

2008 SPED TC Meeting Minutes

The Signal Processing in Education (SPed) technical committee (TC) of the IEEE Signal Processing Society (SPS) met on Wednesday, April 2, 2008 from 7:00 am until 8:30 am in Las Vegas, Nevada, during the 2008 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP). Attendance included 17 of the 21 SPed TC members as well as three invited persons.

Member name and attendance:

Abut, Huseyin (Yes)	Longley, Lester (Yes)	Spanias, Andreas (Yes)
De Martin, Juan Carlos (Yes)	McClellan, James H. (Yes)	Thorn, Jon (Yes)
Erzin, Engin (Yes)	Morrow, Michael G. (No)	Welch, Thad B. (No)
Green, Roger (Yes)	Padgett, Wayne T. (Yes)	Williams, Douglas B. (Yes)
Hansen, John H. L. (Yes)	Pierre, John W. (No)	Wright, Cameron H. G. (No)
Hettel, Lisa Gresham (Yes)	Robbins, Tom (Yes)	Yoder, Mark A. (Yes)
Jones, Douglas (Yes)	Saint-Nom, Roxana (Yes)	Zoubir, Abdelhak (Yes)

Invited guests in attendance:

Lee, Lin-shan (General Chair of ICASSP 2009, National Taiwan University)
Alwan, Abeer (Education Subcommittee member of the Speech TC)
Luther, Erik (National Instruments, Erik.Luther@ni.com)

Please note that throughout these minutes, key materials and action items are identified in **bold**.

(7:06 am) Roxana Saint-Nom called the meeting to order.

(7:07 am) Roger Green volunteered to record meeting minutes.

(7:08 am) Roxana Saint-Nom reviewed the recent evaluation results of the SPed TC and emphasized that **the SPed TC requires improvements to continue operation**. In particular, the evaluation recommends that the TC form subcommittees, that the TC be active with edicts and document activities in yearly reports, and that the TC better collaborate with other TCs. Prior to this meeting, Dr. Saint-Nom established subcommittees within the SPed TC and ensured each TC member is included in at least one subcommittee. **To assist in reporting, each subcommittee is responsible to document their yearly activities**. To begin improved contact with external links, Dr. Saint-Nom invited two individuals to this year's meeting: Dr. Lin-shan Lee (general chair of ICASSP 2009) and Dr. Abeer Alwan (Education Subcommittee member of the Speech TC). Dr. Zoubir recommended that the TC investigate a link with the SPTM TC as well.

(7:12 am) Dr. Lee overviewed the organization of ICASSP 2009. While many aspects will remain similar to previous ICASSPs, planned new features include 12 "overview talk sessions" (3 overview talks for each of 4 sessions) as well as plans to group conference content by theme/symposia. Dr. Lee also provided several preliminary ideas how the SPed TC may increase its involvement in the conference scope and activities:

- 1) Propose/organize an “SP Techniques for Education” theme, including overview talk, special sessions, etc. A possible example: “Speech Language Technologies for Language Education.”
- 2) Propose/organize a session that addresses better ways to teach difficult topics in SP (e.g., hidden Markov models).

Dr. Lee noted that a fundamental purpose of ICASSP is education, and therefore the SPed TC has direct relevance to the conference scope. Dr. Saint-Nom asked what specific role our TC would/could play, and Dr. Lee indicated the TC should propose special sessions, groups, topics, and/or speakers. **Dr. Lee emphasized that the SPed TC needs to drive any proposals for ICASSP 2009.**

(7:21 am) Douglas Jones provided an overview of the Connexions project, which provides open source education materials including a strong base in the SP area. Several Connexions-related opportunities may be available for the SPed TC. The general idea is that the SPed TC may provide peer review of Connexions materials, thereby providing, among other benefits, some measure of quality assurance. Details of this possibility require direction and approval from the Connexions lensing oversight committee, which is headed by Mos Kaveh and includes SPed TC members Douglas Jones, Roxana Saint-Nom, and Douglas Williams. Dr. Jones noted that, although an excellent opportunity, serving a peer review role of Connexions would require substantial effort and responsibility as well. Douglas Williams noted the review role could also include recommendation of missing areas for the Connexions project. Huseyin Abut inquired what support would be provided for the review effort, and expressed concern regarding running experiments, including details such as need/availability of uniform computing platforms. John Hansen noted that Connexions serves undergraduate, graduate, and technical audiences, and that initial review activities might target one group. Some concern was raised regarding the metrics of success for such an endeavor. To determine SPed TC interest in pursuing this opportunity, a straw vote was held regarding **interest in pursuing the Connexions peer review opportunity: 12 TC members voted “Yes”, 0 TC members voted “No”, and the remaining did not vote.**

