

ICEAA 2022 Association Awards

ICEAA thanks everyone who nominated one or more of their colleagues for a 2022 Association Award. The stories our nominators shared gave us unique glimpses into what makes our members the best of the best in the cost professions. As you read the summaries of their achievements below, give thought to the dedicated and inspiring members you interact with regularly and consider nominating them for a 2023 Association Award!

Junior Analyst of the Year: Thomas Cook

Thomas Cook is an up-and-coming analyst within the National Nuclear Security Administration's (NNSA) Office of Programming, Analysis and Evaluation (PA&E). PA&E's mission is to provide defensible cost estimates and quantitative analysis to support decision making about the nuclear deterrent, nuclear non-proliferation, and nuclear naval propulsion. Thomas joined PA&E in 2020, after receiving his PhD in Chemistry at Stanford University, as an NNSA Graduate Fellow and then as a federal employee. The NNSA Graduate Fellowship Program develops new leaders in science, program management, and analytics at the NNSA. During and after his fellowship, Thomas demonstrated not only exceptional analytic prowess but also analytical leadership. Thomas is an ICEAA member working towards his PCEA.

Thomas' most significant contribution during his fellowship was leading the development of a discrete event simulation model of the nuclear security enterprise's manufacturing processes for certain specialized components. Thomas participated in a business case

analysis to identify the appropriate tools for PA&E to provide a timely and accurate analysis on classified systems during the COVID-19 pandemic. Thomas then built from scratch a complete model of the current manufacturing capabilities in the nuclear security enterprise and performed sensitivity analyses to identify the equipment needed to meet nuclear security requirements over the next twenty years. Thomas used the equipment set to identify the square footage needed for a specialized manufacturing facility to meet necessary throughput at various confidence levels. These outputs were used to project the cost and schedule ranges for building new facilities and to explore the feasibility of using smaller, modular facilities. Overall, Thomas excelled at his fellowship, also performing timely analyses of key commodity and equipment prices and escalation to inform NNSA procurement decisions.

Thomas federalized in 2021 and took on leading the Analysis of Alternatives for one of NNSA's largest and most complex projects, the dismantlement of plutonium pits. To meet nonproliferation objectives, the United States must dismantle a number of the plutonium cores of nuclear weapons, called pits, and safely dispose of the plutonium. This is a complex process, involving



Thomas Cook

highly specialized safety and production equipment and technical knowledge. Thomas' leadership included overseeing the development of another discrete event simulation capability, reconciling the results with site projections, and overseeing the cost and schedule estimating for procuring the appropriate equipment and either renovating existing or building new facilities. Under Thomas' leadership, the Analysis of Alternatives has completed its analysis within ten months and in time to support the next budget cycle.

Thomas Cook's uncommon dedication and exceptional analytic capability have ensured he is a key member of any analysis team. His ability to consider both the details of analyses like those required in discrete event simulations and to understand the broader picture of how the analysis supports key decision-making marks him as an exceptional junior analyst. Indeed, his work forms the core of a paper, *Discrete Event Simulation as a Tool for Cost Estimating* that was published in the AACE International's March/April edition of the Cost Engineering Journal. I anticipate Thomas continuing to share insights with the field and becoming a true innovator in the cost community.

Thomas Cook has become PA&E's lead for all discrete event simulation, supporting the NNSA in maintaining the United States' nuclear deterrent and its non-proliferation capability.

-Nominator **Charles Loelius**

Technical Achievement of the Year: **Patrick Ahearn**

Patrick Ahearn, a Senior Analyst at Technomics, Inc., has been a tremendous asset to the USCG Offshore Patrol Cutter (OPC) program, the largest acquisition in Coast Guard history and currently the Coast Guard's highest priority. Once complete, the

program's 25 cutters will make up nearly 75 percent of the Coast Guard's major cutter fleet performing a myriad of national security missions. He has approached this program with innovation, intensity, and creativity. He has revolutionized the Earned Value Management (EVM) analysis and brought insights to the program.



