

Pikes Peak Section State of the Section Report

January 17, 2024

State of the Pikes Peak IEEE Section

- Section History
- Award Presentation - John Santiago
- Treasurer's Report
- Section Organization - Proposed Slate For 2024
- Current Membership Statistics
- Activities of Section - Highlights

Pikes Peak Chairs

Pikes Peak Section Was Formed in 1978 After Being a Denver Section Sub-section For Many Years

Year	Chair
1978	Albert Rosa
1979	Unknown
1980	Don E. Cottrell
1981	John M. Murray
1982	J.J. (Mirek) Horenovsky
1983	Don E. Cottrell
1984	Calvin Dunigan
1985	John W. Meredith
1986	C. Frank Hartsell
1987	John Lieberer
1988	John R. Reinert
1989	Warren R. Hill
1990	Peter C.M. Burton

Year	Chair
1991	Loreen A. Ozolins
1992	Aaron C. Lippincott
1993	Steven R. Rogers
1994	Steven R. Rogers
1995	Sami A. Syed
1996	Sami A. Syed
1997	Mark D. Heinrich
1998	Mark D. Heinrich
1999	Jack McIlInay
2000	Jack McIlInay

Year	Chair
2001	Steven Lindemann
2002	Steven Lindemann
2003	Sophie Kogut
2004	William Boles
2005	William Boles
2006	Richard Painter
2007	Richard Painter
2008	Stephen Delory
2009	Mark Heinrich
2010	Mark Heinrich

Year	Chair
2011	Vunqiang Vincent Yang
2012	Vunqiang Vincent Yang
2013	F.D. Wells
2014	F.D. Wells
2015	David Cotton
2016	Debora Elam
2017	Debora Elam
2018	Debora Elam
2019	John Santiago
2020	John Santiago
2021	John Santiago
2022	John Santiago
2023	David Bondurant

Pikes Peak Section Historical Highlights

Increasing Activity, Increasing Student Engagement

- 1978 - Section Formed From Denver Sub-Section
- 1982 - Section Hosts R5 S-PAC Conference at UCCS
- 1993 - Section Wins Best Small Section Regional Award
- 1994 - Section Hosts R5 Annual Meeting at the Antlers
- 1998 - John Reinert, Former Pikes Peak Chair Elected First IEEE-USA President
- 2007 - John Meredith, Former Pikes Peak Chair Elected IEEE-USA President
- 2019 - Region 5 Created John Meredith Lifetime Achievement Award to Honor our Past Chair
- 2020-2022 - Covid Pandemic Leads to Increasing Section Activity Through Webinars
- 2023 - Increasing In-Person Meetings

Pikes Peak Section Treasurer's Report - 2023

Treasurer's Report, January 17, 2024
2023 Summary Activity

Section Finances Remain Strong

- Need to Increase In-Person Activities to Utilize Section Funds

NextGen ACCOUNT SUMMARY - 2023

Opening Balance:	\$41,855.34
Interest Paid	1403.06
IEEE Section Rebate	5959.10
Awards (John Santiago)	(640.82)
ExCom Meeting Feb (John Reinert)	(264.66)
ExCom Meeting Apr (David Bondurant)	(222.98)
ExCom Meeting Aug (David Bondurant)	(489.78)
Life Member Mtg Silicon Mtn (David Bondurant)	(646.19)
Misc (Future Cities Bondurant)	(56.74)
Section Meeting – WWII Museum (Bondurant)	(514.44)
Office	(47.20)
ED/CAS Meeting (David Bondurant)	(227.43)
Future Cities PACE Project	(500.00)
WWII National Air Museum Support	(6000.00)
LMAG Regional Funding Bondurant	500.00
LMAG Global Achievement Bondurant	2000.00
Computer Society Incentive Funding	300.00
Closing Balance, December 31, 2023:	\$42,407.26
Liabilities/Obligations:	
USAFA Student Branch dedicated (2022 awards)	675.00
Computer Society Incentive Funding (2022/23)	950.00
Total Committed Funds	1625.00
Investment Account Opening Balance:	\$75,227.92
Income	939.46
Unrealized Gains/(Losses)	2277.85
Closing Balance, December 31, 2022: (Reporting through 30 September, 2024)	\$78,445.23 (4.28%)
(Note: Dow Jones up 13.7% in 2022 10.8% through September)	
Submitted 17, January, 2024	

