IEEE Buenaventura Section

Welcome to the Buenaventura IEEE Section for February, 2009.
In preparing for our Annual Awards Banquet in January, it struck me how well aligned our activities and mission are with a new national emphasis on science and technology, especially in the areas of Energy, Communications and Health. Please join the officers and members of our Section in continuing our service and educational efforts.

We held our annual Section Awards Banquet last month – and have some wonderful photos of the attendees and award recipients.

Later this month, National Engineering Week will celebrate the accomplishments of engineers throughout Ventura and Santa Barbara Counties, including our Engineer of the Year, ***Nathalie Gosset***! I hope to see you at the dinner and award ceremony at the Ronald Reagan Library on the 19th. Write to me sfjohnso@ieee.org or Doug Askegard dougaskegard@ieee.org to purchase tickets, or better yet, a whole table!

We have some great events this month, including:

- Feb 10th: **Communications**, Recent Progress in Disruption Tolerant Networking
- Feb 11th: **Computer**, Member Interaction / Planning Meeting
- Feb 18th: **MTTS**, The Development of the Hydrogen Maser Atomic Clock
- Feb 19th: **NEWC**, National Engineering Week Dinner
- Feb 23rd: **Section**, Monthly Operating Committee meeting
- Feb 25th: **EMBS**, Progress Update on the Automated Wearable Artificial Kidney
- Feb 26th: **Aerospace**, Member Interaction / Planning Meeting

Steve Johnson, 2009 Section Chair

Renew your IEEE Membership for 2009

Engineers Week / February 15-21, 2009

2009 Engineers Week Committee

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Scholarship Committee

ASQ
Allen Grizzard-Paul
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Awards

Other Participating Societies
AFE, AIAA, AIP, AIPE
ASHRAE, ASPE, ASQ, ITE
NACE SEC, SHPE, SME, SPE

National Engineers Week Dinner
Ventura and Santa Barbara Counties

Thursday, February 19, 2009

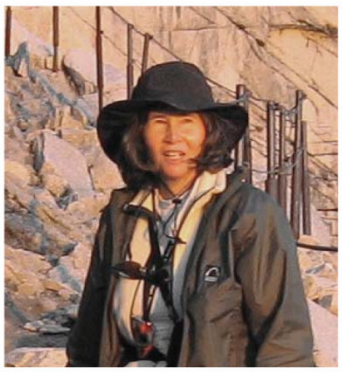
5:30 –9:00 PM

The Ronald Reagan Presidential Library

Suzanne L. Klein, Ph.D.

Senior Flight Software Engineer at the Jet Propulsion Laboratory (JPL)

"The Transition to Alternative Energy: The Challenges and Rewards"



Evening Program Also Includes:

The Ronald Reagan Presidential Library Tour
Dinner
Employee and Project of the Year Awards
Scholarship Awards to Local Engineering Students
Teacher Recognition Award

How to contribute and show your support:

Reserve a Table Now for $650 (seats 10)
Contribute to the Scholarship Fund
Place an Advertisement in the Banquet Program

Look for More Details on our Website:

http://www.newc-vsb.org

MEETING NOTICE **Buenaventura Section's ComSoc Chapter**

Date and Time: Tuesday, February 10, 2009

Location : ITT – FPS, 3500 Willow Lane, Thousand Oaks, CA

Directions: take the Hampshire Rd. exit off Hwy 101, facility is east on the south side of 101
http://maps.yahoo.com/maps_result?addr=3500+Willow+Lane&csz=Thousand+Oaks%2C+CA&country=us&new=1&name=&qty=

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

RSVP Requested only if you plan to attend: Victor S. Lin, victor.s.lin@aero.org

NOTE: The presentation takes place in a company that is involved in Government work. Therefore, please note that you will be asked for Government issued picture ID (Drivers License or better). Non-US Citizens will need to bring Right-To-Work documentation.

