



IEEE BUENAVENTURA SECTION

September 2013 Newsletter

**Tue
10 Sep.** **ComSoc** **The ABC's of Orthogonal Frequency Division Multiplexing**
Dr. Bernard Sklar,
6:30-8:30pm
Skyworks
https://meetings.vtools.ieee.org/meeting_view/list_meeting/19643

**Wed
11 Sep.** **Computer** **TBA**
Check website <http://ieee-bv-cs.org/>
6:30-8pm
Richter Hall, Ahmanson Science Center
Cal Lutheran University

**Wed
18 Sep** **LMAG
MTTS** **Avionics Systems and Antennas**
Momin Quddus, JPL
6:30-8pm
Ciao Wireless, 4000 Via Pescador, Camarillo, CA 93012

**Wed
25 Sep.** **EMBS** **The Ventura Biocenter**
Dr. Greg Cauchon
6-8pm
Ahmanson Science Center, Cal Lutheran

**Mon.
30 Sep.** **OpCom** **Operating Committee Meeting**
6:30 pm
China Buffet, Thousand Oaks

IEEE MEMBERS

CSU Channel Islands asks

"What name would you give to a four-year engineering degree?"

See survey at

<https://www.surveymonkey.com/s/HCDJ7WH>

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The IEEE

Membership News

Please join me in welcoming our newest members to the IEEE:

- Alexander Fredrick Baum
- Michael Culver
- John Stefan Meyers
- Gezelle Gregoria Moso Segundera



Members: please be sure to update and share your information at the IEEE Member Portal and set up your IEEE email alias. Please also introduce yourselves at meetings; networking starts here in the IEEE.

--- Bridge Carney
IEEE Buenaventura Section Chair 2013-

Senior Member Elevation Clinic



Many thanks to all the Senior Members who turned out to make the July Elevation Clinics run so smoothly and conduct interviews:

- | | |
|--------------------|-------------------------|
| • Doug Askegard | • Danilo Llanes |
| • William Au | • Mike Markowitz |
| • Cameron Bruce | • Karl Meier |
| • Nai-Shuo Cheng | • Scott Miller |
| • Cristian Cismaru | • Aleksandar Mladenovic |
| • Kenneth Clarke | • Authi Narayanan |
| • Zachary Cohen | • Mike Nicholls |
| • Mark Fisher | • James Petersen |
| • Karl Geiger | • Charles Pitcher |
| • Don Hilliard | • David Schwartz |
| • Steve Johnson | • Mark White |
| • Atul Joshi | • John Wright |
| • Subha Kadambe | |

The review board has the materials for all candidates and should report results soon. Best of luck to our outstanding candidates for Senior Membership.

-- Christian Ziegler

Job Opportunities



ELECTRICAL ENGINEER

Pasadena Medical Device Company needs 3-5 years experience in low power, mix-signal design. Prefer MCU based signal acquisition and battery life optimization experience. BSEE.

Contact
Pat Jacobs

805-579-0630
pat.jacobs@advancedpersonnelprofiles.com

Sr. Electrical Engineer at Alfred Mann Foundation (www.aemf.org) in Valencia, CA

BS & 5+ years working on rigid & flexible PCB design. Analog & digital circuit design. Good knowledge of microcontroller, FPGA, RF and communication protocols.

Contact
Pat Jacobs

805-579-0630
pat.jacobs@advancedpersonnelprofiles.com

Section News

2013 Late Summer/Fall Events

We're looking forward to seeing you at our upcoming events later this Summer and into Fall. Look for

- So You Want to Be an Engineer Day at Moorpark College in September

If you are interested in help with these events, please contact me, and please send your ideas to me at bcarney@ieee-bv.org or call me at 805-558-5097.

-- Bridge Carney
Chair, IEEE-Buenaventura 2013-

Computer Society

The Computer Society Chapter is seeking new volunteers for officers and presentations. Please contact Craig Reinhart, CS Chapter Chair to volunteer or to speak at an upcoming meeting.

