



IEEE

Buenaventura Section

WELCOME BACK!

Spring Mixer

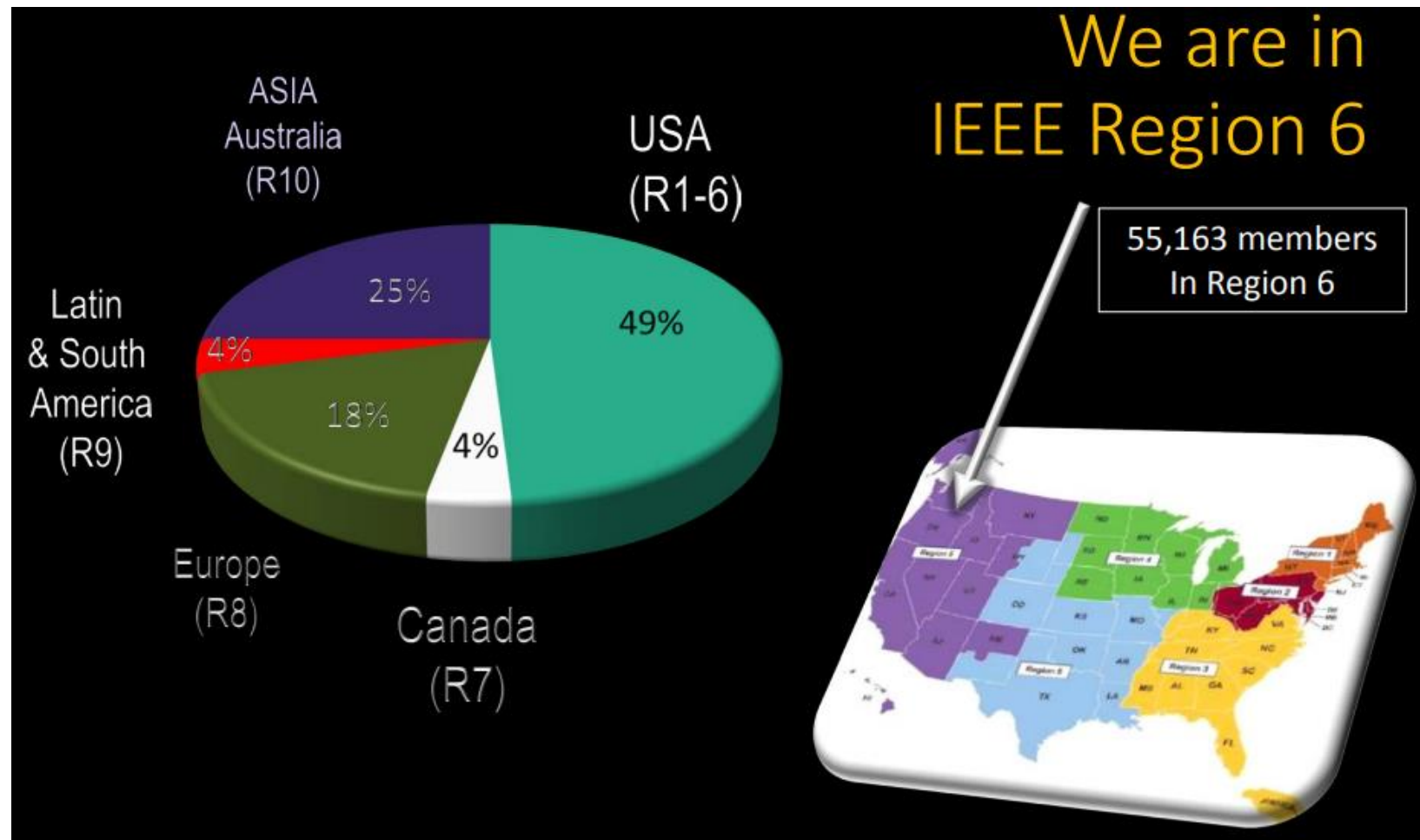
2022

Momin Quddus, Chair

May 11, 2022



IEEE is one of the largest Professional Organizations in the World



IEEE BV
Section
Geographic
region



Buenaventura Section represents 10 societies and 1 Affinity Group

IEEE Societies

- Aerospace & Electronic Systems
- Antennas & Propagation
- Broadcast Technology
- Circuits & Systems
- Communications
- Components, Packaging, & Manufacturing Technology
- Computer
- Computational Intelligence
- Consumer Electronics
- Control Systems
- Dielectrics & Electrical Insulation
- Education
- Electromagnetic Compatibility
- Electron Devices
- Engineering in Medicine & Biology
- Geoscience & Remote Sensing
- Industrial Electronics
- Industry Applications Information
- Theory Instrumentation & Measurement
- Intelligent Transportation Systems
- Lasers & Electro-Optics Magnetics
- Microwave Theory & Techniques
- Nuclear & Plasma Sciences
- Oceanic Engineering
- Power Electronics
- Power Engineering
- Product Safety Engineering
- Professional Communication
- Reliability
- Robotics & Automation
- Signal Processing
- Society on Social Implications of Technology
- Solid-State Circuits
- Systems, Man, & Cybernetics
- Ultrasonics, Ferroelectrics, & Frequency Control
- Vehicular Technology
- **Photonics Society**



Affinity Groups

- Consultants Network
- **Life Members**
- Women in Engineering
- Young Professionals
- coming up: Entrepreneurs Network

IEEE- BV Section Mission

- **Mission-Enhance the careers and enrich the lives of our members**
- Improving our members knowledge in technologies thru Technical talks
- Mixers for networking
[Home - IEEE Buenaventura Section \(www.ieee-bv.org\)](http://www.ieee-bv.org)
- Helping our members find employment opportunities
[Jobs - IEEE Buenaventura Section \(www.ieee-bv.org\)](http://www.ieee-bv.org)
- Provide a platform to contribute to our community.

