

2020: Issue #2

Publishing a Book
During a Pandemic

2020 Award Winners

ICEAAWorld

The magazine for the International Cost Estimating & Analysis Association



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PROFESSIONAL DEVELOPMENT & TRAINING WORKSHOP

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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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President's Perspective

Rick Collins, ICEAA International President

Happy autumn! I wrote my last *ICEAA World* article on 20 February. Given what's transpired globally, that seems like a lifetime ago. I sincerely hope that you, your families near and far, and your friends are healthy, managing home and workplace changes effectively, and creating some new opportunities for yourself in the process. In my case, I have neither learned to bake bread nor refined my martini-making skills, but I have managed to translate the elimination of commuting time to more outdoor cycling. I trust some of you have also found a way to enjoy new or perhaps dormant diversions that are good for the body, mind and/or soul and been inspired to do more!

I continue to be excited about ICEAA's prospects for delivering greater value to you and new members in 2020 and beyond. The International Business Office (i.e., **Megan Jones**, **Sharon Burger**, and **Chelsea Torres**), the Board of Directors and the Board's appointed principals and volunteers here and abroad continue to work hard to accomplish the five priorities that I have highlighted in my previous three *ICEAA World* articles:

1. **Improve CEBok® and associated certification exams**
2. **Develop Software CEBok® (aka sCEBok) and associated certification exam**
3. **Stimulate increased level of U.S. Government (USG) cost analysis community engagement**
4. **Deliver greater value to public/private sector cost analysis community outside the U.S., aka make the "I" in ICEAA more meaningful**
5. **Stimulate increased level of original equipment manufacturer (OEM) estimating, pricing, and engineering community engagement**

I'm not going to get into details regarding the priorities because some of my ICEAA colleagues have written their own articles discussing their and others' progress achieving our objectives. However, that's not going to stop me from stealing a little of their thunder by highlighting notable accomplishments since the last edition.

- We are 20+ test-takers into the era of the online certification exam that affords applicants tremendous test-taking flexibility. Reviews to date are very positive.
- A beta version of the upcoming CEBok® 2.0 is available to all members by logging into your ICEAA profile. Reviews to date are positive, but we'd love to see more of you check it out and let us know what you think at www.iceaaonline.com/cebok2beta.
- We have completed storyboards in preparation for creation of six (of seven) national sections that will contribute to the globalization of CEBok.
- We awarded a contract to develop a specialty version of CEBok oriented to software cost/schedule estimating intended to appeal to a broad audience, including foreign audiences very interested in a corresponding certification.
- We conducted a series of free and priced webinars on a wide variety of technical topics. While we had existing plans to provide more online content, the cancellation of the annual workshop in San Antonio provided a great opportunity to ramp-up these offerings with webinars featuring authors who won best paper awards, paper authors who didn't win awards and others who didn't author papers but had planned to present in San Antonio.

continued


- In addition to providing well-deserved best paper recognition, we also continued the annual tradition of recognizing deserving members for individual and team achievements with the ICEAA Association Awards program.
- We have initiated planning for a webinar series oriented to areas of common interest to original equipment manufacturers (OEMs), with the inaugural webinar tentatively planned for early 2021.
- A great example of technical collaboration, forward-leaning members (some with and others without elected positions) are growing a community of practice with the Machine Learning Working Group.
- The Washington Capital Area Chapter has offered three ICEAA AfterWork events featuring notable executive-level private and public sector speakers to members inside and outside the Washington area.

As you can see, the Board and other volunteers having been doing their best to bolster the value of ICEAA membership while improving our community of practice. I owe them a debt of

gratitude for making the time to leave their respective marks and urge any of you who think you might be interested in doing the same to reach out to the International Business Office.

In closing, despite the continuing public health situation, we are hopeful that our annual workshop planned for May 18-20 in Minneapolis is going to happen and are planning accordingly. If you haven't already submitted or seriously considered submitting an abstract, please don't miss out on the opportunity to grow your reputation by writing and presenting a paper. You can't win a best paper award if you don't write a paper. Go the extra mile: win or no win, the experience will be invaluable.

Likewise, if you haven't thought about a colleague or group of colleagues (clients included if you in fact have clients) deserving of an Association Award, this is the right time to think about crafting a compelling nomination that acknowledges and promotes their accomplishments. What a great thing to do for a colleague or client.

Please stay healthy and join us in the land of 1,000 lakes! 



PROFESSIONAL DEVELOPMENT & TRAINING WORKSHOP
 MAY 18-20, 2021 • MINNEAPOLIS
 ICEAA
 Abstract Summaries Due November 3, 2020
iceaaonline.com/cfp2021

The poster features a stylized city skyline at the bottom with several yellow and orange diagonal rays emanating from behind the buildings. The text is centered and uses a mix of black and gold colors.



Business Office Update

Megan Jones, ICEAA Executive Director

Shortly before we published our last issue, premonitions of the Weirdness were starting to waft their way into people's minds. My first reaction was that the whole hullabaloo would be this year's Kony 2012 and by March we'd be laughing about how silly we had been for a week or two. Then the answer we started giving those of you who asked about the status of the Workshop was that if Disney can stay open through this, we'll be fine. Disney and the entire San Antonio Riverwalk, including our host hotel, closed soon after and the 2020 Workshop was no more. Okay, fine, but there's no way we won't have the joint SCAF/ICEAA Workshop in Bristol in the fall. If things are still shut down then, surely society will have reorganized into roving moped gangs desperately scavenging the wastes for the last fumes of petrol.

I suppose I should leave the forecasting to you guys.

Since I reached the acceptance step of all this grief, I have made every effort to be grateful for what is rather than lament for what is not. In a normal year, this issue of *ICEAA World* would be bursting with stories and photos of the fantastic time we had at the Workshop, all crafted to instill FOMO in even the coldest of hearts. Instead, the following pages are filled with the silver linings found in these dark clouds and the lemonade squeezed from an overabundance of lemons.

By the time the Workshop got cancelled, preparations were well underway. The deadline for Best Paper Award submissions and Association Award entries had passed. There wouldn't be a Workshop, but work had been done, and recognition for those efforts and accomplishments was still in order. Our Association Award winners weren't presented their plaques on the main stage, but in their mailboxes. The excitement and anticipation of one morning's Best Paper Awards ceremony was instead spread over a week of daily social media announcements. Papers and presentations for the 2020 Workshop weren't scheduled 5 at a time over three days but once a week for three months.

We may not have memories of the 2020 Workshop sessions to look back on, but we do have recordings of this summer's webinars to watch or re-watch on ICEAA's YouTube channel.

Many of our members count on the free year of membership that comes with the non-member Workshop registration rates. We saw an opportunity to offer a next-best-thing option and launched the QED Series, premiere paid webinars that one can purchase at the non-member rate and receive the same free year of membership they would have with their Workshop registration. Members and non-members can both purchase access to a QED Webinar for \$100 and either receive their first year of ICEAA membership, or have their current membership extended by 12 months. Of course, these webinars are available to purchase individually for the members-only price of \$25. Learn more at www.iceaaonline.com/qed.

Not all of ICEAA's new online benefits were born of the Weirdness. Our Machine Learning Working Group had gotten its start in the fall of 2019 and has been going strong ever since. The plan to finally move our certification exams off paper and online proved prescient and an even smarter move than we had anticipated. The beta version of the upcoming CEBoK[®] 2.0 was and remains online for members logged into their ICEAA profiles to view and provide their feedback on.

I missed getting to see so many of you for three days this spring, but enjoyed getting to hear a lot of you once a week all summer. **Sharon Burger, Chelsea Torres** and I haven't been in the office together for more than six months, but we have gotten together virtually to see each other's smiling faces every week or two.

I guess it all follows a pattern: instead of getting something all at once, it's small doses over longer periods of time. But I'd still rather it be the old way and am hopeful it will be that way again soon.

And if it can't be the old way, I'd rather be a shaven-headed Valkyrie of the post-apocalypse.



WHERE'S THE JOURNAL?

by Erin Barkel

It's been a while since ICEAA last published the *Journal of Cost Analysis and Parametrics*. Some regular readers have sent concerned queries as to its whereabouts; others may also have noticed the *Journal* has gone missing but haven't reported it to us; and others still may have not even realized it vanished.

So, what happened?

The internet continues to reshape the publishing world, including the business model of academic journals. Margins have shrunk while publishing fees have grown, and readers continue to migrate to other platforms, namely open-source journals and social media. The most important metric for an academic journal is citation count: journals are ranked by the number of times the articles they publish are cited in other journal articles. The more citations, the higher the impact rating of the journal. The most recent publication of our journal had a citation count of one.

ICEAA's *Journal of Cost Analysis and Parametrics* had a small readership and a low citation count. Combine this with the relative silence from the membership on the journal's absence, it was hard to justify the investment of membership dues and volunteer hours in a publication that served so few of people. We took a brief hiatus to think about how best to serve our current readers and attract new ones. In this time we came two important realizations:

First, it is unnecessary to pay a publisher to have a journal. As evidenced by the magazine in your hands, ICEAA's International Business Office is

highly capable of preparing a publication in-house. By relying on our own resources to design and lay out the journal, we can reduce the financial impact of the journal on the association and allow those funds to provide additional benefits elsewhere.



