



Center for
Scientific Review

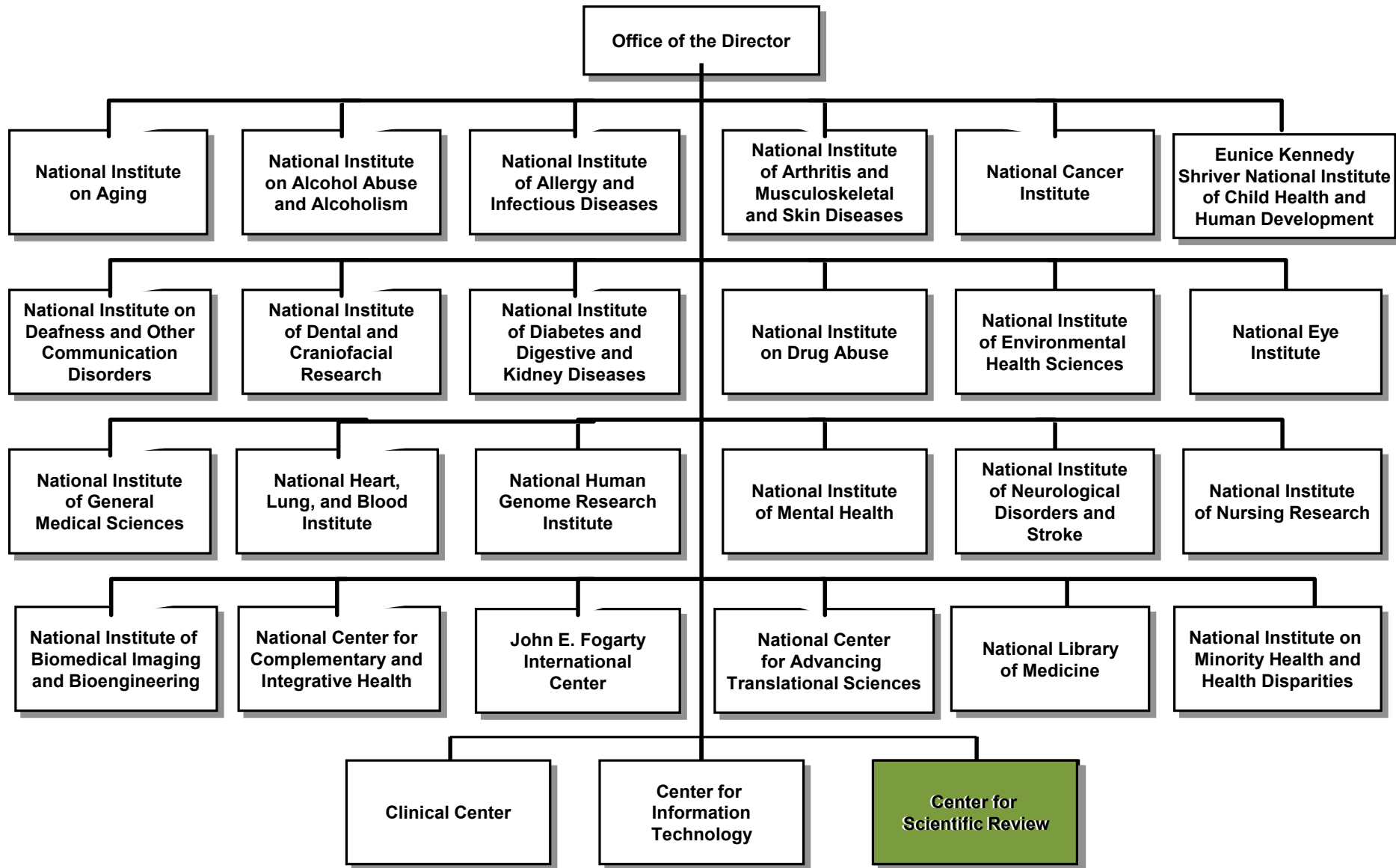
Center for Scientific Review (CSR) Update

NIH Tribal Advisory Committee

March 21, 2019

Noni Byrnes, Ph.D.
Director, CSR

CSR: One of the 27 NIH Institutes and Centers





Center for
Scientific Review

MISSION: To ensure that NIH grant applications receive fair, independent, expert, and timely reviews – free from inappropriate influences – so NIH can fund the most promising research.

