Rocky Mountain Section

Annual Report 2013-2014
Outstanding Section Award
Outstanding Activity Award

Section Name: *Rocky Mountain Section, Region V*
Colorado (1303 members)
Wyoming (29 members)
Montana (26 members)

Section Size Category: *Very large*
952 Professionals
164 Educator Associates
242 Students

Section Organization

1. List the names of the Section Officers and any additional members of the section council (as of May 1, 2014).
   - *Chairman: Dr. Roger McNamara*
   - *Chairman-Elect: Chris Zeller*
   - *Northern Chair: Dr. Donna Gerren*
   - *Southern Chair: Dr. Taylor Lilly*
   - *Secretary: Susan Janssen*
   - *Treasurer: Cindy McNamara*
   - *Education: John Eiler*
   - *Honors and Awards: Open*
   - *Member-At-Large: Pamela Burke*
   - *Membership: Susan Janssen*
   - *Newsletter Editor: Adrian Nagle*
   - *Public Policy: Jason Kuchera, Arthur Hingerty, and Dan Hampton Sr.*
   - *Pre-College Outreach: John Eiler*
   - *Professional Development: Fred Slane*
   - *Programs: Chris Zeller*
   - *Webmaster: John Grace and Brian Gulliver*
   - *Young Professionals: Heather McKay*
2. Number of council/officer meetings held during the year: Average attendance:
   - *Ten council meetings were held from July 2013 to May 2014 with an average of 9 attendees.*
   - *Subcommittees held telecons or meetings to plan activities.*
     - *The Annual Technical Symposium committee held XX planning meetings with an average of X attendees.*
     - *The Public Policy subcommittee held xx meetings with an average of x attendees.*
     - *The Education subcommittee held three telecons to coordinate the new AIAA RMS prize for state science fairs.*
   - *The May council meeting was a joint meeting of the current (2013-2014) and new (2014-2015) council members. It was held in conjunction with the National Space Symposium in Colorado Springs to allow council members to participate in activities at the NSS.*
3. Percentage of membership voting in last election of Section Officers:
   84 ballots, 8.8% of professional members, were cast during the two-weeks of the May 2014 election.
4. List any activities targeted at officer training or development including attendance at the Regional Leadership Conference:
   - *No council members attended the Regional Leadership Conference this year.*
   - *Our long-time webmaster of 15 years, John Grace, is training Brian Gulliver to maintain the section email distribution lists.*
   - *Chris Zeller, Chair-elect, worked closely with the Chair, Roger McNamara, to prepare for next year's chairmanship.*
   - *Council officers and subcommittee members willingly support new council members and work diligently to make a smooth transition. Also, council members cross train by supporting the various subcommittee efforts.*
   - *The joint meeting of the current and future council members at the NSS is important for operational continuity and continued momentum.*

5. Estimated membership located within 1 hour of the meetings:

   RMS membership is primarily along the Front Range: 30% Colorado Springs and Southern Colorado, 36% Denver Metro Area, 23% Boulder and Northern Colorado. Council meetings and section events are held in Denver Metro, Boulder and Colorado Springs. Attendance is influenced by rush-hour traffic along the I-25 corridor (the main route along the Front Range). If the event is in the Denver Metro Area, about 40% of members are within an hour's drive; Boulder about 30% and Colorado Springs about 25%.

6. Number of Chapters within the Section: Chapter Names:

   The RMS does not have any professional membership chapters. Instead the council has Vice-chairmen for the geographical areas that provide liaison between the council and members in that area.

7. Describe how your section supports members outside the main local area (if any):
   - *The RM section maintains a website (www.aiaa-rm.org) with links to pertinent news, section announcements and a calendar, as well as archived newsletters and minutes of council meetings. We email newsletters, requests and announcements to all (professional, educator associate, and student) section members.*
   - *Many section members participate in AIAA conferences including student conferences. Ninety one section members are on Technical Committees. Ten members are officers of the Region V Council.*

Meetings, Programs and Events

1. Describe the Section's general meetings. Include date, meeting type (e.g. dinner meeting, field trip, lunch and learn, etc.), speaker, organization, topic, location, and attendance. You may further break down your attendance if you would like (AIAA members, nonmembers, students, etc). Also include the focus (young professional, public policy, technical, workforce development, STEM K-12, etc. or just general), any publicity used for the event, and if it was jointly sponsored and if so, by whom.