Pikes Peak Section Roster - Proposed Slate For 2024

Section

Chair - David Bondurant

Vice-Chair - Gene Freeman

Secretary - Ze Ni

Treasurer - Open

Past Chair & Webmaster - John Santiago

Past Chair - Rich Painter

Student Activities Coordinator - Bailey Heyman

YP Representative - Priyank Kashyap

Program Committee Chair - Russ Borgardus

Student Representative (UCCS) - Yugesh Bhattarai

Student Representative (AFA) - TBD

Student Representative (CSU-Pueblo) - Calvin Bahl

Life Member Affinity Group

Chair - David Bondurant

Vice-Chair - Open

Computer Society

Chair - Gene Freeman

Vice-Chair - Senthilkumar Mehalingam

Power and Energy Society

Chair - Dr. Tarek Masaud

Vice-Chair - Dr. William Crowell

Magnetics Society

Chair - Dmytro Bozhko

Treasurer - Ezio Iacocca

Joint Electron Devices and Circuits & Systems

Chair - Dr. Thottam S. Kalkur

Vice-Chair - Open

UCCS Student Branch

Student Advisor - Dr. Darshika Perera

Student Advisor - Dr. Byeong Lee

Air Force Academy Student Branch

Student Advisor - John Ciezki

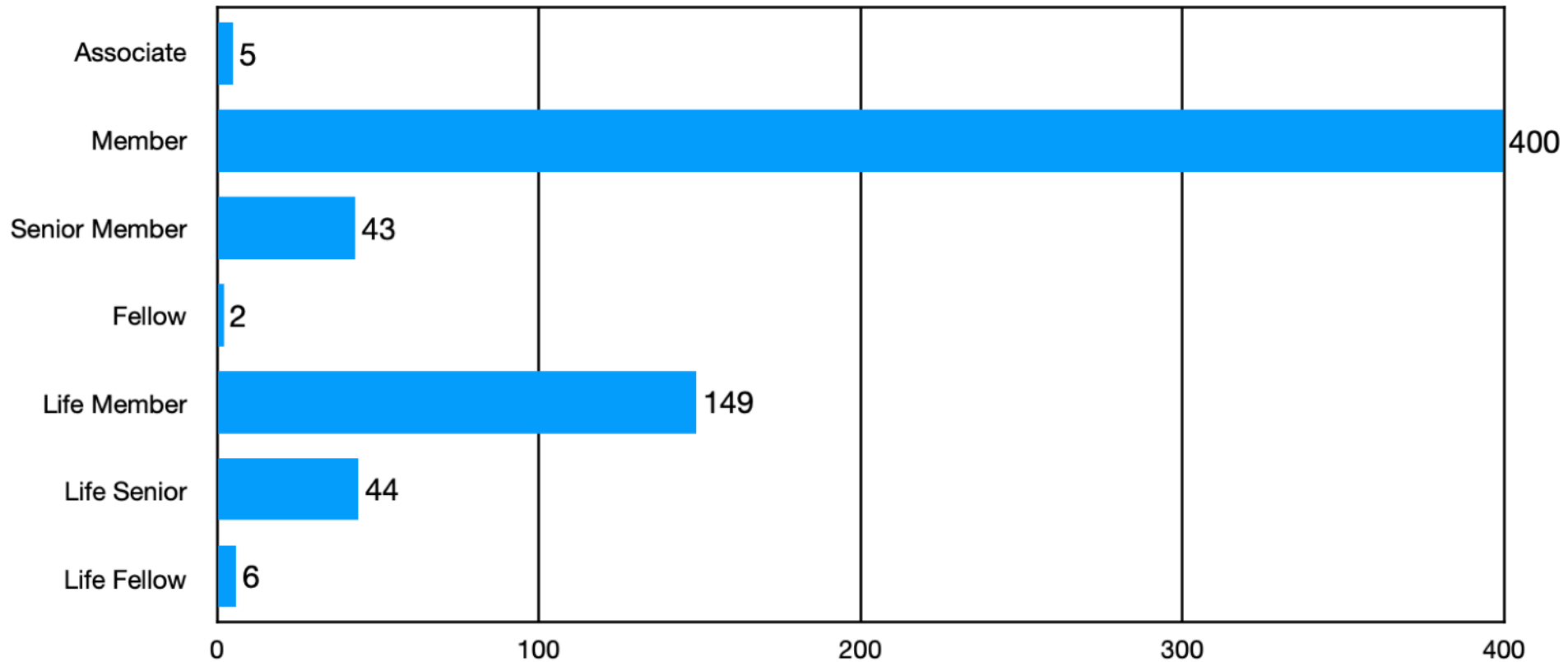
CSU - Pueblo Student Branch

Student Advisor - Jude de Palma

Pikes Peak Membership Statistics

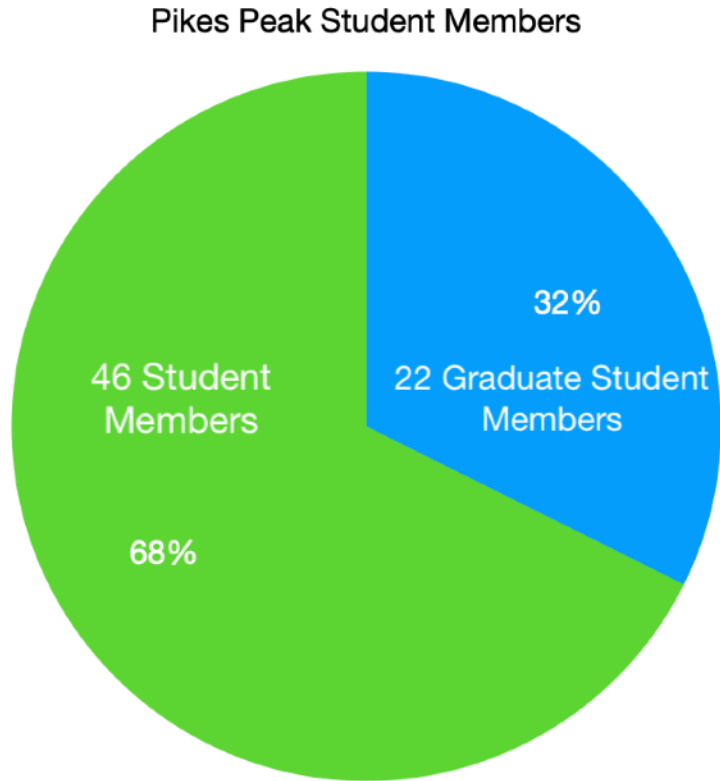
659 Professional Members (Including Affiliates & SA) - 71 New in 2023