What CSR Does



- **Serves as central receipt point for grant applications** submitted to NIH and some other DHHS agencies
- **Assigns applications to CSR review groups/study sections** or Institute scientific review groups
- **Assigns applications to NIH Institute(s)/Center(s)** as potential funding component(s)
- **Conducts initial scientific merit review of most** research applications submitted to the NIH in about 240 Study Sections and Special Emphasis Panels

What CSR Does Not Do



- Identify scientific and programmatic priorities for the NIH-funded research
- Develop funding opportunities or initiatives to support research or researchers
- Advise investigators about the scientific content of their application
- Make awards to institutions or individual researchers

These are handled by the 24 NIH Funding Institutes/Centers or by the NIH Office of the Director

NIH's Two-Stage Peer Review System



The Two-Stage Peer Review Process



The Scientific Review Officer

Designated Federal Official In-Charge of the Peer Review Process



- **Selects and recruits reviewers**
- **Conducts training for reviewers on NIH review policy, preparing critiques, scoring etc.**
- **Manages conflicts-of-interest**
- **Conducts review meeting**
- **Prepares summary statement to report outcome of review**

Where Do SROs Find Reviewers?

- Successful applicants
- Recommendations from reviewers and NIH staff
- NIH RePORTER
- NIH PI and reviewer databases
- Scientific publications and presentations at conferences
- Scientific societies
- Volunteers

SROs Seek Reviewers Who Are Recognized Authorities in their Field



- Doctoral degree or equivalent
- Demonstrated scientific expertise/research support
- Mature judgment and breadth of perspective
- Work effectively in a group context
- Impartiality
- Inclusion of women and minority scientists
- Geographic distribution

Review Criteria

5 Scored Review Criteria

- Significance
- Investigator(s)
- Innovation
- Approach
- Environment

Each scored from 1-9

Overall Impact Score

Assessment of the likelihood for the project to exert a sustained, powerful influence on the research field(s) involved.

Scored from 1-9

The Peer Review Process

Before the Meeting:

- Each application is assigned to 3 or more reviewers 4-6 weeks before the meeting
- Each of the 3 assigned reviewers independently assess each application by providing:
 - A preliminary Overall Impact score
 - Preliminary scores for each of the 5 Core Review Criteria
 - A preliminary written critique

At the Meeting:

- The top (usually half) of the applications are discussed and given Final Overall Impact scores (by all reviewers)

After the Meeting:

- The discussed applications receive the summary statement with the composite Overall Impact Score, the 3 individual reviewer critiques, criteria scores from each reviewer, as well as the SRO's Resume and Summary of Discussion
- The not-discussed lower half applications receive the summary statement with the 3 individual reviewer critiques and criteria scores from each reviewer

Scoring Overall Impact

Overall Impact:

The likelihood for a project to exert a sustained, powerful influence on research field(s) involved

Overall Impact	High			Medium			Low		
Score	1	2	3	4	5	6	7	8	9

e.g. Applications are addressing a problem of high importance/interest in the field. May have some or no technical weaknesses.

e.g. Applications may be addressing a problem of high importance in the field, but weaknesses in the criteria bring down the overall impact to medium.

e.g. Applications may be addressing a problem of moderate importance in the field, with some or no technical weaknesses

e.g. Applications may be addressing a problem of moderate/high importance in the field, but weaknesses in the criteria bring down the overall impact to low.

e.g. Applications may be addressing a problem of low or no importance in the field, with some or no technical weaknesses.