Chapter Meetings and Technical Talks

In 2020

BV Chapters organized 15 technical talks, 8 of which were in-person and 7 were virtual due to the pandemic

In 2021

BV Chapters organized 40 virtual lectures.

Some of these lecture were organized local speakers.

Others were co hosted with organization such, as Keck Institute of Science, Caltech Program Office, SETI, Planetary Society of OC and MTTs.

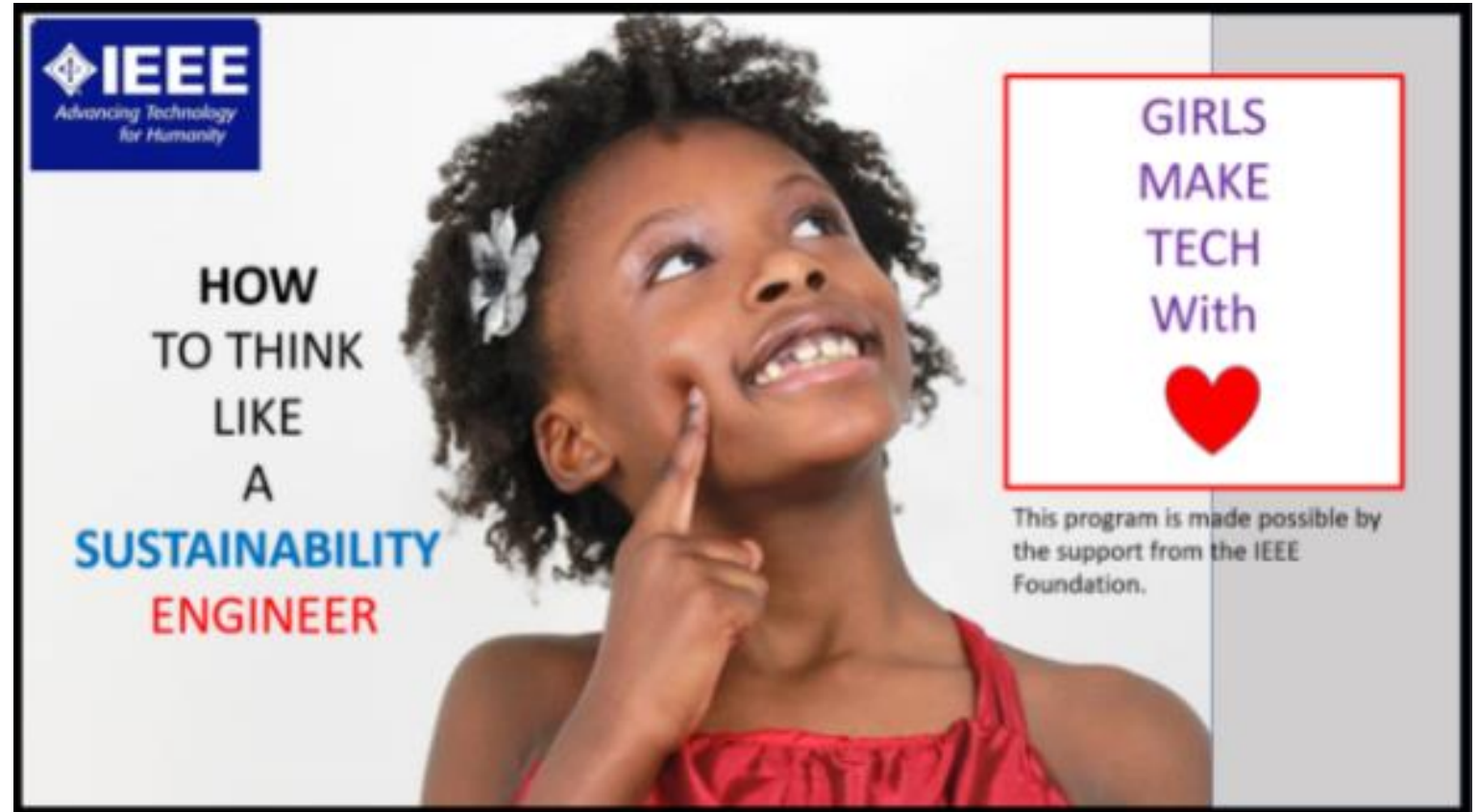
Mixers for Networking

In 2020

BV Section organized 2 in-person mixer events prior to the pandemic

Happy to say we are BACK!!!

Provide a platform to contribute to our community.



IEEE
Advancing Technology
for Humanity

HOW
TO THINK
LIKE
A
SUSTAINABILITY
ENGINEER

**GIRLS
MAKE
TECH
With**


This program is made possible by
the support from the IEEE
Foundation.

IEEE Foundation Grant

Buenaventura Section was awarded IEEE Foundation grant to raise awareness of 'Sustainability Engineering' in the community.

20 outreach events were held to promote sustainability engineering.

The IEEE Foundation

-Nathalie Gosset

The screenshot shows the IEEE Foundation website homepage. At the top, there is a green navigation bar with links to IEEE.org, IEEE Xplore Digital Library, IEEE Standards, IEEE Spectrum, and More Sites. A search bar for the IEEE Foundation is also present. Below the navigation bar, the main header features the IEEE Foundation logo and a 'DONATE' button. A horizontal menu contains links for ABOUT US, WHAT TO SUPPORT, HOW TO GIVE, FOR DONORS, FOR IEEE UNITS, and STAY CONNECTED. A central graphic consists of four colored circles (orange, blue, purple, green) containing icons for a lightbulb, an open book, a power plug, and a battery. Below this, the 'About' section is highlighted in orange. A sidebar on the left lists various pages under 'About', including Our History, Vision/Mission, Board of Directors, Professional Staff, Financial Information, Disclosures for Charitable Donations, IEEE Foundation Privacy Policy, and Governance. The main content area features 'OUR VISION' and 'OUR MISSION' sections, each with a descriptive paragraph. A photograph of a person in a red jacket standing in a rocky, mountainous landscape is positioned to the right of the mission statement.

