

2024: Issue #1

Cost Estimating Body of Knowledge-
Software and the SCEC Certification

2024 Professional Development
& Training Workshop Preview

ICEAAWorld

The magazine for the International Cost Estimating & Analysis Association



May in Minneapolis!

2024 PROFESSIONAL DEVELOPMENT & TRAINING WORKSHOP

ICEAA MAY 16-18, 2024

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**International Cost Estimating
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The Magazine for the International Cost Estimating & Analysis Association

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The International Cost Estimating and Analysis Association is a 501(c)(6) international non-profit organization dedicated to advancing, encouraging, promoting and enhancing the profession of cost estimating and analysis, through the use of parametrics and other data-driven techniques.

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Publication of materials is at the discretion of the editor and officers of the association. Opinions expressed by contributors are not necessarily those of the International Cost Estimating and Analysis Association. The association endorses no product or service, does not engage in any form of lobbying, and does not offer for sale any commercial product or service for a profit. All revenue received from the activities of the association are used solely for the professional benefit of its members.



President's Perspective

*Christina N. Snyder, CCEA®
ICEAA International President*


We are two months away from the 2024 ICEAA Professional Development & Training Workshop - have you started making your travel plans? As I mentioned in the last issue of *ICEAA World*, my highest aspiration for our organization is ensuring ICEAA is serving our members in meaningful ways across their career journeys. So how does the 2024 Workshop stack up against the KPIs used to measure that goal?

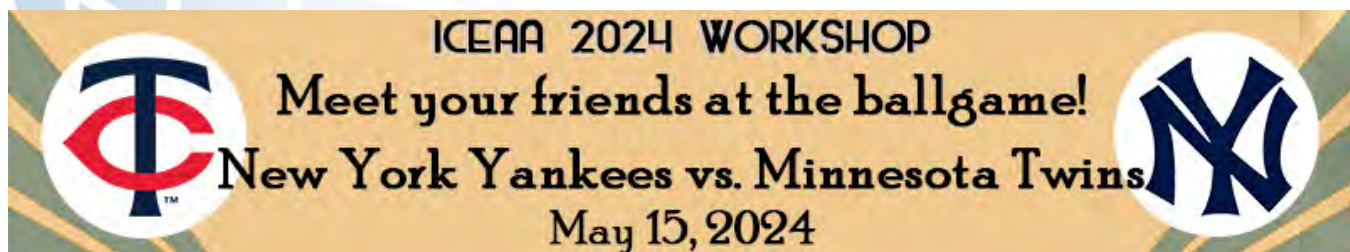
Keep People Interested – After the inaugural success in 2023, we are extremely excited that we will once again be hosting our Cost Challenge at the 2024 Workshop in Minneapolis. We were blown away by the enthusiasm and feedback from last year's challenge! This year we are looking forward to providing the opportunity for our most junior analysts to show off all that they've learned and provide judging opportunities for our respected seniors to share their insights and wisdom. By providing opportunities like this across our membership, we broaden our perspectives in every direction while enjoying the spirit of friendly competition.

Keep People Involved – We are still looking for volunteers to help onsite in Minneapolis, especially room monitoring, registration, and check in. As always, the Workshop is the best time of the year to get more involved with ICEAA – and we need you! It's a great opportunity to get to know your fellow members and see a little more behind the scenes of what it takes to pull off our 400+ attendee events! If you are interested in volunteering, please reach out to Megan Jones at iceaa@iceaaonline.org

Keep People Informed – There is no single better spot to get informed as a cost analyst than the ICEAA Workshop. It is three days filled with opportunities to learn about the amazing work and opportunities in our field. This year we will be training our Cost Estimating Body of Knowledge, great for those members looking to get the desired CCEA® and having multiple tracks to cover any interest you may have in cost estimating! The full list of tracks and a look at everything that's in store for us in Minneapolis is later in the issue!

Keep People Inspired – My personal favorite part of the ICEAA workshops is that after a week submerged in learning and discussions with our ICEAA community, I always walk away more inspired. I love hearing how our creative members have overcome challenges within our profession and have found original solutions to the most complex problems. It's not just the pre-programmed training or paper sessions, the conversations I've had at the networking events or just between breaks at coffee have opened me up to new ideas and have helped me become a better analyst.

Adam Grant recently said "In a stable world, success depended on building expertise. In a changing world it hinges on evolving expertise." Watching our members grow throughout their career from attending their first workshop to furthering research motivates us all and is exactly what the ICEAA community is about. I say come to the 2024 ICEAA Professional Development & Training Workshop to boost your expertise with fundamentals and learn practical applications from our amazing attendees. See you in Minneapolis! 



ICEAA 2024 WORKSHOP
Meet your friends at the ballgame!
New York Yankees vs. Minnesota Twins
May 15, 2024

Business Office Update

Megan Jones, ICEAA Executive Director



While your ICEAA Business Office has been busy preparing for our 2024 Professional Development & Training Workshop, our members have been pretty busy themselves! Every spring, chapter and other ICEAA events pop up around the country like brave daffodils. Just look at what your fellow members have been up to:

I had the pleasure of joining the Washington Capital Area Chapter for their Spring Social at the beginning of March, and their monthly webinar series has started off strong with great offerings so far and a lively schedule planned for 2024.

The Southern California Chapter re-started their in-person events last year along with holding periodic webinars. Their recent workshops have combined educational presentations with relevant “field trips” like touring a local airport!

