Message from the Chair

We are at the start of a new year and our new committee has taken shape. I hope everybody had a great summer and new year.

This year we are already making solid progress in bringing you many great activities. The best activity will be the workshop with Prof Froyd. He is an inspiring person, so please register ASAP so that you don’t miss out. Limited numbers for this event.

If you have any suggestions to help enhance the chapter, please feel free to contact me.

Sasha Nikolic

Workshop on Publishing in the IEEE Transactions on Education—Prof Jeffery Froyd

At the last NSW Education Chapter meeting in 2015, the committee agreed that it was important to expose members to some leaders in engineering education. As a result it brings great pleasure that we have been successful in obtaining The Editor-in-Chief of IEEE Transactions on Education, Prof Jeffery Froyd, to discuss publishing your work in a high quality engineering education journal.

This event will be held online using the iSee software platform that provides a 3D immersive collaborative experience. That means you can participate from anywhere in the world. You will be able to mingle with other participants, including Jeff, as well as ask questions. The event is being held on the 9th of June 2016 at 8:45am (AET).

Registration is essential and closes on the 6th of June. Participants will then be emailed a link with the web address to join the online workshop. Registration is limited and is on a first come, first served basis. NSW Education Society members are being notified of this event first, before being advertised across the greater IEEE network.

Dr. Jeffrey E. Froyd is a TEES Research Professor in the Office of Engineering Academic and Student Affairs at Texas A&M University, College Station. He has authored over 70 papers and offered over 30 workshops on faculty development, curricular change, curriculum redesign, and assessment. He has served as a program co-chair for three Frontiers in Education Conferences and the general chair for the 2009 conference. Prof. Froyd is a Fellow of the IEEE, a Fellow of the American Society for Engineering Education (ASEE), an ABET Program Evaluator, the Editor-in-Chief for the IEEE Transactions on Education, a Senior Associate Editor for the Journal of Engineering Education, and an Associate Editor for the International Journal of STEM Education. A full biography and more details about the event is available on the registration page: https://meetings.vtools.ieee.org/m/38310
IEEE Transactions on Education

Using Scopus SCImago Journal Rank, IEEE Transactions on Education is the second highest rated engineering education journal. Have you considered publishing?

Major fields of interest include:

Educational research, methods, materials, programs, and technology in electrical engineering, computer engineering, and fields within the scope of interest of IEEE.


Some great resources to get your started in writing a journal paper:

The Scholarship of Application
A practical approach to understanding the Scholarship of Application
Increase the relevance of your manuscript

$500 Rebate for an IEEE Education Society Conference

Are you a PhD student or ECR looking to attend an engineering education conference?

The NSW chapter is serious in promoting the benefits of engineering education to the next generation of academics. If you are an IEEE Education Society member and a PhD student or an Early Career Researcher (within 3 years of obtaining a PhD) we are offering one $500 rebate to attend one of two IEEE Education Conferences—either Frontiers in Education or TALE in 2016.

For more information or to apply please see the application form

$250 Rebate for AAEE Winter School 2016

Are you an IEEE Education Society member and a PhD student or non academic (university) staff member that would like to develop their knowledge in engineering education research? With the NSW chapter alliance with AAEE, providing two $250 rebates to attend the Winter School at UTS, 11-15 July

Attendees will learn about: Designing and undertaking effective education research projects; Evaluating teaching and curriculum; Positioning evaluation and research activities in light of current trends; Appreciating and responding to national and local grant opportunities; Building collaborative research partnerships across Australia and beyond; plus more

For more information or to apply please see the application form
New Position Created—Sessional Teaching

Are you a sessional teacher? A new committee position has been created that will look to provide support and resources to sessional teachers in NSW.

Jacob Donley is a high performing sessional teacher at the University of Wollongong. He knows the importance of training and support to ensure that students receive a high quality learning experience.

Jacob will be working to organise events and resources that help support sessional teachers within the fields of IEEE. In particular, he is looking for other sessional teachers from other NSW universities to join his team. The intention is to connect sessional teachers across campuses so they have the support and knowledge of best practice. Plans include running teacher forums such as the successful forums run at Macquarie and Wollongong university in 2015.

This new position also aims to help inspire sessional teachers to appreciate engineering education research and apply it to their teaching. For those with a passion for research this will provide a platform to allow for multi campus research, should members choose.