Second, the traditional journal format restricted the number and kinds of articles we could publish. The academic peer review process is a long and arduous one that requires hours of volunteered editing and review time per article. At the time the most recent *Journal* issue was published in 2016, for example, the backlog of articles that required review, editing, and general “academicizing” was over twenty articles deep and two years old - authors were still waiting for their 2014 articles to undergo the professional-to-academic makeover.

In the end, we have decided to relaunch the journal as a publication that will feature edited and peer-reviewed versions of the dozens of papers we receive every year in preparation for the annual Professional Development & Training Workshop. By publishing ourselves, we can set our own rules for editing, what makes a paper *Journal*-worthy, and control our own timeline.

Our next step is to assemble a team of volunteers to help with the launch of this new journal format. If this is sounds like your kind of thing, consider joining the editorial board. If you only have a few hours to spare, consider being a reviewer. Either way, your contributions will be rewarded with CCEA® recertification credits. If you are interested, please send an email to iceaacanada@gmail.com



International ICEAA CEBOK® Update

*By Dale Shermon, ICEAA
UK / Europe Region Director*

Unit I.
Cost Estimating Basics
Modules 1-3

Unit II.
Cost Analysis
Modules 4-5

Unit III.
Analytical Method
Modules 6-10

Unit IV.
Specialized Costing
Modules 11-12

Unit V.
Management Application
Modules 13-16

Unit VI: UK Context
Module 17. Regulations
Module 18. Glossary

Unit VII: French Context
Module 17. Regulations
Module 18. Glossary

Unit VIII: Korean Context
Module 17. Regulations
Module 18. Glossary

Unit IX: German Context
Module 17. Regulations
Module 18. Glossary

Unit X: Canadian Context
Module 17. Regulations
Module 18. Glossary

Unit XI: American Context
Module 17. Regulations
Module 18. Glossary

In the second issue for 2019 of *ICEAA World*, I wrote an article titled *International Constraints of CEBOK* proposing options to make CEBOK® more internationally applicable. The *I* in ICEAA stands for International and the globe in the *C* of the logo reinforces the commitment from our board of directors to promote the art and science of cost estimating & analysis worldwide.

The ICEAA board agreed with my option 2 proposed in the article to have individual national sections within CEBOK, rather than multiple national CEBOKs. This option proposed

the removal of all country-specific references from the body of the CEBOK making them country-independent and gathering this important guidance in specific national sections at the end. This work has been pursued by a number of lead authors who volunteered to help me with this undertaking.

When I was voted onto the board as the UK and European regional director, my first action was to survey the members that I represented. This included a question regarding the CEBOK and *would you volunteer to write a section for your European country regarding the national cost regulations, and national terminologies for the glossary?* I was grateful to 21 ICEAA members who answered *Yes, I am willing to volunteer to write content for my country's section.*

I'm indebted to the lead authors who have freely given their knowledge, experience, and time to this work. It's not too late to join this initiative. If you are motivated to write a national section for your country, please let me know.

The process that we embarked upon was established early with nine steps. These steps will result in the agreement of

continued

National Section Lead Authors

Australia: **Anh Pham Waddell** - Director, Strategic Cost Analysis, Contestability embed in Force Planning and Prioritisation; Australian Defence Force Headquarters

Belgium: **Paul Marston** - President, MCR Global

France: **George Teologlou** - Head of PRICE Systems International; PRICE Systems France

Germany: **Fabian Eilingsfeld** - Country Manager; PRICE Systems Deutschland GmbH

Netherlands: **Eric van der Vliet** - Director, EAS - Estimation Centre; CGI Corporate Services


UK: **Mark Johnson** - Function Estimating Lead, Project Controls (Corporate); DE&S Ministry of Defence

USA: **Kellie Wutzke** - Senior Consultant, E-IDS; Cobec Consulting, Inc.

the CEBok national sections together with associated exam questions. The process provided the opportunity for each lead author to circulate their national storyboards to the other national volunteers to ensure a wide acceptance of the final text.

Kellie Wutzke has been tackling the huge task of de-Americanizing some of the examples in the new CEBok version 2.0 Beta to make them more generic and appealing to a global audience. She is also working to move those portions of CEBok that are unique to the US into another national section, where the American nuances of cost estimating will be explained in a format similar to the other national sections.

At the present time the national storyboards are being developed into full narrative in the new CEBok Wiki format. This can then be circulated to the national volunteers for comment before the final version is incorporated into CEBok 2.0. Take a look at the new CEBok through the ICEAA website at www.iceaaonline.com/cebok2beta/

The final step is to consider a bank of exam questions for each of the national sections. This will enable the exam to be tailored to the nationality of the student taking the exam to ensure that they are competent in their national cost estimating and analysis regulations, terminology and requirements. 

Processes and Progress

- | | |
|--|----------|
| 1. Propose CEBok amendments | Complete |
| 2. Obtain ICEAA board of directors approval | Complete |
| 3. CEBok section analysis | Complete |
| 4. Propose common headings for national sections | Complete |
| 5. Confirm leaders for national sections | Complete |
| 6. Populate national section storyboards with topics | Complete |
| 7. Circulate and agree national storyboards | Complete |
| 8. Author national section based upon storyboards | On-going |
| 9. Generate national exam questions and answers | Next |

Dale Shermon is the Head of Planning, Monitoring and Control at QinetiQ. He is a QinetiQ Fellow, lifetime member of ICEAA, SCAF deputy Chairman and recipient of the ICEAA Frank Freiman award. DSherman@QinetiQ.com

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Certification Congratulations

Sharon Burger, ICEAA Certification Manager

Despite the COVID-19 pandemic, and thanks to our new online exam platform, we welcomed **40** newly certified cost estimators and analysts to our certification rolls between February and August 2020!

If you are looking for professional development opportunities as well as opportunities to accumulate points toward CCEA recertification, make sure you stay connected with ICEAA's Distance Learning Series webinars held every Wednesday into October. Additionally, other virtual events can be found on our Events Calendar on the website. Updates are made frequently so be sure to check back often. To ensure you receive email notifications of upcoming events, please remember to keep your email address current so you won't miss a single notification!

Other certification-related notifications you don't want to miss include the call that was sent out this summer for certification exam questions in exchange for recertification points. We received numerous high-quality questions from both Capt

Katherine Carr and Capt **Dakotah Hogan**. Thank you both for helping to expand our exam question bank!

Another important reminder: Be sure to show off your accomplishment appropriately in your email signature line, LinkedIn profile, and on other social media sites by using the registered trademark symbol like this:

CCEA® and PCEA®

Let's now recognize our ICEAA certified members who volunteered their time to proctor the exam for others. Thanks go out to the following CCEA®'s who proctored the exam between February and August 2020: **Joe Bauer, Michail Bozoudis, Tammy Cayer, Anil Divvela, Robbin Hackett, Ann Hawpe, Diane Heckert, Sam Kitchin, Megan McDonald, Jacek Pachocki, Akvile Palenski, Ryan Webster** and **Chris York**.

Congratulations are extended to the following individuals for passing either the CCEA® or PCEA® exam between February and August 2020:

CCEA® Achievers:

Corey Boone, Herren Associates

Jonathan Green, Technomics, Inc.

Pieter Jansen, NATO Communications and Information Agency (NCIA)

Julian Keith, Tecolote Research, Inc.

Faye Kim, Herren Associates

Darren Kreidler, NATO Communications and Information Agency (NCIA)

Christopher Manno, Booz Allen Hamilton

Corey Maples, Technomics, Inc.

Elizabeth McMahon, Herren Associates

James Northington, Tecolote Research, Inc.

Rachael Pascale, Technomics, Inc.

Patrick Kelly, Tecolote Research Inc.

Jonathan Schuster, Tecolote Research Inc.

Geraldine Smidt, Tecolote Research Inc.

PCEA® Achievers/CCEA® Eligible:

Benjamin Berkman, Technomics, Inc.
Katherine Carr, US Air Force
Alexander Cottle, Tecolote Research Inc.
Collin Donner, Herren Associates
Brett Fitti-Hafter, Tecolote Research Inc.
Meagan Gadreault, Herren Associates
Ryan Hoang,
US Department of Homeland Security
Dakotah Hogan, US Air Force
Charles T Horgan IV, Technomics, Inc.
Matthew Kieffer, Booz Allen Hamilton

Megan Liebman,
US Department of Homeland Security
John Maddrey, Tecolote Research Inc.
Karlas Madera,
US Department of Homeland Security
Orly Olbum, Technomics, Inc.
Carlo Francisco Palma, Technomics, Inc.
Eric Plack, US Air Force
Abby Schendt, Technomics, Inc.
Sara Shaw, Technomics, Inc.
Benjamin Sowell, Technomics, Inc.

PCEA® Achievers:

Ryan Faris, Augur Consulting
Alexander Garner, Augur Consulting
John Johnson, US Air Force
John Martyn, Tecolote Research Inc.