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DONATE

About


- > Our History
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OUR VISION

The IEEE Foundation is a leader in transforming lives through the power of technology and education.

OUR MISSION

The IEEE Foundation inspires an engaged community and leverages the generosity of donors to enable IEEE programs that enhance technology access, literacy, and education and supports the IEEE professional community.



Granted to the Buenaventura EMBS Chapter

2006
\$10,000

**CHOOSE TO BECOME
A BIOMEDICAL ENGINEER!**
Roadshow for 7th graders

IMPACT: 400 middle schools / 7,000 students
2007 EMBS Best Chapter of the Year

LEGACY: The Engineering in Medicine and Biology Society filmed a documentary about THE Buenaventura EMBS chapter initiative.

EMBS roadshow



- Cal Lutheran University Students
 - Joshua Lee *
 - Thomas Estus *
 - Gregory Johnson *
 - Stephen Roberts *
 - Corey Russo *
 - Abigail Corrin



2006

**BEST CHAPTER
ENGINEERING IN MEDICINE &
BIOLOGY SOCIETY**

2016
\$13,000

Grant to the Buenaventura Section



PLAYERS OF THE LIGHT

STEM event for 100 girls
from 6th to 8th grades
+
Conference for 50
parents



GREEN PEPPER

Precision agriculture
drone flyover
The science of agriculture
Field Trip

STEM event for 56 children
from 6th to 8th grades



**2016 IEEE REGION 6
OUTSTANDING SECTION
OF THE YEAR**

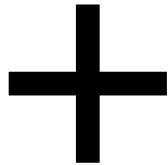
2018
\$16,000

2019
\$16,000

Grants to the Buenaventura Section



**GIRLS MAKE STEM
WITH ❤️**
STEM event for 120 girls
and 60 parents



ENTREPRENEURSHIP
Stimulating
innovation



**SPEAKERS
AWARENESS
PROGRAM**
2018: Aging gracious with Tech
2019: Cybersecurity



FIRST LEGO LEAGUE





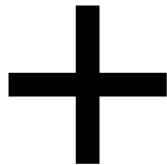
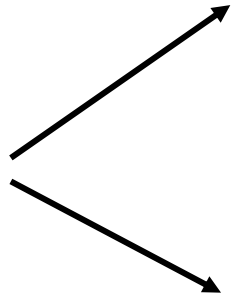
**2019 SECTION PROFESSIONAL
DEVELOPMENT AWARD
FROM THE IEEE EDUCATIONAL BOARD**

2021 and 2022
\$17,000

Grant to the Buenaventura Section



**GIRLS MAKE STEM
WITH ❤️**
STEM event for 180
girls and 60 parents



ENTREPRENEURSHIP
Stimulating
innovation

**SPEAKERS
AWARENESS
PROGRAM**
2020-2021: Engineering
Resilience with Wildfires and
Drought

ROBOTICS LEAGUE

Girls Make STEM with Heart

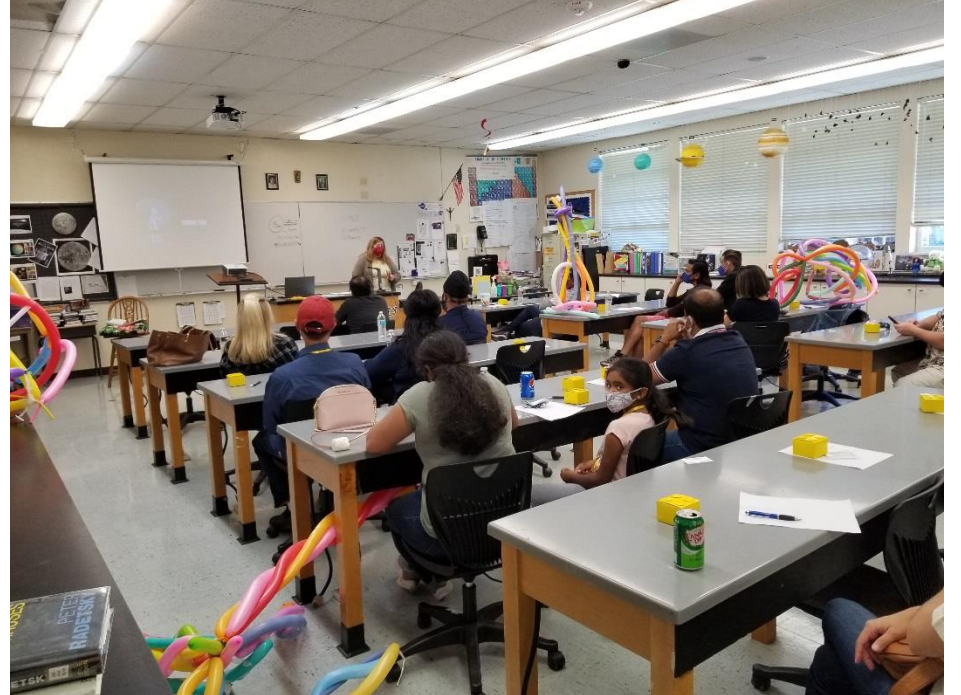
IEEE Buena Ventura Section

Nathalie Gosset/Deron Johnson



Girls Make STEM – Thousand Oaks

- October 2021
- This was our 6th year, introducing middle-school girls different facets of STEM.
- Students chose from workshops on chemistry, circuits, ham radio, light, robotics, solar energy, or math and numbers.
- Parents could attend a program with a mix of hands on experiences, and discover the future that awaits their daughters in STEM.
- Volunteers were a mix of IEEE members and people from other professions.
- 114 students, 50 parents, 30 volunteers



Girls Make STEM – Santa Paula

- Last Saturday!
- This was our 7th year, and first time in Santa Paula, at Isbell Middle School.
- Students chose from workshops on chemistry, circuits, or gravity and magnetism.
- 62 students, 18 volunteers.
- Outstanding support from the school for the first time at their location.





