

Review Unto Others As You Would Have Others Review Unto You

Kristina Edström
*Department of Learning in
Engineering Sciences*
*KTH Royal Institute of
Technology*
Stockholm, Sweden
kristina@kth.se

Lisa Benson
*Department of Engineering
& Science Education*
Clemson University
Clemson, USA
lbenson@clemson.edu

John Mitchell
*Electronic and Electrical
Engineering*
University College London
London, UK
j.mitchell@ucl.ac.uk

Jonte Bernhard
*Department of Science and
Technology*
Linköping University
Linköping, Sweden
jonte.bernhard@liu.se

Maartje van den Bogaard
*Department of Science
Education and
Communication*
*Delft University of
Technology*
Delft, The Netherlands
m.e.d.vandenbogaard@tudelft.nl

Cynthia Finelli
*Department of Electrical
Engineering and Computer
Science*
University of Michigan
Ann Arbor, USA
cfinelli@umich.edu

Nadia Kellam
*Ira A. Fulton Schools of
Engineering*
Arizona State University
Tempe, USA
nkellam@asu.edu

Mark Lee
School of Education
Charles Sturt University
Australia
malee@csu.edu.au

Susan Lord
*Shiley-Marcos School of
Engineering*
University of San Diego
San Diego, USA
slord@sandiego.edu

Diane Rover
*Department of Electrical
and Computer Engineering*
Iowa State University
City, USA
drover@iastate.edu

Hamadou Saliah-Hassane
*Department of Electrical
Technology*
Université TELUQ
Montreal, Canada
hamadou.saliah-hassane@teluq.ca

Sarah Zappe
College of Engineering
Penn State University
City, USA
ser163@psu.edu

Abstract—This workshop invites discussion about peer review of journal manuscripts in the field of engineering education. The aim is to generate advice for reviewers on how to make effective reviews, which can help editors make appropriate decisions and support authors in improving their manuscripts. The workshop is facilitated by editors of three leading engineering education journals.

Keywords—peer review, engineering education research, scientific journals, editorial process, publication

I. GOALS AND INTENDED PARTICIPANTS

This session invites participants who want to consider best practices and jointly generate practical advice for reviewing manuscripts in the field of engineering education research.

We welcome experienced reviewers as well as those who are interested in taking on review assignments for the first time. The session is highly recommended for doctoral students in engineering education research.

The goals are that participants will be able to:

- Explain different quality criteria for scholarship in engineering education, and how they can be applied in peer review
- Highlight particular aspects of a manuscript that a reviewer should consider
- Discuss how reviewers can support editors in making fair decisions, support authors in improving their manuscripts, and how they can spend their own time wisely when making reviews

II. WHY YOU SHOULD ATTEND

Improving one's skills to review effectively is a wise investment. While invitations from editors never seem to arrive when the timing is quite right, there are also rewards for the reviewer. Regular reviewing is a way to stay in tune with the field and acquire insights that can improve one's own writing. It is also considered to be a merit for promotion and tenure, and part of one's professional practice. Understanding the editorial process from the inside is also a great help for taking one's own manuscript through the stages of the review process, from submission to successful publication.

The session is facilitated by the editors of three leading journals in this field:

- European Journal of Engineering Education (SEFI)
- IEEE Transactions on Education (IEEE)
- Journal of Engineering Education (ASEE)

III. INTERACTION

After brief introductions and an overview of the workshop goals, participants break into groups. The task is to harvest collected wisdom from their own experiences of the review process, as reviewers and authors of manuscripts. The groups capture their advice on posters with "do's and don'ts". Posters are then viewed and explored in a plenary discussion. The editors will synthesize the group discussion and identify particularly useful pieces of advice.

IV. BACKGROUND – THE PEER REVIEW PROCESS

When a manuscript is submitted to a journal, the editorial team checks whether the topic is within the aims and scope of the journal, and decide whether the manuscript should proceed for peer review. They invite reviewers with relevant expertise, usually two to four scholars, who volunteer their time to go through the manuscript carefully. The review is double-blind, meaning that reviewers receive an anonymous version so as not to be influenced by the identity of the authors, and neither will the authors know who reviewed their manuscript.

The first function of a review is to help editors make an appropriate decision about the manuscript. Each reviewer makes a recommendation, e.g. Accept, Minor revision, Major Revision or Reject. The reviewers' recommendations can be quite disparate, so when making a decision the editors must consider them together with their own impressions from reading the manuscript.

The second function of reviews is to support authors in improving the manuscript. Reviewers provide comments to explain their assessment of the manuscript and give thorough, constructive advice for how it could be developed. If suggestions are disparate, authors must decide, sometimes with guidance from editors, how to navigate contradictory advice as they revise their manuscript.

The aim of the peer review process is to identify which manuscripts most deserve to be prioritised over other good manuscripts, and then also to improve them as much as possible before they are published. This process furthers the quality of the journal papers, and by extension the whole research field. It is only thanks to the reviewers, and their anonymous efforts, that it is possible to maintain a well-respected research endeavour.

V. SESSION AGENDA

A. *Introductions*

- Participants, session leaders and session overview. [5 minutes]
- The journals: aims and scope, review criteria and review process. [15 minutes]

B. *Breakout Group Activity*

- In groups of four, make a poster (Google Slide): "Advice for reviewers". [30 minutes]
- Vernissage (view other groups' posters).

C. *Back into Plenary*

- Discussion of results from breakout group activity. Editors' synthesis and picks. Conclusions. [30 minutes]

During the session, participants can sign up (Google Form) for receiving documentation from session in pdf format, e.g. facilitator notes and posters. They can also sign up to volunteer as reviewers for the journals.