Bradford Myers, US Air Force
Janine Peckham, Tecolote Research Inc.
James Turner, Tecolote Research Inc.

The following 58 individuals recertified between February and August 2020:

Guenever Aldrich	James Gates	Aimee Kirchner	Derek Roberts
Richard Aldrich	Daniel Germony	Don Kimminau	Alfred Smith
Stewart Beckwith	Vrenti Ghergari	Edward Kobilarcik	Ali St.Clair
John Beerman	Amit Gulat	Mitchell Tarah	Greg Tomberlin
Teresa Brown	Erik Gyorgy	Jason Navaroli	Bryn Turner
Brian Bucceri	Richard Hartley	Alan Nicholls	Trevor VanAtta
Sharon Burnette	William Haseltine	Joshua Pepper	Andrew Walker
Charles Burns	Ann Hawpe	Mark Pesola	Wade Wathen
Tammy Cayer	Rob Houghton	Dwayne Pittman	Kevin Watson
Peter Chrzanowski	Anna Irvine	Rex Potter	Ryan Webster
Cortney Collins	Timothy Jamison	Andy Prince	Philip Weston
Stephen Dargis	Chiugo Lilian Joel	Joe Puckett	Timothy J. White
Maureen Deane	Michael Johns	Shalini Puri	Eun Yoon
Scott Drylie	Neala Jones	Emily Purpuri	
	Meghan Kennedy	Tony Purpuri	

ICEAA 2020 Association Awards

ICEAA thanks everyone who nominated one or more of their colleagues for a 2020 Association Award. Though we were not able to present the awards at our usual presentation ceremony this year, these outstanding members' accomplishments will not go uncelebrated. As you enjoy the following summaries of their achievements below, think about your fellow members who exemplify the best of the best in the cost world and consider nominating them for a 2021 Association Award!

Junior Analyst of the Year: Justin Cooper

It is my honor to nominate Justin Cooper for the Junior Analyst Award. Since joining Technomics as an Associate from the Pennsylvania State University with a degree in Economics in 2018, Justin has already contributed an impressive amount to the cost community. He is currently an analyst at the OSD CAPE Defense Cost and Resource Center (DCARC) working on the Cost Assessment Data Enterprise (CADE) project. As a DCARC analyst Justin facilitates the collection of Cost and Software Data Reporting (CSDR) data and provides guidance and support to ensure CSDR policies and processes are enforced.



Justin is one of the next generation of cost analysts. He works closely with other experienced cost analysts and has already made his own impact utilizing his data science skill set. He is an accomplished practitioner in tools such as R and SQL which he has been applying to larger more complex data sets and, in turn, greatly increase the efficiency of data engineering processes. He is well versed in data visualization and business intelligence platforms such as R Shiny and Tableau and exploits these abilities to make the data he works with more accessible and useful to cost analysts and decision makers. He is one of the forces driving the application of new tools and techniques at DCARC as the organization evolves to meet the challenges of significantly larger and more complex data reports that industry is delivering via the FlexFile initiative.

Justin's considerable contributions to the cost community includes his work as the DCARC lead for the new draft Contractor Business Data Report (1921-3). While the existing 1921-3 required strictly formatted data and necessitates mappings to a government standard, the new Draft 1921-3 can be submitted in the contractor's own format and according to the contractor's own rate structure. In his role, Justin leads the validation process for the 1921-3 submissions and has supported the policy and Data Item Description updates. He works with senior CADE leadership and external stakeholders to enable increased data reporting through the new more flexible 1921-3 format.

Justin also has the responsibility of being the DCARC Compliance lead. In this role, he works with the rest of the DCARC team to conduct compliance assessments of DCARC submissions. Justin has already brought his own flavor of innovation to this role by utilizing R Markdown technology to improve the efficiency and readability of the compliance reports.

DCARC continues to work more and more with the new FlexFile submissions that represent one of the top data collection initiatives for the DoD. Justin actively leverages his data science skills to manipulate the FlexFile data more efficiently using scripting tools and techniques. He also supports data exploration by creating visualizations of the FlexFile data utilizing R and flexdashboard technologies.

Justin is also actively growing his involvement in the operating and support (O&S) cost data realm. He currently supports the Maintenance and Repair (M/R) data reporting initiatives which by reviewing the Verification and Validation Guide and supporting data analysis and validation on initial M/R submissions. He is

continued

ICEAA 2020 Association Awards

also a key contributor for the Consolidated VAMOSC Tool initiative which consolidates services VAMOSC system outputs into a R Shiny Dashboard to facilitate program comparison and data visualization.

I am truly impressed with what Justin has already demonstrated in his young career. On top of all his accomplishments, he brings an amazing attitude to everything he is involved with. He is always willing to freely give his time to help his teammates. He is always looking to learn and increase his skills and knowledge, whether it is exploring a new R library or how it might be applied to O&S cost data. I am privileged to work with him and look forward to watching him grow as a leader in the cost field

-Nominator Sung Seo

Team Achievement of the Year: **Australian Defence Force Design Team**

The accomplishments of the Australian Defence Force Design team demonstrate an impressive convergence of talented individuals and powerful predictive analytic cost solutions, tempered by significant amounts of determination and grit. The synergy necessary in a team to deliver close to 200 researched and vetted whole life cost estimates with limited time, resources, and data is commendable. This speaks to an international team that coalesced quickly and efficiently. This effort included re-prioritization of existing projects and the programming of new projects into Australia's Defence acquisition budget for the procurement of all future missions and enabling capabilities.

Key success factors for this endeavor included establishing detailed processes and optimizing automation. Combining these processes with the predictive analytics capabilities of the TruePlanning® models (FACET, Hardware, Software, IT, etc.) and historical data from internal and external sources created the perfect opportunity for success. Creating a transparent framework for clients to model project changes real time not only smoothed the process of estimation but also created an environment of trust and cooperation within the team. The parametric cost models

were structured to reflect the capability lifecycle as understood by the Australian Department of Defence and to account for cost elements that fell outside the immediate scope of these parametric models. A team of American consultants from Technomics, Inc. were deployed with the QinetiQ Australia cost team to assist with access to alternative data sources and provide another layer of assurance around the cost work.

This effort demonstrates an outstanding accomplishment within the cost estimating and analysis field worthy of recognition. This teams accomplishments in the twelve month framework were recently announced as part of the 2020 Force Structure Plan. The fact that this process has been institutionalized with documented processes, effective deployment of these processes and tools, and adequate training across the entire team means that this project not only benefitted the organization in the short term, but promises to continue to benefit the organization as it is applied to future challenges. Not only did this team facilitate near real time support for decision makers as conditions and plans changed, it also empowered the decision makers to be directly involved in the process.

The Australian Defence Force Design Team embody the spirit and essence of the ICEAA Team Achievement of the Year Award. Congratulations to the members of this international team for being named the 2020 recipients:

- Brigadier **Chris Mills** – Australia DOD:
Director General Force Options and Plans
- **Anthony Ween** – Australia DOD:
Director Force Planning and Prioritisation
- **Philip Gowlett** – Australia DOD:
Deputy Director Force Planning and Prioritisation
- **Dr Anh Pham Waddell** – Australia DOD:
Director, Force Structure Cost Analysis
- **Adrian Mitchell** – QinetiQ Australia
- **Grant Millar** – QinetiQ Australia
- **Tyler Saunders** – QinetiQ Australia
- **Karan Sood** – QinetiQ Australia
- **Dale Shermon** – QinetiQ UK
- **Rick Collins** – Technomics US
- **Paul Hardin** – Technomics US
- **Brian Flynn** – Technomics US

-Nominators Arlene Minkiewicz,
Adrian Mitchell, Dale Shermon, Georges Teoglou

continued

ICEAA 2020 Association Awards

Technical Achievement of the Year: Orly Olbum



Orly Olbum's technical contributions have played a significant role in furthering the cost community's understanding of cloud migration and sustainment requirements and costs. Working primarily on her own time, Orly was the key contributor to developing a Process Breakdown

Structure (PBS), Work Breakdown Structure (WBS), a framework for a Business Case Analysis (BCA), and the first Cloud Cost Analysis Requirements Description (CARD).

Orly was deeply involved in establishing the methodology by which programs should evaluate potential cloud hosting solutions and developing standards in the terminology and templates that support cost estimating best practices. Potential cost overruns and ineffective implementations might occur due to poor understanding of factors such as the size of legacy applications, the number and complexity of system interfaces, the quantity and quality of data to be migrated, the need for business process reengineering, and the general complexity of the defense environment.

The innovative tools and templates Orly developed provide insight and innovative artifacts to help organizations achieve better cloud performance, mitigate total ownership costs, and meet system affordability thresholds. The PBS details the steps required to migrate to the cloud, from upfront requirements and design to backend system refinement, testing, and deployment. The WBS considers all costs – from existing application discovery through the sustainment of a cloud solution. The BCA Framework details all the steps needed to formulate alternative cloud architectures, collect and analyze data, and analyze and life-cycle costs and benefits of alternatives, and to make key tradeoffs between cost, capability, and risk.

