

# THE BEEET



## Bulletin of the IEEE Tucson Section

May 2015  
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Tucson Meeting Sponsored by Student Branch of Microwave Theory and Techniques and the Tucson Joint Chapter of MTT, AP, EMC, and COM:

### Low-Cost Smart Antennas for Satellite Communications and Terrestrial Mobile Communications

Speaker: Professor Steven Gao

IEEE Distinguished Lecturer Program

Chair of RF and Microwave Engineering, School of Engineering and Digital Arts, University of Kent, UK

LOCATION: University of Arizona,  
Room ECE 530

DATE: Monday, May 25, 2015, 6:00 pm  
Refreshments Provided (pizza and soft drinks)

#### ABSTRACT

Smart antenna is the key technology for advanced satellite communications and terrestrial mobile communication systems as well as radars. The traditional smart antenna systems, or adaptive arrays or active phased arrays, have high cost, large size, heavy weight and high power consumption. For commercial applications, it is critical to reduce the size, mass, power consumption and cost of smart antennas. This IEEE DL talk will give some recent examples of low-cost smart antennas, such as smart antennas for Ka-band Satellite Communications on the Move, low-cost small smart antennas for wireless communications, phased arrays for synthetic aperture radars, broadband active integrated arrays, etc.

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#### BIOGRAPHY

Steven Gao is a Professor and Chair of RF and Microwave Engineering at University of Kent, UK. His research covers smart antennas, phased arrays, space antennas, RF/microwave and mm-wave/THz circuits and systems, satellite communications, synthetic-aperture radars, UWB radars and GNSS receivers. He is a Distinguished Lecturer of IEEE AP Society (2014-2016), General Chair of LAPC'2013, UK, and Chair of Special Session at CSNDSP'2012, etc. He is a Guest Editor of IEEE Transactions on Antennas and Propagation for a Special Issue on "Antennas for Satellite Communication" (April 2015 issue). He is a Keynote Speaker at AES'2014, an Invited Speaker at IWAT'2014 (Sydney), SOMIRES'2013 (Japan), APCAP'2014 (Harbin), etc. He is an Associate Editor of Radio Science and also the Editor-in-Chief of Book Series in Microwave and Wireless Technologies, John Wiley & Sons. He is a Fellow of Institute of Engineering and Technology, UK. He has two books including Space Antenna Handbook (Wiley, 2012) and Circularly Polarized Antennas (Wiley & IEEE Press, 2014), over 200 technical papers and holds several patents in smart antennas and RF.

## Help your section, help your career, help yourself!

The Tucson section has several open volunteer opportunities for the right volunteer. There are lots of benefits to volunteering:

- You get to help decide on the activities and programs that will make a difference in our community over the next year
- You get to work with other smart, dedicated engineers
- You get to learn new skills
- You get to show off your skills to others who are working right here in Tucson

So what jobs are open?

**Recording Secretary** is responsible for documenting the activities of our administrative council. This typically includes keeping minutes of committee

meetings, submitting reports as required, and participating in any votes that come up.

**Membership Development Chair** uses the IEEE membership database to keep track of the current members in our section, identify members eligible for advancement, monitor trends, and obtain and distribute recruiting materials as needed.

**PACE Chair (Professional Activities Committee for Engineers)** helps arrange professional development activities, usually supported by the larger IEEE PACE foundation. This could include career-related seminars, job fairs, project management training, and more.

Want to help in some other way? Just ask - we welcome your assistance in any capacity!

## Become an IEEE Senior Member!

Do you want to become a senior member of the IEEE? The IEEE wants to promote qualified candidates to senior membership! If you have 10 years of professional experience of which five years of significant professional performance, you are qualified for a senior member upgrade. Educational experience such as a bachelor's degree in an IEEE-designated field counts 4 years to that number, a master's degree counts 5 years and a doctorate counts 6 years. In order to find out more, point your web browser to [www.ieee.org](http://www.ieee.org) and search for senior membership!

