



Upcoming Events

March 19, 2018

Colorado Aerospace Day
Denver, CO

March 21, 2018

Congressional Visits Day
Washington, D.C.

March 22, 2018

3rd Annual Aerospace Summit
Location TBD

April 27, 2018

Honors and Awards Banquet
The Falls, Littleton, CO

Note from the Editor

By Adrian Nagle, *Ball Aerospace*

As the new year starts, there are many activities to look forward to. You might reflect on what new opportunities you need to jump start your career in aerospace or to continue your involvement with aerospace events.

In March, there is the Congressional Visitors Day to meet congressional staff and promote the aerospace industry by educating congressional representatives and staff of your aerospace experiences. Colorado has a similar Colorado Aerospace Day hosted at the state capitol also in March. Be sure to consider these opportunities if they interest you, whether you want to travel to Washington, DC, or stay local in our state. Contact Tracy Copp (tcopp@ball.com) for details.

See who was recently selected in the Rocky Mountain Section as AIAA Associate Fellows. You can meet them at the annual awards banquet to be held in late April. The speaker and details of the awards banquet will be announced via e-mail and in the next newsletter.

This year will continue with more events, such as our speaker programs, volunteer opportunities, and soon a young professionals event to spread (and share!) our enthusiasm of all things aerospace in our local education community.

Bring on 2018 with exciting events from AIAA RMS!

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We Need You!!

If you are interested in increasing your participation in AIAA Rocky Mountain Section, we need your help with positions in any of the committees. If you have an interest, please contact: Kevin Mortensen – kevin.mortensen@baesystems.com

Aerospace in Denver News

Our Rocky Mountain Section member, Dr. Roger McNamara was in a photo demonstrating a battery for a mission to Mars. Find the article in the Boulder Daily Camera “[Longmont's Enersys part of NASA's 'road to Mars'](#)”, Dec. 11, 2017 or the same article in the [Denver Post](#) Dec. 12. Photo includes Dr. McNamara and others looking over a battery developed by Longmont company Enersys Advanced Systems.

AIAA-RM 6th Annual Technical Symposium at MSU Denver

Taylor Lilly, *Lockheed Martin*

(Also appears in Aerospace America)

On November 17th, 2017, the Rocky Mountain Section of the American Institute of Aeronautics and Astronautics hosted its 6th Annual Technical Symposium at Metropolitan State University of Denver. This was the first year for the conference at MSU Denver, and through generous university support, the event went



Figure 1- Congresswoman DeGette addresses attendees. Photo by W. Kenison

fantastically well.

The symposium broke from tradition and separated its formerly unified technical theme into four tracks, giving attendees the ability to select Aeronautics, Astronautics, Unmanned Aircraft Systems, or Advanced Manufacturing as the focus of their day's events. In addition to the separate tracks, plenary sessions, expert panels, and an exhibit hall filled with booths and

interactive displays from 17 event sponsors were also available to all attendees. In addition to its section website, <http://aiaa-rm.org/>, The Rocky Mountain Section also added a new website, <http://www.aiaa-rm.tech/>, dedicated to the Symposium.

Some of the highlights of this year's symposium included: a presentation by Congresswoman Diana DeGette of Colorado's 1st district [Figure 1], a drone delivery demonstration by the Colorado School of Mines Student branch of AIAA [Figure 2], a 3D fly-through of the Lockheed Martin designed Deep Space Gateway, and a keynote presentation on the development of the Mars Base Camp [Figure 3] by DSSI President, Stephen Bailey.

Each track also featured a panel of industry experts giving attendees the chance to ask questions and take a deeper dive into the policies and programs shaping these industries. Panel topics included: The Effects of Advanced Additive Manufacturing on Engineering Development Cycles, Airport Mapping and Maintenance using UAS, and a Young Professionals Panel highlighting the challenges and opportunities for young people just starting their aerospace careers. A new feature to this year, certification testing for AGI's Systems Tool Kit (STK) software was also conducted, giving attendees the chance to add an industry certification to their resumes.