Evaluating Overall Impact:

Consider the 5 criteria: significance, investigator, innovation, approach, environment (**weighted based on reviewer's judgment**) and other score influences, e.g. human subjects

Significance and Overall Impact



Significance (If successful, what will we learn?):

- Does the project address an important problem or critical barrier to progress in the field?
- If the aims of the project are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved?
- How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that **drive this field**?



Overall Impact:

Reviewers will provide an overall impact score to reflect their assessment of the likelihood for the project to exert a sustained, powerful influence on the **research field(s) involved**, in consideration of the following five core review criteria, and additional review criteria (as applicable for the project proposed).

NIH Review Policy, Criteria and Training Allow Reviewers the Flexibility to Exercise Scientific Judgment

- **NIH policy, and CSR Reviewer Training, does not define the “field” for reviewers**
- **NIH policy, and CSR Reviewer Training, does not tell reviewers how to weight the 5 review criteria (Significance, Investigators, Innovation, Approach, Environment) in determination of the Overall Impact score**
 - E.g. Application to sustain/maintain a database – not innovative, but very high Overall Impact for the community of investigators who rely on it for their research
- **NIH policy, and CSR Reviewer Training, does not use the word “broad” when defining Significance or Overall Impact**
 - E.g. Applications to study a rare disease – not broad population, but potentially very high Overall Impact for the small community of those who have the disease

Scope of Review Operations in CSR



77%
NIH Applications
(62,000 of 81,000)

>200

Chartered or Recurring
Study Sections



>18,000
Distinct Reviewers



>1,600
Annual Review Meetings



245
Scientific Review Officers

Addressing Error in the Review Process

If identified before the review (usually by the SRO or by a different reviewer)

CSR re-oriens the reviewer, obtains edited preliminary critique

If identified after the review (usually by the SRO or the Program Officer)

Depending on the nature and scope of the error, CSR will either re-review the application, or release the summary statement

If identified by an appeal from the investigator and CSR agrees with the investigator's appeal

CSR will re-review the application in the same council round

If identified by an appeal from the investigator and CSR does not agree with the investigator's appeal

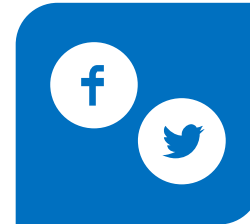
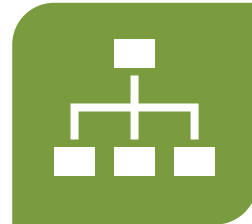
The SRO will provide a written response for the Institute Advisory Council considering the appeal

The Advisory Council at the 24 Institutes/Centers and the OD consider appeals of the first level of review

The AC can either deny the appeal, or recommend that CSR re-review the application

Expanding CSR's Outreach and Communications Efforts

New Office of Communications & Outreach (proposed)



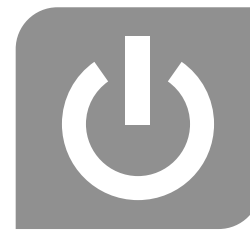
New blog, webinars, social media feeds

Twitter: center for scientific review

Facebook: CSRpeerreview

Blog: <https://www.csr.nih.gov/reviewmatters>

Significant enhancement of methods and venues to reach underserved communities



Building new system to handle vetted reviewer lists from scientific societies

New, user-friendly website with enhanced study section guidelines and specific explanations of scientific overlap between study sections