Recent Progress in Disruption Tolerant Networking

Speaker: Loren Claire

The Delay/Disruption Tolerant Networking (DTN) architecture has been offered as a solution to the shortcomings of the TCP/IP Internet suite of protocols in networks exhibiting very long delay links, paths lacking continuous connectivity, and other effects in "challenged" environments. Examples of DTNs include space networks, mobile ad hoc networks (MANETs) and Vehicle Area Networks (VANETs), rural/village networks, and wireless sensor networks. The DTN architecture provides a store-and-forward capability, using intermediate storage in nodes, to accommodate intermittent network connectivity and use of opportunistic or scheduled contacts.

This talk will provide a brief overview of the DTN architecture. Then recent progress will be described for the specific domain of space networking. In particular, the Deep Impact NETwork (DINET) flight experiment was conducted by NASA-JPL in the fall of 2008 in which an implementation of the DTN architecture was uploaded onto a vehicle in deep space and relay operations were successfully conducted over a virtual network topology created using the Deep Space Network and a ground-based operations center. Additional progress is being made toward the international standardization of DTN for space, as reflected in the CCSDS Green Book draft that appears to be nearing acceptance.

Bio: Loren Clare is the supervisor for the Communications Networks Group at the Jet Propulsion Laboratory. He is responsible for communications architecture definition and protocol design and analysis for space networks. He manages tasks within the Interplanetary Network Directorate (IND) Networking and Mission Automation Program Office. He conducts systems engineering for NASA's Space Communications and Navigation (SCaN) Network Integration & Engineering (NI&E) team. He obtained the Ph.D. in System Science from the University of California, Los Angeles in 1983. His interests include wireless communications protocols, self-organizing systems, network systems design, modeling and analysis, and distributed control systems. Prior to joining JPL in May 2000, he was a senior research scientist at the Rockwell Science Center, where he acquired extensive experience in distributed sensor networks, satellite networking, and communications protocols for realtime networks supporting industrial automation.

IEEE Buenaventura Section
Computer Society Chapter

IEEE COMPUTER SOCIETY

Computer Society

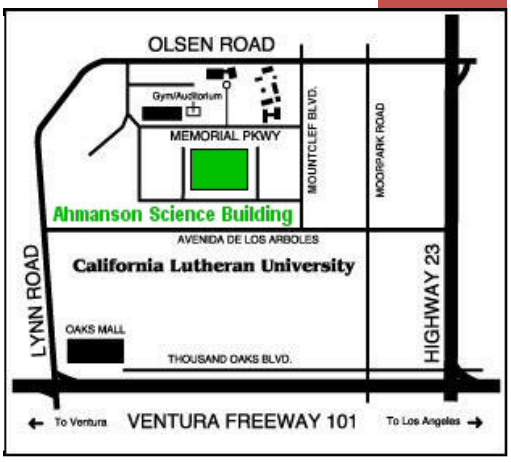
Interaction and Planning Meeting
Wednesday, February 11, 2009
CLU Ahmanson Science Building

Join us to set the agendas for the Ventura County 2009 IEEE Computer Society chapter meetings at 7pm Wednesday, 11 Feb, at CLU's Ahmanson Science Center. This is the year to see and share with your colleagues, friends, and interested parties what's really driving innovation in computers, software, and robotics.

Following William Gibson's assertion that "the street finds its own use for things", come figure out what hacks, tweaks, new ideas and novel uses are out there and you want to get your hands on.

Pizza at 6pm, meeting at 7pm. See you there!

Meeting Site:	**California Lutheran University, 100 Ahmanson Science Building, 60 West Olson Road, Thousand Oaks** **Meetings are free, open to the public**
Dinner:	Pizza and soft drinks available at 6 p.m.
Parking (Changed):	**Visitor Parking is no longer permitted before 7 p.m. on Memorial Pkwy and adjacent street. Please Park in "G" lots or stop at the CLU Welcome Center for an on-street parking permit.** If you desire assistance walking to/from the Ahmanson Science Center, ask at the CLU Welcome Center or call CLU Public Safety is at 805-392-3208 Map Here
Contact:	Craig Reinhart, reinhart@clunet.edu



