

# Quality Control in Science: **The Peer Review Process**

Editors of newspapers, books & magazines publish:

- what they think people will buy
- what they think people want to read
- what they think people ought to know
- what reflects their own belief systems

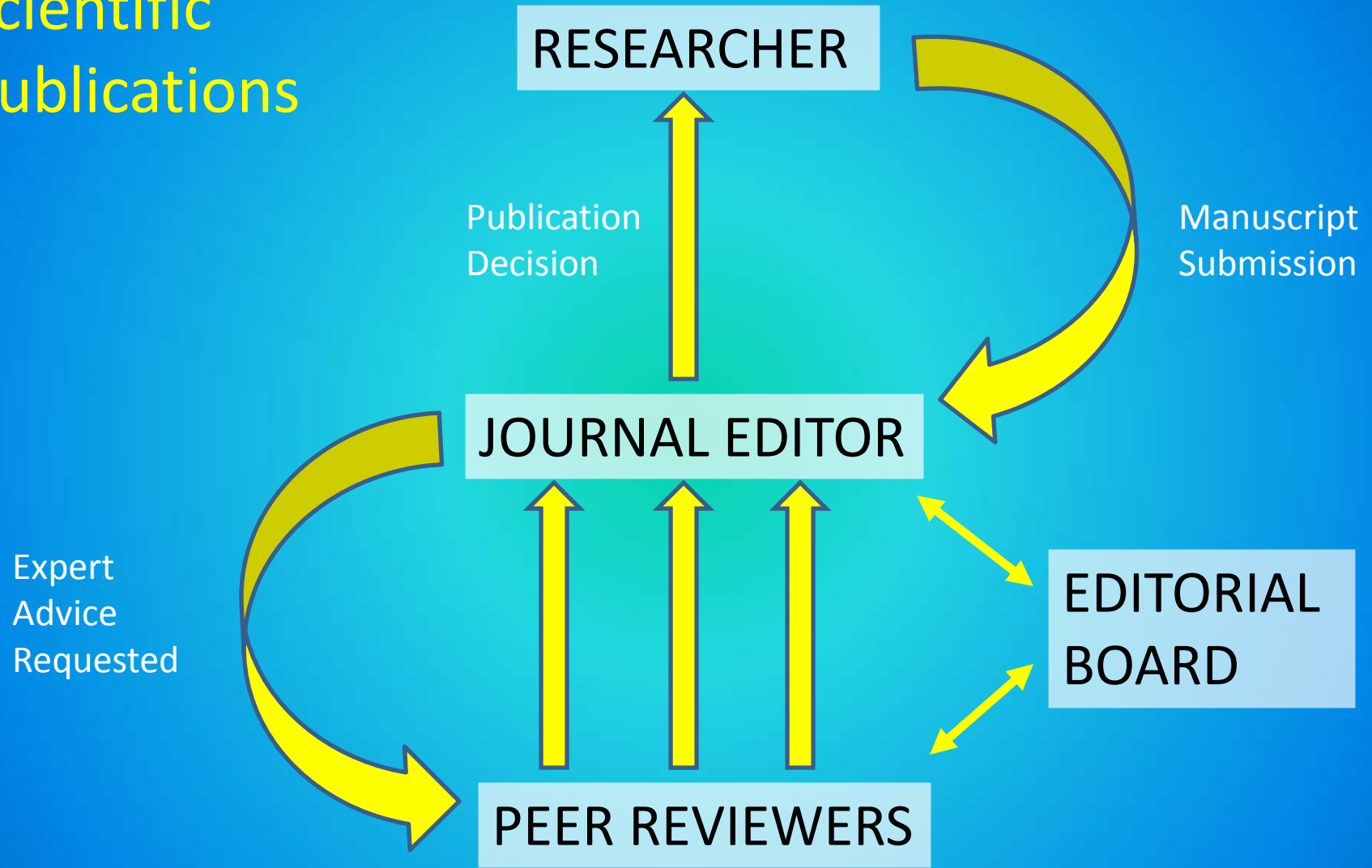
# A Peer is an expert in the same field who knows and understands:

- the context of the work (including the existing literature)
- the accepted methods and approaches (including experimental design, instrumentation, and statistics)
- the scientific method (ability to determine if the data support the conclusions)