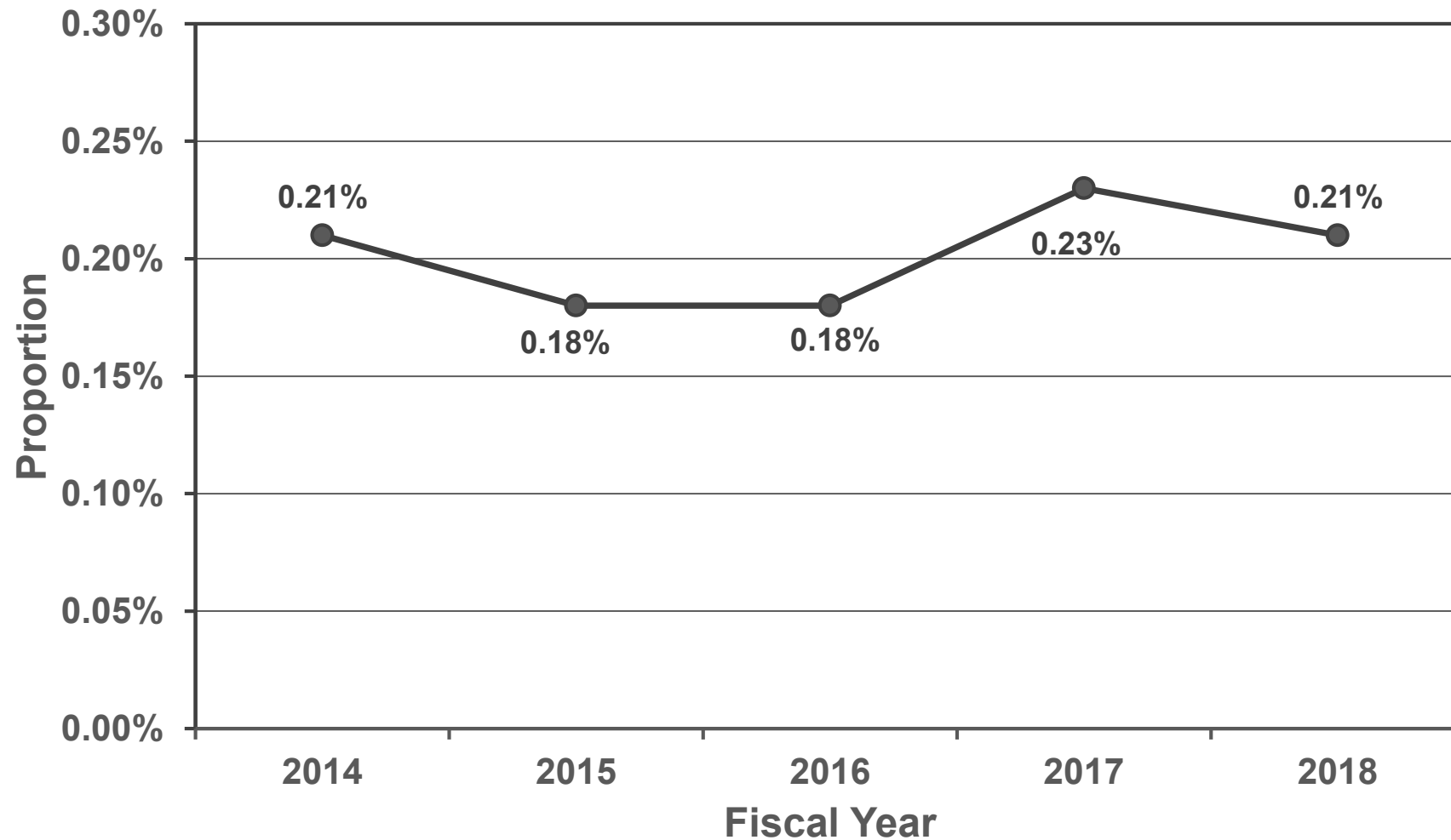
This Is CSR