Figure 2- A boxed lunch arriving via drone. Photo by A. Pickett

One of the things that continues to set this event apart from so many similar events throughout the industry is accessibility to a broad range of industry participants, from fortune 500 vice presidents and congressional delegates to collegiate students and eager new hires. This availability is born from the ATS history of strong planning and close ties to the community, this year highlighted by the partnership between AIAA and MSU Denver. Throughout the planning of this event, ATS Committee Chair, Wesley Kenison, brought together nearly 100 students,

faculty, and staff from across the University to help make the event successful.

University organizations for Aviation and Aerospace, Hospitality Tourism and Events, Brewing Science, Restaurant Management, Events Management, The Advanced Manufacturing

Sciences Institute, Marketing and Communications, and The Center for Advanced Visualization and Experiential Analysis, all participated to turn this event into a truly unique experience for attendees and event sponsors.

In addition to the Symposium activities on



Figure 3-DSSI President Stephen Bailey's Keynote Presentation. Photo by W. Kenison



Figure 5-Beer tasting at the Sponsor Recognition Dinner. Photo by A. Pickett

Friday, the event organizers held a sponsor recognition dinner the evening prior. This event featured five beers specially crafted for the event to celebrate the partnership between AIAA and MSU as well as their shared love for all things aerospace. The culinary program then prepared dozens of amazing treats and paired these to the small batch brews, taking guests on taste extravaganza demonstrating the universities top notch programs. "This is the first time in the history of the department that three major programs – brewing science, restaurant management and event management – came together to plan and produce an event," said Andrea Peterson, affiliate

faculty.

The decoration and event management for both days was handled by the Hospitalities, Tourism, and Events Program's, Advanced Planning and Risk Management class, who also provided a 50+ page risk management plan to ensure the safety and security of all guests.

Not only did this year's Annual Technical Symposium turn out great, MSU Denver is excited to apply the lessons learned this year to making next year's Symposium even bigger and better.



Figure 4-One of the many interactive booths in the Exhibit hall. Photo by A. Pickett

ATS 2017 Sponsors!



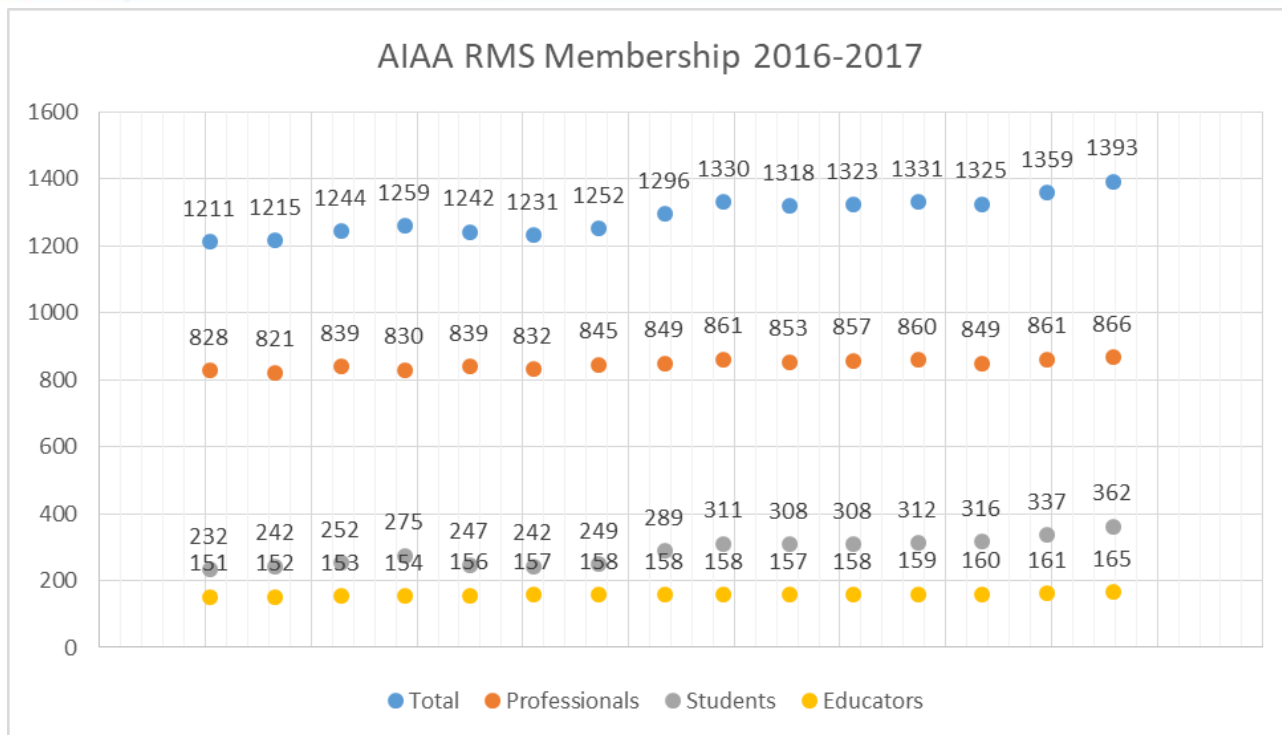
Congressional Visitors Day, March 21, 2018