The Greater Alabama, Dayton, and New England chapters have been hosting local in-person events for the members in their areas, along with social elements to encourage networking.

Are you signed up as belonging to a chapter? If not, you could be missing out on chances to meet new estimators and stay on top of the latest trends in the industry. Log on to your ICEAA Profile at iceaaonline.com/login to make sure you’re hearing from the chapter in your area!

It’s not just the volunteers at the chapter level that have been busy little ICEAA bees this spring. The OEM COG held their first webinar of 2024 on March 7 to discuss *How to Better Estimate and Forecast Production Costs*. Visit iceaaonline.com/oemcog to watch recordings of previous webinars and see what you missed.

Even if there isn’t a chapter in your area, the world is a little less area-centric than it used to be. Keep an eye on the ICEAA Calendar on the main page for virtual events from chapters or other ICEAA offerings that may not be in your area but are broadcasting to your office!

On behalf of everyone at ICEAA, thanks to all of our members who give their precious time and invaluable expertise to helping make ICEAA membership valuable and rewarding for everyone involved.



Tecolote Research is always looking for ambitious people to join our team!

ABOUT US

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Money Changes Hands... ...A Good Book Changes Minds

Book review by David Peeler

After missing last summer's issue – my apologies – we're back with a review of yet another ICEAA member's book. Three years ago, we looked at **Christian Smart's** book, *Solving for Project Risk Management*. Today we review another data-driven book. However, rather than a specific focus on risk, this edition's book analyzes the economic value of product attributes, and does so in a way seldom before seen or used. The lessons therein can be used by consumers, producers, and new market entrants alike. For many of our readership, the application is in the priced value of product options – those characteristics of comparable benefit.

How many of us have sat through presentations of product attribute value that merely show a series of slides purporting the value of specific capabilities without ever putting them together in a unified comparison? The individual slides often don't even keep the same scaling; so even mental comparisons of relationships across the slides are practically impossible. In **Hypernomics**, Howarth shows us how to use multidimensional mathematics to compress the data for analysis of products with various attributes, keeping the common axis of price. Now that may seem high-order, but the author makes it all very accessible via common objects, presenting multidimensionality in terms of every-day concepts. Things like pie, a rolodex, pond ripples, extendable mirrors, etc.

Howarth provides an easy-to-grasp foray into multidimensional methods to find solutions to problems both macro- and microeconomic in nature. In essentially twelve chapters, he introduces position and direction, multi-dimensional systems, value, demand, price, mapping, aiming, and provides an example of how the same market data-set can be used by consumers, producers, and prospective new entrants. Throughout, the author keeps the reader grounded in applicable (neo)classical economic

HYPERNOMICS: USING HIDDEN DIMENSIONS TO SOLVE UNSEEN PROBLEMS

DOUG HOWARTH

John Wiley & Sons.
Hoboken, New Jersey; 2024

theory, as he presents the defining aspects of "hypernomics." The book is replete with pictures, tables, and graphs which all serve to guide the reader visually; but just as important, each image is well-described in its captioning and the concepts fully-fleshed in the surrounding text.

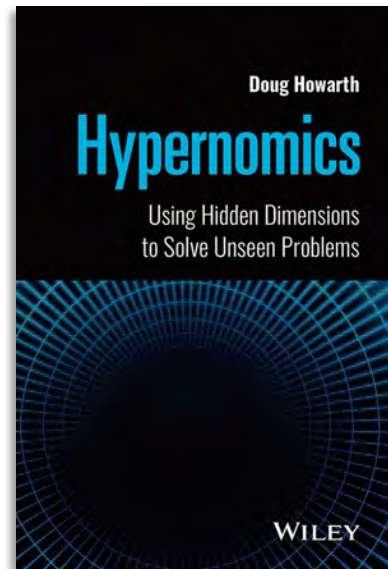
While the publisher didn't do the author any favors with the small size of the graphics or deciding to present them in black and white rather than in color, the concepts are clear and well explained. I was able to follow the material with some extra attention/examination. As an aside, I'm sure this decision hinged on keeping the price down. I would have preferred a slightly more expensive volume with color presentation. An option the publisher could have considered by using methods presented in the book.

continued

Book Review

The author does overlay his criticism of the neoclassical supply curve, but this notion doesn't detract from the concepts presented. He merely conflates the classical supply curve with the producer's cost curve. Essentially distinct constructs on two levels – macro and micro.

Nonetheless, a highly recommended read, with value for economic decisions of many types. A useful reference for evaluating personal consumer product markets and for professional assessment of major weapon systems or large corporate decisions. What attributes add value and how much? How do the characteristics or performance parameters compare? What does the market look like for specific product attributes? The book is a tutorial for grasping a multidimensional understanding of market assessments; and will serve the role of a great desk reference or informative scholastic text. I encourage you to pick up this book; it is well written for easy concept understanding. I'm a slow reader and finished it rapidly. Plus, those of more advanced cost analysis skills will see potential applications throughout their realm of endeavors.



Colonel David Peeler, USAF Retired, is an associate with Dayton Aerospace and Deputy Director emeritus of Financial Management and Comptroller for the Air Force Life Cycle Management Center. He is a certified cost estimator/analyst and a DoD certified acquisition professional in financial, program, and test management. He is a member of both the American Society of Military Comptrollers and the International Cost Estimating and Analysis Association.



ertification ongratulations

What a year 2023 was! 113 ICEAA Certification exams were administered in 2023 including 20 Software Cost Estimator Certification (SCEC) exams! SCEC certification is ICEAA's most recent certification opportunity offered to the cost community. You can learn more about the SCEC certification and the new Cost Estimating Body of Knowledge – Software (CEBoK-S) on our website at www.iceaaonline.com/cebok-s.