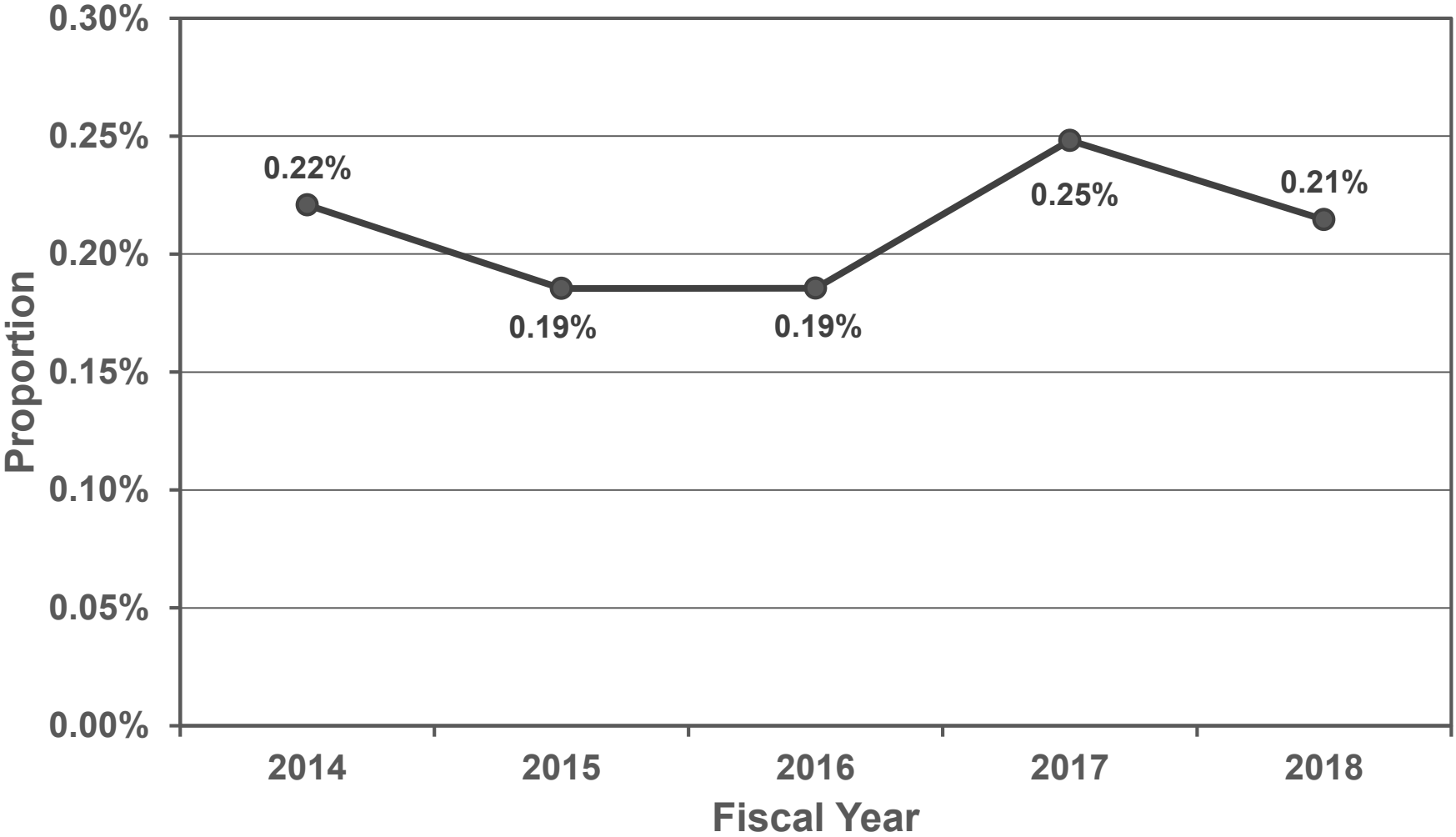
We want to hear from you:
feedback@csr.nih.gov