Patrick Ahearn

When Patrick joined the OPC program in early 2020, the shipyard was trying to recover after a hurricane struck the shipyard in 2018, creating schedule delays and resulting in an approved request of Public Law (P.L.) 85-804 (extraordinary contract relief). Patrick quickly got up to speed on the complexities of the program and began updating and delivering EVM briefs. Very early, he advised the program on data reporting requirements to both enhance his own analysis and lighten the burden on the shipbuilder. Patrick's ingenuity became very apparent when he tied data with the Control Account Plan (CAP) and built Business Intelligence (BI) dashboards to perform deep dives into the shipyard's data. His analysis and insights were immediately noticed. As a result, he built significant confidence for the USCG's overseers, the Department of Homeland Security (DHS) Cost Analysis Division (CAD).

Patrick's efforts extends far beyond gold-card analysis. His analysis is comprehensive: clarifying existing problems, identifying areas of concern, forecasting Estimates at Completion

continued

(EAC), and projecting schedule completion dates. He is innovating and exploring the data in ways that truly benefit the program, the USCG, DHS and ultimately the taxpayer. He has also made a concentrated effort to share data and get insightful tools into the hands of the decision makers. He recently developed and shared an online BI tool that enabled users to visually explore the data at very detailed levels such as trades are causing problems, performance comparison among hulls, and forecasted workload versus shipyard capacity. Patrick has even integrated his analysis into the 2020 and 2021 Life Cycle Cost Estimates (LCCE). And with OPC Stage 2 (i.e. re-compete) being in source selection, Patrick has been hand-selected by the USCG to assist with reviewing shipbuilder cost proposals.

Though Patrick’s support of the OPC program has been invaluable, he simultaneously supports other programs including Navy Program Executive Office Integrated Warfare Systems. He also takes time to mentor younger new cost analyst by sharing his tools and allowing them to take lead on program briefings. He has even developed data analysis training and provided a two hour brief at the CPA-

Canada Conference. Patrick has become a resource to others within Technomics, answering questions and pushing others to properly store data to facilitate analysis and the building of insightful dashboards. He has been a champion for spearheading the implementation of BI software across multiple programs.

Patrick is an excellent choice for the Technical Achievement Award. Due to commercial sensitivities, I am unable to quantify the value delivered by Patrick, but suffice it to say that he is being a great steward of the American taxpayers. The OPC is the USCG’s top acquisition priority, and, at award, the OPC contract that Patrick performs EVM on was the largest contract in DHS history. He has excelled on OPC and other programs and exceeded all expectations.

-Nominator Robert Nehring

Team Achievement of the Year: Army Defensive Cyber Operations Cost Team

The DCO Cost Team was formed in 2017, supporting Agency-wide cyber missions in an ever-changing landscape. It can be difficult to estimate due to requirements being written to maximize flexibility and speed (deliberately vague). How the requirement is met can change often, but our cost estimates need to be logical, defensible, and most importantly, helpful to decision makers. Threading the needle of scientific but flexible has been where this cost team



*Ryan Webster
Augur Consulting*



*Greg Wright
Octo Consulting*



*Stephen Koellner
Augur Consulting*



*Gabrielle Briones
Augur Consulting*



*Ryan Faris
Augur Consulting*



*Alex Garner
Augur Consulting*

Members of the Army Defensive Cyber Operations Cost Team

has really shined, especially in 2021.

When asked the question “What is the cost of a cyber analytic algorithm?”, a question that has no single answer, the DCO team gathered as much data as possible to gain an understanding of the range of efforts previously pursued by this program, and others, including DARPA. The team came forward with a range of datapoints roughly analogous to the scope in question. They developed a methodology for sizing these efforts by complexity level. This enabled flexible planning based on velocity and complexity of new capabilities. This also functioned as a measuring stick for vendor negotiations during the IGCE process, enabling the contracts team to evaluate a reasonable range of cost for these vague capabilities.

When asked for an IGCE on tactical cyber kit warranties, the Cost Team decided to also do a Business Case Analysis, evaluating recent failure rates, parts covered by the SI warranty, parts covered by OEM warranty, and how many failures would have to occur for the warranty to be economic. The team’s recommendation was to change course and pay for failures as they occur and consider using a fraction of the savings to increase critical spare parts. Leadership largely agreed and is looking to ensure organic maintenance chains are established to avoid paying for costly warranties. This recommendation saves \$2-\$5M per year.