Did you know that you can now track your recertification points as you collect them, right inside your ICEAA member profile? Once logged in, you'll find the CCEA Points Tracker in "Quick Links" at the top of the page. There are several drop down options when entering your activities, but you can also add your own description as well as upload certificates of completion or other documentation associated with the points claimed. The final determination of points approval will be made by ICEAA. Please contact the ICEAA Business Office with questions.

Now, let's celebrate those attaining or retaining certification. We extend our congratulations to the following 36 individuals for passing either the CCEA®, PCEA® or SCEC exam between June and December 2023:

PCEA® Achievers:

Rana Asghar, Capital Costing Services
Crystal Austin, ECS Federal
Zack Ayliffe, TP Group
Rebecca Baker, TP Group
Jacob Brown, ECS
Charise Fuller, Hunatek
Christopher Giandoni, Technomics, Inc.
Josh Glover, Department of Homeland Security
Shelton Hill, Tecolote Research, Inc.
Dongjae Lee, Booz Allen Hamilton
Chandler MacLaren, Booz Allen Hamilton
Blake Minty, Systems Planning and Analysis
Rob Pike, TPG Services Limited
Jee Hyun Suchoski, Booz Allen Hamilton
Carl Tindall, FEMA

SCEC Achievers:

Eric Bom, Belastingdienst
Rob de Munnik, Belastingdienst
Nick DeTore, Logapps LLC
William Gellatly, Technomics, Inc.
Amy Kearney, ECS Federal
Austin MacDougall, Technomics, Inc.
Kevin McKeel, Logapps LLC
Tom Van Medegael, Smals

June - December 2023 Re-Certifications:

Remmie Arnold	Andrew Drennon	Emily Hagerty	Jennifer Rose
Annette Barlia	Klara Emelianova	Thomas Knoll	Kimberly Roye
Geoffrey Berntsen	Salem Engler	Daryl Kubo	Joseph Ruwe
John Bielecki	Candace Fogle	Robert Mach	Cabin Samuels
Teresa Bright	Joseph Frisbie	Patrick Malone	Thomas Sanders Jr.
Donald Brown	Jermaine Garland	Keith McSweeney	Andrew Thompson
Sandy Burney	Mark Gornall	Mary Margaret Ertz	Robert Watts
Charles Casserly	Thomas Goughnour	Brian Oceau	Jing Wu
Nick DeTore	Kelly Grey	Akvile Palenski	Christopher York
	Juan Jose Guzman	Tom Parr	

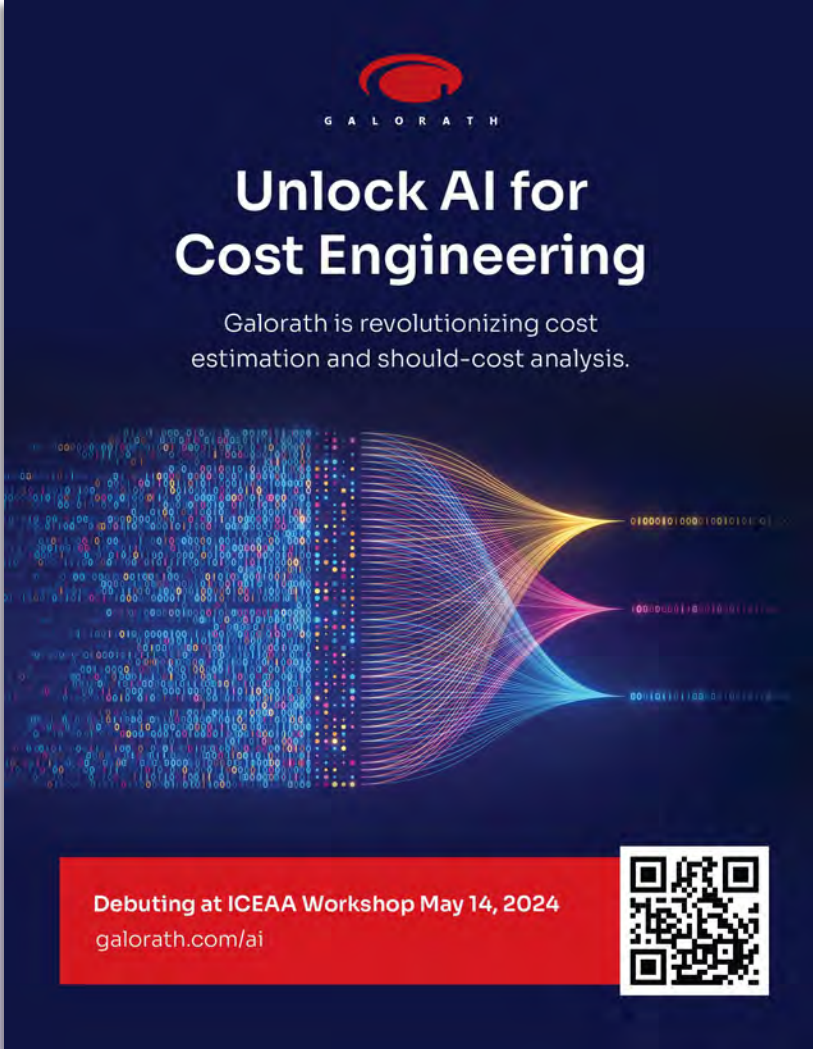
CCEA® Achievers:

Richard Cousins, TP Group
Aubrey Dial, Technomics Inc.
Florent Doullat,
European Space Agency
Hannah Doyle, TP Group
Mike Ford, TP Group
Rivers Jenkins,
Tecolote Research, Inc.
James Johnson,
Tecolote Research, Inc.
Neil Morrill, TP Group
Daniel Nicoloso, Johns Hopkins
University Applied Physics
Laboratory
Mary Rzepka,
Booz Allen Hamilton
Jason Sticka, Booz Allen Hamilton

PCEA® Achievers/

CCEA® Eligible:

Ismil Alnajmy, Technomics, Inc.
Adam Lacerte, Technomics, Inc.



The image is a promotional poster for a workshop. At the top center is the Galorath logo, a red stylized 'G' with the word 'GALORATH' underneath. Below the logo, the main title 'Unlock AI for Cost Engineering' is written in large, white, sans-serif font. Underneath the title, a subtitle reads 'Galorath is revolutionizing cost estimation and should-cost analysis.' The background of the poster is dark blue with a digital aesthetic, featuring a grid of binary code (0s and 1s) on the left and a series of colorful, glowing lines (yellow, orange, red, pink, blue) that curve and converge on the right side, resembling a neural network or data flow. At the bottom left, a red rectangular box contains the text 'Debuting at ICEAA Workshop May 14, 2024' and the website 'galorath.com/ai'. To the right of this box is a square QR code.

2024 PROFESSIONAL DEVELOPMENT & TRAINING WORKSHOP

MAY 16-18



MINNEAPOLIS

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2024 PROFESSIONAL DEVELOPMENT & TRAINING WORKSHOP PREVIEW

By Megan Jones

The 2024 ICEAA Professional Development & Training Workshop is coming soon, and we're here to tell you everything you need to hear to get excited for the cost event of the year! ICEAA was originally scheduled to hold our Workshop at the Renaissance Minneapolis Hotel, The Depot in 2021, but due to Covid restrictions, we had to wait three long years to get to this breathtaking hotel that is built into a train station from 1899!

The 2024 Workshop will start off with our second **OEM Forum & Networking Event**, Monday May 13 from 3-5pm. Employees of Original Equipment Manufacturers (OEM), those who serve them, or any attendee otherwise interested is encouraged attend. Tick the box for the OEM Forum & Networking Event when you register for the Workshop for two hours of panel discussions, presentations, and networking from representatives from BAE Systems, Huntington Ingalls, L3 Harris, Lockheed Martin, Northrop

Grumman, Raytheon Technologies, The Boeing Company, and more. The open forum will allow for questions of our panelists and time for individual discussions before the group gathers for some social networking.

Every year we adjust the Workshop schedule based on the feedback of our attendees and in ways we think will make the experience more positive for everyone, which brings us nicely to the first new feature for 2024:

For those arriving on May 13, stop by the lobby bar in the Renaissance Depot at 5pm for the unofficial start of the 2024 Workshop: our **Monday Meetup**. Are you a first-time attendee? Traveling solo? Looking to make new acquaintances or secure a lunch buddy? After you drop off your luggage, drop in and meet your fellow attendees!



The historic Milwaukee Road Train Station

For the rest of us, the 2024 Workshop starts as usual on Tuesday morning, with coffee and chow with our sponsors and exhibitors. To give everyone a taste of the outstanding paper

CONTINUED

presentations scheduled for the days to come, we start with the **2024 Best Paper Awards** presentation. A team of judges scored the narrative/white-paper formatted papers first to choose the best in each category, then from the category winners, scored the Best Paper Overall. These winning papers will definitely be ones to check out in the days ahead!

The authors on stage will be giving just a handful of the 70+ presentations that will be presented throughout the Workshop! We've organized them into eight tracks to help guide attendees to the presentations they will find most applicable, and arranged (as best we could) to keep similar topics from being scheduled at once. As always, the best way to keep track of which presentations you want to see and when is by using the ICEAA app on

70+ PRESENTATIONS IN 8 TRACKS:

- ◆ Analytical Methods
- ◆ Data Science & Machine Learning
- ◆ Management, EVM & Risk
- ◆ Modeling
- ◆ Processes & Best Practices
- ◆ Strategy
- ◆ Soft Skills & Trending Topics
- ◆ Software

Whoa. Invitations to download the app, which will include all of the scheduling, downloading, and socializing features you've come to love over the past few years.

After the awards on Tuesday morning, it's time to introduce the **2024 ICEAA Cost Challenge**. Teams of junior analysts and their mentors will be signing up to compete in the coming weeks, and will be expected to arrive ready to give a presentation on a dataset and series of scenarios to our panel of judges. Our six teams have entered and will be getting the details of the challenge to start their estimate in mid-April, ready to present to our judges throughout the day Tuesday. Our judges will convene Wednesday and announce the winning team, along with a \$1,000 cash prize, on Thursday morning!

Tuesday morning's general session will conclude with a panel discussion between senior leaders from OEM corporations and U.S. Government cost shops on the various impacts of acquisition regulations. Look forward to details on our panelists and the discussion in the coming weeks.