Pikes Peak Professional Members

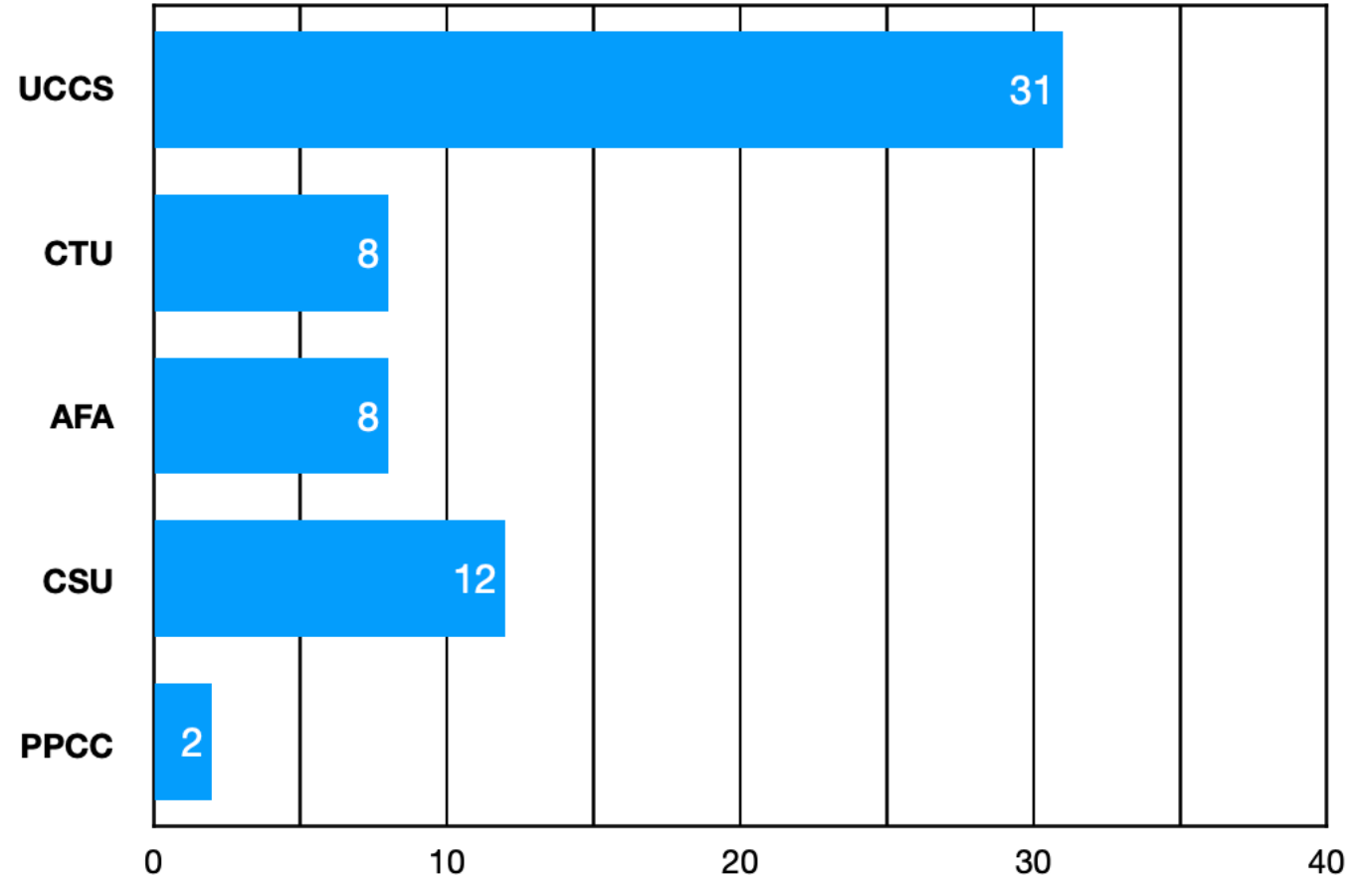


Pikes Peak Membership Statistics

68 Student Members

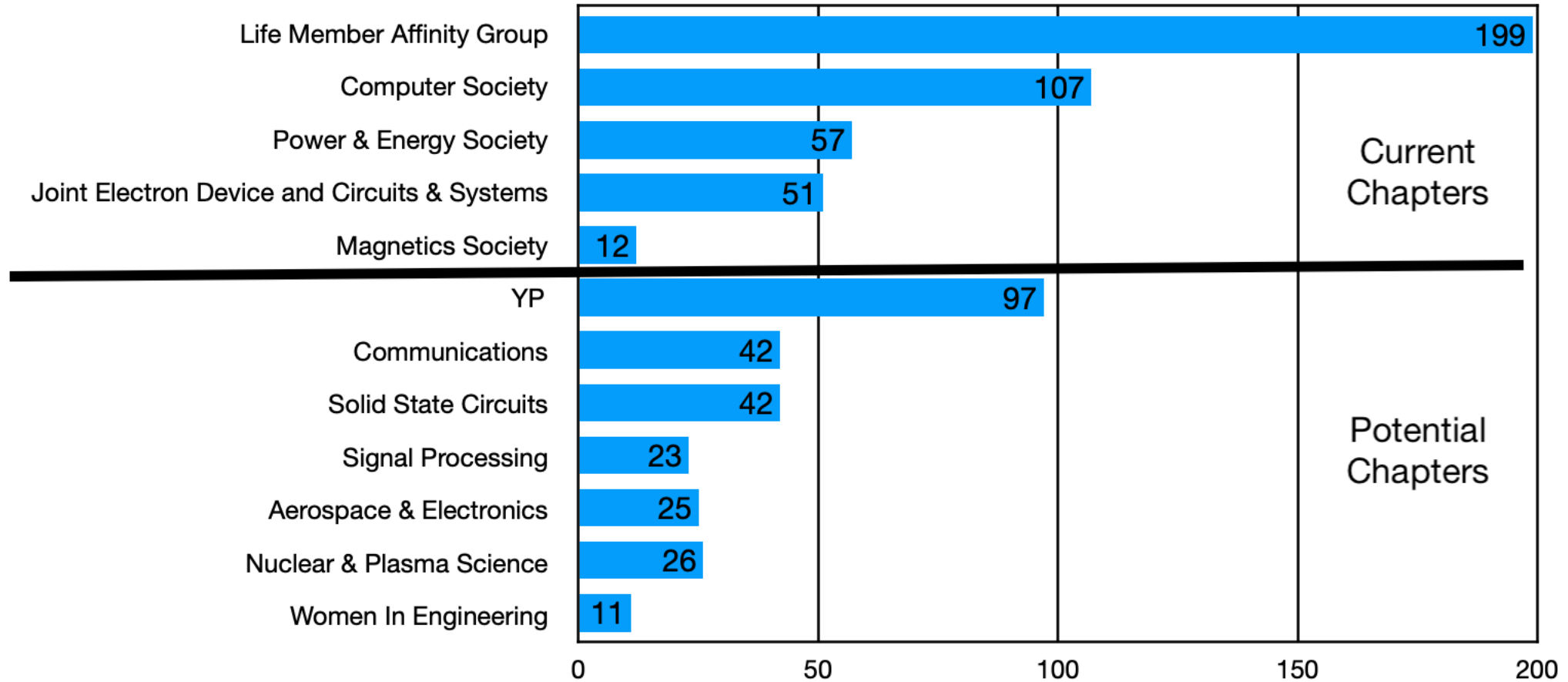


Student Members By College



Society Memberships

Opportunities for Future Chapters or Joint Chapters

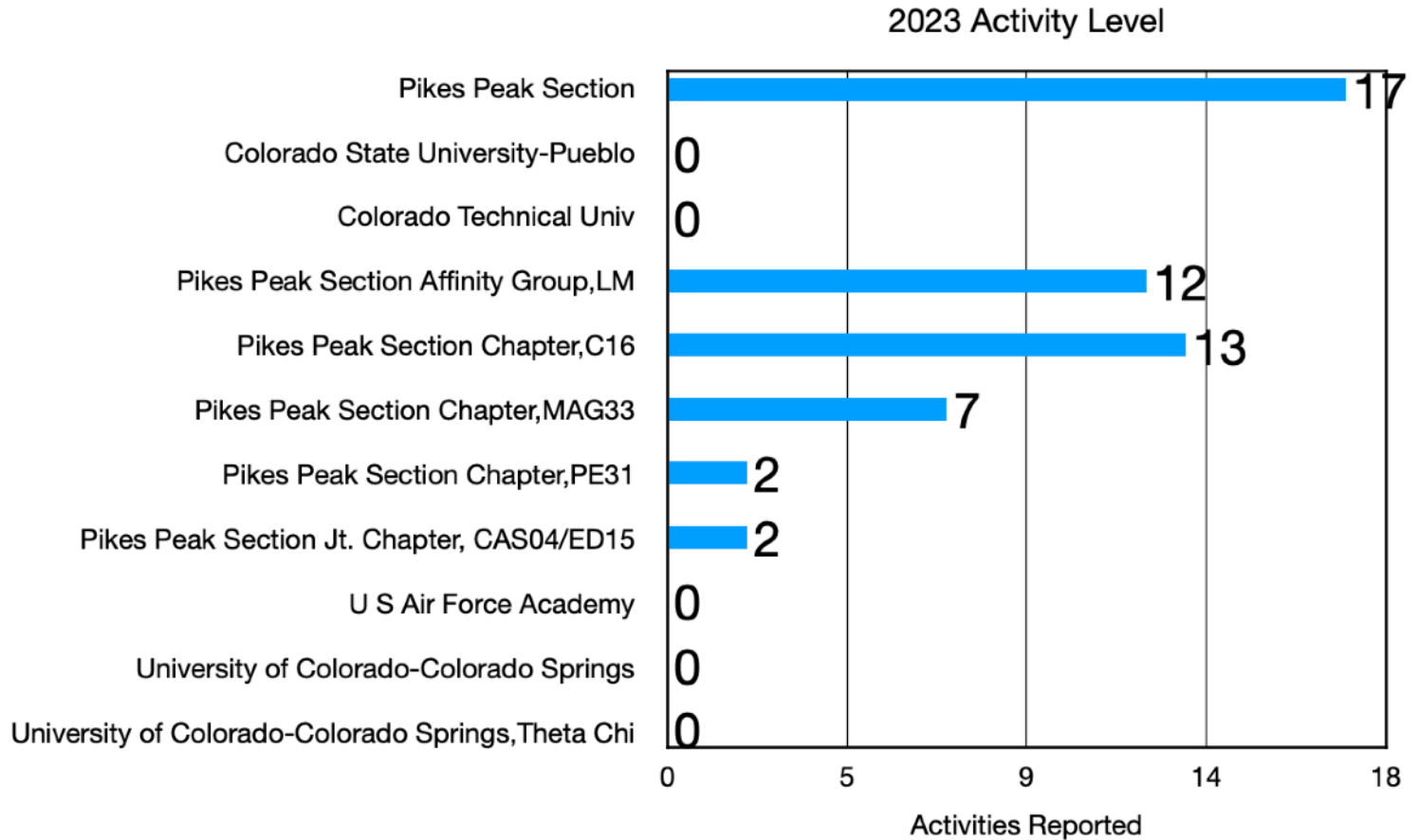


Pikes Peak Operational Units

Activity Levels - 2023

Current Pikes Peak OU Listed on Vtools

- Pikes Peak Section - R50043 (Active)
- LMAG - LM50043 (Active)
- C16 -CH05056 (Active)
- PE31 - CH05183 (Active)
- CAS04/ED15 - CH05055 (Active)
- MAG33 - CH05210 (Active)
- UCCS, Theta Chi - HKN166 (Before 2010)
- AFA - STB50971
- UCCS - STB08811
