

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

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also a key contributor for the Consolidated VAMOSOC Tool initiative which consolidates services VAMOSOC 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 Teologlou

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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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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, Ri\$K, 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



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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***

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