After a full day of breakout sessions, we will wrap up Tuesday with the first of our two main networking events in the exhibit hall. Every year, and last year more than ever, our attendees tell us the most valuable part of the

CONTINUED

Workshop is all of the opportunities you have to make new connections, ask an extra question of a presenter, or get to know our sponsors. Like it or not, the working world has changed, and many of us regularly work with people we never see. At the ICEAA Workshop, you'll have plenty of chances to meet face to face with colleagues and peers between sessions, during beverage breaks, or at the receptions on Tuesday and Wednesday evenings. Take some time to teambuild while you roam the historic Depot hotel.

The crowd has spoken and we're here to listen: attendees loved getting drink tickets, so we're bringing them back. If you still needed a reason to check out the receptions, we've got two more for you!

If Tuesday feels like a long day from reading this article, wait until you get to Minneapolis – because we're just getting to Wednesday.

We'll start off the day honoring ICEAA's standout stars with our **Annual Association Awards** presentation. ICEAA members across the globe go above and beyond to make a



General Sessions in the old train platform!

difference in the community. From the Junior Analyst of the Year to the Frank Freiman Lifetime Achievement Award, ICEAA is proud to take the time to honor and thank these individuals (and teams) for their efforts and contributions. Learn more about the award categories and read up on previous years' winners at iceaaonline.com/awards

Most of the rest of Wednesday will be the same or similarly-different to Tuesday: keynote speaker, drink tickets (if you didn't use them both on Tuesday), and the reception.

View speaker bios, paper abstracts, training session descriptions, and hotel information on our website. You can also download the latest detailed schedule, featuring session dates and times at:

www.iceaaonline.com/min2024



For those looking for something fun to do on Wednesday evening, we have great news for you: the New York Yankees will also be visiting Minneapolis to face the Minnesota Twins at Target Field! ICEAA has coordinated with the Twins club to offer discounted tickets to our attendees at the game, which is a 20-minute walk (or bar hop) from the hotel. A link to purchase your tickets is on iceaaonline.com/min2024
Meet your friends at the ballgame!

The second big change for 2024 will come on Thursday. Years ago, we came up with the idea to separate the winning **Best Paper Overall** to a

general session so everyone could fit in the room and nobody had to compete for crowds with the best overall paper. Everything was great except the timing; being right before lunch meant long buffet lines and hangry attendees. To further refine the idea, we've decided to move the Best Paper Overall again, this time to first thing Thursday morning - no more rushing the food lines or struggling between paying attention to the speaker or the spread! Look forward to hearing the year's finest paper Thursday morning right after we announce the winners of the 2024 Cost Challenge.

While you're listening to your fellow members' thought provoking presentations, you may notice our photographer making the rounds capturing the spirit of the event. But that's not all our official photographer, Carrie Evans, will be there for: have you gotten a **new head shot** recently? Stop by the head shot booth during breaks or the receptions on Tuesday and Wednesday to sit for your free head shot. ICEAA strives to enhance our members' careers in every way, and our online presence is more important than ever. A great head shot gives your profile a professional edge.

The ICEAA Workshop has always been a fantastic opportunity for individuals preparing for our PCEA[®] and CCEA[®] exams. Last year, we introduced the SCEC, or Software Cost Estimation Certification, and conducted training based on the new CEBok[®]-S, the

2024 WORKSHOP COMMITTEE

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CONTINUED





*The Great Hall, the Depot's former ticketing area.
Check the marble floors for indentations from passengers' feet!*

CEBoK[®] supplemental material focused on Software Cost Estimating. We plan to alternate between offering CEBoK[®] and CEBoK[®]-S training at the Workshop each year going forward.

Which makes 2024 a CEBoK[®] training year! Are you preparing to take the CCEA[®] or PCEA[®] exams? Attend the training track for live sessions covering all 16 CEBoK[®] modules instructed by experts from the community. Our training program is designed to cover all of the topics that represent the body of knowledge that

ICEAA promotes and tests for in our exams. If you have been studying CEBoK[®] you with the one concise and all-inclusive collection of study materials that will help you attain your professional education goals. The training courses at the Workshop will give exam candidates ample opportunity to ask specific questions, review topics in detail, and work through practice exercises.

Exams are offered online, which allows individuals to take their exam any time from the comfort of any place they have access to a computer and internet, even the Depot itself! If you want to take the exam right after the Workshop, just be sure to complete your certification application and get your exam link from ICEAA before you head to Minneapolis!

After two full days of training and presentations from your peers and colleagues Tuesday and Wednesday, and starting with the Best Paper Overall Thursday, we'll have a few more hours of presentations before we all reconvene in the Depot Pavilion for our **closing general session**. We initiated the closing general session a few

OEM Forum & Networking Event

May 13, 2024



Minneapolis

OUTLINE SCHEDULE

TUESDAY, MAY 14

years ago to give us a chance to sum up final thoughts from the event, hear from another thought-provoking speaker, and say our goodbyes and go our separate ways for the year. Make sure to book your flight to allow you to enjoy the entire workshop - from opening to closing sessions so you don't miss out on anything, and consider sticking around for Thursday evening, or even over the weekend, to get out and explore Minneapolis. The Depot is conveniently located to shops, museums, restaurants, breweries, Lake Calhoun, and more. Or take a short walk from the hotel to pick up a tram that heads out to the Mall of America every 30 minutes!

Remember how I said a few pages ago it sounds like a lot and we just got to Tuesday? Imagine how you'll feel Friday waking up after three full days of stimulating presentations, eye-opening conversations, and hopefully plenty of *ah-ha!* moments. We hope that full feeling of excitement and invigoration for your career tides you over until it's time to prepare for 2025!