Orly then developed a CARD that captures all potential requirements in a dynamic form. The CARD allows different programs the ability to develop estimates based

on the same understanding of requirements and capture the in-depth technical data that is so valuable for future estimates.

Orly additionally has made significant technical contributions to studying machine learning (ML). Orly pioneered in the application of machine learning to generate more-informed resource allocation decisions. She implemented a novel approach to estimating and analysis and in an ex post examination of accuracy, her ML proved significantly superior to estimates based on the classical linear regression model.

Orly collected a training set of cost data for various classes of U.S. Navy ships. For each class of ship, she developed a consistent set of technical and performance data. She normalized the data, accounting for differences in base years, methods of computing ship displacement, and so on. Orly then executed a thorough and complete review of the literature and discovered over 100 different ML algorithms and conducted a deep-dive into a handful that seemed promising for defense cost analysis. Orly ran the ML algorithms against the training set and adjustments were made as learning took place. Using a handful of accuracy metrics, such as root mean square error, R-bar squared, and an F statistic, the ML algorithm proved its worth: rather than relying on only two or three explanatory variables as in multiple regression analysis, Orly's ML application uses over 20 variables simultaneously, thus satisfying an all-important statistical attribute of sufficiency.

Finally, Orly served as a cost team member supporting LCCE development for six alternatives in the USMC Advanced Reconnaissance Vehicle (ARV) Analysis of Alternatives (AoA). Orly organized and normalized historical contractor cost data reports (CCDRs) from a dozen ground vehicle programs. She leveraged R scripts to help generate statistics and graphics of costs and cost factors. Orly developed a user-friendly tool that prompts the user to select the most applicable historical, analogous programs and generates the appropriate cost factors tailored for each alternative in the AoA.

-Nominator Emily Hagerty

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ICEAA 2020 Association Awards

Management Achievement of the Year: **Sam Kitchin**



As the Technical Director at Augur Consulting, Sam is a tremendous asset to both the customers he supports and the junior analysts he trains. Sam Kitchin's ability to explain complex topics to audiences unfamiliar with the cost, schedule, and EVM fields is unparalleled. In the time I spent

working with Sam supporting several NAVSEA customers, his analysis was often so thorough that it shaped the program's overarching strategic approach to acquisition well beyond the scope of typical management support. His detailed yet practical approach to risk analysis, knack for making accurate inferences in environments of incomplete information, and ability to put analysis results in terms of actions decision makers can take has resulted in strong estimates and has undoubtedly saved the Navy thousands of dollars.

From a day to day managerial perspective, Sam goes above and beyond the call of duty to ensure his team's success. He has personally trained numerous junior analysts with an emphasis on the principles found in the CEBoK, he gives his team members opportunities to lead follow-up training sessions on advanced analysis topics, and he routinely gives his team the flexibility to spend time learning new skills which result in increased long-term efficiency. Perhaps the most telling evidence of Sam's managerial skill is that his team always wants to do the best job possible on his behalf.

As someone who used to be part of Sam's team, I can say with absolute confidence that he is well deserving of this award. The reason I pursued my CCEA certification is because Sam motivated me to be the best analyst possible. He is an expert when it comes to applying the principles of the CEBoK, his decisions have saved his customers huge amounts of time and money, and I have seen firsthand the effect his leadership has on those around him.

-Nominator Jim McMahon

Educator of the Year: **Cost Assessment Data Enterprise (CADE) Training Team**

ICEAA is pleased to announce the Cost Assessment Data Enterprise (CADE) Training Team, Mr. Tom Henry, Mr. Torri Preston, Mr. Ryan Horn, Mr. Ben Berkman and Mr. Jack Titus, as the ICEAA Educators of the Year. They have built a robust dedicated training program that uses live classroom, virtual, and on-demand training to reach hundreds of Department of Defense cost analysts and acquisition professionals each year. With the prevalence of data science, never has data been more important to the profession, and the CADE Team focuses on improving the efficiency and effectiveness of planning for, collecting, and analyzing data across the community.

The CADE Team is championed by Mr. Tom Henry, Director of the Air Warfare Cost Analysis Division at the Office of the Secretary of Defense Cost Assessment and Program Evaluation and a member of the Senior Executive Service. Tom is keenly aware of the importance of training and works to make sure the community is kept abreast of the latest data, tools, and techniques. He is always challenging the team to improve its materials and methods and building bridges with other organizations.

The CADE Team is continually disseminating knowledge and developing the next generation of successful cost estimators and analysts as part of its CADE Regional Training effort, which visits all the major Defense Acquisition University (DAU) regions and fourteen different locations each year between February and October, teaching dozens of students at each location.

With ongoing retirements, military rotations, and other career transitions, a significant portion of participants in these offerings are new analysts who are generally not familiar with the wealth of Cost and Software Data Reports (CSDRs) and other data available in CADE, nor how to use it. Even seasoned attendees can use help keeping up with the rapidly evolving policies and processes. For example, the focus of the 2019 campaign was on FlexFiles, which officially became the default cost and hours reporting format in May of

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2019. This drove significant changes into both the planning and analysis of the data life cycle. The team found a wide range of abilities and comfort levels and was highly successful in bringing analysts up to a common level of competency.

In order to build proficiency and performance in cost estimating capabilities, the CADE Team emphasizes hands-on student exercises, often conducted in “pilot-navigator” pairs. The navigator steps through the instructions for the exercise, while the pilot “flies” the Excel spreadsheet, CSDR Plan, or whatever tool or construct for which the pair is working to build proficiency. The CADE Team maintains the human touch and mentors new cost estimators by frequently circulating in the classroom to head off any frustration and gently offer corrections to the more common mistakes or misconceptions. In addition to building skills, the CADE Team builds camaraderie and enthusiasm amongst each class by using a variety of survey, gamification, and demonstration approaches throughout the course.

As analysts, the CADE Team collects its own data and applies analytical best practices in using those data to inform everything from regional training locations to content delivery in live courses to duration of online videos. This data-driven continual improvement is particularly important given the wide reach of the CADE Team across the Army, Navy, Marine Corps, Air Force, and Defense Agencies to the broader cost community.

The force multiplier for the CADE Team in reaching this broad audience is an array of different channels for achieving different types of learning. The CADE Team helps maintain a public website (<https://cade.osd.mil/>) with detailed information and handy how-to videos for easy reference. The CADE Team uses webinars sponsored by DAU and the Naval Sea Systems Command to reach hundreds of practitioners in the broader acquisition and contracting communities. Finally, the Bridge learning management system (LMS) provides on-demand training in the form of both bite-size courses and comprehensive programs, all custom-designed and built by the CADE Team. The Bridge LMS has more than 1,000 active users who have completed over 3,500 modules.

-Nominator Crystal H. Rudloff

Frank Freiman Lifetime Achievement Award: John J. McGahan, Jr.



As one of our industry’s top innovators over the last 36 years, John McGahan has led a transformation of cost and EVM tools and data. While developing exceptional databases and cost tools, John moved the cost/EVM communities away from incomplete and manual reports to rich, detailed data ready for analysis. He is that rare combination of a domain expert in cost/schedule/earned value analysis, advanced software design architect and outstanding programmer. John is known throughout the government and support contractor community as the go-to expert to wrangle complex data, solve challenging cost analysis tasks and deliver effective results on time and within budget.

John started his journey with a M.A., Mathematics, Dartmouth and a B.S., Mathematics/Computer Science, Fredonia State University. His career with Tecolote Research began in 1984 as the lead software engineer for the VAX based version of ACEIT. Along the way, he designed and implemented algorithms and advanced the software through massive technology upgrades including DOS, Windows, and .NET environments. He has provided the intellectual stimulus behind most of the ACEIT applications – ACE, ACDB, Co\$TAT, RISK, ACE Executive, and POST. After building the DoD’s prime cost analysis tool, John turned his attention to DoD data collection efforts: DCARC (cost) and PARCA, now AAP (EVM). He was the major architect of redefining the business rules associated with CSDR and EVM data collection processes and responsible for transitioning to secure web-based solutions using XML and JSON based submissions.

As a cost analyst, John contributed to the estimating and analysis of countless programs including G8 STEEM, Army Future Combat System, the Navy Common Cost Model (NCCM), THAAD Risk Analysis, NUWC Cost Engineering, Joint Strike Fighter, and Airborne Laser. As a methods expert he was responsible for the algorithm designs behind many uncertainty and learning curve

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methods including rate adjusted learning, non-linear regression, and optimization methods. As a systems architect, John redesigned the DCARC CSDR repository (DACIMS), architected new business tools for development and validation of CSDR plans and reports, and defined the business rules and software architecture for the EVM-CR. As a software developer he was the master programmer for ACEIT for many years. He also designed and implemented the cost/technical databases within the ACDB framework.

John has devoted countless hours to passing on his knowledge to other members of the community. He is at home presenting on virtually any cost analysis topic including big data analytics, pooled regression learning curves, CSDR data reporting, application of risk and uncertainty, and the history/vision of CADE and EVM-CR. He routinely speaks at conferences and workshops on behalf of AAP and CAPE regarding EVM and cost data standards and policies.