   The council organizes regular programs throughout the year at various locations. They are open to members and non-members alike. This year we sponsored 6 technical programs, co-sponsored one public policy event and held two Young Professionals happy hours. Events are summarized in the following table; the Topic is hyperlinked to the announcement archived on the section webpage or on the internet.

Date	***Event***	***Topic***	***Speaker***	***Location***	***Sponsors***	***Attendance***
10/03/13	*Evening Program*	*Airborne Lasers*	*Dr. Jim Horkovich*	*Raytheon Missile Systems*	*AIAA RMS*	*34*
10/23/13	*Annual Technical Symposium*	*Game Changing Technologies and Strategies*	*Various presenters, panelist & keynotes*	*University of Colorado, Colorado Springs*	*AIAA RMS*	*175*
11/21/13	*Evening Program*	*Green Propellant*	*Chris McLean & William Deininger:*	*Ball Aerospace*	*AIAA RMS*	*49*
01/23/14	*Evening Program*	*GPS III*	*Mark Woempner*	*Lockheed Martin*	*AIAA RMS*	*101*
02/07/14	*Young Professionals*	*Networking*	*n/a*	*South Denver Metro Area*	*AIAA RMS*	*25*
02/20/14	*Evening Program*	*Balloon Astronomy*	*Eliot Young*	*Southwest Research Institute*	*AIAA RMS*	*55*
03/24/14	*Public Policy*	*Colorado Aerospace Day*	*n/a*	*Capitol Building, Denver*	*CSBR, CSC, AIAA RMS*	*No count available*
04/03/14	*Evening Program*	*Spaceports*	*Brian Gulliver*	*Colorado School of Mines*	*AIAA RMS*	*43*
04/22/14	*Evening Program*	*Dream Chaser*	*Merri Sanchez*	*Wings Over the Rockies Museum*	*INCOSE, AIAA RMS*	*131*
04/22/14	*Young Professionals*	*Networking*	*n/a*	*East Denver Metro Area*	*AIAA RMS*	*12*
05/22/14	*Dinner Program*	*Awards Banquet*	*Sandra Magnus*	*Denver Area Restaurant*	*AIAA RMS*	*70*

Membership Activities

1. Describe any membership recruitment/retention activities.
    - *Several members of the section held a membership drive at the Lockheed Martin Space Systems campus on January 22. At least three new members were recruited.*
    - *Membership information is available at all the section programs.*
    - *Membership information was provided at the Annual Technical Symposium on October 25, 2013. At least three new members were recruited.*
    - *At least 5 participants requested membership information at Colorado Aerospace Day on March 24.*
    - *The RMS has two Fellows and eleven Associate Fellows in the class of 2014.*

- *A new student chapter was formed at the Colorado School of Mines in April.*
- *Young professionals enjoyed two after-work events in February and April:*
    - *YP Happy Hour was held on Friday, January 7. Twenty five people came from LM, ULA, Seakr, and the INCOSE fellow, Bill Good, from DCMA. We had a lot of fun and talked about other potential young professional events—a barbeque, outreach to the colleges, more happy hours, doing an event with telescopes at a planetarium. There were quite a few people active in AIAA in college that would like to get more involved in our section. Matthew Cannella, the Region V Deputy Director of YPs, was at the Happy Hour. He is interested in helping to plan other YP events and a membership drive at ULA.*
    - *AIAA-RM Young Professionals and area graduate students expressed interest in meeting up at the Lowry Beer Garden for a social after the SNC Dream Chaser event on 4/22. Heather McKay and Matthew Cannella organized and advertised the event. The AIAA-RM section provided appetizers/snacks. There were 12 area YPs (from Raytheon, Northrop Grumman, LM, ULA, and others) and a couple of CU/CSM students coming in and out of the Beer Garden after the AIAA program. Even the speaker, Merri Sanchez, and retired Astronaut-now SNC employee Col. Jim Voss came over to say "hi" after the Dream Chaser program.*

Young Professionals socialize in February and April.

