COST ESTIMATING COMMUNITY OF PRACTICE

3rd Annual Symposium

WORKING TOGETHER:
ONE MISSION, ONE VISION, ONE NSE

AUGUST 6–7, 2019 • LAWRENCE LIVERMORE NATIONAL LABORATORY

WIRELESS ACCESS

The guest wireless network provides a hotspot type of environment allowing both guests and employees Internet access for their non-government-owned devices. This service is available across the site and is broadcast with the name 'LLNL-GUEST.'

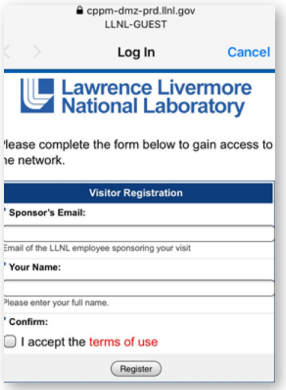
Steps for the person connecting the device

1) From your device, select **LLNL-GUEST** from the list of available wireless networks.
2) Enter the group password when prompted: **greatscience**
   a) Press whatever button is required to submit the password on your device. (After a few seconds, a form will appear.)

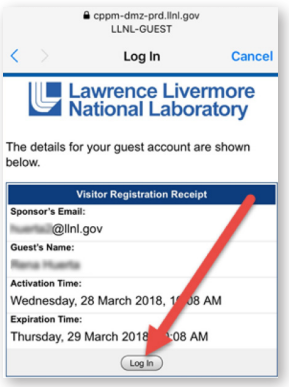
      TIP: If the form does not appear (possible on older devices), start your web browser and it should redirect you to the form.
3) Complete the form
   a) Enter the LLNL email address of the person who is sponsoring the visit: **<calder2@llnl.gov>**

      NOTE: It must be a valid LLNL email address ending in @llnl.gov. LLNL employees looking to connect their personal devices can use their own LLNL email address.
   b) Enter the first and last name of the person visiting or connecting. **<Lauren Calder>**

      NOTE: LLNL employees looking to connect their personal devices can use their own first and last name.
   c) Check mark the box.
   d) Click the **'Register'** button.



4) Click the **'Log in'** button.



The person will be granted temporary wireless access for up to 24 hours.

WELCOME

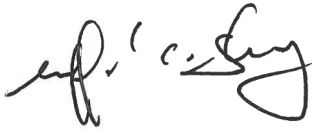
On behalf of the Cost Estimating Analysis Group (CEAG) Council and NNSA Defense Programs, we would like to welcome you to Lawrence Livermore for the Third Annual Cost Estimating Community of Practice (CECOP) Symposium.

CECOP was formed by the eight sites and HQ for the purpose of exchanging cost estimating best practices through collaborative relationships within government, industry, and the Nuclear Security Enterprise. The cost estimating field has considerable richness and complexity and is as worthy of attaining mastery as any technical specialty.

This year, in addition to presentations covering topics on cost estimating and analysis, we have instituted a training track to convey insights into Cost Estimation fundamentals including basis of estimate; risk analysis; NNSA planning, programming, budgeting, and evaluation; parametric model development; and more to provide you learning and professional growth opportunities.

We hope you enjoy your time at the Symposium. Welcome to California.

Sincerely,



Cliff Shang
CEAG Council Member
Director, Laboratory and Nuclear Weapons Infrastructure
Lawrence Livermore National Laboratory

COST ESTIMATING ANALYSIS GROUP

CEAG

NNSA is responsible for ensuring the safety, security, and reliability of the U.S. nuclear stockpile through its Defense Programs activities. The planning, programming, budgeting, and execution of these activities across the Nuclear Security Enterprise and NNSA involve complex, dynamic, and interdependent processes within and between the sites. This increases the challenge of estimating costs for these activities. In October 2013, the Deputy Administrator for Defense Programs directed that a Cost Improvement Initiative be undertaken to identify key areas of improvement within the cost estimation process, while also establishing a series of standards and best practices to significantly improve cost estimating for both programs and projects in Defense Programs.

Multiple recommendations emerged from the initiative, one of which was the creation of a subgroup within the Integrated Planning Group for estimating life extension program costs for publication in the Stockpile Stewardship and Management Plan. Members of this subgroup recognized the need for developing a Cost Estimating Analysis Group (CEAG) for Defense Programs that would lead continuous improvement of Defense Programs cost estimation practices and other related issues in the Enterprise.

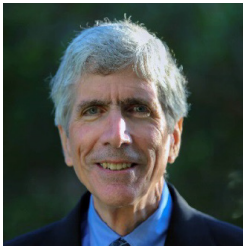
CEAG is comprised of representatives from across the Enterprise, integrating the knowledge and expertise of professionals at the sites and NNSA headquarters. CEAG was chartered to lead independent cost estimate reviews and other cost analysis efforts as requested by Defense Programs leadership (NA-11, NA-12, NA-15, NA-18, NA-19) and approved by the CEAG Leadership Team. CEAG is also responsible for leading the Cost Estimating Community of Practice (CECOP) and establishing cost estimating procedures, methodologies, and best-practices specific to Defense Programs activities. This both informs higher-fidelity cost estimating efforts and fosters more effective communication and collaboration.