-- Craig Reinhart
CS Chair
craig@ieee-bv-cs.org

Seeking Newsletter, Website Editor



Past Chair, current Secretary, and Newsletter/Website editor Karl Geiger has relocated to Redwood City in the Bay Area. Consequently, we're looking for assistance with the Monthly Newsletter and Website.

The newsletter requires about 6-8 hours per month to produce. The website requires a similar time commitment. Karl will train and guide the new editors through the end of 2013.

Working with your fellow IEEE members to get the work out about Buenaventura, neighboring section, and sibling professional organizations is a great way to network. Contact Karl or Bridge about this role.

-- Bridge Carney
Chair, IEEE-Buenaventura 2013-

Systems Integration Test Engineer at Alfred Mann Foundation (www.aemf.org) in Valencia, CA

3+ years of automated system testing. Experience with C/C++, Java, MATLAB and good knowledge of testing equipment. Develop test automated test system for V & V.

Contact
Pat Jacobs

805-579-0630

pat.jacobs@advancedpersonnelprofiles.com

Quality Engineer at Second Sight, Sylmar

Quality Engineer with medical device and quality systems experience.

Contact
Pat Jacobs

805-579-0630

pat.jacobs@advancedpersonnelprofiles.com

FIELD CLINICAL, CLINICAL RESEARCH ASSOCIATE & CLINICAL PROJECT MANAGER

Job openings at Bioness, Alfred Mann Foundation and Second Sight. Must have device experience.

Contact
Pat Jacobs

805-579-0630

pat.jacobs@advancedpersonnelprofiles.com



A Very Special Evening with Jonathan Erland: Making the technology that makes the Movies

6:30-8:30pm, Wednesday, 23 October
Westlake Village Inn



The IEEE of Ventura County is very pleased to present a most unique evening with Motion picture technology developer and innovator Jonathan Erland.

Mr. Erland will present some past, present and future technology challenges that confront movie makers.

Jonathan Erland was been a significant innovator in the development of technology to make the movies that we love. Amongst his many accomplishments, Jon has been responsible for groundbreaking visual effects work on STAR WARS in 1977, STAR TREK: THE MOTION PICTURE in 1979 and FIREFOX in 1982. Over the past 35 years Mr. Erland has been associated with the leading technical teams that make new technologies for motion pictures and in 1993, he and his wife Kay founded Composite Components Company.

Mr Erland's FILM bio:

<http://www.imdb.com/name/nm0259510/>

6:30 – 8:30pm (Hor' dourves and refreshments will be served)

Admission is TBD.

Bridge Carney

bcarney@ieee-bv.org

805-558-5097

OpenADR 2.0 Workshop

Mon Sep 23, 2013 9:00 AM to 5:00 PM and
Tue Sep 24, 2013 9:00 AM to 2:00 PM
Simi Valley, CA

QualityLogic, the official test tool and training vendor to the OpenADR Alliance, is offering a two-day open enrollment class for companies and organizations interested in developing products or programs involving the OpenADR 2.0 specification, including "a" and "b" profiles.

Get more information here:

<http://www.qualitylogic.com/Contents/Smart-Grid/Products-Services/OpenADR-2-Workshop.aspx>

Register now:

<http://storefront.qualitylogic.com/p-92-open-enrollment-training-workshops.aspx>

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and appear in both newsletter and online.

Sponsorships available for website and Section.

Contact newsletter@ieee-bv.org or see our [Ad Placement information](#) to advertise or sponsor the Section.



Technical Ventura

As part of our outreach and education program, IEEE Buenaventura Section publishes a monthly general interest column in a local newspaper, The VC Reporter, under the by-line “Plugged In”. These articles feature local technology businesses and inform the general public about people and technologies that would not usually see in their regular news. “Plugged In” items will be reprinted in the IEEE BV Section monthly newsletter.

Seeing into walls and cookies: SensorTech Systems Inc. in Moorpark

Karl Geiger, karl@ieee-bv.org

What do gypsum board, cookies, clothing and wheat have in common?

Water. More specifically, levels of water, that is, the product’s moisture content.