(7:35 am) Douglas Williams discussed work to establish the scope and bylaws of the SPed TC, including details regarding TC membership. Dr. Williams provided TC members copies of the “Scope of the Signal Processing Education Technical Committee” (1 page) and “Signal Processing Education Technical Committee ByLaws” (4 pages). **Both documents are attached to this document as an appendix.** The “Scope” was read aloud to the TC and, following minor corrections and word changes, **the TC voted unanimously to approve the statement of scope.**

(7:41 am) Douglas Williams next moved the discussion to bylaws. He noted that some TCs appear to have bylaws while others do not. Dr. Williams began by first reading Section 1 (Purpose and Activities) of the proposed bylaws. It was recommended that the TC investigate, as a possible additional activity, the nomination of editors. **Follow minor changes, members agreed to the material in Section 1 of the bylaws.**

Dr. Williams next read Section 2 (Membership). Much discussion followed regarding this section, particularly with regard to the proposed statement regarding dismissal of members who are unable to commit to TC responsibilities. Some members felt this statement was too severe,

others felt it was appropriate, others recommended non-renewal of membership rather than termination, and still others thought perhaps individuals should first contribute to the TC and before membership is granted. Particularly since no process was documented, **it was recommended and agreed that the statement regarding excusing members be removed for the time being. No significant objections were raised regarding the remainder of Section 2.** Given the current membership of 21 individuals, the TC believes there is enough depth in membership to ensure completion of TC activities.

Dr. Williams requested that individual subcommittees provide him with appropriate material for Section 6 (Subcommittees). Due to time constraints, the remainder of the bylaws discussion and approval will be conducted by e-mail.

(7:58 am) Engin Erzin reported on the activities of the publicity subcommittee. Using an IEEE template, Dr. Erzin and his students created a new website for the SPed TC. **Committee members were provided handouts of the draft webpages, which are included as an appendix to this document.** One TC member recommended a link to the SP lensing committee be created. Mark Yoder suggested that analytics be included to monitor page usage; he offered to provide additional details and recommendations as needed. In the near future, **the publicity subcommittee will request content information from each SPed TC subcommittee**, which the committee will then appropriately locate on the new TC web site. In the future, a more formal procedure is envisioned to help streamline the addition or update of webpage material. Further, the subcommittee anticipates hosting the TC website using IEEE services.

(8:05 am) Lisa Hettel reported on the Awards subcommittee activities, including roles in (1) nominating candidates for Society and IEEE awards and prizes, (2) encouraging other TCs to provide nominations for education awards, and (3) the nomination and promotion of distinguished lecturers; **in addition to its own recommendations, the subcommittee will solicit nominations from the entire TC in the future.** The Awards subcommittee also discussed possible methods to increase the visibility of our TC, including ideas such as best paper awards. **Additional details are provided in the attached subcommittee memo.**

(8:08 am) Jon Thorn reported on the Conferences and Workshops subcommittee, which met during the TI Developer's Conference. **Dr. Thorn presented the TC with a memo, which is attached to these meeting minutes as an appendix, that details six goals and tasks for 2008,** including (1) support of the 2009 DSP/SPed Workshop, (2) investigate joint activity with ASEE, (3) support review of ICASSP papers, (4) collaborate with other committees on expectations of SPed TC members, (5) establish relationship with SP Magazine education column editor, and (6) establish a relationship with other TCs for soliciting education-oriented papers. Regarding (5), one TC member mentioned that some opportunities may exist with Lee Ding (sp?) of Microsoft, who is the associate editor now.