COST ESTIMATING COMMUNITY OF PRACTICE

Like an academic consortium, the Cost Estimating Community of Practice (CECOP) is an informal gathering of cost estimating practitioners. CECOP is focused on training, education, and the exchange of cost estimating methodologies and best practices. Cost estimating professionals from the NNSA, Department of Energy, Department of Defense, contractors, and other experts in the field participate in the annual CECOP Symposium.

The CECOP leadership team sets the priorities for CECOP and develops its values and guiding principles. Primary participation has been from the NNSA and NSE. As the community expands and the pool of participant expertise increases, CEAG may pull specific expertise for CEAG projects from the CECOP. It is important to note that CECOP as a body is not directly involved in Defense Programs' projects. CECOP is a standalone group focused on communication, community building, and knowledge exchange through yearly symposia that concentrate on cost estimating–focused tracks.

KEYNOTE DAY ONE



DR. CHARLES P. VERDON

Deputy Administrator
Office of Defense Programs

BS Nuclear Engineering, University of Arizona, Tucson (1973)
MS Nuclear Engineering, University of Arizona, Tucson (1978)
PhD Nuclear Engineering, University of Arizona, Tucson (1982)

Dr. Charles P. Verdon is NNSA's Deputy Administrator for Defense Programs. He leads the team that directs the Stockpile Stewardship Program, which is responsible for maintaining the safety, security, and reliability of the Nation's nuclear weapons stockpile.

Confirmed by the Senate on Sept. 18, 2018, Dr. Verdon was sworn in on Oct. 9, 2018.

Prior to joining NNSA, he was the Principal Associate Director within the Weapons and Complex Integration Directorate at Lawrence Livermore National Laboratory. In this role, he was responsible for the management and coordination of all of the lab's weapons program activities.

Before that, Dr. Verdon served as the Directorate's Principal Deputy Principal Associate Director, Program Director for the Secondary Nuclear Design Program, and the AX-Division Leader. In these roles, he worked to maintain national and global security by maintaining scientific and technical leadership in all aspects of thermonuclear weapon physics design and operation. He was also responsible for the management of the scientific grand challenge effort of achieving ignition at the National Ignition Facility.

Dr. Verdon was selected as a Fellow of the American Physical Society in 1997. In addition, in 1995 the society awarded him the Excellence in Plasma Physics Research Award for outstanding theoretical work, computational design and analysis, and experimental work leading to quantitative and predictive understanding of aspects of high-energy density plasmas.

Dr. Verdon and his wife have one child and live in Washington, DC.

KEYNOTE DAY TWO

ANTHONY V. McNAIR

Head of Cost Estimating, Modeling, and Analysis (CEMA) Office

BS Industrial Engineering, North Carolina Agricultural and Technical State University (1990)
Defense Acquisition Workforce Improvement Act (DAWIA) Level III Certification (1995)
NASA Cost Estimator Leadership Award (2014)
NASA Cost and Schedule Leadership Award (2018)

Anthony V. McNair has almost thirty years of cost estimating experience working for the Department of Defense Naval Sea Systems Command (NAVSEA) and the National Aeronautics and Space Administration (NASA) Agency. In 2010, he was selected to head the newly formed Cost Estimating, Modeling, and Analysis (CEMA) Office at Goddard Space Flight Center at NASA. As Head of the CEMA Office, he is responsible for developing and providing overall Center direction on policies, practices, data gathering, and documentation of cost estimates in support of concept formulation, proposals for space missions and instruments, directed work, and estimates developed in support of projects during execution.

In 1990, Mr. McNair began his career as an engineering intern at NAVSEA and went on rotations to program offices. While on rotation, he learned how program offices used Estimates at Completion and Earned Value Management to monitor contractor performance. Upon completion of the intern program, he became a cost engineer with the Amphibious and Auxiliary group providing cost engineering and industrial analysis support for the LPD-17, SEALIFT, and T-AKE programs. He became the Cost Engineering Team Lead for the Amphibious and Auxiliary group where he acted on behalf of NAVSEA on all issues relating to cost engineering. In 2002, Mr. McNair transitioned into a new role as the Cost Engineering Team Lead of the submarine group leading the Virginia Class submarine program. This was the largest submarine procurement in history (approximately $10 billion). He also led cost engineering and industrial analysis activities for other submarine programs such as Underwater Launch Missile System, SEAWOLF Class submarines, and Advance Seal Delivery System programs. In 2008, Mr. McNair was selected Director of the Industrial Planning and Analysis Division to manage the development of shipyard labor/overhead rates and workload projections for the six major shipbuilders of U.S. Navy ships.