If you are interested to know more please contact Jacob: jrd089@uowmail.edu.au

Australasian Journal of Engineering Education

Change of publisher for the journal behind AJEE

The journal run by the Australasian Association of Engineering Education (AAEE) has recently moved their journal publication to Taylor and Francis in order to provide better exposure and services to its authors and readers.

The journal is offered as a means of exchanging current work and ideas, predominately from Australian engineering education faculties and as a resource for Continuing Professional Development for our community. The journal is open to members and non-members of Engineers Australia.

It is the policy of the AJEE to publish a variety of contributions on the scholarship and practice of engineering education. Major fields of interest include

- teaching and learning styles, methods, practices and philosophies in engineering
- assessment; ethics; inclusivity; sustainability; student issues; online and laboratory learning; and, professional practice.

You can access the journal from http://www.tandfonline.com/loi/teen20#.VrLiP1JEt2B
Meet the New Team Members

Meet some of the new faces volunteering to promote and improve engineering education in NSW

Montse Ros—Secretary

Montse (M’02) received the B.E. (Hons1)/B.Sc. double degree with majors in computer systems engineering and mathematics and the Ph.D. degree in computer engineering from the University of Queensland, Brisbane, Australia, in 2000 and 2007, respectively. She is currently a Senior Lecturer with the University of Wollongong (UOW), Wollongong, Australia. Dr. Ros has won two UOW Vice-Chancellor’s awards for Teaching and Community Engagement.

Jacob Donley—Sessional Teaching

Jacob received his B.E. degree in computer engineering in 2013. His currently pursuing his PhD on Signal Processing from the University of Wollongong. His research is on loudspeaker reproduction of sound fields within restricted areas or zones to create multiple sound field zones simultaneously. This can allow multiple listeners to experience their own private listening areas. Jacob has been a sessional teacher at the University of Wollongong since 2014. He has received significant recognition as both a tutor and laboratory demonstrator. Jacob has a strong interest in engineering education research and helping his peers provide a quality teaching experience.

Sudipta Chakraborty—Women in Engineering Education

Sudipta Chakraborty is Secretary of the WiEE committee. She is pursuing her PhD in Electronics Engineering at Macquarie University as a recipient of International Post-graduate Research Scholarship (IPRS). She had completed her Masters in VLSI Design at Indian Institute of Engineering Science and Technology (IIEST), Shibpur, India (which was previously known as Bengal Engineering and Science University (BESU)). She was awarded the University medal for being ranked first in the VLSI Design discipline of her batch at M.Tech. She is also entrusted with the responsibility of Vice-Chair of IEEE Student Branch of Macquarie University in 2015. She was a participant of the first IEEE NSW casual tutor forum at Macq Uni.

Why Education Research?

Q: Why should you care about education research?

I have heard many conversations about the conflicting nature between publishing papers in journals and teaching. In the argument surrounding conflicting time constraints, one area that many academics forget is educational research. With careful planning, the time and effort you put into the classroom to provide that exceptional engineering education experience, can be transformed into world class research. Alternatively the research of others can help transform your teaching with less effort, with many proven ideas ready for you to take advantage of.
Women in Engineering Education

New year, New goals … Ready, Set, Go...

Our plan for a more engaging program for WiEE, in the year 2016, is to establish connections with more women engineering associations and to invite women educators from different NSW universities to join our group.

Our vision is to set up variety of activities and motivate engineering educators to participate in set of programs and gatherings. As Engineering educators, we are dedicated to connect more with the students. Through discussions in our forums, we would like to exchange ideas that would help the educators to cater to the needs of students in a better and effective way.

To expose the leadership opportunity to other team members, excitingly, the leadership of the team will move to our team secretary, Sudipta. She has been extremely active and supportive to the team last year, and always came up with great ideas in our meetings. She has strong communication skills and immense experience in academics to create a successful new year for WiEE.

Another piece of news is, our team member, Meriam has moved to the University Technology Sydney, as I have moved to the Western Sydney University. My new role is engineering teacher and will be directly working towards educational development and delivering learning activities in accordance with the needs of students. These moves are significant in the way that our words are spreading and our team has members in four top NSW universities: Macquarie University, University of Newcastle, University Technology Sydney and Western Sydney University.