(8:12 am) Wayne Padgett reported on the Industrial Liaison and Interaction subcommittee, which also met during the TI Developer's Conference. **Dr. Padgett presented the TC with a memo, which is attached to these meeting minutes as an appendix, that details the committee's goals and comments.** Briefly, Dr. Padgett discussed (1) desire to promote education/industry interaction, including a needs assessment, (2) support for the Connexions project, and (3)

improving communication with other TCs, the Education Society, and ASEE. The memo provided by the subcommittee also details tasks for the subcommittee.

A TC member suggested placing a link in the web page to appropriate education magazine articles. Dr. Saint-Nom emphasized the importance of how we link to industry. **Further, Dr. Saint-Nom again emphasized that all subcommittees will need to add content for the yearly TC report.**

(8:17 am) Mark Yoder reported the activities of the Innovation and Growth subcommittee. This subcommittee includes a rather broad charge, and the committee continues to identify its key focus areas. **Following the meeting, Dr. Yoder provided a memo, attached as an appendix, that details the group's current direction and activities.** Some ideas on subcommittee tasks presented for consideration include (1) establishing a forum for Senior Design projects and research, (2) creating a resource for DSP test signals and sources, (3) creation of a Wiki for key SP areas, (4) resource for real-time SP principles, and others (see memo). Dr. McClellan expressed interest and support in the SD project initiative.

Brief discussion was made of ICASSP 2010, to be held in Dallas. The question was poised whether education can be a main focus and whether to consider a Senior Design forum. Possible NI support was mentioned. Dr. McClellan expressed an interest in posting a paper "Best on Web" (?) on the TC webpage.

(8:26 am) **Dr. Saint-Nom indicated that the TC will need to complete work on the rest of the bylaws through e-mail and also reminded that every TC member needs to be on at least one subcommittee.** TC business concluded and Dr. Saint-Nom ended the meeting.

Please accept my apologies for the inevitable but unintended omissions and mistakes. Feel free to direct corrections and comments to Roger.Green@ndsu.edu.

Scope of the Signal Processing Education Technical Committee

The purpose of the Signal Processing Education Technical Committee (SPEd TC) is to foster the growth of all aspects of the intersection between signal processing and education. Historically, these efforts have focused on publicizing best practices in a rapidly evolving field driven by technological advances in industry and pedagogical innovation, and fostering research in signal processing education. The TC emphasizes a systematic approach to educational research instead of the use of isolated examples and promotes and disseminates innovation in education.

More recently, the SPEd TC has adopted the goal of encouraging and exploring new vehicles for delivering education, including the use of tools for open access electronic publishing and online community building. Of particular interest are the development and use of signal processing tools for educational technology to enhance education and learning in all fields, both technical and non-technical.

The SPEd TC will become the Society's agent for educating the public at large and increasing the visibility of signal processing, particularly its role in society and technology. These efforts include continuing education and the development of educational materials for the layman from pre-college students to influential policy makers.

Signal Processing Education Technical Committee ByLaws

This document presents the Bylaws of the Signal Processing Education Technical Committee (SPEd TC) of the IEEE Signal Processing Society (SPS). The bylaws can be altered by majority vote of the SPEd members.

1. Purpose and Activities

1.1 Purpose

1.1.1 To promote the advancement of signal processing education and applications of signal processing for education

1.1.2 To enhance interaction with similar organizations within IEEE and throughout the world.

1.2 Activities

1.2.1 Assist with the review of papers in collaboration with IEEE journal and magazine editors.

1.2.2 Conduct the review of papers submitted to Society conferences.

1.2.3 Organize and operate symposia, seminars, workshops and sessions at technical meetings of the Society or of the IEEE, at all levels, and at meetings of other organizations having cooperative relationships with the Society, in accordance with IEEE rules and procedures and the rules of such meetings.

1.2.4 Nominate candidates for SPS and IEEE awards and prizes.

2. Membership

2.1 All SPEd TC members must be current IEEE and SPS members of good standing. SPEd TC members are expected to play an active role in the technical and professional activities of the Signal Processing Society. Personal commitment and willingness to serve are expected. This includes conducting conference reviews (such as ICASSP) as well as being actively involved in the operation and subcommittees of the SPEd TC (such as awards, membership, etc.). SPEd TC members who are unable to commit to the responsibilities may be excused from the SPEd TC.