SCHEDULE DAY ONE

August 6	Presentations R1005, Armadillo	Training R1012, Black Diamond	Q-Cleared R1205, Tilden Vis Theater
8:30 – 8:45	Welcome and Opening Remarks		
8:45 – 9:45	Keynote, *Dr. Charles Verdon*		
9:45 – 10:15	An Analysis of NSE Cost Estimating Terminology to Improve Communication, *Terry Josserand*	Introduction to Cost Estimating and Analysis 101, *Peter Braxton and Ryan Horn*	
10:15 – 10:45	KC SINC Planning Study, *Fana Gebeyehu-Houston*		
10:45 – 11:00	Break	Break	Break
11:00 – 11:45	Schedule and Cost Uncertainty Risk Analysis (SCURA), *Michelle Oakes*	(RESUME) Introduction to Cost Estimating and Analysis 101, *Peter Braxton and Ryan Horn*	
11:45 – 12:45	Lunch	Lunch	Lunch
12:45 – 1:15	Designing a Basis of Estimate for Life Extension Program Engineering Tests, *Michael C. Emmons*	Introduction to Cost Estimating and Analysis 201, *Peter Braxton and Ryan Horn*	
1:15 – 1:45	Emerging Weapons Program BoE Requirements, Planning, and Development, *Robert G. Anderson*		
1:45 – 2:00	Break		
2:00 – 2:15		Break	Break

Room capacities:
Tilden – 128
Black Diamond – 74
Armadillo – 135

August 6	Presentations R1005, Armadillo	Training R1012, Black Diamond	Q-Cleared R1205, Tilden Vis Theater
2:15 – 2:45	Programmatic Equipment Lifetime Analysis, *John Pantano and Cory Carnes*	NNSA Planning, Programming, Budgeting, and Evaluation (PPBE), *Richard Caballero*	
2:45 – 3:15	How to use Micro Process Maps to Improve Schedule, *Tewfik Boutaleb*		
3:15 – 3:45	Chipotle: A Case Study in Implementing Risk Management, *Craig R. Johnson*		
3:45 – 4:00	Break	Break	Break
4:00 – 4:45	At Least Two Ways To Incorporate Cost Estimates Into Senior Managements' Risk-Benefit Analyses, *Ian Bailey, Andrew Mastin, and Carol Meyers*	Introduction to Cost Risk Analysis, *Steven W. Wageman*	
4:45 – 5:00	Closing Remarks/Adjourn Day One		

Menu for Tuesday, August 6

All-day Beverages include:
- Coffee (Regular/Decaf)
- Tazo Hot Tea
- Water

Breakfast:
- Yogurt Bar
  Greek and regular yogurt (choice of vanilla or strawberry), dried apricots, dried cherries, granola, toasted almonds, and coconut
- Assorted Pastries
  Includes muffins, croissants, breakfast breads, and pastries
- Fresh Seasonal Fruit

AM Break: Trail Mix and Assorted Granola Bars

Lunch:
- Street Taco Bar
  Your choice of carne asada, grilled chicken, or sofritas (tofu). Served with black beans, lime cilantro rice, pico de gallo, corn tortillas, chips, guacamole, salsa verde and rojo, and hot sauce
- Beverages: iced tea, water, or soda

PM Refreshments:
- Baja Fruit Bar
  Spears of pineapple, cucumber, watermelon, and papaya. Served with lime juice and tajin
- Assorted Fresh Baked Cookies

SCHEDULE DAY TWO

August 7	Presentations R1005, Armadillo	Training R1012, Black Diamond	Q-Cleared R1205, Tilden Vis Theater
8:30 – 8:45	Welcome and Opening Remarks		
8:45 – 9:45	Keynote, *Anthony McNair*		
9:45 – 10:15	Capital Acquisition Planning Process to Achieve CD-0, *Kayee Leung*		Parametric Model Development, *Harlan "Hal" Swyers*
10:15 – 10:45	DP Analysis of Alternatives (AoA): Tales from an AoA Lead, *Cash Fitzpatrick and Laura Driscoll*		
10:45 – 11:00	Break	Break	Break
11:00 – 11:30	Program. Equip. Cost Estimation Data Collection Modeling Activities, *Ann D. McConnell and Christopher H. Adams*	How to Develop a Schedule, *Kathleen E. Lane*	
11:30 – 11:45	Lunch		
11:45 – 12:45		Lunch	Lunch
12:45 – 1:30	Cost Risk Analysis Using Palisades @Risk, *Steven W. Wageman*	NNSA Basis of Estimate Training, *Phil Chamberlin and David Zimmerman*	