IEEE Microwave Theory and Techniques Society MTT-S

The Development of the Atomic Clock
Adrian E. Popa, Director Emeritus, Hughes Research Laboratories
Wednesday, February 18, 2009 at Ciao Wireless, Camarillo

Since 1967, the International System of Units has defined the second as the duration of 9,192,631,770 cycles of radiation corresponding to the transition between two energy levels of the ground state of the caesium-133 atom. This definition makes the cesium oscillator (often called an atomic clock) the primary standard for time and frequency measurements. Other physical quantities, like the volt and meter, rely on the definition of the second as part of their own definitions.

The core of the atomic clock is a tunable microwave cavity containing the gas. In a hydrogen maser clock, invented at Hughes Research Laboratories in 1978, the gas emits microwaves on a hyperfine transition, the field in the cavity oscillates, and the cavity is tuned for maximum microwave amplitude.

Adrian E. Popa

Doing research in Southern California for defense and aerospace for many decades, and a self-professed Mad Scientist, Mr. Popa worked on the development of the Atomic Clock at Hughes Research Laboratories in Malibu. In the 1950s, he wired Nike Ajax missiles and DC-6/7 aircraft at Douglas Aircraft, (1/54-1/56), Ft. Ord, Army airplane mechanic (L-19s) and was a Nike Ajax radar operator, Kingston, WA. Later in the decade and into the first years of the 1960's, he conducted research on Nike Zeus, Thor antennas and DC-8/9 aircraft antenna systems at Douglas Antenna Lab. Subsequently, he worked for forty years at Hughes Research Labs, Malibu, CA.

Ciao Wireless

4000 Via Pescador, Camarillo.
Pizza and networking at 6:30 Talk at 7:00
Directions at http://www.ciaowireless.com/directions.shtml

From Los Angeles:

- Take the I-405N.
- Take the US-101/VENTURA FWY North
- Take the SANTA ROSA RD exit towards PLEASANT VALLEY RD.
- Turn RIGHT onto SANTA ROSA RD.

From Santa Barbara:

- Take the US-101S/VENTURA FWY towards LOS ANGELES.
- Take the PLEASANT VALLEY RD exit towards SANTA ROSA RD.
- Turn LEFT onto PLEASANT VALLEY RD.
  PLEASANT VALLEY RD becomes SANTA ROSA RD.

- Turn LEFT onto ADOLFO RD.
- Turn LEFT onto AVENIDA ACASO.
- Turn LEFT onto VIA PESCADOR.

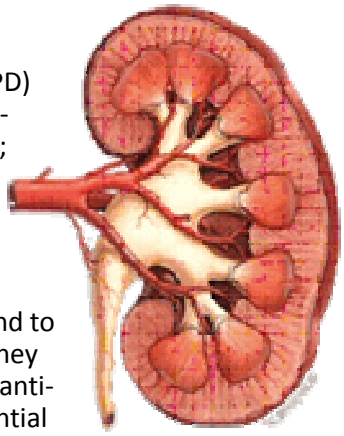
IEEE BUENAVENTURA ENGINEERING IN MEDICINE AND BIOLOGY EMB

Automated Wearable Artificial Kidney (AWAK) - Progress Update

Martin Roberts, PhD

Wednesday, February 25, 2009 7 PM

CLU - Richter Hall, Ahmanson Science Building



Unlike the natural kidney, available artificial kidneys (hemodialysis, HD, and peritoneal dialysis, PD) for the treatment of end-stage renal disease (ESRD) patients do not provide optimum and round-the-clock toxin removal and metabolic and fluid regulation; do not remove protein-bound toxins; and impose regimentations which compromise normal living activities. In addition to chronic ill-health, ESRD patients treated with dialysis have a high death-rate.