Breakfast buffet available	7:00 - 8:00
Welcome & Best Paper Awards	8:00 - 8:30
Keynote/Panel	8:30 - 9:30
Papers & Training	9:45 - 11:45
Lunch	11:45 - 12:45
Papers & Training	12:45 - 4:45
Welcome Reception	4:45 - 7:00

WEDNESDAY, MAY 15

Breakfast buffet available	7:00 - 8:00
Welcome & Association Awards	8:00 - 8:45
Keynote/Panel	8:45 - 9:45
Papers & Training	10:15 - 12:00
Lunch	12:00 - 1:15
Papers & Training	1:15 - 5:15
Networking Reception	5:15 - 7:00

THURSDAY, MAY 16

Breakfast buffet available	7:00 - 8:00
Welcome & Best Paper Overall General Session	8:00 - 9:00
Papers & Training	9:15 - 12:00
Lunch	12:00 - 1:15
Papers & Training	1:15 - 3:00
Farewell General Session with Panel Discussion	3:15 - 4:30



Southern California Chapter Report

Charley Merritt, SoCal Chapter Secretary

The ICEAA SoCal Chapter hosted an in-person workshop on 17 Oct 23. We had over 30 attendees for the all-day learning event. We started the day with our keynote speaker, **Karen McRitchie** (Galorath Incorporated), talking about *Best in Class Costing Systems* before Zooming in Romania High School's International Space Development Conference (ISDC) team from across the world. The team won second place in the National Space Society-run competition in May 2023 for their design of a permanent space settlement. The group of teenagers wowed even the most senior analysts in the room with their thoughtful settlement design and professional presentation.

We also heard from **Justin Knowles** (Northrop Grumman) and **Connor Lawston** (cBEYONData), who presented *Cost Estimating...A Strategy?* and

Generative Artificial Intelligence for Government, respectively. To break up the day of briefings, the group took a trip to the Long Beach Airport to see the renovation of their Art-Deco Historic Terminal and talk to the project manager about the cost of the project. Lauded as "one of the ten most beautiful airports in the world" by BBC, the terminal is full of art-deco murals and millions of mosaic tiles that have been recently uncovered and are in the process of being restored.

To end the day, we held small group discussions to gather peer feedback on *Finding Usable Cost Data*, *How and When to Utilize AI in Cost Estimating*, and *Digital Engineering*. We received great reviews from the attendees and the Chapter Board is looking forward to planning the next in-person workshop in 2024.



October 2023 SoCal Workshop



Safety first at the Long Beach Airport!

Washington Capital Area Chapter Report

Christopher Massey, Washington Capital Area Chapter President

The Washington Capital Area Chapter (WCAC) of ICEAA elected a new Board of Directors in October 2023! The new board is excited to continue supporting and growing our over 470 local members through our ongoing luncheons, social events, and awards programs. In addition, we are focusing on promoting federal government membership in the chapter through targeted and individualized engagement with cost estimating and analysis offices (or those responsible for estimating products) throughout the federal government. The goal of this effort is for the WCAC to provide the government with a forum for federal leadership in cost estimating and analysis to:

WCAC Luncheon Series Recent Presentations:

July 2023 – *Innovative Risk-Driven Contract Pricing Strategy*
– **Bob Nehring, Brian Flynn, Peter Braxton** – Technomics

September 2023 – *Interesting Results from EVAMOS or 'Wow, There Is a Lot of O&S Data'* – **Daniel Germony** – OSD CAPE and past WCAC ICEAA President

October 2023 – *Ticking Time Bomb of Telework: Communication and Time Management* – **Jennifer Aguirre, Shannon Cardoza, Annie Bagay** – Quantech Services

November 2023 – *Shortfall Analysis – Creative Approaches to Problem Quantification and Monetization* – **George Bayer and Brian Carroll** – Cobec Consulting

December 2023 – *Measure It, and They Will Come: Keys to Developing a Successful Software Measuring Program* – **Carol Dekkers and Dan French** – Quality Plus Technologies and Cobec Consulting

February 2024 – *Using Bayes' Theorem to Develop CERs – Extending the Gaussian Model* – **Christian Smart and David Jo** – Jet Propulsion Laboratory (JPL) and Galorath

- Elevate standards of cost estimating practices.
- Nurture and grow a highly skilled and diverse talent pool within participating organizations.
- Advance the profession and, by doing so, ensure growth in demand for our services and supply of the talent to deliver those services.
- Lead focused efforts to influence office and agency-wide policy, processes, and tools.
- Work jointly with industry communities of practice including the ICEAA, AACEI, and others to align with recommended practices, enable engagement with the broader cost community, and promote professional certifications.

To guide this effort, we have the following strategic goals:

- Improve **quality** standards of cost estimating and analysis products.
- Improve **collaboration** of cost estimating activities among federal offices.
- Increase the **relevance** of cost estimating and analysis products.

Recent Events

The WCAC has been active providing our local community with presentations on innovative and impactful work from our members through our monthly Luncheon Series. Since the Summer of 2023 we have hosted six virtual presentations on topics ranging from innovative technical approaches to contract pricing to tips to improve communication and time management in a telework environment. If you missed any of these presentations or you are interested in presenting in the future, please reach out to secretary@washingtonecaa.com. Those that present at a luncheon will be eligible for our best speaker award at our All-Members meeting this summer!