Education

1. List the student branches within the section and describe any section activities related to these branches.

Our section has three student chapters: University of Colorado, Boulder (CU); University of Colorado, Colorado Springs (UCCS); and a new chapter at Colorado School of Mines. There are active student members in other universities including University of Wyoming (UW), the US Air Force Academy (USAFA), University of Denver (DU), Montana State University (MSU), Webster University, and Colorado State University (CSU).

The CU Boulder branch was very active in the number of general student meetings they hosted throughout the academic year. Fall semester's meetings included: introduced CU aerospace clubs, engineers from Orbital Sciences on Cygnus, JPL Ambassadors Barb and Steve Sande, on the legacy of the Apollo program; and an end of the year party. Spring semester programs included Jack Wiegand, the youngest person to fly solo around the world, Dr. Dave Klaus on the Shuttle program, and looking to the future of manned space programs, NASA Langley Program Manager Dr. Anna

Maria McGowan on her work morphing aircraft, Dr. Daniel Baker, Director of LASP on space weather and its impact on Earth and Boeing Vice-President Frank Doerner, on the pros and cons of composite aircraft.

2. Describe actions taken to establish new student branches.

   Our Young Professionals chair, Heather McKay, contacted faculty and students at the Colorado School of Mines to determine interest in forming a student chapter. The response from the students was enthusiastic.

   The Rocky Mountain Section wishes to welcome the Colorado School of Mines and AIAA faculty advisor Dr. Angel Abbud-Madrid. We are very proud to have them onboard with AIAA after developing a strong relationship with the Space Society over the years and the active attendance of their students and faculty at Rocky Mountain AIAA programs. Colorado School of Mines hosted the Rocky Mountain AIAA professional society in April for speaker Brian Gulliver on the topic "From Airports to Commercial Spaceports". We plan to support Mines in the future with sponsorship and through professional speakers as well as host a program on their campus each year.

3. Describe involvement of the section with the Region Student Conference.

   Do we know if any members from the section volunteered as judges?

   CU Boulder, CU Colorado Springs, CO School of Mines, Colorado State University, and the US Air Force Academy sent student members to the Region V Student Competition in Minneapolis, MN. Faculty support is instrumental in encouraging students to participate in the conference. The section provided financial support that was requested by CU Boulder and CU Colorado Springs to help with travel expenses.

   The CU Boulder AIAA student branch participated in both the AIAA Region V Student Paper Conference, held this year from April 2 – 4 in Minneapolis, Minnesota, and the AIAA Design, Build, Fly (DBF) contest, held from April 11 – 13 in Wichita, Kansas. CU Boulder took 3rd Place at the paper conference in the Team Category with the paper and presentation entitled "Development of a Dust Impact Monitor for Exploration of the Inner Heliosphere".

   The UCCS AIAA Student contingent participated in the 2014 Region V Student Competition in Minneapolis with three students. Those students swept the competition and will compete at the International Student Competition in January in Orlando, FL. The winners were: 1st Individual Undergrad – Stephen Sloan, 2nd Individual Undergrad – Corbin Spells, and 1st Graduate – Ryan Bosworth. Mr. Austin Ventura from UCCS won the 2014 Undergraduate AIAA Foundation International Student Conference Best Papers Competition with his paper entitled "Thermophoretic Force Measurements using a nano-Newton Thrust Stand."

4. Describe any professional continuing education programs.

   None this year.

5. Describe any precollege outreach programs instituted/continued this year.

   The section created an AIAA-RMS Aerospace prize for the Colorado and Wyoming State Science Fairs. Montana was not included because of a short timeline, but will be included next year. Prizes were awarded for the best aerospace-related project at the Junior and High school levels. The students were delighted with the iPad minis! In addition we offered free one-year student memberships and invitations to the May awards banquet.

