

Australian Capital Territory Section Report

PART A - SECTION SUMMARY

A.1 Executive Summary

- **Section Executive Committee Member List**

Chair	Ross Summerfield
Vice Chair	Fouad Karouta
Secretary	Ashley Chonka
Treasurer	Ambarish Natu
Webmaster	Muhammed Pallithadathil Nazer
Newsletter	Atiqul Islam
Educational/Student Activities	Shaodi You
Membership Development	Ray Tapabrata
TISP Coordinator	Matthew Collingridge
Societies Chapter Chairs	
Antennas and Propagation (AP03)	David Powell
Computer Society (C16)	Salman Khan
Joint Photonics & EDS (ED15/Pho36)	Mohsen Rahmani
Signal Processing & Com (SP01/COM19)	Nan Yang
Geosc. and Rem Sensing (GRS29)	Xiuping Jia
Nanotechnology Council (Nano42)	Ziyuan Li
Computational Intelligence	Kathryn Kasmarik
Systems, Man and Cybernetics Society	Daoyi Dong
Young Professionals	Zohair Abu-Shaban
WIE Affinity Group	Rita Brimo
TISP Coordinator	Dale Siver
Oceanic Engineering (AC)	Vacant (no active members in ACT Section)
Students Branches Representatives	
Australian National University	Noman Akbar
ANU Councilor	Vacant
UNSW-Canberra (ADFA)	Praveen Kumar Muthusamy
UNSW-Canberra (ADFA) Councilor	Greg Milford
Canberra University	Alisdair Robertson
Student Branch Activities Assistant	Yiqing Guo
- **Section Highlights**

In 2018 the ACT Section ExCom held four meetings (8 Feb, 27 Mar, 10 July and 4 Sep) along with the annual general meeting held on 22nd of November.

The Section was also involved in and present at Canberra Mathematical Association Conference 2018 (18 August, 2018), holding a booth and promoting TISP among the attendees.
- **Major Events (International, National)**

Ross Summerfield, Section Chair, represented the ACT Section at the R10 meeting in Langkawi, Malaysia in March 2018. As usual, the Section Chair attended the Australia Council meeting on the day prior (2 March) in Langkawi.

The ACT Section was heavily involved in assisting the Queensland Section in organising the IEEE WIE International Leadership Summit that was held in Brisbane on 26-27 November. The Section Executive Committee Members Fouad Karouta and Xiuping Jia chaired the Technical Program Committee and Sponsorship Committee, respectively.
- **Major Chapter Activities**

All ACT Chapters have organised a minimum of two technical activities.

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- **Major Student and Affinity Group Activities**

Students engaged in standard membership drive activities. However again this year, due to coordinated university policies, the traditional recruitment barbequees were not held.

- Awards
The Section won a Distinguished Section Award in recognition and appreciation of valued services and contributions.

A.2 Financial Report – (Please follow the format given below)

- Summary (as per submitted L50)
The Section started year 2017 with total assets in bank accounts of AUD 9,825.24 and ended the year with a total asset of AUD 11,327.45, with our section having a strategy of slightly reducing our balance. It has been relatively stable but a little increased when compared to the previous 2017 year. Our main target remains to attract new members and retain existing members.
- Any other financial activities
N/A

PART B - ORGANIZATIONAL ACTIVITIES

B.1 Membership Development Activities

- Total number of active members in the past 3 years.
The total IEEE members in the ACT Section was:
Dec 2018: 645 members and 12 affiliates
Dec 2017: 483 members and 14 affiliates
Dec 2016: 512
Dec 2015: 531
The total IEEE members number shows a moderate fluctuation, with a surprising increase. Work is required to maintain the membership increase, challenging in an area dominated by the public service.
- Summary and evidence of work done to improve the value of membership, which leads to retention and growth of members
- In all activities organised by the Section IEEE membership, benefits are exposed and especially student membership are promoted. To assist with membership development, our membership retention plan was reviewed. Being a forward looking plan, it is still being executed.

B.2 Chapter Activities

- Total number of Chapters in the Section
8 (1 joint with NSW)
- Number of Chapters formed in the current year
1
- Number of active Chapters (Chapters who have reported required number of meetings during the year)
8
- Summary of Chapter activities (Chapter wise with attachment table/information)
Summary:
1. Antennas and Propagation Chapter AP03
Chair: David Powell. Two technical activities seminars were organised on 19th February, and 27 November.
As there is significant commonality in the activities organised by APS and by Microwave Theories and Techniques Society in the ACT, a joint chapter was formed in October.
- **2. Computer Society Chapter C16**
Salman Khan. Two technical activities were organised, on 28 August (a joint session with IEEE ACT CIS) and 18 December.

3. Photonics and EDS Chapter ED15/PHO36

Chair: Mohsen Rahmani. Six events were organised, on 6 March, 8 March, 20 July, 2 October, 4 October and 4 December. The event on 4 October was a social gathering, designed to promote the IEEE and collaboration amongst members across the chapter, racking in 8 new members, a great effort by the Chair, Mohsen Rahmani! The event on 8 March was a joint seminar with the group of EME/ANU and the event on 20 July was joint with the Nanotechnology Council.

