

# INTERNATIONAL COUNCIL ON SYSTEMS ENGINEERING

## CENTRAL VIRGINIA CHAPTER

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

Jan 2020

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Cordially invites you to attend a dinner and presentation by:

**Gordon J. Gattie. PhD**

**Wargaming Coordinator for  
Naval Sea Systems Command Warfare Centers Mission Area  
Director for Surface Warfare**

Topic:

**What Were You Thinking? Investigating Human  
Judgement through Probabilistic Functionalism**

At:

**Park Lane Tavern**

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

**Wednesday, 15 January 2020**

<b>Times: Social (Cash Bar)</b>	<b>1800</b>	<b>(Everyone Welcome)</b>	
<b>Dinner</b>	<b>1830</b>	<b>Charge: INCOSE Members:</b>	<b>\$15.00</b>
		<b>Non-Members:</b>	<b>\$20.00</b>
<b>Presentation</b>	<b>1930</b>	<b>Students:</b>	<b>\$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: Eileen B. McConkie, PhD, (540) 845-3438, [eileenmc@gwu.edu](mailto:eileenmc@gwu.edu) or Rod Cutright, (540) 653-6580, [Roderick.cutright@gmail.com](mailto:Roderick.cutright@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.*

**Topic:** Our increasingly complex environment and rapidly evolving technologies require decision makers who efficiently process multiple data streams from disparate sources while providing sound judgments. The judgment and decision-making scientific literature has significantly increased over the past two decades as sensors collect more information about the decision maker and surrounding environment, new techniques for assessing human judgment effectiveness have been developed, and increased computing power allows researchers to examine tactical-level decisions in greater detail and strategic-level decisions over longer timeframes. Decision theories are broadly classified into two categories: normative, which explains how decisions ought to be made, and descriptive, which explains how decisions actually are made. Furthermore, descriptive theories may also be (Continued)

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

(Continuation) predictive, such as Signal Detection Theory (Green & Swets, 1996) or Judgment Analysis (Cooksey, 1996). Within the scientific literature, various approaches to developing predictive decision theories include: comparing human behavior to an ideal model (Edwards, 1954), assessing judgments based on rationality in a complex uncertain environment (Simon, 1955), using expertise for the recognition-primed approach (Klein, 1997), considering cognitive heuristics and biases in human judgment (Kahneman, Slovic, & Tversky, 1982), and modeling human behavior using a cognitive algebra approach (Hammond, 1955). This presentation will provide an overview of the latter, and how Probabilistic Functionalism and the cognitive algebraic approach has been extensively used across domains such as law enforcement, medical diagnosis, education, and public policy development.

**The Speaker:** Dr. Gordon J. Gattie currently serves as the Wargaming Coordinator for the Naval Sea Systems Command Warfare Centers Mission Area Director for Surface Warfare. Previously, he was the Naval Surface Warfare Center Dahlgren Division Acting Deputy Chief Technology Officer, where he led various strategic planning and technology forecasting initiatives and assisted with managing Naval Innovative Science and Engineering investments. Dr. Gattie's previous assignments include the Chief of Naval Operations Strategic Studies Group Technology Fellow, where he collaborated with senior naval officers and civilians to generate revolutionary naval concepts, and Human Systems Integration Science & Technology Group Lead, where he led a team of scientists and engineers focused on human performance, human-device interaction, and human integration. A lifelong baseball fan, Dr. Gattie has authored over 30 articles on baseball history. He received his Ph.D. and M.S. from State University of New York at Buffalo in Industrial & Systems Engineering, his M.A. from Naval War College in National Security and Strategic Studies, and B.S. from Clarkson University.

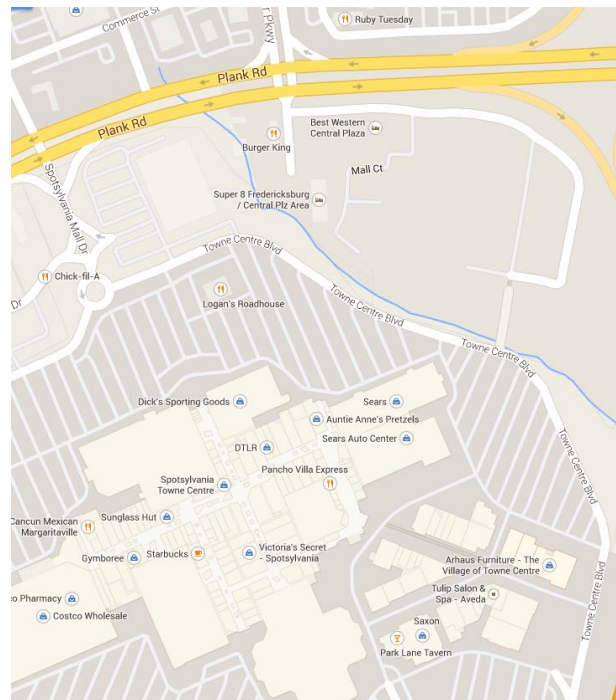
**The International Council on Systems Engineering (INCOSE)** is a not-for-profit membership organization founded in 1990. Our mission is to advance the state of the art and practice of systems engineering in industry, academia, and government by promoting interdisciplinary, scalable approaches to produce technologically appropriate solutions that meet societal needs

**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/>.

**9<sup>th</sup> Annual Stem Summit** The 2020 Annual STEM Summit is scheduled for Feb 29<sup>th</sup>, 2020, at Chancellor High School. More details to come. POC: Dr. Gregory L. Chambers, [gchambers426@msn.com](mailto:gchambers426@msn.com).

**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.



**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 Ajoy Muralidhar (see front page). The approximate (at cost) price will be \$11 if you pick the cup at a meeting.

**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 7, 2019, the Chapter presented awards at the Virginia Piedmont Regional Science Fair (VPRSF). The Chapter

also presented Certificates at the Virginia State Science and Engineering Fair (VSSEF). on April 14<sup>th</sup>.

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 to judge and give awards at the Virginia Piedmont Regional Science Fair on March 2020 and give awards at the Virginia State Science and Engineering Fair on April 2020.

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 all 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 greatly 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:

**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

**Mar TBD, 2020, 1800:** Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr.; David R. Sadler; Topic: TBD; Coord: Eileen B. McConkie

### Past Meetings and Events:

**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

**Apr 25, 2018;** 1800; **Cancelled;** Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr: John Seel.; TBD;; Coord: Ajoy Muralidhar and Dr. Eileen McConkie

**Mar 27, 2018;** 1800; Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr: Mr. John Fiore, SES.; Topic: Technical Rigor in a Multi-Sponsor Organization; Coord: Ajoy Muralidhar

**Feb 27, 2018;** 1800; Chapter Dinner Mtg; Loc: Park Lane Tavern, Fredericksburg; Spkr: Don S. Gelosh, Ph.D., CSEP-Acq.; Topic: Introduction to INCOSE Institute for Technical Leadership; Coord: Ajoy Muralidhar and Dr. Eileen McConkie