



AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

FLIER

LONG ISLAND SECTION

JANUARY 2020

VOL. XLVIII, No. 5

Published by and for the AIAA Long Island Section,  
P.O. Box 491, Bethpage, NY 11714

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*Note from the Chairman*

**The AIAA Long Island Section Council wishes you and you families a healthy and happy New Year.**

**As we start the new year, be aware of an extensive program of new space missions in 2020.** NASA plans to launch the Mars 2020 rover, which will include the Mars Helicopter Scout. The rover will collect samples for eventual return to Earth. Other Mars missions include: The European Space Agency in partnership with Roscosmos will launch the Rosalind Franklin rover; the China National Space Administration (CNSA) will launch its HX-1 mission, which includes an orbiter and small rover; the United Arab Emirates will launch the Hope Mars Mission orbiter on a Japanese rocket. China intends to launch Chang'e 5, a sample-return mission to the Moon. NASA's OSIRIS-REx mission will sample the asteroid Bennu in July. The JAXA Hayabusa2 mission will return samples of asteroid Ryugu to Earth in December. SpaceX's Dragon 2 and Boeing's CST-100 Starliner are expected to make their first crewed flights in early 2020. China plans to test a new generation of crewed spacecraft in October, and begin construction of the Chinese large modular space station. And there are dozens of other missions planned.

Thank you,

**Dave Paris, 516-458-8593 [davidsparis@twc.com](mailto:davidsparis@twc.com)**

**EVENTS CALENDAR**

**January 14, AIAA Section Meeting, Daniel Dumbacher, Executive Director, AIAA. "The Future Starts With you – Now!"**  
Details on page 2.

**Feb. 13, METROPOLITAN ENGINEERING SOCIETIES COUNCIL (MESC) Engineers Week Meeting. Burton Dicht. "From Moonwalks to Spaceplanes- A History of the Space Shuttle."** See page 3 for details.

**Feb. 13, Engineers Joint Committee of Long Island (EJCLI) Engineers Week Seminars.** See page 4 for preliminary details.

**April 26, WAC Lighting Foundation Invitational Science Fair,** at Jericho High School, in Jericho.

**May 21, Dr. Robert Zubrin, Mars Mission Expert,** Details in a future FLIER.

**AIAA Courses, Forums, Conferences in January.** See page 8 for some examples.

The Council is planning meetings through next June and would appreciate your suggestions.

So, watch this space for news of future meetings.



**AIAA/IEEE(AES)/IASE  
Joint Section Meeting**

**Tuesday, January 14, 2020**

**Mr. Daniel L. Dumbacher**

**Executive Director of the American Institute of Aeronautics and Astronautics  
Former Purdue University Professor**

**“The Future Starts With you – Now!”**

**Location: Bethpage Public Library  
47 Powell Avenue  
Bethpage, NY 11714**

**RESERVATIONS REQUESTED  
RSVP BY Jan. 13, 2020  
to: [davidsparis@twc.com](mailto:davidsparis@twc.com)  
or 516-458-8593**

**Time: 6:00 PM Social Time  
6:30 PM Pizza  
7:00 PM Presentation**

**Cost for Pizza: \$7 Members and Guests  
Free for Students**

Expanding the human neighborhood beyond our planet and flying faster and more efficiently here on Earth, means there's lots of life-changing work to do. AIAA's three priorities are air mobility/autonomy, transformative flight, and the space economy. In the air mobility sphere, the opportunities are in automation and control/safety, public acceptance, design challenges, and defense applications. Hypersonics and defense applications are major areas of transformative flight. The space economy includes not only space exploration but also national security and potential economic growth from cislunar resources. We estimate there are 17,000 near Earth objects with a potential of 2 trillion kg of industrial metals and 150 metric tons of precious metals. Between the commitment to put humans on the moon by 2024 and a 4.7 percent increase in the 2020 \$750 billion Budget Request for Defense, the aerospace industry has jobs but not enough people to fill them. Employment is expected to grow 6 percent by 2026 while the unemployment rate of recent grads has hit 2.5 percent.

We have work to do to address these exciting challenges. Join me in learning more about how we can work together to solve aerospace challenges that have the promise to transform our society for the better.

Dan has agreed to speak about the status of the Aviation and Space Industry through his lens based upon his experience and what he is seeing. He will include a discussion of the future of Uncrewed Aircraft, and the balance between Robotic and Human spacecraft in future missions.