We wish all educators a great year ahead full of progress in female engineers’ recognition.

By Azadeh Safari
Past, WiEE Committee Leader

NSW IEEE Education Research

Please do not forget to email the Chapter Chair all the latest IEEE related education research that you published. This information is made available on the chapter’s website.

More importantly, when undertaking research please ensure that you take notice of the publications listed. Being local research, there is a possibility that many synergies can be found and partnerships to be made. Personally, I have been able to take strong advantage and create great partnerships with colleagues with similar research interests. Additionally, there might be great research that can be used to strengthen your literature review and knowledge in a particular area. This is local knowledge that you can easily tap into and ask for more information.
Chapter Goals

The committee tried to achieve all goals in 2015. New goals have been set for the 2016 year. Your contribution can help us achieve them.

Members: At the end of December we ended up with 36 members after obtaining a peak of 38 members in October. As we grow our membership to a reasonable size more opportunities become available. Please help encourage membership.

LinkedIn: At the end of December we reached forty-five members. We encourage all members to post and promote educational activities using this medium.

Activities: Activities will be announced throughout the year. The first activity scheduled for the year, the workshop with Jeffrey Froyd is a big one so please try and attend. Please also feel free to suggest activities.

2015 Goals (Achievements last year)

Increase chapter members by 30%
01 Jan - 28 members 
31 Dec - 36 members 
28% increase

Encourage member contributions
Afternoon get together in the city attempted but little participation
At least two technical meetings 6 events held
Promotion of member publications promotions on web and newsletter

Encourage IEEE participation at AAEE Winter School
Fund a rebate program for chapter members put in place but no applications

2016 Goals (This year)

Increase chapter members by 11%
Reach 40 members by Dec 2016

Grow group membership to LinkedIn group
Reach 60 members by Dec 2016

Encourage member engagement
At least one distinguished lecture
At least two technical meetings
Fund a rebate to an IEEE Education Society Conference
Fund a rebate to AAEE Winter School on Engineering Education
In this paper we propose a novel Application Programming Interface (API) design pattern for inter-communication between Remote Laboratory Management Systems (RLMSs) accommodating different levels of functional support and thereby allowing more efficient sharing of laboratory resources regardless of their hosting RLMS. Afterwards, we present initial results and demonstrate the feasibility and effectiveness of this pattern by developing an API for two common RLMSs, Sahara and the iLab shared Architecture (ISA). As a result, users logging into a Sahara server managed to access and manipulate a radio-activity experiment hosted on an ISA server.

**Abstract**

In this paper we propose a novel Application Programming Interface (API) design pattern for inter-communication between Remote Laboratory Management Systems (RLMSs) accommodating different levels of functional support and thereby allowing more efficient sharing of laboratory resources regardless of their hosting RLMS. Afterwards, we present initial results and demonstrate the feasibility and effectiveness of this pattern by developing an API for two common RLMSs, Sahara and the iLab shared Architecture (ISA). As a result, users logging into a Sahara server managed to access and manipulate a radio-activity experiment hosted on an ISA server.

**Keywords:** Distance learning; Interfaces; Services architectures; Standards and interoperability
The laboratory plays an important role in teaching engineering skills. An Electrical Engineering department at an Australian University implemented a reform to monitor and improve student satisfaction with the teaching laboratories. A Laboratory Manager was employed to oversee the quality of 27 courses containing instructional laboratories. Student satisfaction surveys were carried out on all relevant laboratories every year, and the data were used for continuous improvement. This paper will investigate the reforms that were implemented and outline a number of the improvements made. It also examines the program's overall impact on: (1) overall satisfaction; (2) laboratory notes; (3) learning experiences; (4) computer facilities; (5) engineering equipment; and (6) condition of the laboratory. Student satisfaction with the laboratories increased by 32% between 2007 and 2013. The results show that the laboratory notes (activity and clarity) and the quality of the equipment used are among the most influential factors on student satisfaction. In particular, it is important to have notes or resources that explain in some detail how to use and troubleshoot equipment and software used in the laboratory. Link

More Resources

To get access to more resources in regards to engineering education, and educational research please visit the chapters website.

About this Newsletter

This newsletter was created by the IEEE NSW Education Chapter Chair: Sasha Nikolic
February 2016