4. Nanotechnology Council

Chair: Ziyuan Li. Three activities were held on 27 February, 20 July and 19 September, with the event on 20 July being joint with Photonics and EDS.

5. Signal Processing & Communications Chapter SP01/COM19:

Chair: Nan Yang. Five activities were organised in 2018, on 29 June, 9 July, 23 August, 7 and 23 November.

6. Geoscience and Remote Sensing joint ACT and NSW Chapter

Chair: Xiuping Jia. Three activities were organized on 12 February, 17 August and 8 October. They were held at the ADFA complex, which is conveniently located a short distance from Geoscience Australia.

Yiqing Guo was awarded a grant for funding for the GRSS Grand Challenge proposal entitled, "A Drone-Based Rice Monitoring System to Support Intelligent Farm Management".

7. Computational Intelligence Society CIS11

Chair: Kathryn Kasmarik. Four technical activities were organised on 10 April, 17 May, 28 August and 17 October. One, on 10 April, was joint with WIE, targeting Women in STEM. Another, on 28 August, was joint with the Computer Society.

8. Systems, Man and Cybernetics Society C16

Chair: Daoyi Dong. This chapter was formed in 2018. Two technical seminars were organised on 15 and 27 August.

B.3 Professional and Continuing Education Activities

Please see IEEE Vtools Events for a summary of the 24 continuing Educational activities including conferences, technical activities, training courses, and distinguished lecture programmes held in 2018. The following table summarises.

Event Title	Event Date
The development of high resolution remote sensing and polarization remote sensing	12/02/18
Coaxial Cables: More than just "Coax"	19/02/18
Green Solvent Processed Polymer Solar Cells	27/02/18
Nanophotonics 2018 - The next Frontier	06/03/18
Toward Highly Efficient Solar Water Splitting: A Concurrent Electrical, Optical, and Catalytic Design	08/03/18
IEEE CIS Workshop on Advances in Computational Intelligence	10/04/18
Multi-Objective Optimization and Decision Making in Dynamic Environments	17/05/18
Academic Writing Workshop	29/06/18
Integrated Terrestrial/Non-Terrestrial 6G Networks for Ubiquitous 3D Super-Connectivity	09/07/18
Wireless Optogenetic Nanonetworks for Brain Stimulation	20/07/18
Intellectual Property for Tech Start-Ups	26/07/18
IEEE SMC ACT Chapter Seminar 1 2018: Cooperation of linear systems over uncertain multi-agent networks	15/08/18
Spectral-Spatial Image Analysis for Scene Interpretation	17/08/18
Spatial Noise-Field Control with Online Secondary Path Modelling: A Wave-Domain Approach	23/08/18
IEEE SMC ACT Chapter Seminar 2 -2018: On dynamics of a two-qubit coherent feedback network driven by two photons	27/08/18
An Inclusive Learning Algorithm Framework in an increasingly Networked World of Transducers	28/08/18
Convergence of Nanoscience and Nanotechnology Perspectives in Biomedicine: Innovative Ways to Fight Cancer	19/09/18
Seminar on optical communications	02/10/18

Remote Sensing Seminar	08/10/18
Gene-pool Optimal Mixing Evolutionary Algorithms - From Foundations to Applications	30/10/18
Deep Neural Network-based Wireless Communications: Physical Layer Design	07/11/18
Cyber Attacks on Internet of Things Sensor Systems for Inference	23/11/18
IEEE MTT Distinguished Lecture - Prof Tadao Nagatsuma	27/11/18
III-V Semiconductor Unipolar Barrier Infrared Detectors	04/12/18
Department of Human Services Data Lakes	18/12/18

B.4 Students Activities

- Total number of Student Branches in the Section
ACT has two student branches: one at ANU and one at ADFA. Both branches are active with drives for new student members being organised. We also have active students at University of Canberra but without an official student branch.
- Number of Student Branches formed in the current year
GRSS Student Branch Chapter on 15 December.
- Section level student activities (student congress, paper and other contests, awards etc)
ACT Section students participated in the Australia Council's student paper competition, taking out two prizes.
- Number of active Student Branches (Student Branches who have reported required number of meetings during the year)
2
- Summary of Student Branch activities (Student Branch wise with attachment table/information)
A notable event was the IEEE-Arc Barbequeue, held at the ADFA complex on 16 August, attracting a number of new members.
Additionally, the ACT Section contributed to two students to attend the IEEE SYWL event held in Bali Indonesia (30 August to 2nd September, 2019).

B.5 Affinity Group Activities

- Young Professional (YP)
Chair Zohair Abu-Shaban. Only one activity was organised on 26 July, focusing on the intellectual property interaction with the modern digital/online market.
- Women In Engineering (WIE)
Chair: Rita Brimo. Two activities were organised on 10 April (jointly with IEEE ACT CIS Chapter) and on 31 May.
- Life Member

B.6 Awards & Recognition Activities

- Award constituted by the Section
N/A
- Please list all Awards and Recognitions received by the Section, and members in the Section, from R 10 and IEEE HQ during the year 2018
Distinguished Section Award for 2018.