John spent the last 17 years guiding CAPE and AAP (and their predecessors) in developing and delivering the next generation cost data standards and policies – Flex Files,

IPMDAR, IPMR, and CSDR formats. His integration of the latest digital signing and compression techniques enabled the cost community to move beyond collecting cost reports to collecting raw level data. Data is the lifeblood of the estimating profession, enabling emerging and growing applications of analytical methods and technologies including machine learning, artificial intelligence, and advanced visualizations.

John's lifetime of accomplishments and innovations have resulted in techniques, tools and infrastructure that hundreds in our community use every day. If you have worked with CSDR or EVM data in the last ten years or if you have used ACEIT in the last 36 years, you have benefited directly from John's contributions to our profession. He has delivered cost analysts secure access to data and the tools they need to deliver data-driven, precise and meaningful information to decision makers. John has earned our recognition for his lifetime of contributions to the field of cost estimating.

-Nominator Jennifer Kirchhoffer



ICEAA 2021 Association Awards

Do you know of an outstanding ICEAA member who has made a difference in the profession?

An individual or team whose work is leaping beyond the forefront?

An emerging superstar with a blindingly bright future, or a pillar of the cost community whose years of dedication have strengthened everyone around him or her?

***Nominate your candidate for a 2021 ICEAA
Association Award by March 15, 2021***

www.iceaaonline.com/awards



2020 Best Paper Award Winners

The show, they say, must go on. In the grand scheme of things, cancelling the 2020 ICEAA Workshop isn't the biggest disappointment of the year, but those authors and volunteers who worked so hard to prepare for the would-be Workshop need not suffer the added disappointment of not getting the credit they deserve.

Whether live or virtual, our members' papers and presentations are unmatched in quality and professionalism, but it's the volunteers behind the scenes that truly make the magic happen. Thanks also to all of the best paper judges for taking the time out of their disrupted schedules to read and rate this year's papers.

The process this year was just as it would have been: our judges are broken out into teams, one for each of the five categories, and rate the papers based on technical content, creativity, usefulness in the field, and overall quality and style. The paper with the highest score is named the best in that track. All of the judges from all tracks then review the best papers in each track to determine the overall winner.

We are always on the lookout for more judges willing to read these outstanding papers and provide their thoughts. And for those CCEA®s thinking ahead to their certification renewal: serving as a Best Paper judge is a great way to earn a few more certification points!



Analytical Methods & Strategies Category Winner: **In Search of the Production Steady State: Mission Impossible?**

Patrick McCarthy

Learning Curves are a vital tool for cost estimators when predicting the number of direct labor hours required for a production run. One challenge of utilizing learning curves is predicting when no additional improvement can be expected, otherwise known as the steady state of the production run. This paper addresses different variables to consider when analyzing data to determine when improvement is likely to cease and the steady state of the production run will commence.



Processes & Best Practices Category Winner: **13 Reasons a Cost Estimate During a Concurrent Engineering Study Could Go Wrong**

Andy Braukhane

During early phase spacecraft design, the concurrent engineering (CE) approach is proven to be very efficient. But the condensed and iterative nature of CE sessions can also make life hard for a cost estimator. This work discusses 13 problem areas experienced or observed mainly during one-week, inter-disciplinary space system design studies and provides practical examples on how to tackle them, e.g. how to handle rapid data changes, wrong expectations and a diverse engineering team.



Software & Agile Category Winner: **But Wait, There's More! Using SFPA for Your Cost, Schedule & Performance Needs**

Katharine Mann, Ryan Hoang

Do you need to estimate software size? Do you want to add value to your program beyond the LCCE? Simple Function Point Analysis (SFPA) can help! We discuss how analysts can engage Program Managers to use SFPA not just for cost estimating, but for scheduling and progress tracking of software development programs. Real DHS Programs and Policies are used to illustrate the benefits of Simple Function Points to the entire organization.





Data Management & Machine Learning Category Winner:
Leveraging the Wisdom of Crowds in
Estimating Army SW Sustainment

Christian Smart, Cheryl Jones, Kimberly Roye



The use of modern regression and machine learning techniques can improve predictive accuracy compared to traditional log-transformed ordinary least squares, as well as resolving issues with bias and transformation. The combination of multiple models in an ensemble and cross-validation can further increase accuracy. These techniques are discussed in detail and are applied to an extensive set of software sustainment data for 192 Army systems. Results include models based on release type, software changes, and categories.



Modeling Category Winner and Best Paper Overall:
Augustine's Law: Are We Really Headed for the
\$800 Billion-Dollar Fighter?

Brent M. Johnstone



Augustine's Law famously proposed fighter aircraft costs are growing so rapidly that by 2054 buying a single tactical aircraft will consume the entire defense budget. Is the situation really so dire? This paper examines the trend in U.S. fighter costs and relates them to generational changes in aircraft design and manufacture. It also examines the new jet fighters of the 2000s to see if Augustine's Law is really unfolding as its author originally thought.



Distance Learning Series

Bringing the cost community to your workspace

The Best Paper Award Winners weren't the only ones on hand and online to present for us as a result of the canceled Workshop. From July 1 through the end of October, ICEAA had a lucky 13 webinars to offer our members and the general public to help keep everyone's minds keen and CCEA® recertification points current. If you missed any of the Distance Learning Series webinars, they can be found on the ICEAA website and on our YouTube channel. Thanks to all of the authors who helped take some of the sting out of not getting to meet in person this year!



Using Predictive Analytics and Open Source Data to Estimate Cloud Infrastructure Costs for Government IT Systems

Cara Cuiule, Amanda Ferraro, Daniel Harper, Richard Mabe



Establishing federal budgets for cloud infrastructure costs prior to selecting a cloud provider requires vendor agnostic cost estimating methods. These methods need to reflect the correlation between rates for a variety of infrastructure instances across all viable cloud service providers. This paper describes

research and validation leading to CERs based on over 28,000 virtual machine and storage instances. The predictive analytic approaches presented in this paper can provide valid and verifiable vendor agnostic estimates.

continued



Costing Out an Air Force Software Factory

Stephanie Quintal, Caitlin Burke, Kristen Marquette



The novel concept of standing up a software factory has left even the most seasoned cost estimator scrambling for guidance. Presented by the Kessel Run cost team, this presentation will provide insights on staffing, physical locale and other hidden stand-up costs. We will discuss real world actuals on team sizing, skill mix, and phasing methods as well as labor rate analysis and acquisition support. Lastly, a template for a generic software factory will be provided.



Are you Smarter than an Algorithm?

Andy Prince

Cost analysts rely on mathematical algorithms, experience, and subjective assessments to develop cost estimates.

However, these analysts often disagree over what is more important: statistically derived algorithms; or experience and judgment. To try to answer this question cost estimating professionals were surveyed for their expert judgment on the complexity and new design values for 15 NASA science missions. The results may or may not be surprising, but will surely be interesting.



Storytelling for Cost Estimators

Christina Snyder

As estimators, we advocate the importance of good data; but without context, estimates and analyses are just

numbers. To give power to our work, we need to effectively pair good estimating with good communication. There is no existing best practice guidance for estimators on how to create a compelling narrative to accompany analysis. By leveraging a storytelling structure, we can inspire action, communicate our findings in a way that resonates, and ultimately become more effective.



Improving Software Estimating Relations for Army Software Sustainment Data

Cheryl Jones, Bradford K. Clark, James Doswell

New approaches were employed to improve Army software sustainment cost estimation: causal analysis and annualization of release data. Causal analysis examines the cause/effect relationships between factors that indicate which CERs should be derived. Converting multi-year data to annualized values has improved CERs. This presentation shows what was discovered using causal analysis and the resulting improved CERs.



The costverse for the FlexFile: Enabling Powerful Analysis in R

Benjamin Berkman, Justin Cooper

The Cost and Hour Report ("FlexFile") is a new Contractor Cost Data Reporting (CCDR) format that promises to change the world of Department of Defense (DoD) cost analysis by delivering significantly more granular cost and hour data than its predecessor, the DD 1921 series of reports. The volume of the FlexFile requires a more thoughtful



approach to importing, wrangling, transforming, and ultimately communicating data than Microsoft Excel (Excel) may offer. This paper introduces three R packages that help the analyst exploit the FlexFile to its fullest extent.



Software Estimating: Is the Problem Solved?

Some Myths and Facts

Sanath Rajagopal

Software Estimating is often seen as one of the most difficult domain and an extremely difficult to estimate. However every project (S) now have software and dependency and complexity of which is growing exponentially. In this paper author will explore why people thinks why software estimating is a big issue and will try to break some myths and explore some facts about software estimating.

continued

Advanced Data Analytics for Maintenance & Repair Reporting

Paul Hardin, Alexander LoRusso, Tyler Staffin

The 1921-M/R (Maintenance & Repair Parts Data Report) is the DoD system for collecting actual maintenance event and repair part data in the Cost and Software Data Reporting (CSDR) system. This paper will employ the R Shiny package, which is used for the construction of interactive web applications, to demonstrate the analytical value of -M/R data. Additionally, this paper will explore the mechanics of the R Shiny framework within the environment of advanced data analytics.