- CTU - STB24021
- CSU-P - STB43001



Joint Meeting of Denver, Pikes Peak LMAG and High Plains Section

May 13, 2023 at CU Boulder - Human Interaction Robotics Group

- Member from Denver and Pikes Peak LMAG and High Plains Section Visited HIRO Lab



Pikes Peak Life Member Affinity Group Celebration

October 23, 2023

- Pike Peak LMAG Won Global LMAG Achievement Award for 2023
- 16 Life Members and Guests Celebrated Event at Macaroni Grill on October 23
- Panel Discussion on The Founding of Silicon Mountain By 4 Life Members Who Worked at NCR Microelectronics, Ford Microelectronics, Inmos, and Mostek/UTMC/Aeroflex



Pikes Peak Electron Devices/Circuits & Systems Chapter Reactivation

October 26, 2023 At UCCS

- First Chapter Meeting in 4-Years
- 28 Members and Student Attended
- Presentation - Non-Volatile RAM for the Internet of Things
- Reviewed Status of Ferroelectric RAM, Magnetoresistive RAM, and Resistive RAM Technology
- Notably, FRAM was developed at UCCS Microelectronics Laboratory Starting in 1984



Pikes Peak Section Meeting at National Museum of WWII Aviation

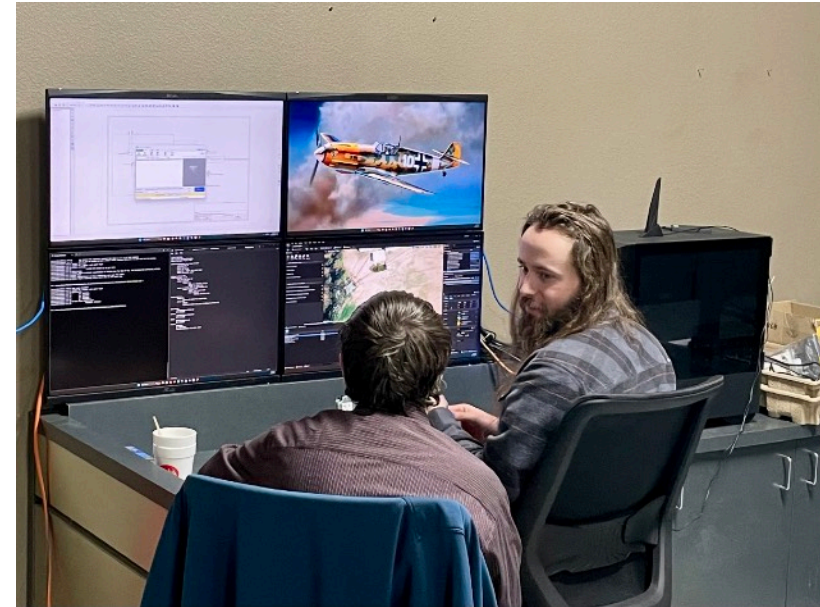
November 18, 2023



22 Pikes Peak Members and Guests

Pikes Peak Funded Student Simulation Lab

- \$6K Grant Raised in 2022
- Major Student Grant Program
 - Pikes Peak Section - \$2K
 - Pikes Peak LMAG - \$650
 - Life Member Committee Grant - \$2K
 - Computer Society Grant - \$1350
- Funding Student Simulation Lab at National Museum of WWII Aviation



National Museum of WWII Aviation Simulation Lab Grant

124 UCCS Students Have Performed Senior Engineering Projects at Interactive Exhibits

COLLEGE INTERN PROGRAM

College interns are hired to develop interactive exhibits that provide the museum's visitors a chance to gain a feeling of the hardships and courage of our military experience in the WWII. These exhibits are designed to allow the visitors to have some fun, have success, and provide a learning experience.