Readers may recall reports about toxic houses in Florida and other southern U.S. states. The walls of these houses began to mold, and their wiring and plumbing began to rot. One of the underlying reasons was, the imported gypsum board (wall covering) contained too much water, which promoted fungal growth in humid climates.

Gypsum board is made to exact specifications. It is formed and then kiln-dried to make it hard, durable and stiff. Too dry and a board becomes brittle and unsuitable as a building material. Too wet and the board sags or it can mold, leading to “toxic house” syndrome.

Likewise for cookies. Nice, chewy cookies (or conversely, crispy-crunchy cookies) have exact specifications for moisture. Too wet is too gooey and the cookies fall apart; too dry and they shatter into crumbs and dust in the package. Similar problems occur for fabrics in their manufacture, or wheat in storage and processing.

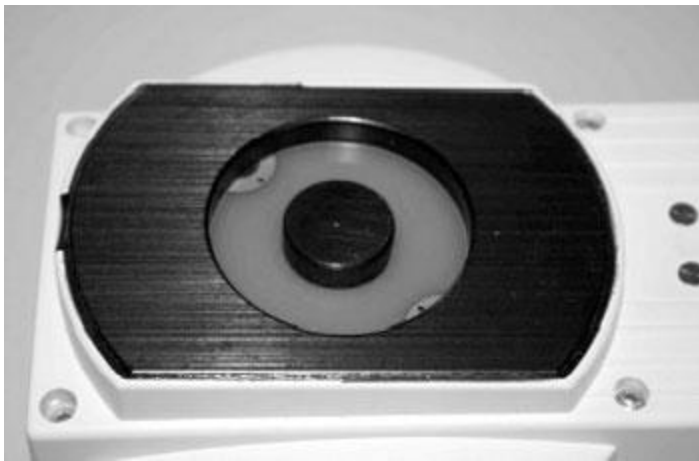
SensorTech Systems Inc. of Moorpark has an answer.

SensorTech (www.sensortech.com) makes devices that scan materials during their manufacture or handling to detect how much water they contain. The company’s sensors use either the company’s patented dielectric effect or near-infrared (NIR) methods. SensorTech’s technologies are noninvasive and work at high speeds. In the case of gypsum board, an array of SensorTech sensors thoroughly check the full width and length of each panel on the production line as it whizzes by at several meters per second.

The dielectric method relies on tuned radio circuit. The sensor circuit sets up an electric field inside the material to be tested. The electric field spreads out and penetrates beneath the material’s surface for several centimeters. The amount of water in the material affects the electric field’s strength, and the radio circuit reads the field change by shifting frequency — it changes tune. Calculations

based on the field change determine the moisture level.

The sensors themselves are made of solid metal and plastic so they are very robust and durable. For gypsum board sensors, they are mounted in arrays that can withstand the harsh manufacturing environment, which includes workers walking across



them or accidentally dropping things on them. The sensors have no moving parts to wear or fail, and they can detect moisture in uneven or bulky materials. They can even test materials that are passing through pipelines. SensorTech's high-temperature and ultrahigh-temperature sensors are capable of operating in temperatures up to 500°C (932°F), and sanitary sensors may withstand total immersion.

SensorTech Systems supplies detectors to many industries where moisture specification is critical: wood products such as plywood, veneer and particle board; coal and asphalt; roofing tiles and shingles; food, candy, food powders and animal feeds; and the textile industry, both for bulk fiber and woven and finished fabrics.

The company, headed by IEEE Buenaventura Section member Colin Hansen, has been in business for 25 years. It has offices throughout the U.S. and Canada and regional offices in Europe, Australia and the Far East. Manufacturing and service takes place in Moorpark, and many parts are sourced from local electronics suppliers in Ventura County.

In addition to its industrial products, the company also makes a portable, hand-held device that can be used anywhere by anyone. Contractors or building and health inspectors can use it to "see" the moisture content inside walls to determine if materials are defective or if a health hazard is present. The unit is sealed and has a simple readout that makes it easy to understand.