Lessons Learned Implementing EVM on Government-led Delivery Efforts

Joshua Teitelbaum

Implementing Earned Value Management on projects where a Government entity serves as the Lead Systems Integrator presents unique challenges and opportunities when compared to typical EVM applications on industry vendor contracts. This paper will cover lessons learned and best practices for implementing EVM on Government-led integration projects based on field experience from a team that has helped the Government with several such efforts. This will include a description of the methods and tools the team used to baseline projects, gather data from performers, and report status to stakeholders.



Assuring Credibility in the Cost Estimate: Part II

Hank Apgar

This presentation updates the original, presented at the 2016 ICEAA

International Workshop, which traced the maturation of cost estimating attributes and focused on cost credibility. Evidence is provided in the words of government and industry executives, estimating and engineering handbooks, professional journals, and government auditing manuals. This update incorporates the impact of popular cost drivers such as system maturity and cost growth. This presentation concludes with guidance for the estimating professional.



Diversity in Software Estimation Approaches – Perceptions to Preferences

Shashank Patil, Ria Bakhtiani



For strong foundation of Software Estimates, diversity in analytical abilities & preferences of winning teams are the key factors those must be effectively addressed. In this paper we talk about how perceptions and preferences play an important role at very early stages of a bid / pursuits lifecycle. This is an attempt to study and present various preferred approaches adopted by winning teams and their usefulness on critical parameters of Software Estimations; viz: Turnaround Time, Accuracy, Repeatability and Reproducibility. The views in this paper are based on our internal surveys carried out with SMEs and Engagement Managers at various hierarchical levels.



A 3 Market, 10 Dimension Trade

Doug K. Howarth

Any person, company, or government working across three or more related markets decides how to divide the costs between them. Often decision makers give little thought as to how those resource splits need to work when working in conjunction to a common goal. Using the example of the Prompt Global Strike (PGS) initiative, this paper studies ways to optimize costs in three connected markets (air-to-surface missiles, bombers, tanker aircraft) across ten dimensions.



The Fact That Your Project is Agile is Not (Necessarily) a Cost Driver

Arlene F. Minkiewicz

All true agile projects follow the same philosophy, they do not all apply the same set of practices, tools or processes. Agile projects are value driven, thus subject to change. There are, however, business and contractual requirements for up front estimates creating a conundrum. This paper discusses a methodology and rules of thumb for estimating agile projects, based analysis of publicly available datasets, that provides value to stakeholders and aligns with Earned Value Management requirements.

Money Changes Hands...

...A Good Book Changes Minds

Book review by David Peeler

In the previous edition, the review installment focused on the philosophical nature of social science and its relevancy. This edition's title is more operational in emphasis. With only limited technical (tactical) statistics, we turn to the motivations in the use and application of statistics. Although not a direct address to the profession of cost estimating and cost analysis, many relevant points surface and lend weight to informed costers, and their work. Statistics are critical to our profession, so understanding their many and varied uses strengthens the estimator's/analyst's processes and products.

As previously promised, we return to less philosophically esoteric material and take a look at the use of statistics in the everyday world. **Damned Lies and Statistics** is common to the theme many of us more seasoned – I was going to say aged – estimators/statisticians have been repeatedly exposed. However, it's important to reiterate these points, in an updated and interesting manner for the next generation. I considered making this a dual review with the classic 1954 text **How To Lie With Statistics** by Darrell Huff, ultimately deciding against such consideration. Although, I highly recommend the latter text to everyone that hasn't read it.

The chosen book for this review is an easy read, both in length and textual flow, as well as interest of topics and everyday applicability. Given the relative brevity of this book and the rapidity of the read, I have provided only a cursory review in the form of an outline of its six chapters. The author divides the book by first discussing the importance of social statistics, then outlining soft facts, mutant

DAMNED LIES AND STATISTICS: UNTANGLING NUMBERS FROM THE MEDIA, POLITICIANS, AND ACTIVISTS

JOEL BEST

University of California Press: Berkeley; 2001.

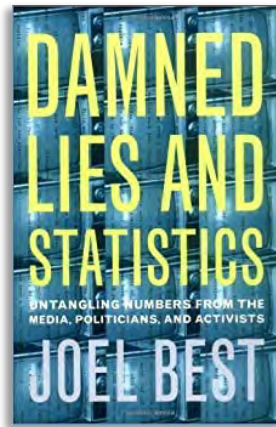
statistics, the ubiquitous comparisons of apples and oranges, statistics wars, and finally a note on critical thinking with regard to statistics.

The author starts by discussing how statistics can be used to create problems. We've all seen this happen. He also discusses the public (and often our bosses) as innumerate audiences, and how to think of statistics as social products. Next, sources of bad statistics are presented: guessing, defining, measuring, sampling, and characteristics. The mutation of meanings is examined through generalization, transformation, and compounded errors. The fruit analogy deals with inappropriate comparisons – time, place, groups, or dissimilar problems. Disagreements over what the numbers mean is particularly interesting. Such differing perspectives lead to debates regarding specific numbers, data collection methodology, as well as interpretation around contentious issues. Ultimately, the consumption of statistics involves the naïve, the cynical, and the critical. We as estimators/analysts should always reside in the latter category.

As professionals, we have an implicit duty to be honest in and about the numbers, and what they mean for not only the problem at-hand but often

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also for the bigger picture. In **Damned Lies and Statistics**, Best provides thought provoking considerations for us and our field. We must be conscious of how we use and present shared material/sources; this is important, as our products are often used to influence, persuade, or mislead. Understanding the framework of the larger use of our work products



should inform us not merely regarding output but also regarding biases applied to our inputs. The potential for soft facts/bad statistics is prevalent among both the suppliers of our raw data and the users of our results. Reading this book will provoke thought and provide insight. I recommend it.



David Peeler 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.



If you can believe it, ICEAA is even more excited than you are to have the PCEA and CCEA exams online! If you've been meaning to take the exam but couldn't find a proctor, or wanted to get certified sooner rather than wait until the world settles down and we can be in the same room together, the online exam is the solution.

As far as taking the exam, the biggest difference between the old paper exams and the new online exam is the proctor. Rather than taking the exam in the presence of a human proctor, the online exam uses a powerful Artificial Intelligence to monitor the examinee.

Using your computer's webcam and mic, the AI proctor watches for distractions, whether the taker is looking at something other than the exam for long periods of time, if someone else comes into the camera frame, or if additional devices (like mobile phones) appear. Meanwhile, the software detects if any other websites or programs are launched during the exam. You may take the exam using any desktop or laptop computer with a camera and microphone; from your

home, office, or anywhere there won't be distractions that the proctoring software may misinterpret.

All of this is done using a simple browser extension attached to either Chrome or Firefox - no other programs need to be downloaded. After that, it's a multiple-choice test: you'll be able to mark questions you'd like to return to after you move on, an onscreen clock will track the amount of time you have left, it even has a built-in calculator. And since it's all electronic, ICEAA will be able to process your score and send your results much faster than before.

While taking the exam online makes the process easier for certification candidates, it also enables us to make analyses of our exams and the questions within. We can now compare the usual amount of time each question takes to answer, whether questions are either too easy or too hard based on frequency of correct or incorrect answers, and other elements that allow us to make data-driven decisions to constantly evolve and improve the exam experience.

Other questions about the exam process are answered at www.iceaaonline.com/certificationfaq



Two Pillars of Our Profession: Emeritus Members Mike Fuller and Ralph Smith

by John Deem, ICEAA Region 6 Director

Cost estimating. You may love it now, but it usually takes a while, even years, to warm up to it. Nobody I know dreamed about being a cost estimator when they were young, but there is a segment of the population out there that have taken that road less travelled and have embraced the challenge.

This year I had the great honor and privilege of nominating and petitioning two such individuals, pillars of our profession, for Emeritus membership: Mike Fuller and Ralph Smith. It's hard to get emotional about math and numbers, but I can tell you explaining to the ICEAA board why I believed Mike and Ralph were deserving of this honor was a moving and emotional experience as is this opportunity to share the highlights of their journeys with you.

Mike Fuller, ICEAA Emeritus Member newly designated in 2020, has been an ICEAA member as well as a member of its predecessor associations, the Society of Cost Estimating and Analysis (SCEA) and the National Estimating Society (NES), is now retired from Lockheed Martin and living in Dallas, Texas.

Mike was a baseball player, a competitive athlete. He continued his love of baseball by officiating many years at the NCAA Division 1 level. To Mike, each member of a team was an essential member. That meant having a special talent the team needed like a strong arm, a strong bat, speed or know how. You didn't have to have it all, but you had to have one thing you brought to the team and made the team competitive. Mike wasn't dreaming about estimating. He wasn't even looking to get into it. Sound familiar? Before becoming an estimator, Mike was a Senior Buyer for Sanger Harris before it was bought out by Macy's, a department store. Mike was approached by his racquetball opponent who suggested he apply for a job with LTV Vought Aircraft, and the rest was history. Mike went on to work as a senior manager

for Lockheed Martin Missiles and Fire Control in Grand Prairie, Texas, where he mentored many cost estimating professionals over the years.