AIAA is the world's largest technical society dedicated to aerospace. Before joining the AIAA staff in January 2018, Daniel Dumbacher was a Professor of Engineering Practice in the School of Aeronautics and Astronautics at Purdue University, where he taught courses in systems thinking, systems engineering, and space policy. Prior to Purdue, he served as the Deputy Associate Administrator, Exploration Systems Development Division, Human Exploration and Operations Mission Directorate at NASA Headquarters. In that capacity, he provided leadership and management as the Program Director for Exploration Systems Development, which included: the Space Launch System; Orion; and Ground Systems Development and Operations development and integration efforts. He led a national team of over 5,000, spanning all NASA centers and industry, and was responsible for a \$3 billion annual budget. He has received numerous awards and honors including the coveted Silver Snoopy Award and the NASA Distinguished Service Medal. He earned a mechanical engineering BS and business administration MA.

**Directions:** The library is west of Route 135 in Bethpage. Take Route 135 to Exit 8, then West on Powell Ave. for about 0.25 miles. The library is on the south side of the street. Park across Powell Ave., opposite the library.

# **ENGINEERS WEEK CELEBRATION**

Sponsored by the

## **METROPOLITAN ENGINEERING SOCIETIES COUNCIL (MESC)**

**RESERVATIONS REQUIRED FOR DINNER** THE PUBLIC MAY ATTEND THE LECTURE (ONLY) AT NO CHARGE.

**Date:** Thursday, Feb. 13, 2020

**Where:** Ukrainian East Village Restaurant, 140 Second Ave. nr 9<sup>th</sup> Street, New York, NY 10003  
Travel: By Subway-F Line (2<sup>nd</sup> Av); Lex Av Line (Astor Pl); Conn's From B,D,G Lines at (B'way Lafayette); Bus Lines along 2<sup>nd</sup> and 3<sup>rd</sup> Aves.

**Time:** 5:30 pm Registration: Main Dining Room  
6:00 pm Buffet Dinner: Main Dining Room

**Program:** 7:00 pm, Presentation: Main Dining Room

7:00 - 7:25 Welcome & Introductions: Wasyl Kinach, P.E., MESC Chair  
7:25 - 7:45 Presentation of Mayor's Proclamation  
7:45 - 7:50 Introduction of Keynote Speaker, David A. Weiss, P.E, IEEE Representative  
7:50 - 8: 55 Keynote Address- Burton Dicht, CAE, Director, Student and Academic Education Programs, IEEE

**Topic:** **FROM MOONWALKS TO SPACEPLANES- A HISTORY OF THE SPACE SHUTTLE**

The space shuttle era came to a close with the final flight of Atlantis in July 2011, after thirty-years of operation. The shuttle system was an engineering marvel. Yet, it never lived up to the expectations of its proponents. Mr. Dicht will guide us through its development, will touch on the politics and economics of the time and their impact on its design. He will also describe several of the engineering challenges that were more difficult than going to the moon.

**Cost:** \$50.00 – mailed reservations and check required by February 7, 2020  
No "At Door" payment 1 PDH for this meeting

Please mail your check made payable to MESC and mail it with the tear-off below to the MESC treasurer: Ms. April Leyla Berkol; 75 West End Ave, Apt P38A; New York, NY 10023

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**February 13, 2020 ENGINEERS WEEK CELEBRATION**

Fee Enclosed: \_\_\_\_\_ Phone #: \_\_\_\_\_  
First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_  
Company: \_\_\_\_\_ Society: \_\_\_\_\_  
Address: \_\_\_\_\_ E-Mail \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

**FOR ADDITIONAL INFORMATION, CONTACT**

**WASYL KINACH, e-mail: [info@mescnyc.org](mailto:info@mescnyc.org), Tel: (212) 669-2203**

Representing Chapters and Sections of the following professional organizations in the Metropolitan New York area:

Association for the Advancement of Cost Engineering	American Institute of Aeronautics and Astronautics	American Institute of Chemical Engineers
American Society of Civil Engineers	American Society of Heating, Refrigerating and Air-Conditioning Engineers	American Society of Mechanical Engineers
American Society of Plumbing Engineers	American Society of Safety Engineers	Association for Facilities Engineering
Association of Energy Engineers	Illuminating Engineering Society	Ingineurs et Scientifiques de France
Institute of Electrical and Electronics Engineers	Institute of Industrial Engineers	National Association of Corrosion Engineers
New York Academy of Sciences	New York State Society of Professional Engineers	Society of Automotive Engineers
Society of Fire Protection Engineers	Society of Women Engineers	American Engineering Alliance
Municipal Engineers City of New York	American Nuclear Society	