Room capacities:
Tilden – 128
Black Diamond – 74
Armadillo – 135

August 7	Presentations R1005, Armadillo	Training R1012, Black Diamond	Q-Cleared R1205, Tilden Vis Theater
1:30 – 2:00	SNL Capital Acquisition Cost Modeling for Strategic Planners, *Christopher (Chris) Nesbit*		
2:00 – 2:15	Break	Break	Break
2:15 – 3:15	Anatomy of a Historical Cost Data System, *Tony Colburn*	Introduction to Cost and Schedule Risk Analysis, *Peter J. Braxton*	
3:15 – 3:45	The Need for Data Analysis (and Analysts) through the Program Lifecycle, *Deborah Dale*		Recurring and Non-Recurring Costs of Warhead LEPs, *Brian Octeau and M. Michael Metcalf*
3:45 – 4:00	Break	Break	Break
4:00 – 4:45	An Introduction to Sandia National Laboratories Cost Products to Advance Collaboration, *Jonell N. Samberson*		Supply and Demand Model for Enriched Uranium, *Jennifer Ward and Robert Fatzinger*
4:45 – 5:00	Closing Remarks / Adjourn Symposium		

Menu for Wednesday, August 7

All-day Beverages include:
- Coffee (Regular/Decaf)
- Tazo Hot Tea
- Water

Breakfast:
- Assorted Breakfast Burritos
  All burritos include cheese & potatoes with choice of bacon, sausage, ham, or vegetarian (roasted veggies, peppers, and onions). Served with your choice of salsa or hot sauce
- Fresh Seasonal Fruit

AM Break: Trail Mix and Mixed Nuts

Lunch:
- Hot Sandwich Bar
  Your choice of pulled pork, grilled chicken breast, or black bean burger on a kaiser roll. Served with your choice of crispy slaw, tomatoes, pickles, onions, lettuce, yellow and spicy brown mustard, BBQ sauce, and kettle chips
- Garden Salad
  Choice of ranch or balsamic dressing
- Watermelon Salad
  Watermelon, feta cheese, basil in a lime vinaigrette
- Beverages: iced tea, water, or soda

PM Refreshments:
- Popcorn Bar
  Choice of caramel, cheese, or sea salt
- Assorted Dessert Bars
  Choice of luscious lemon, Oreo cheesecake, or raspberry bar

PRESENTERS

CHRISTOPHER H. ADAMS

LLNL, Associate Program Leader, Capabilities Based Investments

Chris has 39 years of experience at LLNL starting as a mechanical engineer supporting the Nuclear Test Program. Additional roles have been a field engineer for LLNL's astrophysics group as well as a lead design engineer at NIF on the Final Optics Assembly. Chris transitioned to operations and project management while supporting a NNSA tri-M&O (LLNL, LANL, and NSTec) line item project, the Criticality Experiment Facility project at NNSS's DAF. In his current role he leads a group responsible for the recapitalization of programmatic equipment in support of weapon activities at LLNL.

ROBERT ANDERSON

KCNSC, Engineering Basis of Estimate Manager

Bob is the Engineering Estimate Manager for Kansas City National Security Campus (KCNSC) Systems Engineering Organization. In this role he is responsible for the development and application of Basis of Estimates (BoE) processes for new and emerging programs at KCNSC. The most recent being the BoE for the W80-4 WDCR.

Prior to his joining KCNSC, Bob served several roles in the U.S. Air Force including Conventional Weapons Systems Acquisition, Electronic Combat Development and Flight Testing, and retired as part of the B-2 Follow-on Operational Test and Evaluation (FOT&E) Team. His early military career provided the start of a full circle of experience with the Nuclear Security Enterprise serving as a munitions handler for the early models of B-61s and the AGM-86A.

Bob's experience also includes 20 years of serving as Engineering Development, Management, and Director of Customer Engineering for a major telecom equipment and engineering services provider.

He has a Bachelor of Science degree in Electrical Engineering from Iowa State University and a Masters of Aerospace Science from Embry Riddle Aeronautical University.

IAN BAILEY
NNSA NA-10 Contractor, Senior Technical Advisor

Ian is a senior technical advisor with more than 18 years' experience in the NSE. Since 2008, he has provided program management support and helped lead the formal acquisition cost estimate process for the B61-12 LEP, currently planned at $7.6B over 13 years and also W80-4 LEP, currently developing its first major program cost estimate. He also developed novel system-driven technology evaluation approaches to support NNSA technology funding evaluation across seven NSE Management & Operations Contractors; and as a special team member, evaluated NSE-wide cost estimation methods and more effective risk-adjusted nuclear stockpile planning approaches, to improve cost and risk management performance as well as respond to GAO criticisms of prior NNSA programs' management. Ian graduated with honors in Economics from Harvard and has an MBA from Dartmouth's Tuck School.

TEWFIK BOUTALEB
LLNL, Integrated Project Team Lead

Tewfik has over 19 years of engineering and management experience on DOE, Telecommunication, Nuclear and Fossil industrial projects. He is currently the Integrated Project Team Lead on multiple ongoing projects at LLNL.