SensorTech Systems moisture sensors are found in nearly every gypsum board plant worldwide. The company is continuing its research and development in Moorpark to expand its line of business products in new industries and with new applications. The company offers full design and development services so it can satisfy its customers' demands rapidly.

The next time you work on your house, build something with plywood or just eat a cookie, remember SensorTech in Moorpark.

This item was originally published in the 8 August 2013 edition of the VC Reporter:

http://vcreporter.com/cms/story/detail/plugged_in/11131/

If you would like your company featured in Plugged-In, please contact Bridge Carney, bcarney@ieee-bv.org, or Karl Geiger, karl@ieee-bv.org.

Upcoming IEEE Buenaventura Section Events



MEETING NOTICE

BV-COMSOC Chapter

Date and Time: Tuesday, September 10th, 2013

Location: Skyworks, Intersection of West Hillcrest Drive and Lawrence Drive, Newbury Park, CA 91320 (not the main building, please use link below to green arrow that pinpoints building)

<http://maps.google.com/maps?q=34.187542,-118.930994&num=1&t=h&vpsrc=0&ie=UTF8&z=18&iwloc=A>

Agenda: 6:30 p.m. Dinner, & Networking
7:00 p.m. Meeting & Presentation

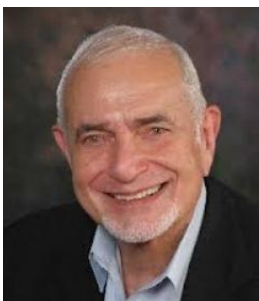
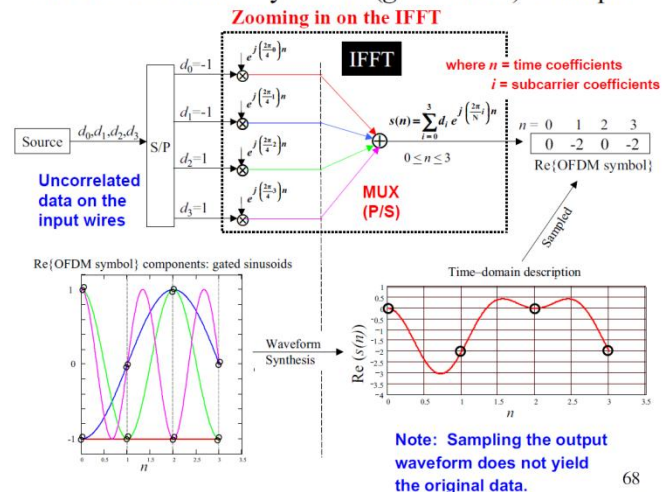
RSVP Requested: https://meetings.vtools.ieee.org/meeting_view/list_meeting/19643

Title: The ABC's of OFDM

Speaker: Dr. Bernard Sklar

Abstract: Orthogonal frequency division multiplexing (OFDM) is a scheme that utilizes many closely-spaced orthogonal sub-carriers. Data is partitioned into groups; each group is assigned a sub-carrier, which is then modulated in a conventional way. The primary advantage of OFDM is its ability to cope with severe channel multipath conditions, such as frequency-selective fading, without having to use complex equalization filters. SC-OFDM is an important variant of OFDM which ameliorates the peak-to-average power ratio (PAPR) problem inherent in OFDM. We use MATLAB examples. We show how to maintain signal orthogonality at the receiver. We review linear versus circular convolution, and illustrate applications from 802.11, 802.16, and LTE. The presentation strives to explain things simply and intuitively.

OFDM Waveform Synthesis (generation) Example



Biography: Dr. Bernard Sklar has over 60 years of technical experience in industry and academia. He helped develop the MILSTAR satellite system, and was the principal architect for EHF Satellite Data Link Standards at the Aerospace Corporation, El Segundo, California. Currently, he is the Director of Advanced Systems at Communications Engineering Services, a consulting company he founded in 1984. He has taught engineering courses at UCLA and the University of Southern California, and has presented numerous training programs throughout the world.