   We had a team of AIAA-RM members that volunteered to be judges that reviewed many great science projects and personally interviewed each student. Chris Zeller and Michael Stoellinger were judges for Wyoming. John Eiler, Brendan Coyne, Michael Mardis, Terry Ladau and Sue Janssen were judges for the Colorado State Fair.

Wyoming State Science Fair

High School: Lia Eggleston

Time and Radiation Domain in Star-like Objects: Relating the Intrinsic Colors of Quasars to their Photometric Redshifts

Middle School: Tristan Barney

WASP-12 2b or Not 2b: Determining the Planetary Radius, Orbital Inclination and Orbital Speed of WASP-12b

Colorado State Science Fair

High School: Trevor Jordan

A Wing of the Future

Middle School: Bryce Kellum

Can Pigs Fly?

6. Does your section have a scholarship fund? Describe how funds are raised, and how scholarships are awarded.
   At this time the section does not have a scholarship fund.

Public Policy

1. Describe activities that inform the public and section members about public policy.
   The public policy subcommittee provides pertinent information on the RMS website and in our newsletter.
2. Describe activities that provided interaction with government officials.
   The section collaborated with Colorado Space Business Roundtable and Colorado Space Coalition to host the second Colorado Aerospace Day on March 24. We were part of the team that initiated this last year and continue to work to increase our engagement with our legislature at the local and state level.
   Colorado Aerospace Day is a daylong event (9:00 am - 6:00 pm) dedicated to celebrating Colorado's aerospace industry, which employs more private sector aerospace workers per capita than any other state. During this daylong event the Colorado Legislature passed a resolution designating March 24, 2014 as Colorado Aerospace Day, recognizing the countless contributions Colorado aerospace companies, organizations, and universities have made to scientific discovery, technological innovation, and in securing the economic and national security of the US. Other activities include exhibit showcases and networking, along with a meet and greet with various aerospace organizations, legislators, and leading government officials including Lt. Governor Joe Garcia. Additional information may be found at https://www.eventbrite.com/e/2014-aerospace-day-at-the-colorado-state-capitol-tickets-10798896791.
   > *"WHEREAS, Colorado is fortunate to have the leadership of organizations such as the Colorado chapter of the American Institute of Aeronautics and Astronautics that addresses the professional needs and interests of the past, current, and future aerospace workforce to advance the state of aerospace science, engineering, technology, operations, and policy to benefit our global society; the Colorado Space Coalition that brings together industry, academia, and nonprofit organizations as well as federal, state, and local officials to advocate on behalf of aerospace; and the Colorado Space Business Roundtable that brings together companies and organizations of all sizes to network and advance aerospace in Colorado; …"*
   The full proclamation is available at https://info.aiaa.org/Regions/MW/Rocky_MNT/Document%20Library/SJR020_01.pdf. Watch the video on YouTube: http://www.youtube.com/watch?v=EAKZ3KjpB_A.
3. Did your section participate in Congressional Visits Day or All Aerospace Is Local? If so, describe.
   The council did not send a representative to CVD this year. We used the allocated public policy budget to support Colorado Aerospace Day.

Honors and Awards

1. Describe any local section awards given to members and supporters. Please note if award is new this year.
   The section has awards for Engineer of the Year, Young Engineer of the Year, Educator of the Year and Educator of the Year (K-12). We received 4 nominations for Engineer of the Year, 6 nominations for Young Engineer of the Year, 4 nominations for Educator of the Year (college/university) and XX nominations for Educator of the Year (K-12). It proved to be a very difficult job for the selection committee because of the high quality of the nominations. Winners were recognized at the Annual Awards Banquet on May 22. The awards will be announced in the next section newsletter and on the webpage.
   Insert photos from the awards banquet

   Young Engineer of the Year
   John Niehues
   United Launch Alliance

   Engineer of the Year
   Stanley Kennedy
   Oakman Aerospace, Inc.