# **Engineers Joint Committee of Long Island**

## **ENGINEERS WEEK SEMINARS**

*Date:* Thursday, February 13, 2020

*Time:* 8:00am – 4:30pm

*Place:* Holiday Inn Plainview – 215 Sunnyside Boulevard, Plainview, NY 11803

*Fee:* \$135 for full day; includes Continental Breakfast & Lunch

### Engineers Week Seminar Tentative Topics:

- VFD Technologies
- Nuclear Energy
- Entertainment Engineering
- 20 Years of Wireless Instrumentation & Automation
- Single Ply Membranes Exposed: The Myths & The Facts
- One & Two Family Electrical
- Solar Assisted Combined Cooling, Heating & Power (SCCHP) Plant
- Building Energy Efficiency and Roof Design
- Building Commissioning
- IRC 2015 Code Compliant Wood Framed Residential Details

For more information or to reserve a spot, contact:

Tom Fiorella  
Home: (718) 258-3143  
Mobile: (516) 359-1038  
tfior9651@msn.com

## NOVEMBER MEETING REPORT

Our last section meeting was held on November 21 at the Bethpage Public Library. Mr. Max Aginsky, a Wind Turbine Engineer at GPT ENERGY LLC. spoke about “Vertical Axis Wind Turbines on Long Island.” He was joined in the presentation by Mr. Ilya Tsitron, the company’s president.

We live in a world where energy consumption is increasing while energy production causes increased pollution. Wind is one of the most promising sources of clean, renewable energy available today. Gradual design improvements for the conventional horizontal axis wind turbines are making wind energy costs more and more affordable, yet the construction and maintenance costs of today’s conventional wind turbines are incredibly high.

These wind energy machines are huge, very noisy, and harm birds. Conventional vertical axis wind turbines are limited in size, have poor stability and lifespans, and can still harm birds.



A New York company, GPT Energy, has developed a new patented vertical axis wind turbine technology called Green Power Tower (GPT). It is less costly to build, to install, and to maintain than any conventional wind technologies. This new technology, unlike any other wind turbines, is a stable cylinder-shaped tower that has no moving parts outside of the structure and thus is safe for birds. The GPT lacks all of the problems of other designs.

Max and Ilya took turns informing the audience of the advantages and progress of the GPT. Model parts are produced by 3D printing. Test models have been placed in a few locations and on the top of a car traveling at 60 mph. Wind tunnel testing is being conducted at New York Institute of Technology (NYIT), Stonybrook University and RPI. Various blade shapes, numbers of blades and shapes of inlet channels have been tried. It is expected that good efficiency levels will be achieved.



While the tower itself does not rotate, the propellers within are spinning from wind flowing in any direction. It is stackable and scalable to any size. It can be placed virtually anywhere, including on rooftops, ships, or attached to a wall of a building. Unlike conventional wind turbines, GPT is safe near residential areas. Max and Ilya consider the Green Power Tower to be the future of wind power.

The audience asked a number of good questions and seemed interested in the future of this vertical axis wind turbine design.

Our co-sponsors for the meeting were IEEE(AESS) and IISE.

<b>Spring/Summer Hours (April 1 – October 31)</b>	
Monday - Friday	10:00am - 5:00pm
Saturday, Sunday & Holidays	10:00am - 6:00pm
<b>Year-Round</b>	
Early Morning Tours    For more information and to purchase tickets <a href="https://www.intrepidmuseum.org/guided-tours">https://www.intrepidmuseum.org/guided-tours</a>	9:00am
The line to the submarine <i>Growler</i> and exhibition may close early. <b>Final Entry and Last Ticket sold one hour prior to closing.</b>	

<b>Fall/Winter Hours (November 1 - March 31)</b>	
Daily (including Holidays)	10:00am - 5:00pm
Early Morning Tours (Weekends & Holidays) <a href="#"><b>Click here for more information</b></a>	9:00am
The line to the submarine <i>Growler</i> and exhibition may close early. <b>Final Entry and Last Ticket sold one hour prior to closing.</b>	

**The Museum is closed on Thanksgiving and Christmas day.**

Join as a Museum Member and experience everything Intrepid has to offer, for an entire year  
A membership pays for itself after just TWO visits.