A primary purpose of the Intern Program is to better prepare the student to transition into industry by providing them a more industry like hands-on, problem solving experience. This multi-discipline program is much more immersive than the Senior Engineering Program as the students spend more time at the Museum working on a high end simulation lab and working directly with the museum's very experienced staff.

.50 Cal Machine Gun Simulation Project

This Intern Project is to create a realistic simulation of a B-17 Waist Gunner firing a machine gun at an attacking ME-109 enemy aircraft and the aircraft reacting as to where hit. This is a full physics simulation designed to demonstrate the difficulties experienced by the waist gunners during WWII.

Norden Bombsight Replica Simulation

This Intern project is to create a realistic simulation of a bombardier in B-17 using a Norden bombsight to drop a bomb on an enemy target. This project is to provide a demonstration of the capabilities of the Norden as well as its deficiencies in war time. The replica bombsight was 3D printed and donated by Stan Vanderwerf.

Rooney, Brian
UCCS

Harley, Alexander
UCCS

Cao, Michael
UCCS

Walker, Chandler
UCCS

Byrd, Austin
UCCS

Mueller, Chris
UCCS

UCCS SENIOR ENGINEERING PROGRAM

The museum provides engineering projects to senior engineering students from the Mechanical, Aeronautical, and Electrical/Computer Engineering Departments at the University of Colorado Colorado Springs. These projects involve modernizing the technologies used in World War II.

In nine years of providing Senior Engineering Project to UCCS students the Museum has helped 124 students gain skills in problem solving and using their hands to create exhibits for the museum. This years students will also be able to use the Museum's newly installed high end computer simulation lab providing then an experience not currently available at the University.

Mobile Aircraft Simulation Station

This Senior Engineering Project is to construct a mobile Aircraft Simulation Station that can be used within the museum as well as at airshows and on special occasions. It will also include an inertial movements system to create the feeling of 3-axis movement and multiple monitors.

UCCS

UCCS

UCCS

UCCS

Discover Engineering - Future City Competition for Middle School Students

Pikes Peak Section Joined Denver Section and Their PES Chapter in All Donating \$500 Each



DISCOVER PRESENTS

future City COMPETITION

Future City is a authentic project-based program that brings STEM to life for 6th, 7th and 8th graders.

Doing things that engineers do, kids build cities of the future showcasing their solution to a citywide sustainability issue.

This year's challenge—**climate change**.

"Future city is an easy way for kids to have fun, and learn more about STEM."
- 8th grader from Idaho

Benefits to Students

- ✓ TeamWork
- ✓ Time Management
- ✓ Problem Solving
- ✓ Public Speaking change
- ✓ Math & Science Skills Improved
- ✓ Leadership & Independence
- ✓ Confidence