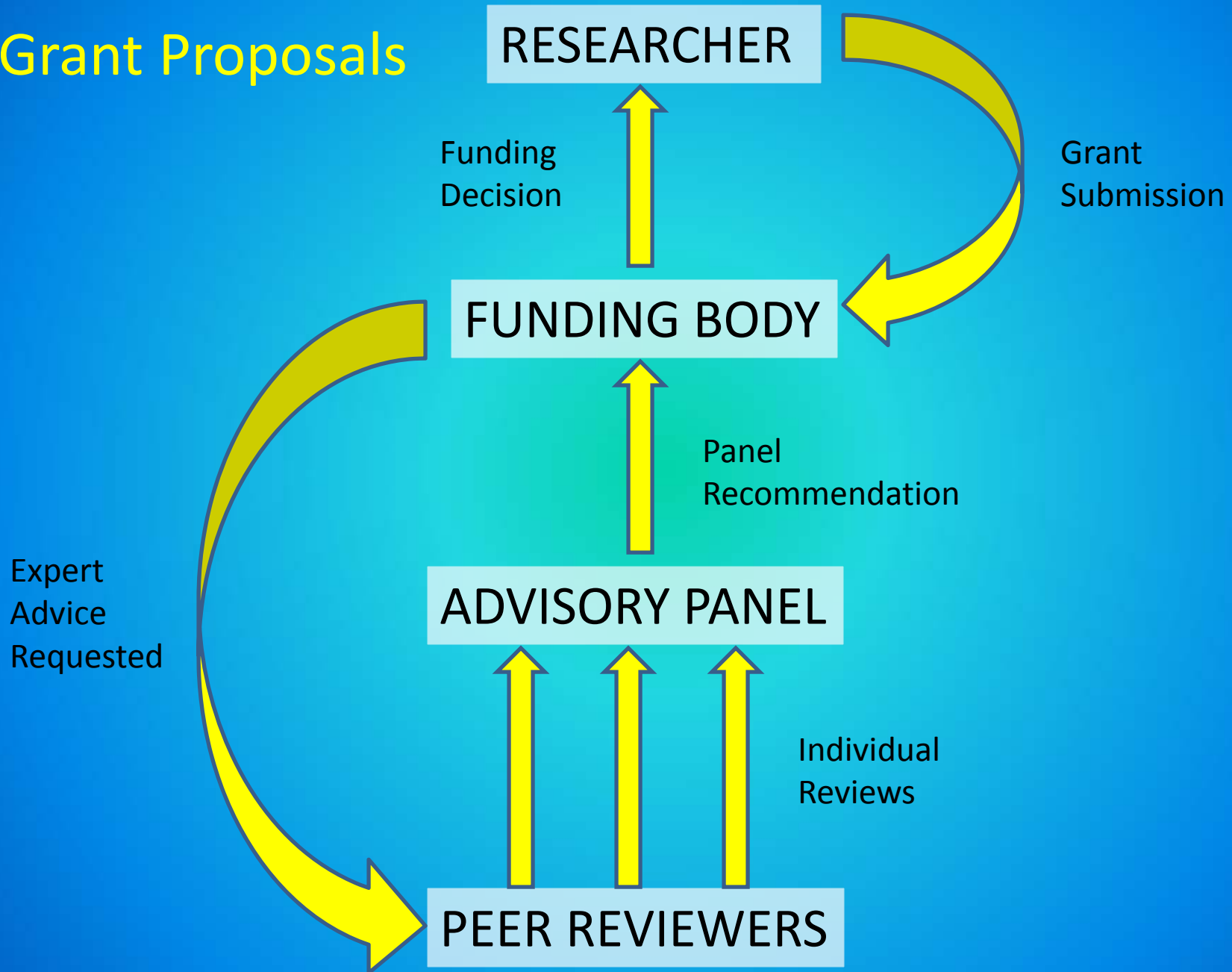
# A Peer is Not...

- A crony, relative or close friend
- A collaborator
- A former student or professor
- An enemy
- Someone with a financial interest
- An expert from another field
- Paid for advice

# Peer Review of Scientific Publications

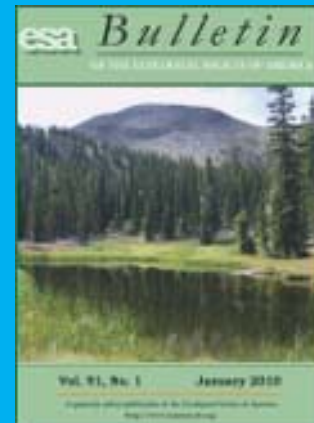
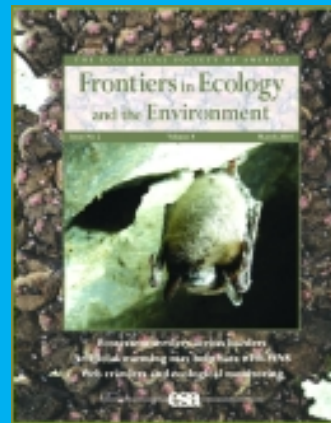


# Peer Review of Grant Proposals



*“We place a great deal of trust in you. We trust you to be prompt, fair, respectful of the rights of the authors, respectful of our obligations to the readership, and to evaluate the manuscript carefully and in depth. At the same time, on behalf of the ESA membership, we are very grateful for the time and effort you invest in the review process.”*

## Ecological Society of America



## ***Reviewers are asked to address the following:***

- Importance and interest to the journal's readers
- Scientific soundness
- Originality
- Degree to which conclusions are supported
- Organization and clarity
- Cohesiveness of argument
- Length relative to information content
- Conciseness and writing style



## Example of Advice to Reviewers:

*“If the research reported in this paper is flawed, criticize the science, not the scientist. Harsh words in a review will cause the reader to doubt your objectivity; as a result, your criticisms will be rejected, even if they are correct! Comments directed to the author should convince the author that (1) you have read the entire paper carefully, (2) your criticisms are objective and correct, are not merely differences of opinion, and are intended to help the author improve his or her paper, and (3) you are qualified to provide an expert opinion about the research reported in this paper. If you fail to win the author's respect and appreciation, much of your effort will have been wasted.”*

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# Criticisms of the Peer Review Process:

1. May fail to recognize truly novel ideas or concepts.
2. May accept existing dogmas with inadequate rigor or suppress results that are contrary to accepted notions.
3. Susceptible to human failings (individual bias, jealousy, dishonesty, honest errors, reviewer inadequacies, etc.
4. Inefficient at detecting fraud .
5. Process is slow and deliberate.

# Reviewing information for management needs

Question: What information don't we trust, and why not?

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- Published work in the peer-reviewed literature?
- Data produced by researchers at state and federal agencies (e.g. ODFW, NMFS, watershed councils, National Estuaries)?
- Data produced , commissioned or sponsored by agenda-driven organizations (e.g. NGO's, fisherman organizations, resource commissions, community teams, etc.)?
- Studies sponsored by federal agencies (e.g. NSF, NOAA)?

