

# INTERNATIONAL COUNCIL ON SYSTEMS ENGINEERING

## CENTRAL VIRGINIA CHAPTER

[www.incose.org/central-virginia](http://www.incose.org/central-virginia)

Nov 2021

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Cordially invites you to attend a joint dinner meeting of PMI/CVC and INCOSE/CVC and presentation by:

**Byron Knight, PhD**  
Chief Scientist  
National Reconnaissance Office

Topic:

**The Art of NRO Systems Architecting**

At:

**Park Lane Tavern**

**Spotsylvania Towne Centre, 1 Towne Centre Boulevard, Fredericksburg, VA**  
(see map)

**Tuesday, 30 November 2021**

<b>Times: Social (Cash Bar)</b>	<b>1730</b>	<b>(Everyone Welcome)</b>
<b>Dinner</b>	<b>1800</b>	<b>Charge: INCOSE &amp; PMI Members: \$15.00</b>
		<b>Non-Members: \$20.00</b>
<b>Presentation</b>	<b>1900</b>	<b>Students: \$12.00</b>

**Menu:** A variety of dinner choices are available for the given price and one coffee, tea or soft beverage.

**Price:** The cost for members is \$15 including 9% tax and 18% tip. The cost for a nonmember or guest is \$20. Full time students will be charged the reduced rate of \$12.

**Contact:** Email: Rod Cutright, (540) 653-6580, [Roderick.cutright@gmail.com](mailto:Roderick.cutright@gmail.com) or Anthony Sirico (904) 307-7512, [Asirico0215@gmail.com](mailto:Asirico0215@gmail.com) to make your reservation.

*We ask you to help us out by reserving early. You can always cancel later if things change so you cannot make it. Please come out and support this event so that the Chapter can continue to hold meetings in Fredericksburg on occasion. Thank you.*

**Speaker:** Dr. Byron F. Knight is a United States Department of Defense Intelligence Senior Leader, currently serving as the Chief Scientist in the Advanced Systems and Technology (AS&T) Directorate at the National Reconnaissance Office (NRO) in Chantilly, Virginia. He is the principal advisor to the Director for emerging science, technology, engineering and mathematics capabilities related to space reconnaissance. Previously to joining AS&T, Byron held numerous positions in the NRO Systems Engineering Directorate (SED). As the Deputy Director for Future Conflict Capabilities he was the principle technical advisor to the Director of Systems Engineering focused on improved reconnaissance systems and operations to address emerging tactical and operational military and intelligence needs. Prior to that, he served as the Mission Assurance Executive advising the NRO Director on, and providing oversight for, spacecraft reliability and maintainability and industrial base issues. From 2008 to 2010, Dr. Knight served at the National Geospatial-intelligence Agency (NGA) as the Chief Advisor to the NGA Director, overseeing customer needs and required future capabilities while on Joint Duty Assignment. (continued)

**Business Meeting:** A short INCOSE business meeting will be held after the presentation to discuss and update on Chapter initiatives and business.



**The Speaker (continued):**

Dr. Knight, a native of Tallahassee, Florida, began his career in 1982 at the Harris Corporation in Melbourne Florida, developing ground-based and space borne antenna systems for the Department of Defense. He worked for two years with Lockheed Corporation as a National Aeronautics Space Agency space shuttle thermal protection systems engineer, as the aft

section team lead for the Shuttle Atlantis. From 1986 to 1988, he was the division mechanical engineer for Unisys Corporation, developing military and intelligence signals intelligence hardware systems. He returned to Harris Corporation to continue developing defense space and terrestrial intelligence technology.