2.2 Regular members are elected based on the needs of the SPEd TC and will serve for a three-year term, beginning the following January 1. Newly elected

members may be called upon to participate in ICASSP paper reviews before their terms officially commence.

3. Management

3.1 The Chair of the SPed TC shall be nominated from among the members of SPEd TC and voted upon by the members of the SPEd TC. The Chair is responsible for organizing the ICASSP review process, organizing the SPEd TC activities, and maintaining communication with the officers of the Society and other similar organizations.

3.2 The Chair will serve for a two year term. The term for a Chair may extend past the end of his or her SPEd TC membership term, in which case the full term of the Chair will be served. At the end of term, the Chair will stay on the committee for an additional year as the "Past Chair". The "Past Chair" will have rights equal to a regular SPEd TC member and in addition is responsible to support the new Chair to aid in providing continuity of that position.

4. Conduct of Business

4.1 The technical committee will hold a face-to-face meeting at ICASSP each year.

4.2 The technical committee will hold a face-to-face meeting at the ASEE Annual Conference and Exposition.

4.2 The technical committee may also conduct business via e-mail at the request of the Chair.

4.3 A majority of legal votes cast by SPEd TC members shall be necessary for the conduct of business.

4.4 The order of business of SPEd TC meetings shall be organized by the Chair and made available to the members prior to the meetings.

5. Elections

5.1 All elections shall be conducted by anonymous ballot. Candidates must receive majority votes in order to be elected; If two or more candidates receive the same number of votes, then runoff elections shall be used as necessary.

5.2 The election process for Chair shall be conducted in alternating years at the

end of the calendar year, and organized by a subcommittee appointed by the Chair. Candidates for Chair must be members of the SPEd TC.

5.3 New member elections shall be held once each year. Nomination of candidates will be made to a Membership Subcommittee.

6. Subcommittees

6.1 Membership & Bylaws Subcommittee: The Membership & Bylaws Subcommittee shall consist of 3-5 members and may include the SPEd TC chair. Subcommittee members are proposed by the SPEd TC chair and approved by the SPEd TC at the annual ICASSP meeting. The subcommittee responsibilities are:

6.1.1 To review the composition of the SPEd TC with respect to current and future activities and maintain a membership composition that is well suited to the activities and responsibilities of the SPEd TC, to solicit nominations, and to detail the rules and procedures of the nomination process.

6.1.2 To govern the election process by identifying the minimum number of open SPEd TC positions, accept nominations for prospective members in those areas, and conduct the anonymous voting process detailed in bylaws 5.1 and 5.2.

6.2 Awards Subcommittee: The Awards Subcommittee shall consist of 3-5 members and may include the SPEd TC chair. Subcommittee members are proposed by the SPEd TC chair and approved by the SPEd TC at the annual ICASSP meeting. The subcommittee responsibilities are:

6.2.1 To coordinate the nomination of candidates for Society and IEEE awards and prizes.

6.2.2 To foster nominations for the Society's Education Award, both from within the SPEd TC and from other TCs.

6.2.3 To coordinate and promote the nomination of Distinguished Lecturers.

6.3 Conference and Workshop Subcommittee: The Conference and Workshop Subcommittee shall consist of 3-5 members and may include the SPEd TC chair. Subcommittee members are proposed by the SPEd TC chair and approved by the SPEd TC at the annual ICASSP meeting. The subcommittee responsibilities are:

6.3.1 To coordinate review of papers submitted for conference and workshops.

6.3.2 To promote the continued vitality and growth of workshops sponsored by the SPEd TC, particularly the IEEE Signal Processing Education Workshop.

6.4 Publicity Subcommittee: The Publicity Subcommittee shall consist of 3-5 members and may include the SPEd TC chair. Subcommittee members are proposed by the SPEd TC chair and approved by the SPEd TC at the annual ICASSP meeting. The subcommittee responsibilities are:

6.4.1 To maintain an up-to-date SPEd TC website.

6.4.2 ???

6.5 Industrial Relations and Liaison Subcommittee: The Industrial Relations and Liaison Subcommittee shall consist of 3-5 members and may include the SPEd TC chair. Subcommittee members are proposed by the SPEd TC chair and approved by the SPEd TC at the annual ICASSP meeting. The subcommittee responsibilities are:

6.5.1 To promote interaction with industry.

6.5.2 ???