Previously Tewfik was the Engineering Group Supervisor at the Uranium Processing Facility (UPF) Project at Y12, where he played an important role in getting the design completed and managed a very large team of engineers and designers. In Telecommunication, Tewfik held the position of Market Engineering Manager to help AT&T expand their cellular tower network in Northern California. Tewfik was the Six Sigma Black Belt at the 1,600-Megawatt coal-fired Prairie State Energy Campus (PSEC) Power Project, where he streamlined multiple processes and substantially helped improve Construction performance at the job site.

In addition to his management expertise, Tewfik has technical expertise in the areas of structural design; including finite element analysis and seismic design. Tewfik has prepared numerous adequacy stress studies analyses, and calculations on a variety of plant systems and structures both in nuclear and fossil power plants. He has also improved project productivity on multiple disciplines on a $4.0 billion job with over 3,000 craft workforce.

PRESENTERS

PETER J. BRAXTON

Technomics, Subject Matter Expert

Peter has more than 20 years' cost analysis experience. While at Technomics, he has led strategic planning, data collection, cost and risk research, and curriculum development efforts for agency-level clients throughout DOE, DOD, and the intelligence community. He currently supports the Cost Assessment Data Enterprise (CADE) project, performing training, outreach, curriculum review, and contract data analysis. He served as ICEAA's inaugural Vice President for Professional Development, received awards for Service to Society (2013) and Education (2007) and received ICEAA's Educator of Year Award (2019). He has taught extensively in North America, Europe, and Australia.

RICHARD A. CABALLERO

NNSA NA-122, Program Management Analyst

Rich has 28 years' experience working for National Defense and Security contractors. Since 2013 Rich has been a Senior Budget Analyst for NNSA's Office of Stockpile Management (NA-122) as a Leidos contractor. From 1996 to 2010 Rich worked at Los Alamos in program support roles, including a three year Change of Station assignment to NNSA. Prior to 1996 Rich supported other DOD and DOE contracts. He holds a BS in Accounting from Montclair State University and advanced degrees in Russian History from University of Colorado, Boulder (MA) and Brown University (MA).

CORY CARNES

LANL, Student

Cory is a Senior Technical Student working in the Office of Weapons Program Strategy and Integration at Los Alamos National Laboratory. Her current assignment is to analyze the programmatic equipment lifetime expectancy modeling system to support prioritization and investment in equipment recapitalization. By utilizing parametric and non-parametric methods Cory and her colleagues were able to estimate the lifetime for each piece of equipment and compare the actual lifetimes against equipment design lifetimes. Cory will be graduating in December 2019 with a Bachelor of Science degree in Biochemistry from the University of New Mexico.

PHIL CHAMBERLIN

SNL, Principal Member of Technical Staff

Phil is a Principal Member of Technical Staff within the Nuclear Security Enterprise and Cost Analysis Department at Sandia National Laboratories. He has over 20 years of cost estimating and project controls experience within the disciplines of building construction, environmental management, space systems, advanced technology development and nuclear weapons. During his detail assignment to NA-143, NNSA Office of Cost Policy and Analysis he led teams reviewing baseline cost estimates for the B61-12, the W88 ALT370 and participated in cost estimating related policy analysis and requirements development.

PRESENTERS

DEBORAH DALE

CNS Pantex, Estimating Specialist

Deborah is an experienced program and project management specialist with over 14 years working in high functioning project teams. Performing a number of different roles, her focus has been on understanding business and successfully leading transformation programs across all functions.

Deborah's focus is on understanding key business drivers and aligning business requirements to process, system and technology development. A key element in all of her experiences has been data and the need to understand big data to drive business outcomes.

LAURA DRISCOLL

NNSA NA-143 Contractor, Senior Operations Research Analyst

Laura has over 30 years of experience in complex program analysis and evaluation. Since joining NNSA in 2014, she has been instrumental in developing the policies, procedures, and capabilities for performing Analyses of Alternatives (AoAs) for capital acquisition programs in Defense Programs. She led the Plutonium Pit Production AoA, and was the lead analyst on several others. As an Operations Research Analyst for OSD/CAPE, the Institute for Defense Analyses, the Naval Postgraduate School, and RAND, she led many high visibility independent studies, Issue Teams, Strategic Portfolio Reviews, and Front End Assessments. Laura received her PhD in Operations Research from UCLA in 2000.

MICHAEL C. EMMONS
LLNL, W80-4 Warhead Assessments Leads

Michael is on LLNL's W80-4 Engineering team serving as the Warhead Assessments Lead. He oversees the body of engineering tests and analyses that will be used for design qualification and system certification. In addition to his technical role, he is the Control Account Manager for system-level engineering tests and analysis, Production Agency hardware procurements, and Joint Test Assembly development. In his seven years at LLNL, he has run large scale tests and led a research and development portfolio on utilizing embedded sensors in the stockpile. He received his BS, MS, and PhD in Mechanical Engineering from UCLA.