Dr. Sklar has published and presented scores of technical papers. He is the recipient of the 1984 Prize Paper Award from the IEEE Communications Society for his tutorial series on digital communications, and he is the author of the book, Digital Communications: Fundamentals and Applications, 2nd Edition, Prentice-Hall, 2001. He is past Chair of the Los Angeles Council IEEE Education Committee. He holds a Ph.D. degree in engineering from the University of California, Los Angeles.

MEETING NOTICE **Buenaventura MTT-S Chapter**

Date and Time: Wednesday, September 18th, 2013 (6:30PM)

Location : Ciao Wireless

4000 Via Pescador, Camarillo, CA 93012

Agenda: 6:30PM Reception & Networking;
7PM Presentation

Avionics Systems and Antennas

Presenter : Momin Quddus

Jet Propulsion Laboratory

Abstract

Since Wright brothers first flew their flying machine there has been a push to add instruments to airplanes to make flying safer and easier. With the inventions of electronic instruments for aviation came the word 'Avionics' (Aviation + Electronics). Modern aircrafts are equipped with several communication and navigation instruments. In addition to these systems military aircrafts are equipped with Electronic warfare systems. Each of the systems requires antennas.

In this talk a high level overview of the avionics systems in commercial and military aircraft and their corresponding antennas will be provided. Detailed topics will be discussed based on the interest of the audience.

About the Speaker

Momin Quddus worked for an avionics equipment manufacturer for a decade where he designed antennas and avionic subsystems for Military and commercial aircrafts. Currently he works at Jet propulsion Laboratory where he is involved in the development of a Radar instrument for a current mission. He is also involved in the formulation of a future remote sensing radar mission. Prior to JPL he designed and developed Satellite receiver for Direct Broadcasting system. He also designed CDMA and TDMA mobile phones at Motorola and NEC. Momin received his MSEE degree from FAU and BSEE degree from University of Texas. He received his PE certification in State of Florida.

Momin holds a patent on a antenna design for wireless devices. He serves as an Officer in MTTS & AESS Chapters and IEEE Buenaventura Section.

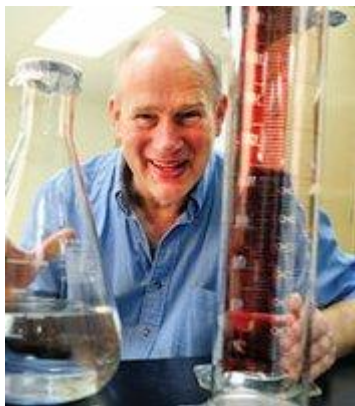
Momin enjoys playing field hockey, tennis and soccer. He coaches youth , field hockey, soccer, basketball and track & field teams.



Wednesday 25 September
The Ventura BioCenter
Dr. Greg Cauchon

Greg Cauchon is the founder and President of Amethyst Life Sciences, a diversified life-sciences company based at the Ventura BioCenter in Thousand Oaks, CA. Through its various divisions, Amethyst offers analytical and discovery CRO services, synthetic polymers and polymer reagents, and consulting support to the global health- and materials-science markets. Dr. Cauchon is an angel investor and charter member of the Maverick Angels of Agoura Hills, where he focuses on life-sciences startups. Prior to founding ALS, Dr. Cauchon served as a research scientist at the biotech firm Amgen, where he was responsible for developing novel analytical methodologies as well as characterizing both early- and late-stage recombinant biotherapeutics.

Dr. Cauchon holds a Ph.D. in Chemistry from Purdue University, an M.S. in synthetic organic chemistry from San Francisco State University, and a B.S. in Chemistry from the University of Miami. He is a member of the American Chemical Society and the American Association of Pharmaceutical Scientists and serves as an advisor to several development-stage life-sciences firms. Dr. Cauchon's current research interests include biotech drug design and development, polymer and biopolymer chemistry, conjugation reactions, convective separation methods, and particle characterization.