   Educator of the Year
   David Richie
   United States Air Force Academy

   Educator of the Year (K-12)
   Nicole Sinnott
   Evans Elementary School

2. List members nominated by the section for AIAA or regional honors and awards. Please include nominee, award, and status.
   TBD – Do we want to forward any?

Technical Activities

1. How many local members are members of an AIAA Technical Committee? Describe how they interacted with the local section or local technical committee(s).
   There are 91 section members who are members of 47 Technical Committees. RMS members chair three TCs. This year there was no overt interaction with the section and the TCs.

2. Describe **local** technical committees, their function and activities for this year.

   There are currently no local technical committees.

3. Describe any technical symposia or short courses not described in detail elsewhere in this report.

   The Rocky Mountain Section held its 2nd Annual Technical Symposium, chaired by Dr. Taylor Lilly - RMS Southern Vice-Chair, on 25 October 2013 at the University of Colorado, Colorado Springs (UCCS). This ATS built on the success of the first ATS in 2012, with improvements to every aspect of the agenda. The venue was much larger, the program more extensive and diverse, the attendance almost twice as large [175], and visibility in the technical and political community greatly improved. Headlining this last point was participation by the Lt. Governor of Colorado during one of the panel sessions, attendance by a representative from Sen. Bennet's office (D-CO), as well as the inclusion of many local industry leaders. This year, there were ten corporate sponsors led by primary sponsor Lockheed Martin Space Systems Company; and four major supporting organizations - UCCS, USAFA, Space Foundation, and CSBR who provided support including promotion and volunteers and committee members. Each of these sponsors organizations brought a display, information, and even models and mock-ups.

   The day began with a welcome by UCCS Chancellor Pamela S. Shockley–Zalabak. The Program consisted of three tracks for the over 40 technical presentations which covered a diverse set of topics and technologies plus a main room for the panel sessions and special events. There were four panel sessions on topics important to the industry and populated with an elite set of panelists. Panel 1 was on the Job Market /Career Advancement in the state of Colorado. It was moderated by RMS YP Chair Heather MacKay and included panelists from prominent Colorado academic institutions and leaders in the local Aerospace industry. Panel 2 addressed the Direction of the Industry. It was moderated by RMS Chair Roger McNamara and included Colorado Lt. Governor Joseph Garcia as well as illustrious leaders from industry, academia, and advocacy associations such as the Colorado Space Business Roundtable (CEO Edgar Johansson). Panel 3, focused on STEM Education and Outreach related topics moderated by RMS Education Chair John Eiler, with panelists representing diverse interests from industry and academia. Finally, Panel 4, moderated by RMS PPC Jason Kuchera, concerned the very important topic and one of the themes of the RMS ATS – Cross-Sector Collaboration. This panel was headlined by Monisha Merchant from U.S. Senator Michael Bennet's (D-CO) office and included insightful representatives of academic, corporate, and local governmental agencies interested in promoting the acceleration of technology development and integration such as Andy Merritt from the Colorado Springs Regional Business Alliance and the LMSSC Director of Government Relations Joe Rice.

   The lunchtime keynote speech was on "The History of Hypersonics" presented by AIAA Distinguished Lecturer Dr. Richard P. Hallion. With a diverse audience, Dr. Hallion was challenged with both technical and topical considerations for his talk; feedback to the RMS supports the fact that Dr. Hallion demolished those challenges with a presentation that was immensely enjoyed by every attendee, from student to CEO. This was followed by remarks from the Colorado Lt. Governor and a presentation by the primary sponsor, LMSSC, entitled "Innovation without Boundaries" which addressed the opportunities and environmental factors surrounding and influencing the growth and direction of the industry. Presentations in the three tracks ranged from deeply technical academic and research topics to industry innovations and new directions to educational enhancement, such as initiatives to encourage and support STEM achievements. Approximately half of the presentations were student presentations – demonstrating the scope and reach of this event! The day was completed by an after-event social with "in-kind" support from Bristol Brewery, continuing tradition from the first ATS.