Tracy Copp, *Ball Aerospace*

Interested in helping AIAA raise the image of aerospace in Washington? If so, please consider participating in the AIAA Congressional Visits Day (CVD) March 21, 2018! Every year, AIAA members - engineers, scientists, researchers, students, educators, and technology executives - travel to Washington, DC, for a day of

advocacy and awareness with national decision makers. Your participation, enthusiasm, and passion remind our lawmakers that aerospace is a key component of an economically strong and secure nation.

AIAA-RMS can help defray the cost of attendance, on a first come-first served basis. For more information, please contact Tracy Copp at tcopp@ball.com and visit AIAA's [CVD website](#).



Membership in RMS Keeps Growing

Marshall Lee, *Sypris Electronics, LLC*

The numbers speak for themselves, as our Rocky Mountain Section continues to grow membership, outpacing the national AIAA trend. We are around 1,393 in total membership with Student Members driving the increase, up some 56% since July 2016.

Most growth from Student Members (since Jul 2016):

Professionals	Students	Educators
38	130	14
4.59%	56.03%	9.27%

RMS Council has the objective to increase membership ~10% per year, which sets our target for the current program year at 1,465. With two months into it, our aerospace organization is already at 4.65% towards our objective. By mid-September, we've added – 25 Students, 4 Professional, 4 Educators, and 1 Associate.

The Membership Committee will working with the Council for ideas and thoughts around boosting Professionals through outreach programs at some of our larger aerospace companies, which seems to be a large untapped source of future participants.

2017 TRAJECTORIES Numbers

TRAJECTORIES 2017 Numbers

190 Registered / ~150 Attendance total

60 AIAA RMS members signed up to attend

- 40 Professionals including 7 Mines alumni
- 4 Faculty from local universities
- 16 Students

Membership Goal for Event = 20 (still work to sign-up more attendees)

12/20 = 60% of Goal Reached

129 to follow-up with

The TRAJECTORIES 2017 networking event held September 8th at Colorado School of Mines was a vision of the Membership Committee geared to attracting new members. It was a fabulous success and a great collaboration with Mines Aerospace Interest Group (MAIG), as well as good

student volunteers and engagement. As a result, we've seen 10+ new Mines students joining us.

Please invite your colleagues to AIAA RMS events!