GET CREDIT FOR PLAYING WITH MESSY FOOD
UCLA

OBSERVE CAREFULLY

EXIT





Thank you

Amelia Aboujawdah
Audrey Askegard
Doug Askegard
Pia Atal
Kirstie Bellman
Noreen Camacho
Susan Camarena
Meta Davidson
Dan Demaggio
Narda Fargotstein
Paul Fargotstein
Suzanne Fisher
Nathalie Gosset

Bonnie Hames
Ken Hesson
Stacy Hunter
Deron Johnson
Emily Johnston
Tom Johnston
Branka Jokanovic
Ashley Kuhnley
Chris Landauer
Victor Lin
Cindy Martin
Pat McCombs

Momin Quddus
S K Ramesh
Laphatrada Richards
Bob Rumer
Sana Sarfraz
Chuck Seabury
Sri Priya Sundararajan
Mohammad Tehrani
Shahin Soltanieh Tehrani
Howard Turner
Lily Weaver
Victor Zeng

Buenaventura Section Sponsored First Lego League Robotics

-Lead by
Bob Rumer



Foundation Grant Events



Extreme Drought
Modeling the Risks of Climate Variability
Speaker: Samantha Stevenson, Ph.D.

Date and Time: Friday September 10, 2021, 7 PM
Pre-registration required at www.ieee.org/events/2021-09-drought

Extreme Weather: Drought
Modeling the Risks of Climate Variability

Dr. Samantha Stevenson's research goals relate to understanding how large-scale climate variability responds to changes in climate. You can use climate and hydrologic models to assess drought and precipitation extremes, and use that information to improve the representation of climate variability in climate models. In this talk, Dr. Stevenson will share what extreme weather means about drought events.

Speaker: Samantha Stevenson, Ph.D.

Dr. Samantha Stevenson is an assistant professor in the Earth School of Environmental Control & Management at the University of Colorado Boulder. She is currently working on the impact of drought in the context of using a combination of ocean and climate models, field observations, and hydrologic models. She has also published on the interannual climate variability in the Western US and other climate events with the US Geological Survey. She is currently working on the National Oceanic and Atmospheric Administration (NOAA) and was an NSF Earth System Research Fellow at the University of Colorado Boulder. She is currently working with the USGS on the impact of drought on the Western US.

This program is made possible by the support from the IEEE Foundation, and the IEEE Boardman Section. Pre-approval has been obtained with the grant Engineering Resilience to Drought and Wildfires.



Disentangling What Changes Our Forests
Speaker: John Dudney

Date and Time: Wed Aug 25, 2021, 7 PM
Register Now


Disentangling What Changes Our Forests
Natural science to assess risk to US

Dr. John Dudney studies important questions: what impacts do natural climate variability and global climate change have on the structure and function of forests? How are forests responding to the disturbance experienced in our forested watersheds? How do we assess drought impact on ecosystems, from forest health to subsurface forest? Dr. Dudney aims to answer these questions through various field and lab based approaches. He conducts research in many natural ecosystems, including grasslands, mixed conifer, and high elevation forests, encompassing the complexity of an array of drivers such as inter-annual climate variability, insect pests, and climate change.

Speaker: John Dudney

Dr. John Dudney, Ph.D. is an Assistant Professor in the School of Earth and Atmospheric Sciences at the University of Colorado Boulder. He received his Ph.D. in Environmental Science, Policy and Management from the University of Colorado Boulder. He is currently working on the impact of climate change on the structure and function of forests. He is currently working on the National Oceanic and Atmospheric Administration (NOAA) and was an NSF Earth System Research Fellow at the University of Colorado Boulder. He is currently working with the USGS on the impact of drought on the Western US.

This program is made possible by the support from the IEEE Foundation, and the IEEE Boardman Section. Pre-approval has been obtained with the grant Engineering Resilience to Drought and Wildfires.



RainCube: First Spaceborne Radar in a CubeSat
Speaker: John R. Mount

Date and Time: Wednesday, October 13, 2021 at 6 PM
Register Now

RainCube: First Spaceborne Radar in a CubeSat
Speaker: John R. Mount

RainCube is a technology demonstration mission to enable Ka-Band precipitation radar technologies in a low-cost, small satellite platform. It is funded by NASA's Small Business Technology Transfer (STTR) program as part of the STTR/STO 2017 (On-space Validation of Earth Science Technological) program. RainCube is the first radar and active microwave in a 1U CubeSat. The radar payload and electronics are the first small satellite radar developed at an industrial laboratory (i.e., in partnership with Tyvak Space Systems) as their nanosatellite bus vendor.

Speaker: John R. Mount

John R. Mount is a Professor and the Director of the Center for Space Systems at the University of Colorado Boulder. He received his Ph.D. in Electrical Engineering from the University of Colorado Boulder in 1998. He is currently working on the impact of climate change on the structure and function of forests. He is currently working on the National Oceanic and Atmospheric Administration (NOAA) and was an NSF Earth System Research Fellow at the University of Colorado Boulder. He is currently working with the USGS on the impact of drought on the Western US.

This program is made possible by the support from the IEEE Foundation, and the IEEE Boardman Section. Pre-approval has been obtained with the grant Engineering Resilience to Drought and Wildfires.



Re-engineering Resilience to Wildfires
Speaker: John R. Mount

Thu May 27, 2021, 6 PM (Online)
Register at www.ieee.org/events/2021-05-wildfires

Re-engineering Resilience to Wildfires
Speaker: John R. Mount

The Western US has seen the most significant increase in fire activity in the last century. This is the direct result of changes in climate that have made about 100 million acres of land more susceptible to wildfire. Dr. John R. Mount, an assistant professor at the University of Colorado Boulder, is the recipient of an engineering award to grant funding California State University 2020 award of new satellite radar technology. He is currently working on the impact of climate change on the structure and function of forests. He is currently working on the National Oceanic and Atmospheric Administration (NOAA) and was an NSF Earth System Research Fellow at the University of Colorado Boulder. He is currently working with the USGS on the impact of drought on the Western US.