Appendix

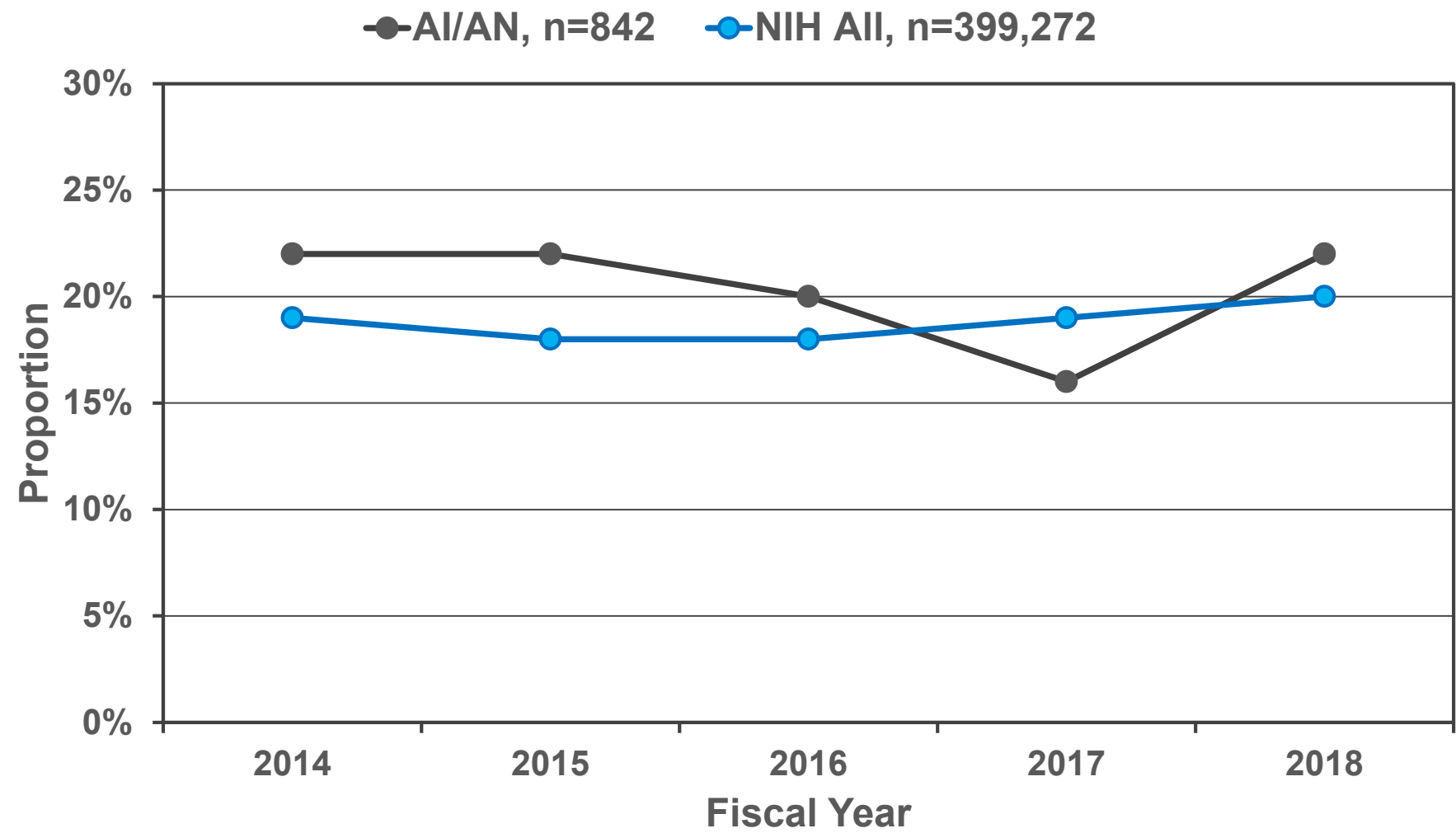
Proportion of AI/AN PIs at NIH 2014-2018