*Mike Fuller and
his wife Debbie*

To Mike working in business was a game, a competition, internally and externally. You were also part of a team...your department, your company. Estimating was challenging and there was a competitive element to it. You had to know the competition, products and programs. You had to understand your personal strengths and weaknesses. You had to learn from your mistakes. You had to know something about each aspect of the business, and you had to bring something essential to the team, like product knowledge for example.

Initially Mike didn't like how estimating had a support role to contracts who took the lead on everything, but it was estimating that did the real negotiations, figuring out how to balance risk and reserves. Estimating was the essential role, and during his career he accumulated a wealth of wisdom that served him well, and he was quite generous in sharing those insights he believed made him an essential player on the estimating team.

Mike's challenge to fellow professionals is to set goals and dreams with deadlines. Write 'em down and make 'em SMART, strategic, measurable, attainable, realistic and timely. Never stop learning and getting better. Read great books for inspiration, like Stephen Covey's classic *Seven Habits of Highly Effective People*. Read it again. Get good at time management, but don't just settle for good. Get really good and excel at it. Plan your schedule

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for the unexpected. You don't know what you don't know. The world is dynamic. When conducting meetings, don't just show up. Prepare and have an agenda. Don't just provide an answer. Estimating is more than just adding number to generate an answer. Find something no one wants to do and do it better than anyone else.

Today, Mike still has a ton of energy. He is involved in multiple organizations. Mike will continue to participate in ICEAA activities, and he hopes to cross paths and connect with you on your professional journey as he has a lot more to share than what I covered here.

Ralph Smith, ICEAA Emeritus Member newly designated in 2020, has been an ICEAA member as well as a member of its predecessor associations, the Society of Cost Estimating and Analysis and the International Society of Parametric Analysts (ISPA), is now retired from Lockheed Martin and living in Fort Worth, Texas.

Ralph's academic background was eclectic, reflecting his wide-ranging interests in highly diverse subjects. His initial academic path led to a master's degree in literature and creative writing. While teaching those subjects at the college level for several years, he also pursued self-directed studies in physics and mathematics. Although he contemplated pursuing a degree in math and physics, Ralph decided to pursue an MBA because he believed that was the better career path. He started his professional career at Lockheed in California in Materials and Producibility engineering supporting design trades and design-to-cost efforts. Ralph appreciated the support of Marlon Guess, one of the M&P group leads and a mentor who connected him to projects that engaged his interests and skills, and stretched him to build upon those skills. Ralph appreciated Marlon's ability to easily communicate complex, technical information.

Business needs took Ralph to Marietta, Georgia, where he continued with design-to-cost and into a leadership role as an estimating manager. From there he came to



Ralph Smith

Fort Worth, Texas, and eventually moved into a position as director of estimating. While management was the right path for career advancement his heart remained in the hands-on work of analysis and modeling. His passion lay in the most challenging analyses early on in the product life cycle including cost estimating for conceptual design and design trades where parametric methods are most powerful and certainly not optional. He understood the value of collecting and understanding historical cost data and the credibility and respect that went along with it. Ralph retired from Lockheed Martin as a

Fellow in estimating. His passion for the math and technical part of the business affected many individuals over the years within the company as well as professionals at other companies.

Ralph's two-cents-worth of advice for career advancement and life-long self-fulfillment may be summarized as follows: continuously adapt, refine, and expand your interests and skills to align with opportunities available to you; create new opportunities for yourself by demonstrating your unique skills and talents; rather than regretting the road not taken, find creative ways to explore all the roads that interest you, even if they seem to be blocked by insurmountable obstacles.

Following up on his interests in math and physics, Ralph has taken up the study of quantum mechanics and cosmology, claiming that it is so fascinating that he just can't get enough. He also continues to be an avid student of world literature and the arts. Ralph will continue to participate in ICEAA activities to the extent he can set his studies aside, and he hopes to cross paths and connect with you on your professional journey as well.

On behalf of ICEAA I commend both Mike Fuller and Ralph Smith on their professional accomplishments and their worthy designations as emeritus members! Thank you for being a role model for other professionals and thank you for your contributions to our profession!



Do you know of an ICEAA member whose years of dedication to the association and the industry have made them a pillar of the community? Learn more about the Emeritus Membership designation at

www.iceaaonline.com/membership/#emeritusfellow

Publishing A Book During a Pandemic: On Which Hunts and Likelihoods

Christian B. Smart, Ph.D., CCEA

My Ph.D. advisor, Peter Slater, and two of his colleagues published a technical book in 1998. They had 1,000 pages of material, so it appeared as a two-volume set. As with all books, the editing process was arduous. One of the last-minute decisions was to switch from using the word “which” to “that.” My advisor remarked “that would be a ‘which’ hunt.” In writing and editing a book of my own book twenty years later, I’m reminded of that joke when dealing with detailed copy edits at the end of the publication process.

Much of my work in cost analysis has focused on risk. I have been presenting at professional cost estimating workshops for many years. My research and published papers include a variety of risk topics, including portfolio analysis, allocation, underestimation of risk, fat tails, correlation, and tail dependency. In the summer of 2014, I put together this collection of topics into a table of contents for a book. The title was *Here There Be Dragons: Realistic Risk Management for Public Programs*. The dragons in the title comes from dragons and other monsters depicted on old maps and globes in uncharted territories to indicate the risk and uncertainty of the unknown.

I worked on the book on and off over the next few years until I was close to completing a draft manuscript for the book in 2019. I then decided I should start looking for a publisher. My colleague Doug Howarth had been working with an agent, so I contacted her. Even though she expressed some

interest, we never signed a deal. My initial manuscript focused on defense and aerospace, so I tried submitting directly to a publisher that focused on that area, only to be rejected. I recalled that several years ago, another colleague, Bill Haseltine, was working with a publisher to produce a book on cost estimating, and he had asked me to write a chapter on risk. The project was never finished, but on remembering that Bill had a connection with a major publisher, I contacted him. He got me in touch with his contact. One thing led to another, and I eventually had a phone call with an editor at McGraw-Hill. He was initially concerned about the narrow focus.

After thinking about it, the editor asked me to prepare a proposal on a book with broader scope, which was accepted. I signed a deal with my publisher in mid-March. I’m very fortunate to have found a major company to publish my forthcoming book. A lot has changed in six years. The title changed significantly and is now *Solving for Project Risk Management: Understanding the Critical Role of Uncertainty in Project Management*. The figures provide a comparison of the original table of contents with the one that will appear in the published book.

Handwritten original table of contents for the book "Here There Be Dragons: Realistic Risk Management for Public Programs" from Summer 2014. The title is written at the top. The chapters are listed as follows:

- Ch. 1: Introduction
- Ch. 2: Motivation Risk and Uncertainty, "It's the uncertainty that is driving the risk."
- Ch. 3: Public Programs - Unique Nature
- Ch. 4: Current State of Practice
- Ch. 5: ~~Public Programs~~ The Path/Line Effect and the Free Lunch
- Ch. 6: Here There Be Dragons: Considering the Right Thing
- Ch. 7: Risk Management
- Ch. 8: Be Trying to do too Much w/ too Little
- Ch. 9: Funding, Contracting, & Negotiating
- Ch. 10: Conclusion (Should not be at MAINS)

fig. 1
Original Table of Contents,
Summer 2014:
*Here There Be Dragons:
Realistic Risk Management for
Public Programs*

I had six weeks to broaden the scope of my book, which required a major re-write. The timing could not have been more fortuitous, as my family decided to stay home until mid-May because of the pandemic. It reminded me of my

continued

final push in graduate school to complete my dissertation. I was procrastinating in making final edits at the beginning of my last semester when an ice storm struck. I was stuck inside for a few days, which helped me focus and complete my Ph.D. thesis in time for my planned defense. The re-write of my manuscript was a lot of work. I had to cut out some chapters altogether, including one on government risk policy, and half of a chapter that dealt with the high cost of government systems. I also had to do some research to see if my research on risk for defense and aerospace programs would apply to all types of projects, such as roads, bridges, dams, etc. I found that it did, so while it was some work to add in examples from other industries, it was a natural fit. My editor provided feedback along the way, along with some high-level edits once I had submitted my manuscript.

Once my re-write was completed, my manuscript and supporting graphics and table files were sent to a copy editor, who provided detailed suggestions. We completed three passes through the book.

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fig. 2

Final Product, Summer 2020:

*Solving for Project Risk
Management:
Understanding the Critical Role of
Uncertainty in Project Management*

It seemed every time I looked at it, I found another typo. I also had a couple of “that would be a ‘which’ hunt” moments as part of this process. One major one that I discovered from a colleague’s feedback was that I had used the terms likelihood and probability interchangeably. In common informal usage the two terms are synonymous. However, there is a technical difference between the two, so whenever I used the term in a technical sense, I had to change it to ‘probability’ or ‘chance.’ Fortunately, this process is complete as the completed manuscript went to the printer in early September.