Dr. Knight moved to the NRC, Chantilly, Virginia, on a technology fellowship in 1998, working in the Operational Support Office (OSO). He worked with a team of civilian, military, and contractors to develop a new communications dissemination program for low bandwidth military users. This activity led to research and studies in Measurement and Signature Intelligence (MASINT), and was identified as a leader in the military application of these typically complex technical products and services. Between 2000 and 2003, Dr. Knight continued his support in OSO as an employee of SRA International. In 2003, he began to directly support MASINT development programs, assuming duties as Chief Scientist in October 2005. He completed his two-year joint duty assignment at NGA in May 2010, returning to the NRO as the Deputy, Mission Success Executive



**President's Corner:**

A dinner meeting has been scheduled at Park Lane Tavern, Wednesday, Nov 30, 2021, Social 1730 and Dinner to follow. Our Joint INCOSE/PMI meeting in Oct was well attended with over twenty people showing up. Thanks to LTC David Maurer, our presenter in Oct, we had an excellent project presentation.

The November meeting was scheduled for November 30 due to limited availability of the Tavern event room. This meeting is a joint meeting between International Council of System Engineers (INCOSE) and the Program Management Institute (PMI). Thanks to Dr. Gregory L. Chambers, President of PMI for his assistance and coordination to make this joint meeting happen.

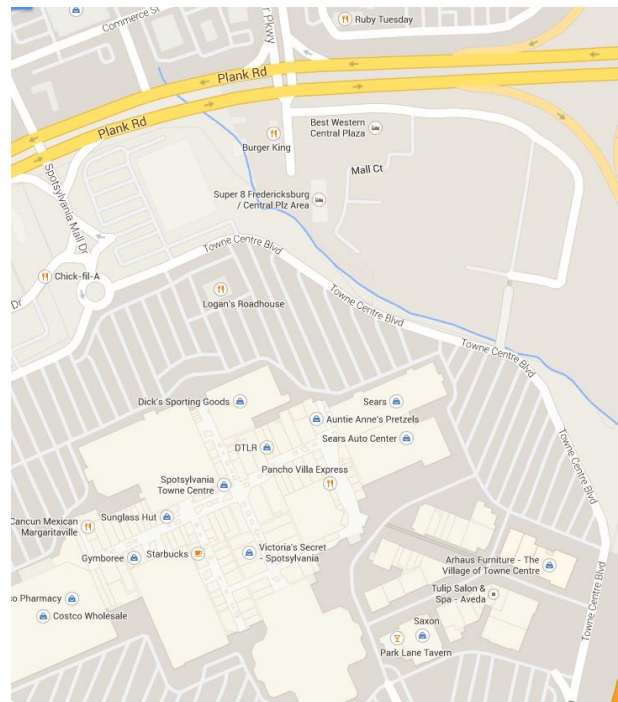
Our presenter in November is, Dr. Bryon Knight, from The NRO. Dr. Bryon's Bio is featured in this News Letter that

you have insight to our speaker and his professional career and accomplishments.

We, as a Profession and Society, through our own resolve, have continued to contribute to the Nation's defense and further the integration of science, technology, engineering and mathematics (STEM) in problem solving.

Elections are this month. A Ballot will be circulated for your vote and approval. Next year's President is Anthony Sirico and the Vice President nominee is Eileen McConkie. Hope to see you on November 30, 2021 at Park Lane Tavern.

**Map to Park Lane Tavern:** Get off Interstate 95 at Exit 130 and go west on Route 3 (Plank Road) and turn left into Spotsylvania Towne Centre Mall. At roundabout go left on Towne Centre Blvd and follow it around to the back of the Mall where one turns right to get to the restaurant as shown on map.



**Want to get more involved?** The Chapter is looking for people who want to do more for the Chapter. There are Chapter committee positions that need people to fill them. There are Chapter positions suited for those who can make small or large commitments. Contact the Chapter President for information or attend one of the regularly scheduled Dinner or Executive Committee meetings.

To get information on leadership responsibilities go to the Central Virginia Chapter website to view the Bylaws and Constitution, <http://www.incose.org/central-virginia/>.

**The International Council on Systems Engineering (INCOSE)** is a not-for-profit membership organization founded in 1990. Our mission is to advance the state of the art and practice of systems

engineering in industry, academia, and government by promoting interdisciplinary, scalable approaches to produce technologically appropriate solutions that meet societal needs.