**Learn, explore and play at the Museum all year long! Visit during one of our seasonal festivals, or drop by anytime for free programs like science demonstrations, talks, planetarium shows and more.**

**For information about Intrepid events:**

**<https://www.intrepidmuseum.org/PublicEventsCalendar.aspx>**

**Example Events:**

**Planetarium Show: On the Wings of New York   Monday-Friday: 3:00pm**

**Planetarium Show: Biome Away from Home to January 26, 2020 Monday-Friday: 1:15pm**

**Operation Slumber    January 18, 25, February 1**

**Deep Space Exploration    January 26**

**Kids Week    February 15 – 22**



# Cradle of Aviation Museum

Charles Lindbergh Boulevard

Garden City, NY

11530

The Cradle is preserving Long Island's rich aerospace heritage of discovery and inspiring future generations through science and technology. Over 75 air and space craft in 8 galleries chronicling 100 years of aerospace adventure.

Visit the Cradle with your children and grandchildren, explore their world-class aerospace history exhibits, talk to their knowledgeable docents, join in their events, watch a first run movie in their wide screen domed theatre, or enjoy an exciting show in the immersive, all-digital, JetBlue Sky Theater Planetarium. The Cradle currently features planetarium and Domed Theatre shows including: Volcanoes: The Fires of Creation; Apollo 11: First Steps; Backyard Wilderness; Train Like an Astronaut/Asteroids; Dream Big: Engineering Our World; Living in the Age of Airplanes.

Also, check the website for dates and times for the Interactive Educator-Led Space Lab Programs including: Current Night Sky; Space News & Asteroid: Mission Extreme; Solar System Tour; One World One Sky: Big Bird's Adventure. Space labs are held on Saturdays, Sundays, holidays and school breaks at noon and weekday mornings.

Usual Hours: Open 9:30-5:00, Tuesday through Sunday and Mondays that fall on holidays and school breaks.

For event details, go to: <http://www.cradleofaviation.org/> or call (516) 572-4111

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**American Airpower Museum**  
**1230 New Highway, Farmingdale, New York,**  
**11735**  
**At the northeast corner of Republic Airport**

Usually Open Wednesday to Sunday 10:30 AM to 4:00 PM

Closed Monday, Tuesday

**Phone: 631-293-6398**

Check website for weekend events.

<http://americanairpowermuseum.com/>

The American Airpower Museum is an aviation museum located on the former site of Republic Aviation at Republic Airport in East Farmingdale, New York. It maintains a collection of aviation artifacts and an array of aircraft spanning the many years of the aircraft factory's history.



**Come to the AAM to see the P-51D Mustang acquired in 2018 and many other aircraft.**



To book your flight please call: (516) 531-3950

## **AIAA Meetings**

[Forums](#) [Events](#) [Exhibit & Sponsorship](#) [Courses & Workshops](#) [Online Education](#)

### **2020 AIAA Associate Fellows Induction Ceremony and Reception**

6 JANUARY 2020    Orlando, Florida, USA

The Class of 2020 Associate Fellows will be officially recognized for their accomplishments in engineering or scientific work, outstanding merit, and contributions to the art, science, or technology of aeronautics or astronautics. Join us in recognizing these exemplary professionals during the Associate Fellows Induction Ceremony followed by a reception, to be held in conjunction with the 2020 AIAA SciTech Forum (AIAA SciTech) at the Hyatt Regency Orlando on Monday evening, 6 January.

### **AIAA Science and Technology Forum and Exposition (AIAA SciTech Forum)**

6 JANUARY - 10 JANUARY 2020    Orlando, Florida

The AIAA SciTech Forum is the world's largest event for aerospace research, development, and technology. The 2020 forum will bring together experts to share ideas on Fluid Dynamics; Applied Aerodynamics; Guidance, Navigation, and Control; Structures; and much more.

### **2nd International Academy of Astronautics (IAA) Conference on Space Situational Awareness**

14 JANUARY - 16 JANUARY 2020    Arlington, Virginia

### **66th Annual Reliability & Maintainability Symposium (RAMS®)**

27 January - 30 January 2020    Palm Springs, California

The Annual Reliability and Maintainability Symposium (RAMS®) is a yearly gathering of the product assurance disciplines where training, tutorials, and the latest technical practices, procedures, and results are presented in easy-to-utilize forums and proceedings.