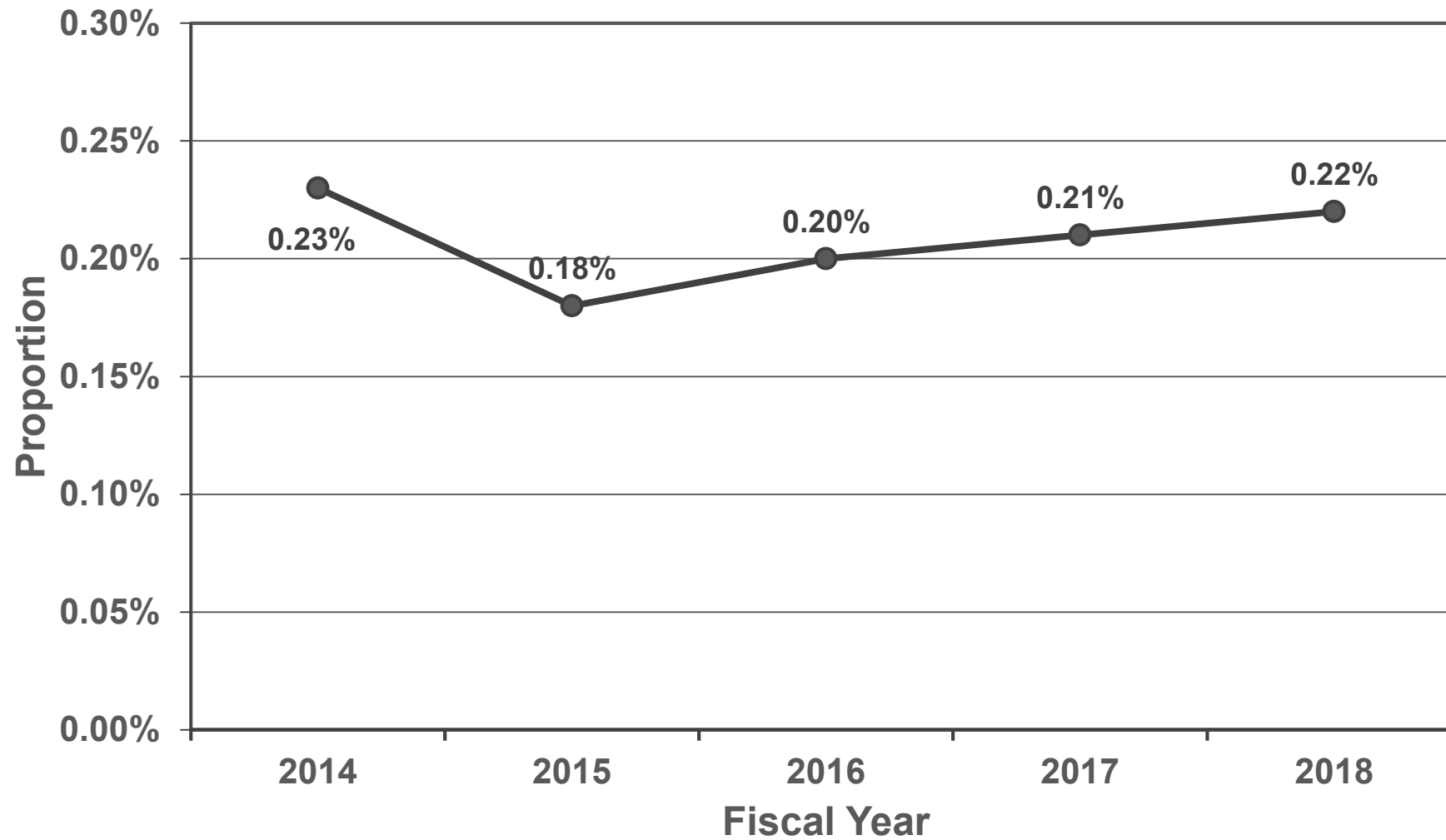
Proportion of AI/AN Applications at NIH 2014-2018