Speaker: John R. Mount

John R. Mount is a Professor and the Director of the Center for Space Systems at the University of Colorado Boulder. He received his Ph.D. in Electrical Engineering from the University of Colorado Boulder in 1998. He is currently working on the impact of climate change on the structure and function of forests. He is currently working on the National Oceanic and Atmospheric Administration (NOAA) and was an NSF Earth System Research Fellow at the University of Colorado Boulder. He is currently working with the USGS on the impact of drought on the Western US.

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Surviving Disasters
Being part of the solution not the problem
By Ross Kocin

Date and Time: Sun July 11, 2021, 7 PM
Pre-registration required at www.ieee.org/events/2021-07-disasters


Surviving Disasters
Being Part of The Solution, Not the Problem

The impact of disasters on the world is increasing rapidly. The number of disasters, their scale, and the number of people affected are all increasing. This is due to a combination of factors, including climate change, population growth, and the increasing complexity of our societies. In this talk, Dr. Kocin will share what extreme weather means about drought events.

Speaker: Ross Kocin

Dr. Ross Kocin is an Assistant Professor in the School of Earth and Atmospheric Sciences at the University of Colorado Boulder. He received his Ph.D. in Environmental Science, Policy and Management from the University of Colorado Boulder. He is currently working on the impact of climate change on the structure and function of forests. He is currently working on the National Oceanic and Atmospheric Administration (NOAA) and was an NSF Earth System Research Fellow at the University of Colorado Boulder. He is currently working with the USGS on the impact of drought on the Western US.

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Electrical Vehicles (EV) Technology and its Implications on Climate Change
Speaker: Momin Qudus

Wed July 21, 2021, 6 PM (Online)
Register at www.ieee.org/events/2021-07-ev


Electrical Vehicles (EV) Technology and its Implications on Climate Change
Speaker: Momin Qudus

Climate change is a global issue that requires urgent action. One of the most effective ways to reduce greenhouse gas emissions is to transition to electric vehicles (EVs). In this talk, Dr. Qudus will share what extreme weather means about drought events.

Speaker: Momin Qudus

Dr. Momin Qudus is an Assistant Professor in the School of Earth and Atmospheric Sciences at the University of Colorado Boulder. He received his Ph.D. in Environmental Science, Policy and Management from the University of Colorado Boulder. He is currently working on the impact of climate change on the structure and function of forests. He is currently working on the National Oceanic and Atmospheric Administration (NOAA) and was an NSF Earth System Research Fellow at the University of Colorado Boulder. He is currently working with the USGS on the impact of drought on the Western US.

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MAFFS: The Modular Airborne Fire Fighting System
Speaker: Colonel Bryan K. Allen

Thu Aug 19, 6PM (Online)

MAFFS: The Modular Airborne Fire Fighting System
Speaker: Colonel Bryan K. Allen

The Modular Airborne Fire Fighting System, or MAFFS, is a self-contained apparatus, coded into C-130 transport category aircraft for the purpose of dropping fire retardant into a fire. The scope and purpose of this briefing is to inform, educate and provide some insight into the history of MAFFS, an overview of the MAFFS system, how it is employed, several fire fighting operations (including the sequence of preparing for and executing a drop) and finally a short overview of retirement.

Speaker: Colonel Bryan K. Allen

Colonel Bryan K. Allen (retired) served as Commander, 146th Operations Group, 146th Air Refueling Wing, Air National Guard, Fort Ord, California. The 146th Operations Group is a part of the 146th Air Refueling Wing, Air National Guard, Fort Ord, California. He is currently working on the impact of climate change on the structure and function of forests. He is currently working on the National Oceanic and Atmospheric Administration (NOAA) and was an NSF Earth System Research Fellow at the University of Colorado Boulder. He is currently working with the USGS on the impact of drought on the Western US.

This program is made possible by the support from the IEEE Foundation, and the IEEE Boardman Section. Pre-approval has been obtained with the grant Engineering Resilience to Drought and Wildfires.



The FarmBot: An Open-Source Robotic Gardening Machine
Speaker: Alan Rotstein

Jun 10, 2020 - 7PM (Online)

The FarmBot: An Open-Source Robotic Gardening Machine
Speaker: Alan Rotstein

The FarmBot is an agriculture robotic farming machine which aims to "create an open and accessible technology using machine learning to grow food and to grow food for everyone." The FarmBot is an open source, precision agriculture computer numerical controlled gardening tool to help you grow vegetables. Users can add, update and modify the open-source project's hardware, software and documentation. The FarmBot is 100% open source, so all our engineering design and CAD models and software code is and will be for free. The FarmBot system has specific custom cables that they want to do they can design their own tools and custom software. They are welcome to use our engineering designs to grow their own FarmBot systems and tools. The FarmBot has 4 motors, two X-axis motors, one Y-axis motor and one Z-axis motor and these motors are what power the movement of the tool head in the 3D space above the growing area. Learn more about the FarmBot at the link below.

Speaker: Alan Rotstein

Alan Rotstein is a Professor and the Director of the Center for Space Systems at the University of Colorado Boulder. He received his Ph.D. in Electrical Engineering from the University of Colorado Boulder in 1998. He is currently working on the impact of climate change on the structure and function of forests. He is currently working on the National Oceanic and Atmospheric Administration (NOAA) and was an NSF Earth System Research Fellow at the University of Colorado Boulder. He is currently working with the USGS on the impact of drought on the Western US.

This program is made possible by the support from the IEEE Foundation, and the IEEE Boardman Section. Pre-approval has been obtained with the grant Engineering Resilience to Drought and Wildfires.