The DCO cost team has brought cost realism and logic to every step of the acquisition process. They educate senior leadership on complex cost drivers tied to cloud service consumption rates and other complicated software pricing structures. They have improved the IGCE process by conducting process training delivered to the government and contractors involved in the acquisition process. They have developed quick and creative methods to evaluate agile vendor performance during renegotiations for baseline changes, tied to nebulous capability deliveries.

Countless times in 2021, the cost team performed extensive research and data analysis to forecast a reasonable price which was used in vendor

negotiations. In some cases, getting directly involved in negotiations to highlight misunderstandings in scope between the vendor and the government based on proposals being outside the expected range. This data was later sanitized and presented at IT-Cast by the cost team alongside government cost leadership from PEO EIS (Preparing for software negotiations: Adding value through the IGCE Process).

The DCO Cost Team remains prepared and engaged throughout the year. When senior leadership asked for an expedited POM submission, they rose to the challenge. A common ACEIT cost model for all ten programs centralized the data and allowed for updates throughout the year based on new knowledge obtained through their daily involvement in program planning. The cost model is tied to capabilities which enabled trade space/CAIV analysis, allowing leadership to make fully informed, but difficult decisions about capabilities and the Army’s cyber posture.

In conclusion, the DCO Cost Team takes cost estimation to the next level. They do not simply take in information and deliver a report or cost product. They provide integrated program management advice through quantitative decision support. They demonstrate logical, scientific, and repeatable approaches to cost estimation. They make actionable recommendations and always have their eye on the best interest of the program and the taxpayer. When requirements are hard to define, they develop creative approaches to estimate reasonable ranges to meet the needs of ever-changing cyber requirements. The products they deliver are thorough, well documented, and result in defensible budget submissions. They demonstrate an understanding of complex technical considerations and the impact on cost. They synthesize and share their knowledge in ways that are easily comprehended, and results in actionable recommendations.

-Nominator Martha Spurlock

Management Achievement of the Year: Cash Fitzpatrick

Mr. Cash Fitzpatrick is the Director for the Office of Programming, Analysis, and Evaluation (PA&E) of the National Nuclear Security Administration (NNSA). NNSA is a semi-autonomous agency within the US Department of Energy, and PA&E's mission is to provide defensible cost estimates and quantitative analysis of its ~\$20 billion annual budget to support decision making about the nation's nuclear weapons stockpile, nuclear non-proliferation, and nuclear naval propulsion. Cash oversees a range of analytical and policy functional areas for the agency including programmatic cost estimating, analyses of alternatives, and enterprise cost modeling. He also chairs the Cost Estimating Analysis Group (CEAG), the community dedicated to furthering cost estimating of both the agency and its eight national laboratory and site partners encompassing the nation's nuclear security enterprise.

In late 2019, Cash began as acting Director and has since hired more than 30 federal and contractor cost analysts. He also established the agency's first cost research and development team, as well as a modeling working group with the agency's laboratory and site partners. After being selected as the permanent PA&E Director in May 2021, he established relationships with peer offices at the Department of Defense (DoD) and National Aeronautics and Space Administration (NASA). He routinely participates in their cost estimating communities and has advised the White House's Office of Management and Budget (OMB) in promoting cost estimating best practices across the federal government.

Cash also promotes integration and synergy as the lead for NNSA's Cost Estimating Community of Practice (CECOP) symposiums, an annual gathering of cost estimating and related professional disciplines (e.g. project controls, schedulers, etc.) to exchange best-practices, methodologies, and strengthen ties within the wider community. These symposia bring practitioners

together to share innovative solutions, and under his leadership has significantly expanded to include ~250 professionals across NNSA, DOE, DoD, Air Force, NASA, Institute for Defense Analysis (IDA), Booz Allen Hamilton, and Government Accountability Office (GAO).