(approved on XXX)

Report on Awards Subcommittee, SPEd TC
ICASSP 2008 (Las Vegas)
April 2nd, 2008

Current subcommittee members:

- Abdelhak Zoubir
- Thad Welch
- Lisa Huettel

Responsibilities of the subcommittee:

- To encourage the nomination of candidates for Society and IEEE awards and prizes.
- To encourage other TCs to provide nominations for education awards.
- To nominate and promote Distinguished Lecturers.

To do list:

- Collect list of awards to be publicized and/or for which nominations should be solicited
 - IEEE Major Education Innovation Award (IEEE Educ. Activities Board, 4/30/08)
 - IEEE Education Society Awards
 - Mac Van Valkenburg Early Career Teaching Award (6/30/08)
 - IEEE Undergraduate Teaching Award (1/31/08)
 - IEEE Graduate Teaching Award (1/31/08)
 - ASEE Awards
 - National Outstanding Teaching Medal
 - Frederick Emmons Terman Award
 - Premiere Courseware Award (NEEDS, 7/11/08)
 - Others?
- Coordinate with Publicity/Web subcommittee to publicize awards/prizes
 - include up-to-date listing (with links, calendar?) to information about and nomination process for these awards/prizes
- Establish best paper/poster award? ICASSP 2008 has a limit of 4 (what are they and do they cover education? Is there a case for a Best Education track award?)
 - Discussion: Would this increase participation in education track? Raise visibility of SPEd?

March 21, 2008

Roxana Saint-Nom
IEEE SPS Education TC Chair
Buenos Aires Institute of Technology

Subject: IEEE SPed TC Conference and Workshops Subcommittee Status Report

Roxana,

The following is a report on the status of the Conference and Workshops Subcommittee.

The subcommittee met during the week of February 25th in Dallas, TX at the TI Developers Conference. The initial meeting was followed by a conference call on March 12th and various email communications. As a result of these meetings, the subcommittee selected a leader and identified goals. We also defined initial tasks that will have a significant impact on our ability to meet the goals. Finally, we identified some areas where we need additional help from SPS although we are just at the early stages of understanding the barriers that we will face.

Subcommittee membership:

Jon Thorn, Texas Instruments (Leader)
Wayne Padgett, Rose-Hulman Inst. of Technology
John Pierre, University of Wyoming

Subcommittee goals and tasks for 2008:

- Support the 2009 DSP/SPed Workshop
There is a need to identify an additional plenary speaker and chairs for two proposed sessions. Wayne Padgett is a co-chair for the education program at this workshop so he will take the lead on these tasks. In addition, we will need to provide “encouragement” for the submission of papers for the workshop.
- Investigate joint activity with ASEE
There was some discussion last year on having a joint activity with the ASEE. Jon will discover the background and further check out the possibilities.
- Support reviews of ICASSP papers
Work with the SPed TC chair to improve support for paper reviews by the TC members. Jon will coordinate.
- Collaborate with other committees on expectations of SPed TC members
The subcommittee felt that we should provide some input and suggestions to the Membership & Bylaws Subcommittee on the expectations of SPed TC members. Jon will coordinate.
- Establish relationship with SP Magazine Education Column editor
At the moment there is little or no relationship between the SPed TC and the SP Magazine education column editor. Jon will investigate establishing a link.

- Establish a relationship with other TCs for soliciting education oriented papers
Jon will investigate establishing a network.

The committee feels that the most significant barrier to completing these goals is simply establishing relationships with other groups and individuals in SPS. This is an area where we can probably use some assistance from SPS leadership.

Sincerely,

Jon Thorn
Wayne Padgett
John Pierre

March 21, 2008

Roxana Saint-Nom
IEEE SPS Education TC Chair
Buenos Aires Institute of Technology

Subject: IEEE SPed TC Industrial Liaison & Interaction Subcommittee Status Report

Roxana,

The subcommittee met during the week of February 25th in Dallas, TX at the TI Developers Conference. The initial meeting was followed by a conference call on March 12th and various email communications. As a result of these meetings, the subcommittee selected a leader and identified goals. We also defined initial tasks that will have a significant impact on our ability to meet the goals. Finally, we identified some areas where we need additional help from SPS although we are just at the early stages of understanding the barriers that we will face.