Section Officers (2022)

Function	Name
Section Chair	Momin Quddus
Section Vice Chair	Doug Askegard
Section Treasurer	Nathalie Gosset
Section Secretary	Deron Johnson
Awards	Doug Askegard
Entrepreneurship	Jerry Knotts – Mentor
Event Planning	Reza Faroozabadi
Historian	Doug Askegard
Membership Development	Reza Faroozabadi
	Nathalie Gosset
	S. K. Ramesh
Newsletter Editor	Deron Johnson
Professional (PACE)	Doug Askegard
Student Activities	Nathalie Gosset
	Bob Rumer
Webmaster	Deron Johnson
	Karl Geiger

Chapter Officers (Vacancies)

Chapter	Officers
Aerospace	Mohammad Tehrani
	Victor Lin
	Doug Askegard
	OPEN
Communications Society (COMSOC)	Victor Lin
	OPEN
	OPEN
	OPEN
Computer	Deron Johnson
	Karl Geiger
	OPEN
	OPEN
Electromagnetic Compliance / Consumer Electronics	OPEN
	OPEN
	OPEN
	OPEN
	OPEN
Electron Devices / Circuits and Systems (EDCAS)	Cristian Cismaru
	OPEN
	OPEN
	OPEN
Engineering in Medicine and Biology (EMAG)	Bob Rumer
	Ryan Neimy
	Joel Harris
	Pat Jacobs
	Reza Faroozabadi

Chapter	Officers
Life Member Affinity Group (LMAG)	Jerry Knotts
	OPEN
	OPEN
Microwave Theory & Techniques (MTT)	Momin Quddus
	Chuck Seabury
	Rick Poore
Photonics	OPEN
	OPEN
	OPEN
	OPEN
	OPEN
Robotics and Automation / Industry Applications (RAIA)	R. Sudharsanan
	OPEN
	OPEN
	OPEN
Entrepreneurship	Stephanie Knotts
	Darrell Gooden
	OPEN
	OPEN



Volunteer with Us!

Get involved within your Comfort zone

Work with your fellow engineers

Contribute to the community

Socialize with your peers





Email:

chair@ieee-bv.org

if you would like to volunteer
or come and see us



Thank you

Looking forward to working with
you in 2022!

Time for Trivia



Four Teams



Rule



Each team will be asked a question.



They will have 2 minutes to come up with an answer.



They will have two chances to answer the question.



If incorrect then they will be given multiple choice.



Team which gets the correct answer with least number of tries wins.

Question 1 : Energy Consumption

Each person in USA consumes 250kWH of energy per day.

1 square meter of solar panels produce 150 Watts of power per hour.

Solar panels produce energy for 8 hours each day on the average.

How many square meter of solar panels are needed to produce each person's daily energy consumption?

