5 May 2018

Memorandum for: Secretary, Acoustical Society of America

Subject: Technical Specialty Group in Computational Acoustics

1. This is an application for the formation of a Technical Specialty Group (TSG) in Computational Acoustics in accordance with the general rules of the Society. A condition for the formation of a TSG is a petition with 50 names, at least 25 of whom are ASA members, who pledge that they are willing to participate in the work of the TSG. 54 such pledges have been obtained and are provided as an attachment to this petition. Hard copies of the pledge emails will be provided to the ASA Secretary.

2. Computational Acoustics is a mature yet still rapidly growing discipline of acoustics, which attracts a broad range of researchers across the spectrum of the current acoustical TCs. A Computational Acoustics TSG would provide a forum for these researchers to exchange research results and to discuss the most recent advances in this area. Currently, computational acoustics topics are typically discussed independently within the TCs; this lack of interaction is a detriment to progress in the field, since many new techniques have applications to multiple specialties. Given the increasingly computational nature of acoustics and the sciences in general, and the interest of many members of the Society in recent developments in fields such as distributed computing, uncertainty modeling, machine learning, and analysis of large datasets, it is important that the Society does not cede these vital research areas to other organizations. Note that many of the petition's signatories are relatively young ASA members and/or hail from countries other than the U.S. and Canada. A Computational Acoustics TSG would thus help the ASA to serve the professional interests of, and to retain, many younger researchers, and to expand its reach to other countries.

3. The technical scope envisioned for the TSG includes the following topics:

    - Numerical methods for acoustic wave propagation, scattering, structural interactions, and other acoustically related phenomena.
    - Optimization, parallelization, and acceleration techniques.
    - Validation, benchmarking, and uncertainty analysis.
    - Machine learning and other computational approaches for analysis of large datasets.
    - Practical utilization of acoustical computations for engineering and noise control, and integration into other simulations.

4. Computationally focused sessions are already occurring at most ASA meetings. For example, at the current (Minneapolis) meeting there will be sessions on "Novel Methods in Computational Acoustics," organized by K. Wilson and A Hanford, and "High Performance Computing Applications in Underwater Acoustics," organized by Y.-T. Lin and M. Ballard. At the upcoming Victoria meeting, there will be a session "Challenges in Computational Acoustics," organized by M. Blevins and K. Wilson. A Computational Acoustics TSG will enable these sessions to be organized and coordinated in a consistent manner.

5. In addition to organizing technical sessions, the TSG plans to undertake activities designed to foster technical exchange on computational methods and best practices between researchers in different specialty areas of acoustics. Such activities may include holding workshops on recent computational methods, facilitation of code sharing, benchmark formulation, and new software tools.

6. In anticipation of the activation of the TSG, the following ASA members have accepted nomination to be members of the Session Organizing Committee for the proposed TSG in Computational Acoustics. D. Keith Wilson will serve as the initial chairperson.

One-year terms:	**Two-year terms:**	**Three-year terms:**
Yun Jing	Amanda Hanford	Sheri Martinelli
Jason Summers	Scott Miller	Michelle Swearingen
Martin Verweij	Wendy Newcomb	D. Keith Wilson (Chair)
Kuangcheng Wu	Shung Sung	Z. Charlie Zheng

7. It is hereby requested that approval of the formation of a TSG in Computational Acoustics be considered by the Executive Council at its Monday meeting in Minneapolis (7 May 2018). By such timely consideration it will be possible for the new TSG to commence its activities at the Victoria meeting.

Sincerely,

D. Keith Wilson, U.S. Army Engineer Research and Development Center

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Amanda Hanford, Applied Research Laboratory, Penn State University

Amanda D. Hanford
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