ROBERT FATZINGER
NNSA NA-143 Contractor, Subject Matter Expert

Robert is a skilled program manager and cost estimator bringing a unique combination of Federal Acquisition experience from both government and industry. He maintains active certifications as a Certified Estimating Professional (CEP) and Project Management Professional (PMP®), and is a licensed Certified Public Accountant (CPA) in Virginia. Robert currently supports NA-14 in the deployment of financial analysis systems and development of cost, schedule, and risk analysis. His industry experience includes direct participation in DHS major acquisition programs, major acquisitions in the Intelligence Community, and U.S. Navy nuclear shipbuilding and repair. He is the former (contractor) Program Manager of TSA's $500M Passenger Screening Program (PSP) Integrated Logistics Support (ILS) contract. Robert previously served on the CIA's OIG audit team assigned to independently review the cost schedule and technical performance of large classified acquisition programs, and worked in planning, scheduling, and material supply on the first two Nimitz Class Aircraft Carrier refueling and complex overhaul (RCOH) contracts at Newport News Shipbuilding.

PRESENTERS

CASH FITZPATRICK

NNSA NA-143 Contractor, Senior Cost Analyst

Cash is a senior cost analyst contractor supporting the Office of Cost Policy and Analysis (NA-143) since 2014 over a range of analytical and policy areas. He previously worked for DOE renewable program and site offices, and began his federal service career with the Office of Cost Analysis for the CFO in 2010. He holds bachelor and master degrees in environmental engineering from Cal Poly and Massachusetts Institute of Technology respectively, and lives in the Washington, DC., area.

FANA GEBEYEHU-HOUSTON

NNSA NA-143, Director of Office of Cost Policy and Analysis

Fana has spent her federal career implementing transparency and program management initiatives for the federal government. Most recently, she established an independent cost estimating and analysis organization for the United States nuclear weapons program that has received recognition for transparency and effectiveness from our nation's National Laboratories, the Deputy Administrator for Defense Programs, the Office of Management and Budget, and the Government Accountability Office. Her office's technical approach to long-range forecasting of nuclear stockpile costs headlined the September/October 2016 Cost Engineering Journal of the Association for the Advancement of Cost Engineering. Fana lives, works, and rows in the District of Columbia with her husband and three children.

RYAN HORN

Technomics, Lead Analyst

Ryan is a Lead Analyst at Technomics, Inc., in Arlington, Virginia, where he specializes in cost estimation training and other pedagogical efforts for Cost Analysts within the Department of Defense, Department of Homeland Security, and other departments. He previously served as an Implementation/ Training Consultant in the Healthcare IT industry and also served as a Financial Auditor at a Big 4 CPA firm. Ryan holds an MS in Marketing and a BS in Accounting and Information Systems from Virginia Tech.

CRAIG R. JOHNSON

SRS, Reservoir Assurance Engineering Manager

Craig is the Reservoir Assurance Engineering Manager at the Savannah River Site Tritium Facility in Aiken, South Carolina, USA. He has a BS in Chemical Engineering from the Colorado School of Mines. He has held positions of increasing responsibility in engineering, manufacturing operations, waste management, nuclear safety, program management, risk management, and supply chain management. As a Risk Manager, Craig's experience includes Enterprise Risk Management, Business Continuity, and Supply Chain Risk Management. He holds the Risk Management Society – Certified Risk Management Professional credential and the RIMS-CRMP-Federal micro-credential.

TERRY JOSSERAND

SNL, Principal Nuclear Security Enterprise Analyst

Over the past ten years, Terry has been involved in developing and reviewing estimates and analyses for nuclear weapon systems, secure transportation assets, satellite programs, and many other national security efforts.

PRESENTERS

KATHLEEN E. LANE

SNL, Detailee to NNSA NA-143

Kathy's first job after graduating from the University of California, Irvine was in a Project Controls department and she has incorporated Project Management principles into her work ever since; supporting government, civil, and private industry projects. Throughout her career Kathy has consulted on project management, defining policy and procedures for project management information systems by determining requirements, implementing software, training on project management process and software and providing expertise on project management software such as Microsoft Project and Primavera (P6).

Kathy holds the Project Management Professional certification from PMI and the Earned Value Professional certification from AACE International.

KAYEE LEUNG

NNSA NA-143 Contractor, Senior Analyst

Kayee has over 10 years of experience in project management, process improvement, policy definition and analysis for various government agencies, including the DLA, OSD, OCDMO, USDA, OSD CAPE, and DOE NNSA. She is currently a project manager contractor with NA-143 Office of Cost Policy and Analysis providing programmatic and operational support to a portfolio of Analysis of Alternatives worth over $20 billion in capital acquisition and the development of the NNSA Defense Program's 25 Year Infrastructure Capital Acquisition portfolio.