Choose one

A. 90 Square meters

B. 140 Square meters

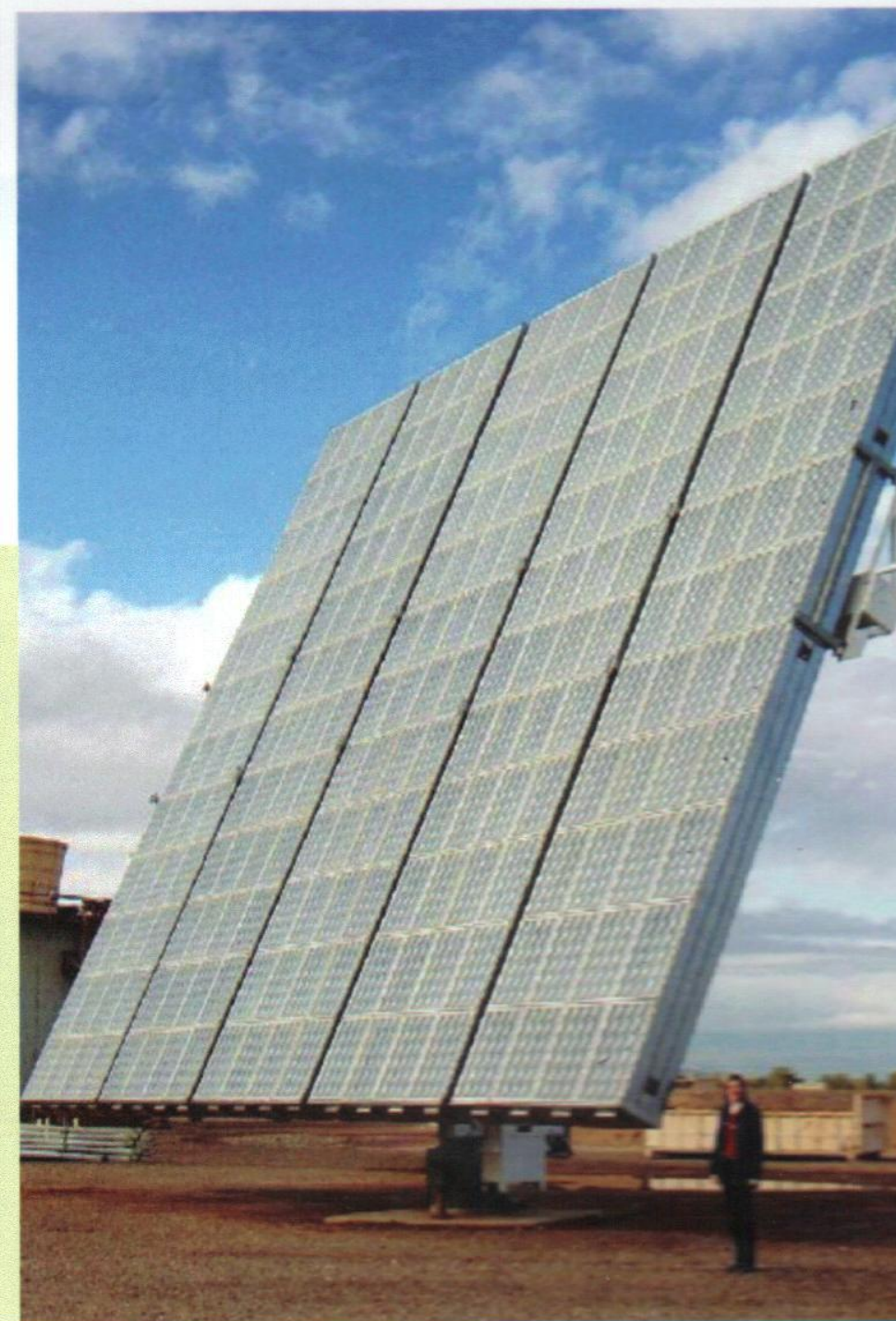
C. 208 Square meters

D. 300 Square meters

E. 422 Square meters

Solar Power

- With current solar technology each person in USA will need 208 sq meters of solar cells to meet his or her energy needs.
- $(250\text{kWh}/8\text{h})/0.15\text{kW}/\text{sqm}=208\text{ sqm}$



Question 2 : Oil Reserves

USA has proven crude Oil reserves
of 36.5 Billion Barrels

US crude Oil production is 11.2
million barrels/day

There are 365 days in a year

At this rate of production how many
years will the US oil reserve be
depleted?

Choose one

A. 5 years

B. 8.9 years

C. 12 years

D. 21 years

E. 30 years

US Oil reserves

- With current rate of production US oil reserves will be depleted in 8.9 years
- $(36.5 \times 1000 / 11.2 / 365) = 8.9$ years



Question 3 : Mile Per Gallon equivalent (MPGe)

Mile Per Gallon equivalent is defined as the number of miles an electric vehicle can travel with the amount of energy contained in one gallon of gasoline.

1 gallon of gasoline contains 36.4 kWh of energy

A Tesla Model S can travel 3.36 miles with 1 kWh of energy

What is the MPGe rating of Tesla Model S?

Choose one

A. 72 MPGe

B. 95 MPGe

C. 110 MPGe

D. 122 MPGe

E. 134 MPGe

Mile Per Gallon equivalent (MPGe)



- MPGe of a Tesla Model S is 122
- $(36.4 \times 3.36) = \mathbf{122 \text{ MPGe}}$

Question 4 : Carbon Sequestration

Each tree removes 48 lbs/year of CO₂ from the atmosphere on the average

One gallon of gasoline releases 20 lbs of CO₂ when burned.

Each person in USA consumes 656 gallons of gasoline/year

How many trees are needed to sequester (remove) CO₂ produced by each person's gasoline consumption each year?

Choose one

A. 76 Trees

B. 102 Trees

C. 150 Trees

D. 220 Trees

E. 273 Trees



Carbon Sequestration

- 273 trees are need to sequester CO₂ produced by each person in USA
- $(656 \times 20 / 48) = \mathbf{273}$ trees