**Order Coffee Cups with Chapter Logo:** The Chapter will have some coffee cups with the new Chapter logo imprinted on them for mementos for our meeting speakers and for responding members, in the near future. If you would like us to include you on this order, contact Rod Cutright (see front page). The approximate (at cost) price will be \$11 if you pick the cup at a meeting.

**9<sup>th</sup> Annual Stem Summit:** The 9<sup>th</sup> annual STEM Summit was held on Feb 29, 2020, and was a huge success. I would like to thank David and Rebecca Kreider, Ajoy Muralidhar, John Maresco, Matt Iglesias, and Greg Buchanan for their assistance in manning the INCOSE booth and discussing career choices with the students. The next Summit may be held virtually.  
POC: Dr. Gregory Chambers, [gchambers426@msn.com](mailto:gchambers426@msn.com).

### **Interested In Becoming an INCOSE Member?**

If you would like more information about the international Council on Systems Engineering (INCOSE) or you are interested in obtaining information about becoming a member, please contact any of the members of the Executive Committee of the Central Virginia Chapter. Their names and contact information are listed in the "letterhead" located on the first page.

**Science Fair Judges and Supporters:** On March 4, 2020, the Chapter presented awards at the Virginia Piedmont Regional Science Fair (VPRSF).

The awards consisted of a certificate and check. The first place award was \$100, the second place was \$75 and third place award was \$50, along with Certificates. Dan Vavrck, Director and Science Fair Committee Chairman attended the Regional Fair as judge.

The Section plans on giving awards again to the Regional and State Science Fairs as fairs come back to normal operation.

If interested in volunteering or wish for more information on opportunities to participate in Science events, please contact Dan Vavrck or any INCOSE Officer.

The Piedmont Regional Science Fair Web site address is <http://www.vprsf.org/register.htm> to sign up to be a judge, The 2020 Virginia State web site is <http://www.vssef.org>.

**From the Desk of the Editor:** If you are not on our Chapter's newsletter emailing list, please send me an email and I will make sure to get your name on the list. You will then get future newsletter and meeting announcements. My contact info is on front page.

Again, I want to remind the membership of the efforts that go into organizing a meeting and the efforts of the speaker

to prepare his/her presentation. These dinner meetings can only continue with your support. The Officers of the Chapter will continue to arrange excellent programs and the Chapter will continue to subsidize the cost of the meal for all attendees.

I hope that you decide to support this engineering event, of which there are only a few per year. Also, I hope to meet you and get to know you.

## **Meeting and Events Schedule:**

### **Future Meetings and Events:**

**Nov 30 2021, 1730:** Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr.; Byron Knight, PhD.; Topic: The Art of NRO Systems Architecting; Coord: Greg Chambers, PhD

**TBD, 2022, 1800:** Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr.; TBD; Coord: Rod Cutright

### **Past Meetings and Events:**

**Oct 13 2021, 1730:** Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr.; David Maurer, LTC; Topic: The Cuban Missile Crisis 1962; In Extremis Project Management; Coord: Greg Chambers, PhD

**Aug 18, 2021, 1800:** Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr.; Anthony Sirico; Topic: Machine Learning Techniques for Systems Engineering; Coord: Rod Cutright

**Jun 23, 2021, 1800:** Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr.; Eileen B. McConkie; Topic: Mathematical Properties of System Readiness Levels; Coord: Rod Cutright

**Jan 15, 2020, 1800:** Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr.; Gordon J. Gattie; Topic: What Were You Thinking? Investigating Human Judgement Through Probabilistic Functionalism; Coord: Eileen B. McConkie

**May, 21 2019, 1800:** Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr.; TBD; Topic: A General Theory of System Safety; Coord: Alan Brown

**Mar 26, 2019, 1800:** Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr.; George Meadows; Topic: From Virtual to Physical and Back Again: 3D printing and Augmented Reality; Coord: G Chambers

**Feb 19, 2019; 1800:** Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr: Gil Goddin.; Topic: Complex System of Systems Control Hierarchy; Coord: Ajoy Muralidhar

**May 29, 2018; 1800:** Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr: Gil Goddin.; Topic: Systemic Risk Analysis for Complex Systems; Coord: Ajoy Muralidhar