A wearable artificial kidney can duplicate the natural kidney by providing round-the-clock function. Available work on wearable kidney has focused exclusively on the technology of HD/ hemofiltration, which requires blood to circulate outside the body (extracorporeal circulation) and to come into contact with artificial membrane for purification. To-date, HD/HF-based wearable kidney has uniformly failed to function for extended period because of blood-clotting not amenable to anti-coagulation therapy. A need for extensive monitoring of the extracorporeal circulation and potential immunologic and non-immunologic complications of life-long blood-artificial membrane interactions are some of the other concerns.

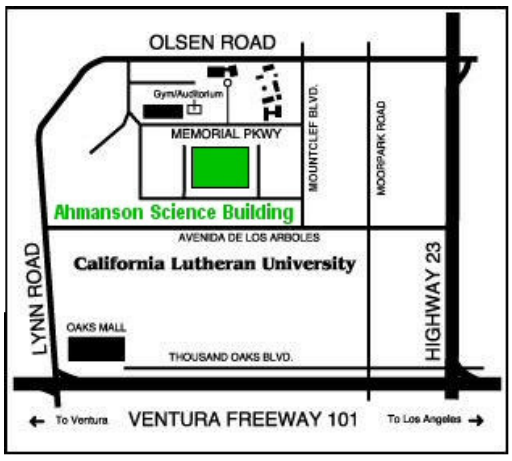
We have worked on a peritoneal dialysis-based automated wearable artificial kidney (AWAK). PD does not require an extracorporeal circulation and is therefore “bloodless”. It is also “waterless” because the spent dialysate, instead of being discarded (as is in current practice), is continuously regenerated and reused in perpetuity. A sorbent-based assembly regenerates both the aqueous and the protein components of the spent peritoneal dialysate, producing a novel autologous protein-containing dialysate that can remove both the water-soluble and protein-bound toxins. Automated dialysis-on-the-go frees the ESRD patients from the servitude of current dialytic regimentations.

Martin Roberts, PhD.

Consultant in Nephrology, VA Greater Los Angeles Healthcare System and Assistant Professor of Medicine, David Geffen School of Medicine at UCLA

Dr. Roberts and his collaborator, David BN Lee M.D., have worked in the field of dialysis and the wearable kidney for decades. Dr. Roberts received his PhD from USC and M.A. from Brooklyn College. Holder of six patents and the recipient of the 2001 Distinguished Honoree for Outstanding Contributions to Nephrology in the Area of Research from the American Nephrology Nurses Association, Dr. Roberts has been associated with Nephrology for over 40 years, most of that time in Southern California. He is assistant professor of clinical medicine at the David Geffen School of Medicine at UCLA and a dialysis consultant with the VA Healthcare System.

Meeting Site:	**California Lutheran University, 100 Ahmanson Science Building, 60 West Olson Road, Thousand Oaks** **Meetings are free, open to the public**
Dinner:	Available at 6 p.m. for $10 payable at the door, no RSVP needed.
Parking (Changed):	**Download your on-street parking pass by visiting the EMBS web site, www.bv-embs-chapter.com**
Contact:	Mike Shaw, mcshaw@clunet.edu
Our Sponsors:	**California Lutheran University**, **IEEE EMB Society**, Alfred Mann Institute, MicroJoining Solutions, IEEE Buenaventura Section, Amgen Foundation



IEEE Buenaventura Section
Aerospace and Electronics Systems Chapter

AEROSPACE & ELECTRONIC SYSTEMS

Member Interaction Meeting

Date: **February 26, 2009**

Time: **6:30 pm Refreshments and Networking,**
7:00 pm Talk

Venue: **Vitesse Semiconductor Corp.**
741 Calle Plano,
Camarillo, CA 93012

This is a general planning meeting specifically for AES members (but open to all IEEE members) in the IEEE Buenaventura Section, to develop a plan for the coming year. The agenda for the meeting is as follows:

(1) General Membership development
- Providing best value to members
  - What can the local chapter do to help members in their professional activities?
  - What are the expectations of the members?
  - What can members do to help develop chapter activities?
  - What benefits does IEEE membership provide?
- Discussion on issues pertaining to GOLD members
  - Benefits of membership
  - Other benefits (resume, conferences, jobs, papers)

(2) Monthly Meeting ideas and logistics
- Live & Virtual Meetings
- Meeting Content & Speakers
- Mini-conferences
- Other ideas

Discussion is not limited to above items.