gettyimages
zlikovec



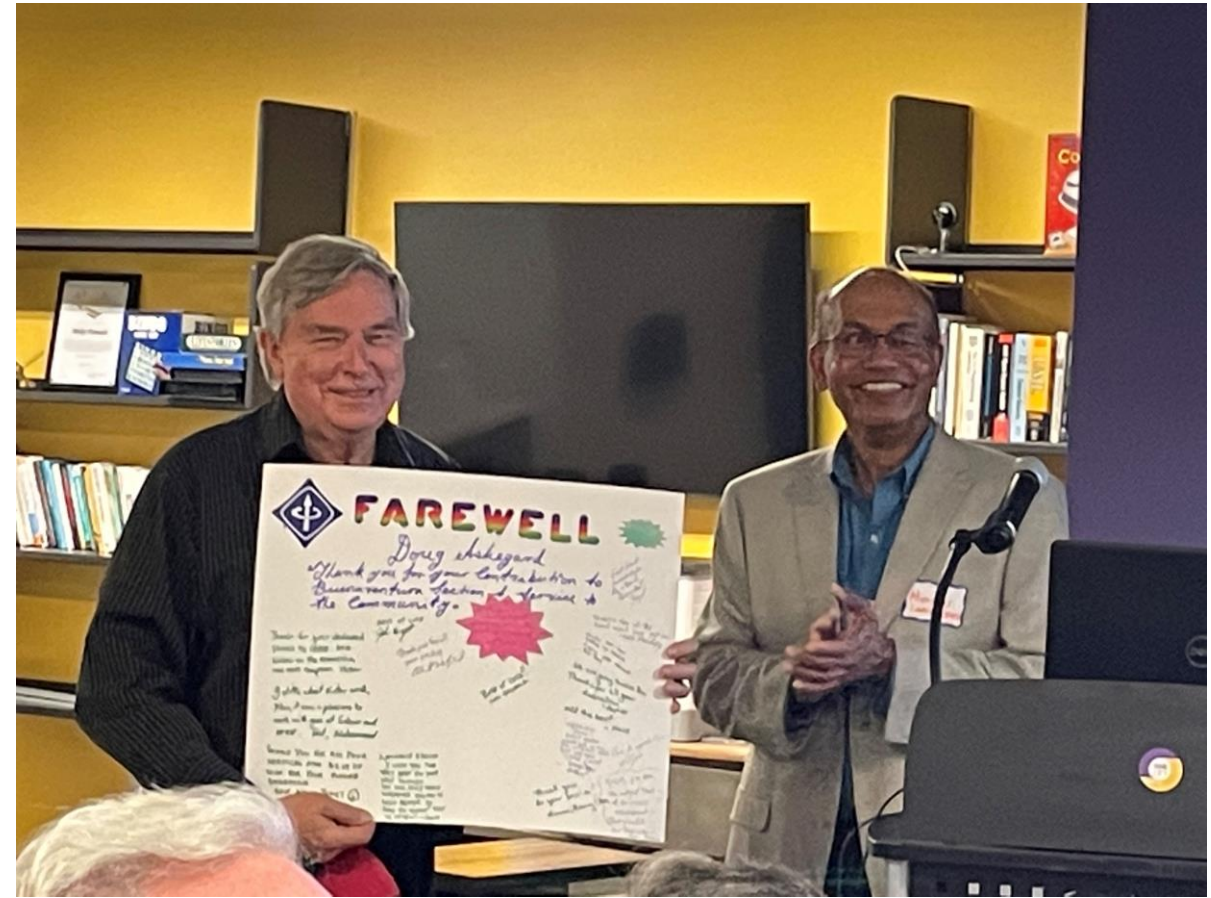
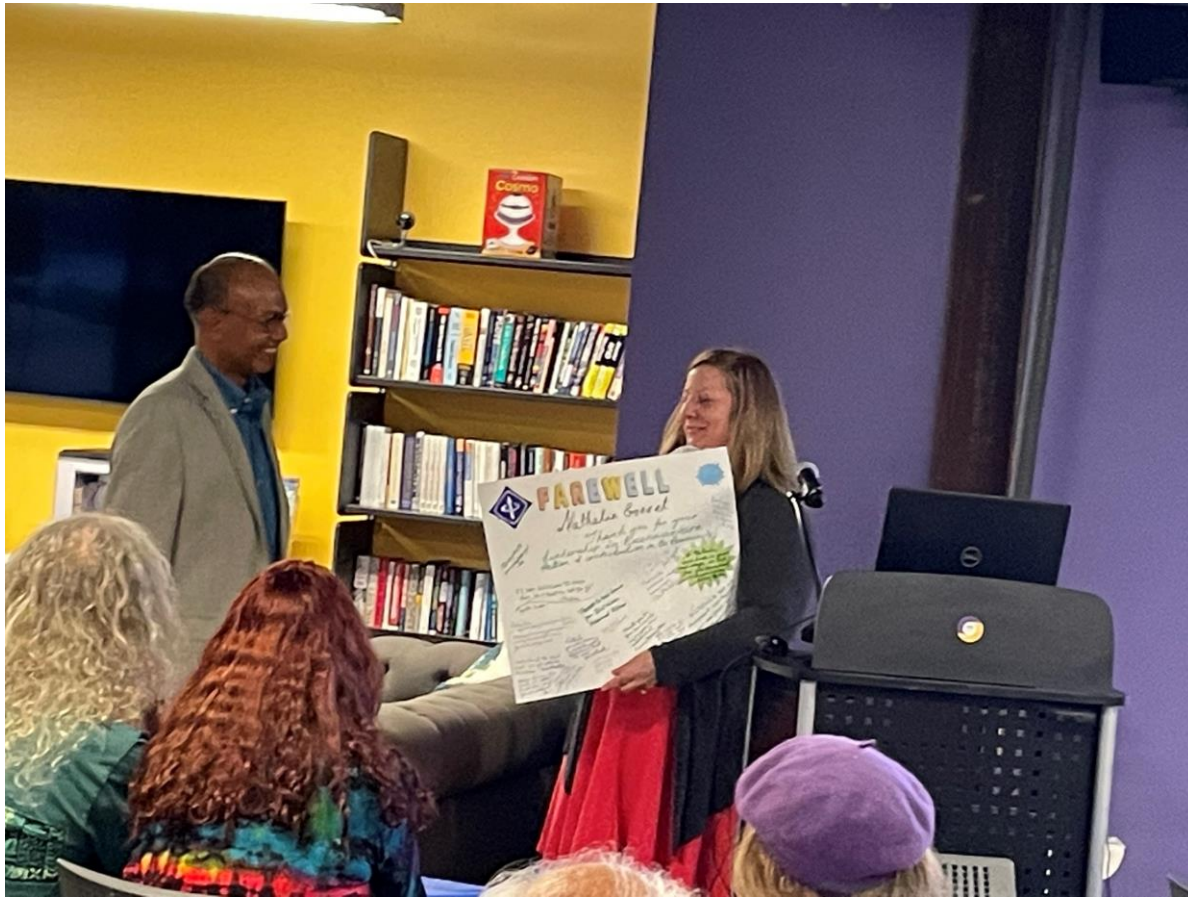
Enjoy

rest of your evening

Event Photographs



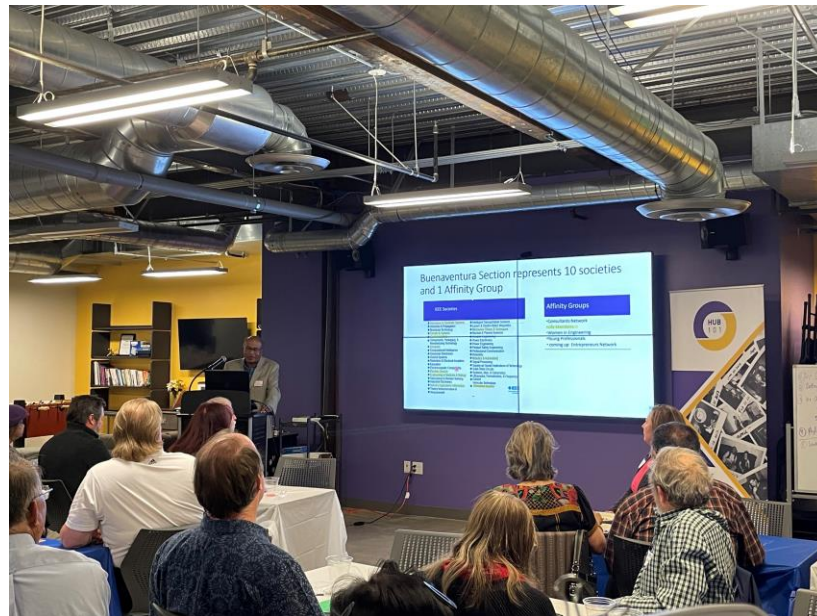
Event Photographs



Event Photographs



Event Photographs



Event Photographs