Top Reasons to Join:

- Connections – networking, career development, and technical achievement
- Participation – build strong relationships with colleagues, such as involvement with STEM
- Access – stay up-to-date on the latest buzz in our Aerospace Community

If you have any questions about membership, please contact Marshall Lee, AIAA RMS Membership Chair

Marshall.Lee@sypris.com, (813) 503-7122



SPACE RESOURCES PROGRAM
COLORADO SCHOOL OF MINES

Colorado School of Mines: Colorado Space Resources Program

Marshall Lee, *Sypris Electronics, LLC*

Colorado School of Mines will soon be preparing the next generation of scientists and engineers to responsibly explore, extract, and use resources not only on Earth, but also on the Moon, Mars, asteroids, and beyond. Mines is planning to

launch a first-of-its-kind interdisciplinary graduate program in space resources in 2018. The first pilot course, Space Resources Fundamentals, is being offered this fall, to be followed in the spring semester by a new space systems engineering course, design project class, and seminar series, all focused on space resources.

"In recent years, there has been a growing interest by space agencies and the private sector in resources found beyond our

planet, such as water, gases, minerals and metals, to be used in space, instead of launching them from Earth. This often-called 'living-off-the-land' approach has been driven by an awareness that further development of space travel will be enabled through processing of materials and production of propellants in space for more affordable and flexible transportation, facilities construction, and life support," said Angel Abbud-Madrid, Director of the Mines Center for Space Resources.

Through the proposed Space Resources Program, Mines students would develop

skills to design systems for exploration, extraction, processing, and utilization of space and planetary resources. Instruction would focus on the scientific, technical, economic, policy, and legal aspects of this developing field, from a multidisciplinary group of experts in academia, space agencies, and the private sector. Post-baccalaureate certificates, master's degrees and doctoral degrees are expected to be offered once the program is fully approved and implemented in fall 2018.

You can find more information: <http://space.mines.edu>.



The New Class of 2018 AIAA Associate Fellows in the Rocky Mountain Section

By Gene Dionne, *Retired*

Each year, the Institute recognizes exemplary professionals for their accomplishments in engineering or scientific work, outstanding merit and contributions to the art, science, or technology of aeronautics or astronautics.

This year, the Rocky Mountain Section had an unusually large number of Associate Fellows selected for the Class of 2018.

Please congratulate the new Associate Fellows from our Section:

Arnold "Chip" Barnes III, Chief Engineer, Civil and Commercial Space Programs, Ball Aerospace and Technologies Corporation

William P. Cristler, Ph.D, Professor of Aerospace Engineering, Embry-Riddle Aeronautical University

Taylor C. Lilly, Ph.D, Lead for Analysis and Integration, Project Orion Propulsion, Lockheed Martin Space

Chris C. McCormick, CEO and Founder, PlanetiQ/Global Weather & Climate Solutions

William C. Jackson, Chief Systems Engineer, Sierra Nevada Corporation

Gretchen M. Lindsay, Ph.D, Director, Director of the Systems Engineering, Acquisition and Operations Department, The Aerospace Corporation

Angela Suplisson, Ph.D, Professor and Director of the Unmanned Aerial Systems Center, Dept. of Aeronautics, USAF Academy

Bernard Kutter, Manager of Advanced Programs, United Launch Alliance

Mark E. Peller, Vice President for Major Development, United Launch Alliance

John G. Reed, Senior Technical Fellow, United Launch Alliance. Currently the Vice

Chair of the AIAA Guidance Navigation and Control (GNC) Technical Committee and has been elected to be chairperson starting in May 2018.

Melissa Sampson, Ph.D, Program Manager for XEUS Lunar Lander, United Launch Alliance

Michael A. O'Hara, Director, Space Technologies and Services, Ball Aerospace and Technologies Corporation

Gary L Wentz, Jr., Vice President, Human and Commercial Systems, United Launch Alliance

Jay McMahon, Assistant Professor, Smead Aerospace Engineering Sciences Department, University of Colorado, Boulder

The Class of 2018 Associate Fellows was officially recognized during the Associate Fellows Recognition Ceremony and Dinner, held in conjunction with the AIAA SciTech 2018 on Monday evening, 8 January 2018, at the Gaylord Palms in Kissimmee, Florida.