Kayee holds a PMP certification from the PMI, CSCP certification from APICS, and DOE Lean Six Sigma Greenbelt certification. Prior to Technomics, she worked as an Operations and Supply Chain Management Senior Consultant at IBM Corporation.

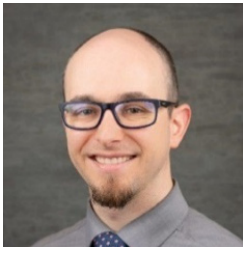
ANDREW MASTIN
LLNL, Analyst

Andrew is an Operations Research Scientist at Lawrence Livermore National Laboratory. He has participated in a variety of EMAC projects involving stockpile diversity, production scheduling, and risk analysis. His current projects are focused on decision theory and process optimization. He holds a PhD in Electrical Engineering and Computer Science from MIT.

ANN D. McCONNELL
LLNL, Computer Scientist; EDADS Specialist

Ann has been a Computer Scientist at LLNL for over 24 years. She has specialized in developing web-based software tools to support the laboratory's mission and has extensive experience in software life-cycle development, process improvement, and project management. Prior to her work at LLNL, she developed real-time control systems for the Navy, graphical user interfaces for the Air Force, and custom software for commercial businesses.

PRESENTERS



M. MICHAEL METCALF

NNSA NA-1.3 Contractor, Project Manager

Michael has been a cost estimator at Technomics Inc., for over nine years. He has worked with clients within DOD, NNSA, DOE, and DHS and has performed data collection, LCCEs, and ICEs on programs ranging from $50M to $100B. Prior to Technomics, Mike worked at the Institute for Defense Analyses.

CAROL MEYERS

LLNL, Associate Program Leader for Nuclear Weapons Enterprise Evaluation and Planning

Carol is a mathematician at Lawrence Livermore National Laboratory. She manages a suite of efforts in nuclear enterprise modeling, including stockpile, workforce, infrastructure, and cost models. She previously led the LLNL W80-4 Weapon Design and Cost Report effort, and she has been a site representative to the NNSA Cost Estimation Analysis Group (CEAG) since 2016. She currently engages with the W80-4 and W87-1 programs on cost analysis, benefits modeling, and program planning.

CHRISTOPHER (CHRIS) NESBIT

SNL, Site Strategic Partnership Planner

Chris is a licensed architect with 25+ years of experience in institutional, commercial, and government facility planning, design, construction, and occupancy subject matters. The last 15 years of his career have been focused predominantly on the science, technology, research, and development building typologies and campuses. Chris has been with Sandia National Laboratories for approximately six years as a Partnership Planner in the Facilities Department to assist with the planning, programming, and budgeting of future capital acquisition projects.

MICHELLE OAKES

KCNSC, Operation Excellence Program Manager

Michelle has a Bachelor of Science in Psychology, Master's Degree in Organization Development, Green Belt, and PMP Certification. She has worked for Honeywell FM&T for 16 years, 11 of those years spent working on complex program and project management assignments with an emphasis in weapons programs, earn value management, and IT project delivery. She is currently responsible for managing the PMO Operational Excellence team that is responsible for developing best practices in program management, project management, risk management, cost estimating, and baseline change. She was also the B61-12 LEP risk manager for 2 years and is currently responsible for developing, executing, and training on the schedule and cost risk analysis process for the B61-12 LEP, W88ALT, MK21, and W80-4.

PRESENTERS

BRIAN OCTEAU

NNSA NA-1.3 Contractor, Project Manager

Brian is a senior member of Technomics' management team with more than 25 years of experience leading cost research, analysis, and estimation in support of technologically complex programs and engineering projects. His analytical experience spans database development, estimating methodology development, lifecycle modeling, risk and uncertainty analysis, and earned value management. Brian has presented his work at conferences, instructed cost analysis courses, and served as an expert witness for U.S. House and Senate Committees and the National Academy of Sciences.

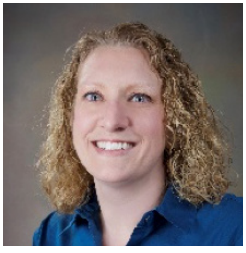
JOHN PANTANO

LANL, Senior Analyst

John is a Statistical Analyst for the Weapons Program Strategy and Integration Program Office. His current work involves analysis and modeling of support systems (infrastructure, equipment, human resources, and financial), capability modeling, database development to quantify and analyze capabilities, and equipment reliability analysis. In addition to the 19 years of analysis within the DOE complex, he has taught mathematics and statistics at the college level for over 23 years.