Please RSVP to Sunil Pai (paisunils@ieee.org) if you wish to attend this meeting.

Speakers: Officers of the Buenaventura AES chapter

Chair:	Sunil Pai, paisunils@ieee.org
Vice-Chair:	Rich Borgioli, borgioli@vitesse.com
Treasurer:	Angela Monheim, amonheim@ieee.org
Secretary:	Puneeta Bhadsavle, puneetab@vitesse.com

2009 Buenaventura Section IEEE Officers

We welcome your involvement – We have several positions open!

Section Office	**Name**	**E-Mail**
Chair	Steve Johnson	sfjohnso@ieee.org
Vice-Chair	Momin Quddus	mominq7@yahoo.com
Treasurer	Zak Cohen	zakc99@aol.com
Secretary	Jerry Knotts	jeknotts@roadrunner.com
Program Officer		
Award Officer	Doug Askegard	dougaskegard@ieee.org
Past Chair	Nathalie Gosset	gosset@usc.edu
Sr. Representative, LA Council	Geoff Lenart	glengator2004@yahoo.com
Jr. Representative, LA Council	Albert Wolfkiel	albert.wolfkiel@navy.mil
Section Webmasters	Alex Lancaster	alexlancaster@ieee.org
	Steve Johnson	sfjohnso@ieee.org

Chapter	**Chair**	**E-Mail**
Aerospace	Sunil Pai	paisunils@ieee.org
ComSoc	Mihai Pucchiu	MPuchiu@ixiacom.com
Computer	Craig Reinhart	reinhart@callutheran.edu
EDCAS	David Viveiros	david.viveiros@ieee.org
EMBS	Mike Shaw	mcshaw@clunet.edu
LMAG	Jerry Knotts	jeknotts@roadrunner.com
MTTS	Chuck Seabury	cseabury@pacbell.net
Robotics	Karl Meier	karlmeier@ieee.org

2009 Buenaventura Section Awards Banquet

Robotics and Automation
Karl Meier, Chair
Ben Johnson, Vice Chair

Microwave Theory and Techniques
Momin Quddus, Chair
Chuck Seabury, Vice-Chair
Mishal Khalil, Pgrm Officer
Will Branning, Secretary
Xiaofang Mu, Treasurer

Communications Society
Victor S. Lin, Secretary
Mihai Puchiu, Chair
Mike Markowitz, Program Officer
Zhijian Hua, Vice-Chair
Zak Cohen, Chapter Officer

Electronic Devices, Circuits and Systems
David Viveiros, Chair
Hongxiao Shao, Vice-Chair
Emmanuele Mandeli,Treasurer
Juntao Hu. Marketing Officer
David J. Gulbransen. Officer

Life Member Affinity Group
Jerry Knotts, Chair

Engineering in Medicine and Biology
Steve Johnson, Chair
Harry Croner, Vice-Chair
Pat Jacobs, Treasurer
Michael Shaw, Ph.D., Student Dvlpt
Abe Janis, Professional Development
Nathalie Gosset, Past Chair
David Steinmeier, Program Chair
Abigail Corrin, Secretary
Thomas Estus and Greg Johnson, Student Club Liaison

Aerospace and Electronics Systems
Sunil Pai, Chair
Angela Monheim, Secretary
Rich Borgioli, Treasurer

Administrative Committee
Nathalie Gosset, Chair
Steve Johnson, Industry Relations
Albert Wolfkiel, Treasurer
Alex Lancaster, Webmaster
Zak Cohen, Secretary and Member Development
Doug Askegard, PACE Officer, Program Chair
Geoffrey Lenart, IEEE Los Angeles Council Representative, Council Chair

IEEE Buenaventura Section

Computer and BioEngineering Departments

Physics Department

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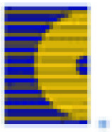

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