Most recently, Dr. Cauchon has launched the Ventura BioCenter, Ventura County's only wet-lab incubator for life-sciences businesses. Located in Thousand Oaks, CA, VBC offers over 11,000 square feet of offices and laboratories along with access to modern lab equipment and instrumentation. In addition to lowering the cost of early-stage R&D by sharing space, utilities, and equipment, the Ventura BioCenter leases out its R&D and office space on a month-to-month basis, providing unprecedented flexibility for startup firms as they negotiate the tortuous path to profitability. One important goal of the Ventura BioCenter is to leverage the rich talent pool in Ventura County to develop new products and services which can be commercialized by startup companies right here in this area, fueling sustainable economic growth well into the future.

Dinner will be held in the Ahmanson Science Building. Dinner begins at 6 pm and the presentation at 7 pm in the Ahmanson Science Building.

As always, meetings are held at California Lutheran University. Dinner will be held at 100 Ahmanson Science Building at 60 West Olson Road, Thousand Oaks. We offer a sit-down buffet-style dinner for \$10 and hope that you will join us for networking. Looking forward to seeing you

Please note that the parking situation at California Lutheran University (CLU) has recently changed. Visitor parking is no longer available without a permit before 7 p.m. on [streets shown in red on the map](#). Please Park in "G" lots. If you would like a one-evening on-street parking permit (readily available at no cost), or desire assistance walking to / from the Ahmanson Science Center, ask at the CLU Welcome Center or call CLU Public Safety at 805-392-3208. For more information, please see our [chapter web site](#). There is a [link to parking permits](#).

Upcoming IEEE Nearby Events



Coastal LA Section Presents CLAS TECH Symposium and Exhibition
October 25, 2013
Hacienda Hotel, 525 N. Sepulveda Blvd.
El Segundo CA, 90245

Mark Your calendar!

The 2013 CLASTECH Symposium and Exhibition will include 5 technical sessions, a poster session, and table top exhibits. A buffet lunch will be provided.

To get the ½ price fee (\$15), register on-line and ensure that you get lunch, please register before October 21. Onsite registration will be \$30.

Here is a link to the registration page <http://clastech2013.eventbrite.com>
or contact c.jackson@ieee.org for more information

Antenna Speakers (Preliminary)

Yahya Rahmat-Samii (UCLA)
Dan Sievenpiper (UCSD)
Hans-Henrik Viskum (TICRA)
Greg Hindman (Nearfield Systems, Inc)
Martin Schauer (CST)

Microwave Speakers (Preliminary)

P. Heydari (UCI) RF CMOS
Jim Schellenburg, GaN
John Wood, Modeling
Ken Cooper, THz imaging
J-S Moon, graphene transistors

Buenaventura Section and Chapter Info

<u>Section Office 2012</u>	<u>Name</u>	<u>E-Mail</u>
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Vice-Chair	Albert Wolfkiel	awolfkiel@ieee-bv.org
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Sr. Representative, LA Council	Bridgeman Carney	bcarney@ieee-bv.org
Representative, LA Council	John Wright	j.wright@ieee.org
Section Webmaster	Karl Geiger	webmaster@ieee-bv.org
Newsletter	Zak Cohen	newsletter@ieee-bv.org
	Karl Geiger	

<u>Chapter</u>	<u>2013 Chair</u>	<u>E-Mail</u>
Aerospace	Momin Quddus	moming7@yahoo.com
Communications	David Pehlke	chair@comsoc.ieee-bv.org
Computer	Craig Reinhart	reinhart@callutheran.edu
Electron Dev./Circuits and Systems	Sunil Pai	chair@edcas.ieee-bv.org
Engineering in Medicine and Biology	Bob Rumer	chair@embs.ieee-bv.org
Life Members Affinity Group	Jerry Knotts	chair@lmag.ieee-bv.org
Microwave Technology and Techniques	Tom Campbell	chair@mtts.ieee-bv.org
Power and Energy	Bridge Carney	bcarney@ieee-bv.org
Robotics	Bob Rumer	rrumer@callutheran.edu

Be sure to check the Section's websites for the latest updates, meeting flyers, and newsletters. Some event details may change. Sites:

<http://www.ieee-bv.org/>

<http://comsoc.ieee-bv.org/>

<http://www.ieee-bv-cs.org/>

<http://www.ieee-bv-embs.org/>

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