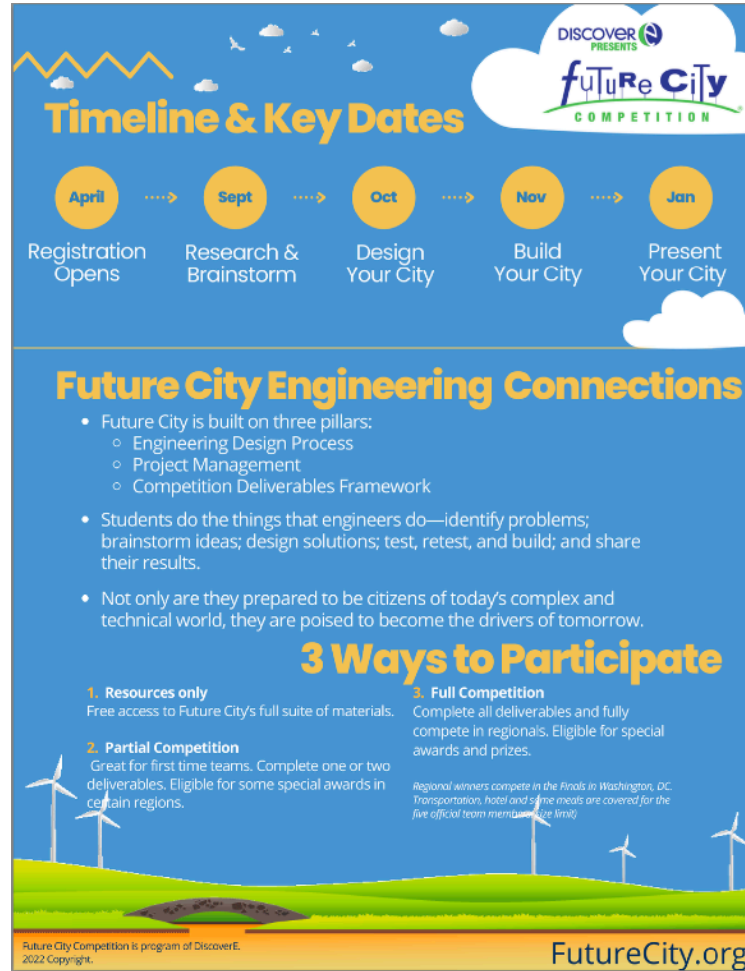
Resources

- Step-by-Step Guide
- Electronic Dashboard
- 30+ Activities
- STEM Mentor
- Regional Competition

FutureCity.org

What's needed

- Dedicated Program Facilitator
- Ability to meet once a week for 2 to 3 hours
- Internet access for research
- Access to LOTS of different kinds of recycled materials
- Place to build and get messy
- \$25.00 Registration Fee (per organization)
- Up to \$100 budget for model and presentation materials (*most teams do not spend full amount*)
- Minimum of three middle schoolers (*no team size limit*)



DISCOVER PRESENTS

future City COMPETITION

Timeline & Key Dates

April	Sept	Oct	Nov	Jan
Registration Opens	Research & Brainstorm	Design Your City	Build Your City	Present Your City

Future City Engineering Connections

- Future City is built on three pillars:
 - Engineering Design Process
 - Project Management
 - Competition Deliverables Framework
- Students do the things that engineers do—identify problems; brainstorm ideas; design solutions; test, retest, and build; and share their results.
- Not only are they prepared to be citizens of today's complex and technical world, they are poised to become the drivers of tomorrow.

3 Ways to Participate

- 1. Resources only**
Free access to Future City's full suite of materials.
- 2. Partial Competition**
Great for first time teams. Complete one or two deliverables. Eligible for some special awards in certain regions.
- 3. Full Competition**
Complete all deliverables and fully compete in regionals. Eligible for special awards and prizes.

Regional winners compete in the Finals in Washington, DC. Transportation, hotel and some meals are covered for the five official team members (size limit).

Future City Competition is program of Discover.E.
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FutureCity.org

Pikes Peak STEM Project

Discover Engineering - Future City Competition for Middle School Students

13 Pikes Peak Members Judged Papers, 10 Pikes Peak Member Judging In Person at Colorado School of Mines

Future City Judges - Pikes Peak IEEE

December Remote Judging		January 20 - In-Person Judging		
Name	Email	Name	Email	
David Bondurant	dbondurant@ieee.org	David Bondurant	dbondurant@ieee.org	
Gene Freeman	genef@ieee.org	Gene Freeman	genef@ieee.org	
Priyank Kashyap	pkashya2@ncsu.edu	Priyank Kashyap	pkashya2@ncsu.edu	
Russell Bogardus	russbogardus@comcast.net			
Nathan Edwards	NathanEdwards@uspae.org	Nathan Edwards	NathanEdwards@uspae.org	Maybe for Jan 20
Robert Cronk	rncronk@gmail.com			
Mark Holthouse	mark.holthouse@gmail.com			
David Barnett	david.h.barnett@ieee.org	David Barnett	david.h.barnett@ieee.org	
Donald Kraft	dkraft2@lsu.edu			
Michael Allison	m.allison@ieee.org	Michael Allison	m.allison@ieee.org	Maybe for Jan 20
Kurt Humphrey	khumphrey@ipenguinuity.com	Kurt Humphrey	khumphrey@ipenguinuity.com	
Jodi Fleming	jodilynn.fleming@gmail.com	Jodi Fleming	jodilynn.fleming@gmail.com	
Patrick Keller	Patrick.Keller5@alumni.ctuonline.edu	Patrick Keller	Patrick.Keller5@alumni.ctuonline.edu	
Senthil Vinayagam		Senthil Vinayagam	senthil_vin@yahoo.com	