The book is scheduled to appear in print on November 3rd. This is also election day, so you should pre-order it now to avoid having to vote and visit a bookstore to find my book on the same day. You can read a draft of Chapter 1 and view the table of contents at <https://bit.ly/3ggPZK2>,

which has links to pre-order the book in both hardcover and e-book formats from Amazon and Barnes and Noble. You can also read my technical papers and presentations on the topic of risk at

www.iceaaonline.com/solvingprm.



Machine Learning Working Group

01 Communicating

02 Challenging

03 Collaborating

iceaaonline.com/mlgroup

Detroit Chapter Report

Trevor VanAtta, Detroit Chapter President

The Detroit Chapter is pleased to introduce our new-ish Board of Directors to the general membership. At the beginning of COVID-19, the previous president, vice president, and secretary all left the chapter in rapid succession for various reasons, so the main focus this spring/summer was to establish a new leadership team and build consensus on strategic direction.

President **Trevor VanAtta** and Vice President **Pat McCarthy** were elected in the spring, and Secretary **Karen Kunkler** joined us over the summer. We have since appointed **Brandon Bryant** as Training Coordinator and **Matthew Polk** as Social Events Coordinator to round out the team.

Significant changes in the organization of the Cost Analysis community at US Army TACOM occurred this spring and required the Detroit Chapter of ICEAA to shift focus from PCEA/CCEA certification training and to supporting collaboration and sharing of ideas within the local cost community. Efforts have so far been successful and have garnered new interest in ICEAA.

Chapter President Trevor VanAtta created a new Data Analytics Working Group (DAWG) and appointed **David West** as its lead. The group includes 10 members of the local cost community and is focused on improving skillsets amongst the local cost community in Data Science. The group has established Bi-Weekly meetings and has been focused on sharing skills/knowledge in R Programming.

We are discussing various training topics with TACOM Cost Analysis leadership with plans to establish new forums to share ideas in 2021, and starting to formulate plans for an annual summer picnic to debut in 2021, should conditions allow.



*Trevor VanAtta,
President*



*Pat McCarthy,
Vice President*



*Brandon Bryant,
Training Coordinator*



*Matthew Polk,
Social Events
Coordinator*



*David West,
Chair, DAWG*

 **the
NEW SCEBOK** **Software Cost Estimating
Body of Knowledge**
rolling out in early 2021

featuring

Online content delivery Focused training modules

Software Cost Estimator Certification Program

developing news and information at iceaaonline.com/scebok


Southern California Chapter Report

Tom Bosmans, Southern California (SoCal) Chapter Vice President

The SoCal Chapter has continued to conduct our weekly Board of Directors meetings, during which we have brainstormed options for the next several SoCal Workshop events due to pandemic uncertainty issues. Do we try to hold an event outdoors, or conduct 2-hour webinars as either extended lunches or afternoon happy hours with a single speaker? We will continue to explore these and other options to keep serving the Southern California cost community even while business is not as usual.

We have also continued to reach out to the MORS CAWG and Affordability Community of Practice (COP) to identify opportunities for joint events in 2020 and 2021. It's still uncertain whether events will be virtual or in-person, single vs multiple sessions, presentation vs participation-based, and/or all-day vs partial-day in nature.

Elections for the SoCal 2021-2022 Board of Directors are underway! If you are a SoCal Chapter member and have not yet voted, contact the ICEAA office for your ballot. Voting closes November 2 and the new board's term will begin January 1, 2021.

Before the entire world got upheaved, the SoCal Chapter commissioned a horde of commemorative challenge coins that will serve as tokens of our thanks to speakers at our events or in appreciation for outstanding contributions. We haven't been able to hand out a coin yet, but we look forward to doing so once in-person events begin anew post-pandemic. 



*ICEAA SoCal Challenge Coin
Do you recognize the icons on the back?*

The ICEAA Southern California Chapter 2019-2020 Board of Directors:

President: **Rich Harwin**
harwin42@hotmail.com

Vice President: **Tom Bosmans**
Tom.L.Bosmans@leidos.com

Treasurer: **Melissa Winter**
melissa.winter@pricesystems.com

Secretary: **Karen Mourikas**
karen.mourikas@boeing.com

Board Members: David Bloom, Danny Polidi, Justin Knowles, Steve Sterk (Appointed), Nicole Leighton (Host Volunteer-At-Large), Kurt Brunner (President Emeritus), Sherry Stukes (Election Chair)





Society for Cost Analysis and Forecasting

SCAF Newsletter

Sanathanan Rajagopal, SCAF Chairman



What a year this has been so far. As we all got hit by this new crisis it made us think what we had and how easy it is to lose the very basic freedoms that we take for granted. This crisis has certainly changed our lives and we are slowly settling into our new norm. It is the same with SCAF, we have followed and continue to follow the UK government guidelines on what one can and cannot do, adjusting, and making changes to our commitment following these guidelines. This has also allowed us to embrace the new technology to deliver our commitment to our members.

In September of this year we had our Annual General Meeting (our very first virtual event) and we published our new committee members to our community. I am very happy to congratulate **Antony March** (MoD, UK) for becoming SCAF's new Deputy Chair and **George Lyon** (TP Group) on his appointment as SCAF Secretary. A big thank you to **Dale Shermon** who stepped down as Deputy Chair and to **David Baggley** who stepped down as secretary. Thank you for your selfless commitment and support. **Dale** and **David** will still be part of the SCAF Committee.


Our annual SCAF Challenge, was postponed from its planned April date to two virtual events in September and October. This year, we challenged our young and next generation cost graduates to come up with a cost of having an Electric Car in an average UK household from 2025 to 2030.

The SCAF Awards event was cancelled this year due to Coronavirus and social distancing. However, the year's entries have been judged and the committee will make awards and commendations in the following categories at the next physical event:

- Innovation (P Pugh Award) - the best annual presentation with novelty and originality content
- Technical Content - best presentation with scientific, mathematical, process-driven content
- Best Quality Presentation - best presentation with visually stimulating, colourful, interesting content
- Members Award – based upon the highest workshop questionnaire score
- Service to the Society - recognising outstanding dedication to SCAF

SCAF is very happy to announce that following a discussion with ICEAA it has been agreed to hold a joint virtual workshop in 2020. The aim will be to hold two paper/presentations in a one-hour session at 17:00 (UK time) over four weeks - the provisional dates have been set as:

- 17th November
- 1st December
- 24th November
- 8th December

Many thanks to all of our members who have supported us during this crisis. Stay safe and look after each other and the family. 



ICEAA Events Calendar
What's happening in and around the cost world
Find it on the homepage or visit
www.iceaaonline.com/calendar

Get involved with ICEAA at the highest level:
run for a position on the
2021-2023 International Board of Directors



Nominations due January 15



ICEAA's Board of Directors meets three times annually for approximately eight hours per meeting, and directors are expected to spend at least two hours reviewing materials in preparation for those meetings. Board members are encouraged to volunteer to participate in additional activities or complete tasks as needed by the association that require varying amounts of time and effort.

The Executive Committee consists of five elected positions, one legacy position, and the ICEAA Executive Director. These individuals are expected to attend all Board of Directors meetings, participate in additional meetings/calls of the Executive Committee, and perform specialized duties as listed below. Executive Committee members should be prepared to spend a minimum of **80 hours per year** in their role:

President

Executive Vice President

Vice President for Professional Development

Secretary

Treasurer

Immediate Past President (not an elected position; the last sitting President assumes this role at the end of their term)

The remaining members of ICEAA's Board of Directors are two **Elected Directors**, seven **U.S.-based Regional Directors**, a **U.S. Non-Aligned Region Director**, and **International Regional Directors** for our key areas abroad. All are expected to attend the three annual board meetings and additional duties as required or desired.

Any board member should be prepared to spend a minimum of **60-80 hours per year** in their role. An Officer or Director who misses two consecutive board meetings or three total over the two-year term may be removed from their position by a majority vote of Executive Committee.

In addition to the elected members of the ICEAA International Board of Directors, committees to address areas such as certification, marketing, member outreach, chapter development, government participation, finance/budget, and governance are formed to solve problems, research solutions, and figure out how ICEAA can best serve its members. Though neither the members of these committees nor their chairs can vote during a Board of Directors meeting, committee participation and involvement is always encouraged, and as a mostly-volunteer run association, vital to ICEAA's success. Nearly all of ICEAA's voting board members got their start by serving on a committee.

Additional details, position descriptions, and nomination forms at:

www.iceaaonline.com/leadership

Don't wait until an election to get involved on a committee; please email iceaa@iceaaonline.org to find out where and how you can participate!



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2021-2023 International Board of Directors

Nominations due January 15

- ◆ Develop leadership skills and network with driven individuals
- ◆ Impact the future of cost estimating and analysis
- ◆ Influence the direction of the association



We're looking for willing and qualified individuals to serve on people to serve on the 2021-2023 International Board of Directors.

All 19 positions are up for election for the upcoming term. Volunteers are encouraged to complete a nomination application online by **January 15, 2021**

For details and information, visit www.iceaaonline.com/leadership