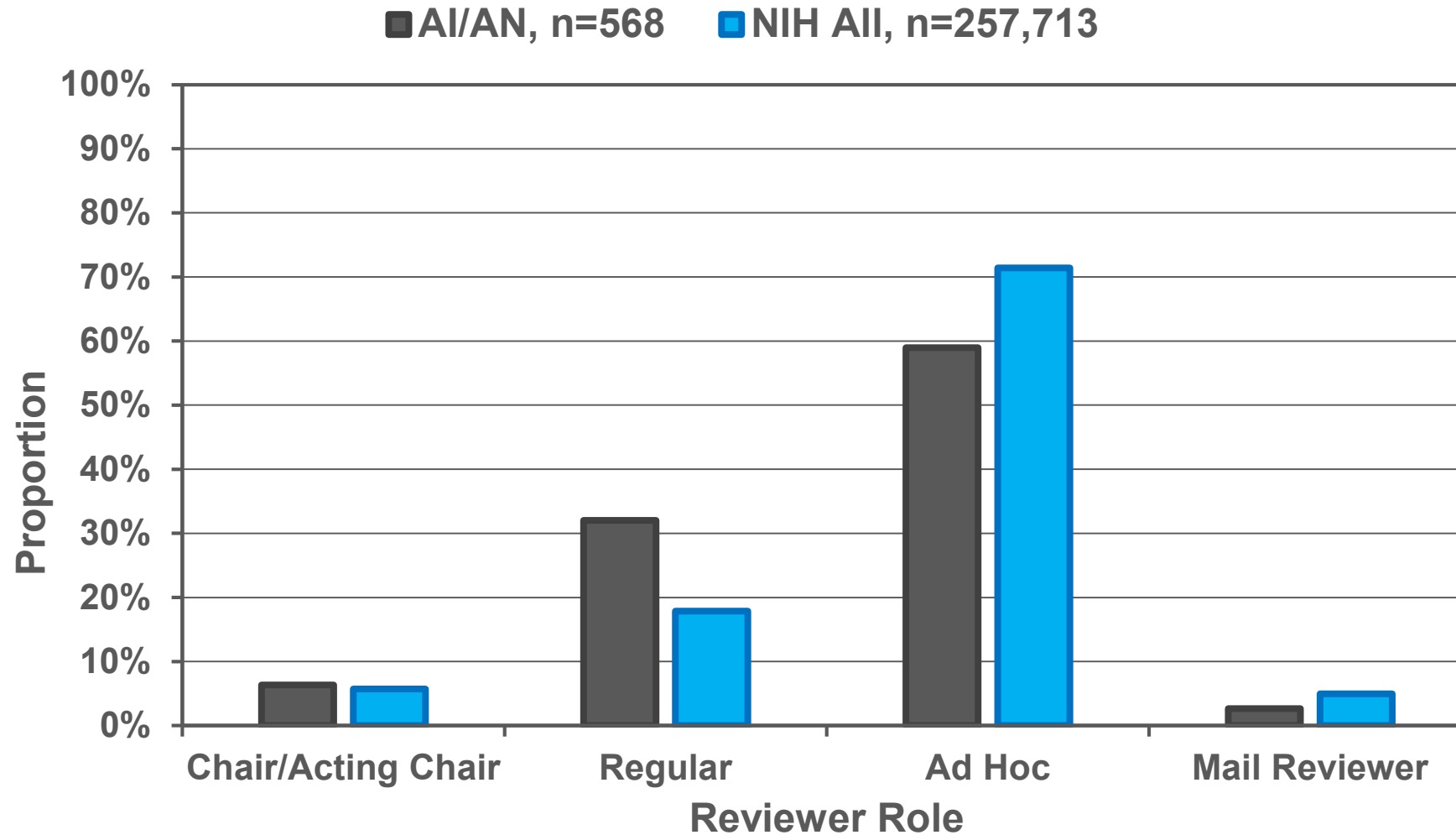
Success Rates 2014-2018



Proportion of AI/AN Reviewers at NIH 2014-2018



Reviewer Roles 2014-2018



AI/AN Reviewers 2014-2018