Subcommittee membership:

Wayne Padgett, Rose-Hulman Inst. of Technology (Leader)
Lester Longley, Texas Instruments
Jon Thorn, Texas Instruments

Subcommittee goals and comments:

- Promote ways of education to industry. Reach out to, and better serve, industry.
This goal is directly related to Recommendation A from the RCR. “Foster the development and application of new signal processing technologies that can enhance the delivery of education in technical and non technical fields. This will involve collaborating with other TCs, other IEEE and non-IEEE professional societies and government agencies to help introduce relevant problems to members of the Society, facilitate interdisciplinary collaborations and secure funding for research in the most relevant areas.”
- Support the Connexions Project
This goal is related to Recommendation D from the RCR. “Work with other professional societies within and outside the IEEE to educate members about critical needs in different fields and facilitate the development of relevant signal processing research in rapidly developing areas in other disciplines.”
- Improve communication with other TC’s, with the Education Society and with ASEE.
This goal is related to Recommendations E and F from the RCR. “(E) Renew its leadership and develop and deploy new ways of communicating with members of the Society. (F) Actively maintain a close relationship and collaboration with other TCs within the Society and IEEE, as well as other relevant non-IEEE professional organizations.

The following represents a list of tasks that the subcommittee will work on in 2008. A major portion of the effort is related to information gathering and establishing of relationships outside of SPED TC in support of the goals above. Wayne will serve as the leader but the subcommittee intends to make progress in these areas through a group effort.

- Email TC chairs to establish a process for liaison. Basically find out how to do it and build initial relationships.
- Gather information on joint projects, papers, and inter-TC efforts with a goal of eventually creating a web page that can serve as a focal point for inter-TC communication on education topics and issues.
- Propose a session on education at workshops sponsored by other TCs. Offer to help solicit papers for the session and provide reviewers.
- Establish a relationship with the SP Magazine Education column editor. Learn about goals for the column and plans for future articles. Hopefully be in a position to nominate someone for the position when the time comes.
- Begin gathering information on industry needs for undergraduate education and continuing education. Build a list of players in the industry, by category if possible, including chip vendors, tool vendors, development board manufacturers, software developers, and end equipment segments. The goal would be to create a survey process for a large cross section of industry. Ultimately may require a budget as well as a multi-year effort. The SPED TC is or should be well positioned to address questions such as:
 - What's a real job like?
 - What do engineers do?
 - What kind of problems do engineers solve?The survey and its results could be offered on a web page and updated over time.

Sincerely,

Wayne Padgett
Lester Longley
Jon Thorn

Innovation & Growth

- Education of the public at large, in particular decision makers and influencers, about the role of signal processing in society and modern technology.
- Sponsor of activities to educate the membership about pressing needs in other fields and related research opportunities that can benefit from the applications of signal processing.
- Foster the invention, development and application of signal processing technologies in technical and non-technical education. For example, novel integration and applications of multimedia and speech technologies in the teaching of foreign languages.

1. Who is responsible?

Members:

Tom Robbins, National Technology & Science Press (Leader)

Jim McClellan, Georgia Tech

Mark A. Yoder, Rose-Hulman (Chair)

2. Tasks of each member (you could add more to the list)

Right now our main task is to generate ideas about what the committee can do. Here's a few, but more are needed:

- Create a forum for SP senior design projects & undergraduate research. Might want to have a corresponding wiki to accumulate project results. Promote collaboration between institutions.
- Create a database for DSP test signals (similar to <http://physionet.org/>). Allow users to link their best analysis results for a given test signal. Try to specify objective tests for analysis quality.
- Create wiki's for key signal-processing areas, to report results & progress, to post examples, and to identify key, outstanding/unsolved hard problems.
- Change the name of ICASSP to better reflect its current scope. (International Conference on All Sorts of Signal Processing)
- Another possible topic of interest to explore, how should software and hardware tools evolve to facilitate the teaching/learning of Real-Time Signal Processing principles.

3. What you need from SPS to help you achieve your goals.

4. Duties you will perform until next ICASSP Report (Jan. 31st 2009)