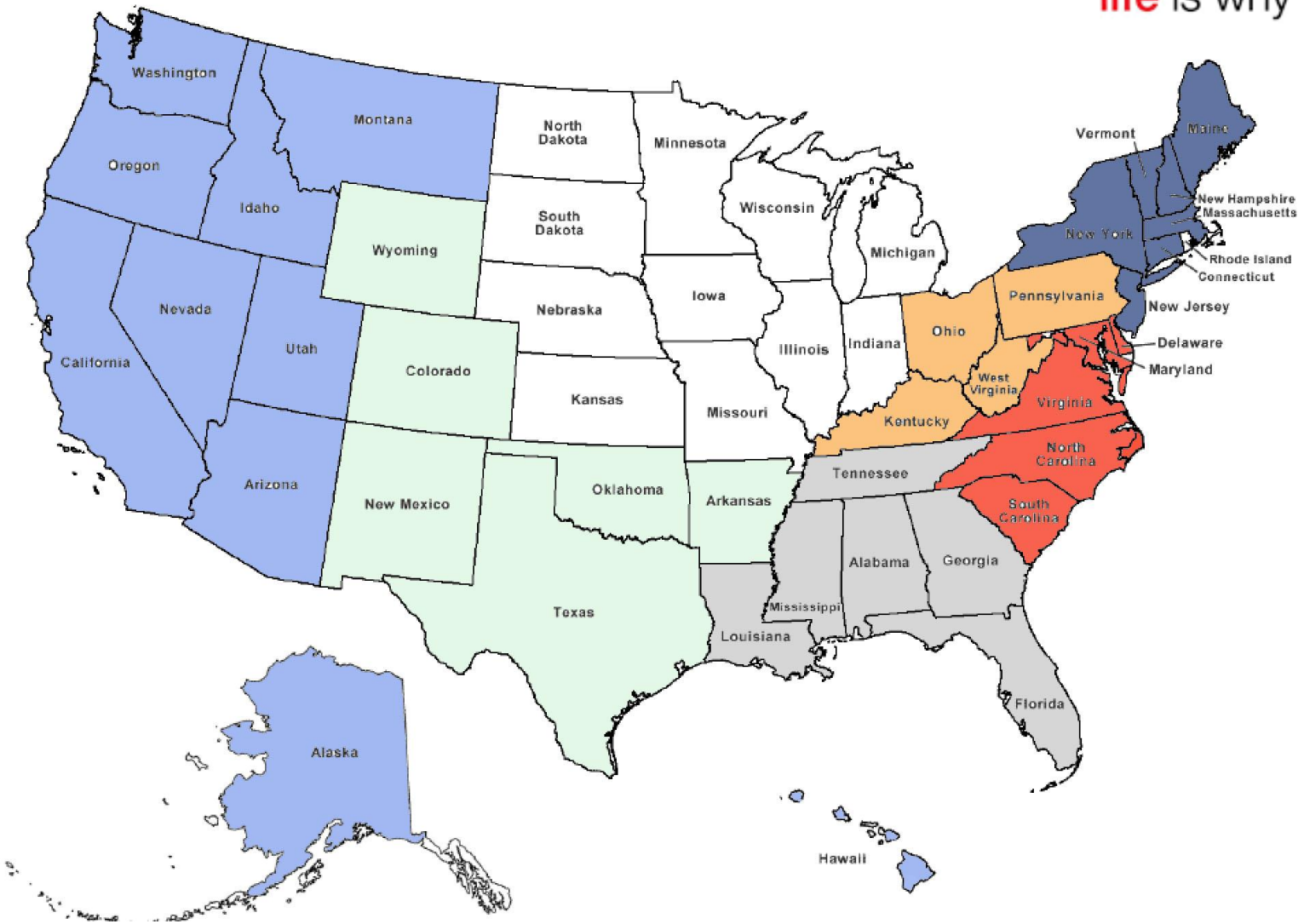

Spring 2011 Reviewers by Affiliate	Total #	Total %	Spring 2011 Apps by Affiliate	Total #	Total %
Founders	192	17%	Founders	491	14%
Great Rivers	182	16%	Great Rivers	393	11%
Greater Southeast	213	19%	Greater Southeast	466	14%
MidAtlantic	100	9%	MidAtlantic	385	11%
Midwest	183	16%	Midwest	478	14%
SouthWest	133	12%	South Central	297	9%
Western States	132	12%	Pacific Mtn	153	4%
N/A	0		Western States	439	14%
Total	1135		Total		3439

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1. Organizations that fund research are in a strong position to assess and seek improvement in effectiveness and value of the peer review process.
2. Evidence-based evaluation of peer review needs more attention. Performing randomized controlled trials on innovative aspects of peer review are warranted.
3. Formal sharing of peer review practices between organizations should be encouraging.
4. Peer review practices for special purposes should undergo evaluation and testing.
5. Mathematical and technical aspects of scoring grants needs evaluation and scrutiny (weighting, normalization, statistical analysis, variation)