### *Senior Membership:*

<http://www.ieee.org/web/membership/senior-members/>

Applications can be found online. You will need the references of three current senior members or fellows. If you need assistance, contact Joseph Wu at [joewu@ieee.org](mailto:joewu@ieee.org).

## Save the date....

The next meeting will come sometime in the fall!

We usually hold meetings at the same time the University is in session. That means we likely won't have any meetings during the summer.

In the meantime, sign up the listserv to keep up on Tucson IEEE activities. Details are below!

## U of A Student Branches

In the Tucson Section, there are active student branches. The Student Branch Chapter of the MTT frequently brings in speakers from the distinguished lecturer series.

The U of A main student branch is also active. They have been running an open lab space in the ECE department. They have been running their own meetings and occasionally have game nights.

If you're interested in finding out what they do, or want to help out with a donation go to:

<http://uaieee.com>

<http://www2.engr.arizona.edu/~mtt/>

### Keep Up with the Tucson Section: Join our email list!

The Tucson Section email list delivers the latest IEEE Tucson news right to your email box. To join, simply send an email to

*[listserv@listserv.ieee.org](mailto:listserv@listserv.ieee.org)*

Put the following in the body of the message:

*[subscribe TUCSON-SECTION-ALL yourfirstname yourlastname](#)*

You'll receive an email with instructions for confirming your new subscription.

## Other News

### Upcoming Conferences

2015 IEEE MTT-S International Microwave Symposium (IMS2015)

16 May - 22 May 2015

Phoenix Convention Center, Phoenix, AZ

[www.ims2015.org](http://www.ims2015.org)

2015 IEEE Radio Frequency Integrated Circuits Symposium (RFIC)

17 May - 19 May 2015

Phoenix Convention Center, Phoenix, AZ

[www.rfic-ieee.org](http://www.rfic-ieee.org)

2015 85th ARFTG Microwave Measurement Conference (ARFTG)

22 May 2015

Hyatt Regency Phoenix, Phoenix, AZ

[www.arftg.org/conferences/85th\\_conference.html](http://www.arftg.org/conferences/85th_conference.html)

2015 IEEE Workshop on Automatic Speech Recognition and Understanding (ASRU)

13 Dec - 17 Dec 2015

Firesky Resort and Spa

Scottsdale, AZ

[www.asru2015.org](http://www.asru2015.org)

2016 Annual Reliability and Maintainability Symposium (RAMS)

25 Jan - 28 Jan 2016

Lowes Ventana Canyon Resort

Tucson, AZ

<http://www.rams.org>

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**To report address changes:**

[address-changes@ieee.org](mailto:address-changes@ieee.org)

**Other record changes (typographical errors)**

[record-changes@ieee.org](mailto:record-changes@ieee.org)

**Other membership issues including subscriptions**

[member-services@ieee.org](mailto:member-services@ieee.org)

**General IEEE Information**

1-800-678-IEEE(4333)

## We need to hear from you!

How can we make IEEE a better organization? We can only do it with your help. As a volunteer organization, IEEE depends on your participation to accomplish all of our goals.

As you can see from this newsletter, there are lots of activities where you can actively contribute. Are you good at organization? Volunteer to head one of our Chapters or to help organize our general meetings. Want to show off or improve your internet skills? Volunteer to help with our Web site. Interested in promoting our field to the next generation of engineers? Help with Engineers Week, or as a judge for any of our student competitions.

Even if you only have a little bit of time, there's sure to be an IEEE opportunity that will interest you. Even if you have no free time at all, but have ideas for meetings or activities that promote engineering and the IEEE, let us know! We'd like to hear from you. Please contact Joseph Wu at [joewu@ieee.org](mailto:joewu@ieee.org).

*We're on the Web!*

*Visit us at:*

<http://ewh.ieee.org/r6/tucson>