Cash Fitzpatrick

PA&E has significantly improved NNSA's cost analysis community. It has established an analytic corps dedicated to providing cost analysis of NNSA's largest and most complex weapons programs, and performed the agency's first early-stage planning studies for large capital acquisitions that integrate requirements development and cost estimating to ensure agile project development. PA&E also ties cost analysis and related decision support into the programming phase of the PPBE process, empowering decision makers to balance risks across their portfolios with quantitative and defensible cost and schedule analyses that tie directly to the budget process.

Cash continues to cultivate expertise, experience, and excellence. His thought leadership and dedication to "raising all boats" through collaboration and continuous improvement have strengthened not just the agency's cost estimating community, but also the nuclear security enterprise and wider cost community writ large.

---Nominator **Charles Loelius**

Educator of the Year: Carol Dekkers

Congratulations to Carol Dekkers, the 2022 recipient of the ICEAA Educator of the Year Award! Carol Dekkers' dedication to the ICEAA Cost Estimating Body of Knowledge-Software (CEBoK-S) development, promotion, and dissemination will have lasting effects on the current and future success of cost estimators and analysts. The inception of CEBoK-S goes back many years, many teams, and several attempted versions. Carol leveraged all of this previous work together with new materials, and using her software leadership expertise, her instructional enthusiasm, and seasoned presentation skills revamped the entire CEBoK-S curriculum into one cohesive body of knowledge. Carol's completed work (a comprehensive suite of nine CEBoK-S lessons) debuted, in its entirety, during the 2021 ICEAA Training Summit in September 2021.

Ms. Dekkers is best known for her software measurement expertise, and her authorship of industry textbooks and many articles including *The IT Measurement Compendium: Estimating and Benchmarking Success with Functional Size Measurement* (Springer); *Program Management Toolkit for Software and Systems Development* (Talentum); *Practical Software Project Estimation* (ISBSG); and others. She has also published many articles in a wide variety of software industry journals.

Ms. Dekkers has been a keynote presenter and instructor at major IT conferences worldwide (spanning more than 35 countries) on topics ranging from functional size measurement and software cost estimation to project management, technical leadership and communication including: MITRE's Cost Estimating Center of Excellence, International Software Benchmarking Standards Group (ISBSG) IT Confidence summits, International Function Point Users Group (IFPUG) conferences, PMI (Project Management Institute) Global Congresses, Heart of Agile (HoA) conference, and SAP's Global Quality Days. Ms. Dekkers has been a leading expert on the US delegation to International

Standards (ISO/IEC JTC1 SC7) since 1994 and has contributed to the development of many global software and systems engineering standards. She is president-emeritus of IFPUG where she continues to hold a leadership role. She continues to be instrumental in the development of advanced software cost estimating approaches including the release of SiSE – Simplified Software Estimation – at the US Department of Homeland Security (SiSE is based on streamlined approaches to software sizing, functionality patterns and analogous estimating specifically for agile software development.)



Carol Dekkers (left) with nominator and 2021 Educator of the Year Denise Nelson

Carol has developed and taught course curriculums for Defense Acquisition University, for government agencies (National Geospatial-Intelligence Agency, USAF, USPS, Veterans Affairs, Medicare, etc.) as well as private enterprises. Carol is a Project Management Professional (PMP), Certified Function Point Specialist (CFPS -Fellow), a Professional Engineer, and a Certified Scrum Master (CSM).

In summary, Carol's impact on the software cost estimating community is immeasurable and continues to increase through authorship, thought leadership, curriculum and International standards development, in addition to continued collaboration with industry groups including ICEAA, IFPUG, ISBSG, PMI, IEEE, and COCOMO (including COCOMO III).

Thus, Carol Dekkers is well deserving of this year's 2022 ICEAA Educator of the Year Award. The resultant quality of CEBoK-S is attributed to her efforts. A large, geographically dispersed team of full-time professionals is not an easy group to corral. As lead author, she coordinated the existing body of work, reorganized it, reduced redundancy, appropriately integrated CEBoK, and managed the reviews, comments and edits under schedule constraints that were almost never met.

--Nominator **Denise J. Nelson**