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ICEAA Chapter and Region Updates

In addition to our luncheon series, the WCAC also hosted a fiscal year-end social at Punch Bowl Social in Arlington, VA. This well-attended event was complete with food and bowling, and provided the opportunity for members or prospective members to socialize and meet the new Board of Directors. We also had our Spring Social on March 7th hosted by Cobec Consulting in Washington, DC. We are looking forward to additional social events in the summer and fall to provide members the opportunity to network and build meaningful relationships with others in our local cost community.

Upcoming Events:

We are looking forward to a busy spring with some upcoming events! First, we are in the midst of our local chapter award process where folks from across our local community nominate their colleagues for their innovative and impactful work. Winners of the WCAC Awards will be announced at our end of year All-Members meeting and will be automatically nominated for an Association-level award. Third, we have our next luncheon lined up for March 2024

ICEAA Washington Capital Area Chapter 2023-2025 Board of Directors

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Committee Chairs:

George Bayer,

Cameron Bennage,

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titled, *Trouble with the Curve: Engineering Changes and Manufacturing Learning Curves* – **Brent Johnstone** – Lockheed Martin and are beginning to plan our April and June luncheons.

If you are interested in learning more about membership, Luncheon topics, social events, the new Board of Directors, or focused initiatives please contact us at secretary@washingtonecaa.com.



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Cost Estimating Body of Knowledge-Software and the Software Cost Estimating Certification (SCEC)

ICEAA Software SIG Marketing Working Group

For years, ICEAA has offered two levels of cost estimating certifications, which are the Professional Cost Estimator/Analyst (PCEA®) and Certified Cost Estimator/Analyst (CCEA®). Recently, ICEAA proudly announced the additional Software Cost Estimation Certification (SCEC). The SCEC represents the culmination of work by a group of software estimation leaders to build training material and develop the certification process that can be a building block for technology estimators of tomorrow. With the SCEC, ICEAA is acknowledging the importance of software and technology estimation, and its unique processes and methodologies.

SCEC candidates need at least two years of software cost-related experience and will need to purchase the Cost Estimating Body of Knowledge-Software (CEBoK-S) to take the certification exam. CEBoK-S provides excellent training material for the SCEC, and is a great resource for:

- ◆ Identifying best practices with software development effort and cost, sustainment, and maintenance.
- ◆ Estimating software products, which include custom development (agile and other methodologies), Commercial-Off the Shelf, Government Off-the Shelf, and software as a service.
- ◆ Reviewing and validating 3rd party software size estimates, development costs, and sustainment and maintenance schedules.

The software industry continues to evolve, with an ever-increasing reliance on agile teams and iterative development. Most of the software estimation tools and

methods, such as COCOMO 81, date back to the 1980s, in which software was developed in a waterfall fashion, in which the sizing metric was typically Source Lines of Code (SLOC). Today, agile teams deliver working software as early as possible to the end user (often described as a prototype or, Minimal Viable Product), and evolving requirements and re-work are a key part of the delivery process. Software teams provide services such as refactoring code, researching better methods of delivery (known as spikes), and their effort cannot simply be estimated based on SLOC delivery rates. Software teams are also staffed with different roles, to include Scrum Masters, Product Owners, and Enterprise Architects. Software teams deploy software with continuous integration and continuous deployment (CI/CD) methods. For many agencies, there is no longer a clear separation of development, security and Operations and Maintenance, as the phases are combined into a DevSecOps concept. These changes in software delivery and support require the estimation community to evolve as well. The SCEC certification and CEBoK-S material provide the analyst with the playbook to develop robust estimates for both waterfall and agile methodologies.

Customers and employers expect their resources to have certifications as proof of their credibility. Project proposals are more competitive with certified employees positioned to do the work, and Contracting Officers often require certifications like SCEC as part of the bid and proposal process. By obtaining SCEC, analysts and their industry or government entities are stating they will meet the standard requirement of software estimating and analysis.

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The SCEC will be used to identify trained software cost estimators, who understand different estimation methodologies, sizing techniques, parametric equations, and models, and how to estimate COTS and software services. Additionally, SCEC will offer certification-holder career advancement opportunities due to the limited number of currently certified software estimators. The SCEC indicates that an analyst possesses both basic cost estimating capabilities and specific expertise in software analysis. Holding the SCEC is a differentiator and will set the analyst above the competition.

Having an SCEC certification is valuable for everyone from new to highly experienced analysts. Software cost estimation involves its own unique methodologies, tools, and models as compared to traditional “hardware” cost estimation. By obtaining an SCEC, the traditional ICEAA estimator demonstrates proficiency in both domains, and adds additional value to their organization. Individuals

without other cost estimating certifications will be able to show their understanding of a wide range of software analysis.

ICEAA has established a Software Working Group, led by Eric van der Vliet, which will identify training opportunities, deliver software estimating related presentations at the ICEAA workshop, and share SCEC news with the acquisition community. For any certification to flourish, an ecosystem of subject matter experts, up-to-date training material, and promotion of the certification is required. ICEAA is committed to making the SCEC a key part of its certification program.

As of February 2024, there are 18 SCEC holders. The latest details, and testing procedures can be found at <https://www.iceaaonline.com/certification/>.