B.7 Communication Activities (Newsletter, Home Page, E-mail etc.)

- Newsletter (name and number of issues in the year)
None: information was propagated through an updated website.
- Home Page of the Section (give the URL and how often it is updated)
<http://sites.ieee.org/act/>

- The site is updated as information comes to hand, including for events notification.
- Other means of contacts with Section members including social media IEEE e-notices, emails and website.

B.8 Industry Relations

- Membership growth and retention
The ACT Section still maintains a high percentage of its members working in industry and government (about 40% of the total number of Section members).
- Activities for/with industrial members
N/A

B.9 Humanitarian Technology Activities

- Humanitarian Technology related activities supported by the Section including collaboration with other OUs.
- SIGHT Activities

B.10 Community Activities

- IEEE Social activities (Family day, IEEE day, Engineers Week)”
At the Annual General Meeting (22 November 2018) we had 83 adults including partners and 15 children of IEEE members have attended the event (and enjoyed Turkish food and drinks along with a children’s Magic Show).

PART C - OTHERS

C.1 Special Events

- Please briefly describe the importance of special events and the outcomes achieved
The ACT Section’s Photonics and EDS Chapter ran a social event to attract new membership into the IEEE and to encourage networking amongst technical specialists, held on 4 October.
The ACT Section also participated in the Canberra Mathematical Association CMA conference in August (see <http://www.canberramaths.org.au/>). At this event, we advertised the IEEE's TryEngineering and TryComputing resources. Also, networking with teachers gave us a great opportunity to explore other ways our professional association could support their work.
- Funding secured from the IEEE and external sources including sponsorships
The events were funded from the ACT Section’s budget.

C.2 Relationship with National and International Societies and Non-Government Organizations (NGO)

- Nature of relationship and details of any formal agreement signed
IEEE ACT Section maintains an excellent relation with Engineers Australia through a Section Liaison officer. There is no formal agreement at the local level although the IEEE has a national level agreement and through a liaison point with the Australia Council.
The IEEE ACT Section also works with the Canberra Mathematical Association, as outlined in C.1 above.
- Details of joint activities
The IEEE ACT Section participated in joint seminars Engineers Australia in the ACT.
- Benefit to IEEE members (for example discounts, access to technical information etc.)
Joint use of a common venue.
- Benefit to Section (for example help in membership development, venue facilities, cost saving etc.)
Venue facilities.

C3. Collaboration with other IEEE Sections

- Support extended to neighboring Sections
Coordinated through the Australia Council, relevant activities are notified to section membership. Of particular note in 2018 was the joint effort across Australian Sections for organisation of the WIE's ILS in Brisbane. The ACT Section contributed a significant amount of effort in organisational assistance.
- Joint activities with any other Section
GRSS operates as a joint section with NSW and its activities are coordinated for local participants across the border.

C.4 Support extended to Sub-sections & Society Chapters within the Section

- Support extended for organising technical, educational and professional activities
The Section contributed to local costs of speakers at seminars and other events of various Chapters and Affinity Groups.
- Joint activities for membership development
The section works with the student branches to assist with membership drives.
- Support extended for the formation of a Sub-section or transition of a Sub-section into a full Section
N/A

C.5 Best Practices of your Section (which you would like to share with other Sections for the benefits of members)

N/A

C.6 Problems anticipated and suggestions for solutions, if any

PART D - GOALS AND PLANS

D.1 Continuation of project/activity in progress and their implementation plans

The Section will continue to pay attention to the recruitment and retention of IEEE members and is happy to receive any hints in this matter.

D.2 Goals and Future Plans

The ACT Section is a modest Section situated in a territory counting less than half million population and therefore the Section is quite happy with a total number of members around just under 500. The ACT Section learnt of three other STEM related teacher groups that we will approach early in this year.

D.3 Any innovative ideas to make IEEE more creative and value added for sustaining the membership retention and recruitment goals.

The ACT Section follows the outline and instructions the Membership Development Team from their meetings and gives consideration to what might work and what will engage our membership. We still maintain the loyalty program and preparing the existing members who qualify to move the different levels within the IEEE societies, such as Member to Senior Member and Fellows. ACT Section learns and tries new options to help with recruitment. One of these options included an ongoing pilot of working with industry to try to encourage more STEM recruitment through some schools and particularly through our presence at the Canberra Mathematical Society Conference, which has a heavy attendance by high school teachers.

D.4. Business Plan for Sustainable Growth and Financial Stability.

The ACT Section has maintained financial stability over at least the past 5 or more years, with a maintained reserve, set aside to aid a major conference.

Pending support, the section is proposing to bid for the 2019 SYW Conference. This should boost the section's finances, allowing a significant injection into a major membership recruitment drive, coupled with a significant STEM focus, with particular emphasis on seeking better gender balance in the latter part of 2019 and 2020.