   Proceedings and program are on the RMS Home page at http://www.aiaa-rm.org/ATS.

   An indication of the success of the ATS is a comment emailed from the Keynote Speaker, Dr. Richard Hallion, commending the ATS:

   "Had a great time--the lecture went well, and I have to say this was one of the very best AIAA meetings I have attended. The organizers, particularly Taylor Lilly, did an OUTSTANDING job. The attendance was amazing, and not just students. They had the Lt Gov of the state (Joe Garcia, a strong aerospace supporter), many other state and local officials, a bunch of AF people from AF Space Command and the Academy, and a tremendous attendance of industry, including Lockheed Martin, United Launch Alliance, and a number of smaller firms. Most impressive!"

   The RMS, undaunted by the challenge to exceed the high bar set by the 2013 ATS, has begun to plan for next year – the 2014 ATS will be held on October 24 at UCCS. The call for abstracts has been distributed.

Lt. Governor Joseph Garcia addressing the ATS

Attendees talk with sponsors and exhibitors in the main hall

Communications

1. Number of newsletters published this year: What article received the most attention or interest this year?
   Two newsletters were published: June 2013 and March 2014. The newsletters are emailed then are archived at https://info.aiaa.org/Regions/MW/Rocky_MNT/Newsletters/Forms/Newsletter.aspx.
2. Describe any section publications other than a newsletter, including content, frequency and distribution.
   None.
3. How does the section utilize electronic communication, such as email notification, social media (such as Facebook, LinkedIn or Twitter), etc?
   The webmaster maintains several email distribution lists: section membership and others who subscribe, council members, ATS registrants, Young Professionals, Award nominations.

The following questions are for those sections with active websites.

4. Do you use the AIAA SharePoint site to host your section's homepage? If not, do you host a website elsewhere?
   We use the SharePoint site. It works reliably and is easy to maintain.
5. How often is the site updated, and do you have a webmaster?
   The webpage is updated weekly by our webmaster, John Grace. The officers and subcommittee chairs update the calendar, add announcements and upload documents as needed. John's dedication and attention is much appreciated by the council and members alike. John is now training Brian Gulliver to maintain the email lists as well as update the webpage.
6. What is the most utilized feature of the website?
   Links to program registration and document storage.
7. Do you use it to promote upcoming section activities?
   You bet! We add the events to both the calendar and the announcements. Registration for programs is online.
8. Describe any new or unique features added this year.
   The webmaster implemented a capability for members to register for programs. This saved the Program Chair a tremendous amount of time and improved accuracy of information. This feature also aids in tracking participation.

Financial Summary

Beginning Total Balance of all cash on hand as of June 1, 2013		$_____
Checking Account:	$ _____	
Savings Account:	$ _____	
Other (please specify):	$ _____	
Section Rebate:	$ _____	
Other Income		
(please specify – advertising, etc):	$ _____	
Expenses:	$ _____	
Estimated Ending Balance as of May 31, 2014		$_____

What corporate donations were received?

Sponsorships for the Annual Technical Symposium were received from

Were any meetings or functions underwritten or financially supported?

AIAA RMS provided funding for Colorado Aerospace Day.

The section provided funding to CU and UCCS student chapters for their activities including Design-Build-Fly, chapter meetings and attending the student conference.

Outstanding Section Award

(Limit to two pages.)

1. Statement of the mission and goals of the section. How is your section functioning within the mission and goals of the AIAA?

2. Statement of philosophy of use of funds (both through rebates and other means). How are financial resources used by the section? How do you think the funds are best utilized?

3. Please describe any challenges or problems that arose during the year (or that are ongoing) and how the section dealt with them.

4. Please describe how your section is responding to its unique circumstances and how it is making a difference. In other words, why should this be an Outstanding Section?

Outstanding Activity Award

Date of Event: Name of Event:

Speaker: Speaker Affiliation:

Meeting type: Attendance:

Description of Event: Joint Sponsorship? With what group(s)?

Describe any publicity for the event:

What makes this event an outstanding activity?