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Charley Hopkins Tribute, 1930-2023

by Hank Apgar

One of ISPA's founding fathers, **Charley Hopkins**, passed away on August 17, 2023, at his home in Cupertino, California. Charley had served on the International Society of Parametric Analysts (ISPA) founding committee, was elected to our first Board of Directors (1979), was sole editor of the *ISPA News* (1979+), and long-time editor of the peer reviewed *ISPA Journal of Parametrics* (1981+). He was honored by ISPA peers to receive the Freiman (lifetime achievement) award in 2002, noting that "...he left a legacy to the profession."

Charley was also a charter member of the Space Systems Cost Analysis Group (SSCAG), where he chaired the Hardware Estimating Committee and was editor for the *2006 Space Hardware Cost Estimating Handbook*. His peers remembered Charley as professional and meticulous.

Charley supported the purpose and encouraged the growth of ISPA, as evidence by his editorial (in part) for vol 1, issue number 1, of the *ISPA News* "...coming of age [theme of our third international conference] signifies that we have entered a new era in the application and acceptance of parametric cost analysis – in the same way this first issue of the News represents a new era in ISPA communications ...in which we are free to experiment...my hopes for the News are my hopes for ISPA as a whole; that it will be technically oriented, excellent, and provocative; that it will promote a dialogue between parametric model builders, model users, and customers that will lead us into acceptance of parametrics; and that it will lead us into new areas where parametrics are needed: construction cost estimating and risk analysis come to mind." (Remember that ISPA was founded to redirect the then-bias by federal government agencies not to accept contractors price bids based on parametric modeling.)

Charles "Charley" Hopkins was born in Medford, Oregon (1930) – was a classical music fan and avid golfer. Charley interrupted his college (San Diego State) experience to enlist in the Air Force where his first



Charley Hopkins and wife Ethyl at the 2002 ISPA Conference in San Diego

military assignment was to intelligence school and then the National Security Agency (NSA); he stayed with NSA as civilian after discharge. Subsequent employment with General Dynamics Convair and then Lockheed Missiles and Space as a Publications Editor was followed with his earning his BA degree in English at Santa Clara University. Then, after special training at RCA PRICE Systems, Charley's career refocused on cost analysis and follow-on employment with Econ and then Wyle.

Charley faced serious illness and wheelchair confinement but maintained a cheerful and positive outlook. He continued working for the National Reconnaissance Office (NRO) in Washington DC and traveling to ISPA, ICEAA, and SSCAG meetings. I admired his attending a SSCAG meeting in London - navigating the underground metro and office building elevators by wheelchair, made possible by his devoted wife Ethel, who accompanied him on some arduous trips.

Charley will be remembered by ISPA (now ICEAA) and SSCAG members for his cheerful and positive attitude about life.



Tribute to Dr. Barry Boehm

by Hank Apgar

ICEAA was invited to support the tribute sponsored by the University of Southern California (USC) in Los Angeles on September 14 to honor the memory of Dr. (Professor) **Barry Boehm**, creator of the COCOMO Software Cost Prediction Model and a lifelong supporter of professional societies.

ICEAA was represented at the tribute by the Southern California chapter: **Karen Mourikas** (Chapter President), **Sherry Stukes**, **Hank Apgar**, and **Marilee Wheaton**. Sherry had supported Dr. Boehm on processing industry software cost data for model development projects at USC; Hank had presented the ISPA Lifetime Achievement (Freiman) Award at their 1988 Brighton (UK) conference; Marilee worked with him at USC where she is a doctoral candidate. Sherry and Hank spoke at the tribute.

Barry Boehm's list of cost society paper awards seems endless; two examples are:


- 1988 ISPA Best Journal Paper Award for "*Understanding and Controlling Software Costs*"
- 1999 ISPA Conference Paper Award for "*From Multiple Regression to Bayesian Analysis for Calibrating COMOCO II*"

The afternoon event, held in the USC Grand Ballroom, included presentations by former students, faculty members, and industry/government affiliates, with a reception and dinner. Professor Boehm had been recruited in 1992 from outside academia (RAND, TRW, DARPA) to eventually establish a graduate program for the Department of Computer Science within the USC School of Engineering and to become Director for Systems and Software Engineering. Several former students spoke about how they would not be where they are today without his personal support; he will be missed by many.

Dr. Boehm developed the CONstructive COSt Model (COCOMO) – relating software development effort to source lines of code; he publishing its first detailed description in the Prentice-Hall textbook, "*Software*

Engineering Economics" (1981 - with later revisions) when he was Chief Scientist for TRW's Mission Systems

Dr. Boehm actively supported cost-related professional societies (especially ISPA and ICEAA) and mentored his students to follow his example. Other supported societies included: International Software Process Association (another ISPA), Space Systems Cost Analysis Group (SSCAG) and Institute of Electrical and Electronics Engineers (IEEE) Computer Society (past President). He submitted 14 articles to the *ICEAA Journal of Cost Analysis and Parametrics*. He recruited a cadre of industry and government executives (affiliates, he called them) who pledged non-proprietary cost/performance data and then mentored support by USC staff and students for developing real-world cost prediction tools.

In a 2014 article (vol 7, article 3) of the *ICEAA Journal of Cost Analysis & Parametrics*, authors Jo Anne Lane, Daniel Galorath, and Ricardo Valerdi paid tribute, in part: "...Professor Barry Boehm's life work is full of contributions to the software engineering disciplines. This article presents [his] work in the context of the giants on whose shoulders he stands as well as the people he has mentored to carry on his work. Much of Professor Boehm's work described in this article focuses on his key contributions to the software and system development industries, as well as from the perspective of the enduring legacy he has established with his industry affiliates and students." 



Dr. Barry Boehm



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