TONY COLBURN
Eos Group, Inc., Senior Consultant

Tony is a senior consultant at Eos Group, a preconstruction professional services firm and technical solution provider. For 18 years he has been helping companies in the AEC/O industry implement cost estimating technologies so they can work more efficiently. He works closely with his clients and the internal Eos development team to create better solutions for process optimization along with developing software for benchmarking and predictive analytics. With over 1,000 successful integrations by developing award-winning and industry-leading commercial software applications and knowledgebases, Eos has become a trusted advisor to the largest AEC/O firms in the world and has worked with many of ENR's top 400 firms, Fortune 1,000 companies, and U.S. Federal Agencies.



JONELL N. SAMBERSON
SNL, Principal Member of Technical Staff, R&D S&E Systems Engineering

Jonell is a Principal Member of the Technical staff within the Nuclear Security Enterprise and Cost Analysis Department at Sandia National Laboratories (SNL). For the past six years, she has assisted key stakeholders with their decisions in the areas of: strategic nuclear weapon stockpile planning, cost analysis and estimating, tritium and special commodities, and nuclear security enterprise wide planning. Jonell is an active member of several groups at SNL and the Military Operations Research Society (MORS). She has a PhD in Analytical Chemistry from Purdue University and a BS in Chemistry from the University of Illinois at Urbana-Champaign.

PRESENTERS

HARLAN "HAL" SWYERS

NNSA NA-1.3, Operations Research Analyst

Hal currently works in NNSA's Office of Cost Estimating and Program Evaluation (CEPE) on the federal staff and is a Certified Cost Estimator/Analyst (CCEA). He is a veteran of the United States Navy where he qualified as a nuclear propulsion trained Surface Warfare Officer [SWO(N)] and deployed multiple times while serving as a division officer onboard the USS Valley Forge (CG-50) and USS Dwight D. Eisenhower (CVN-69). Prior to coming to NNSA, he was a federal civilian working for Headquarters Marine Corps (HQMC), Program Analysis and Evaluation (PA&E) as an Operations Research Analyst/Cost Analyst. In addition to his federal service, he spent over a decade working for a private defense contractor providing support for multiple DOD organizations. Hal holds a Masters of Business Administration (MBA) from University of Maryland University College (UMUC), a Master of Science (MS) in Environmental Management from UMUC, which is recognized as a Professional Science Master's (PSM) degree, and a Bachelor of Science in Mechanical Engineering from Marquette University. He is married and has two children.

STEVEN W. WAGEMAN

SNL, Project Manager

Steve possesses nearly 40 years of management experience, and has consulted to many different organizations and industries such as the Department of Energy, Boeing, and the U.S. Army Corps of Engineers. He previously served as the Risk Engineering Program Manager for the transit authority in Seattle, WA, where he was responsible for risk management and analysis on a $72B portfolio of capital projects. Steve is currently working on risk teams for several large national defense programs at Sandia National Laboratories. He is a Certified Cost Professional (CCP), Certified Estimating Professional (CEP), Earned Value Professional (EVP), and Planning and Scheduling Professional (PSP) through AACE International, a Project Management Professional and Risk Management Professional through the Project Management Institute, and a Certified Professional Classroom Trainer through CompTIA. Steve was previously an Authorized Primavera Instructor through Oracle Corporation, and is also a graduate of the Stanford University Strategic Decision and Risk Management Certificate Program.

JENNIFER WARD
NNSA NA-143, Physical Scientist

Jennifer currently works as a program analyst in NNSA's Office of Cost Policy and Analysis, where she has specialized in analyses of alternatives for large capital acquisition projects. She completed her undergraduate degree from Indiana University of Pennsylvania and her PhD in chemistry from Georgia Institute of Technology.

DAVID ZIMMERMAN
CNS Y-12, Advisor to Enterprise Estimating

David is currently Advisor to Enterprise Estimating for Consolidated Nuclear Security (CNS), Detailee to NA 143, the Office of Cost Policy and Analysis, and he provides data integration and analysis to the Federal Program Managers for weapons systems at the NNSA Albuquerque Site Office.

His career has been centered on estimating and cost engineering. He has worked for the U.S. Department of Agriculture, the U.S. Air Force, the Tennessee Valley Authority, and since 1989 as a subcontractor to DOE and NNSA in Oak Ridge, Tennessee.

In his 30 years in cost estimating in Oak Ridge he has been on the project side supporting Line Item and General Plant Projects and most recently on the program side supporting the weapons programs. His focus has evolved into data integration and analysis, estimating software, and risk and uncertainty integration and analysis.

David is originally from Spring City, Tennessee, and currently lives in Oak Ridge.

LIST OF ACRONYMS

AACE	Association for the Advancement of Cost Engineering
AC	Actual Cost
ADS	Activity Data Sheet (EPAT)
AFP	Approved Funding Program
AHJ	Authority Having Jurisdiction
AI	Artificial Intelligence
AoA	Analysis of Alternatives
ARM	Active Risk Manager
BBA	Bipartisan Budget Act of FY 2013/2015/2018
BCR	Baseline Cost Report
BOE	Basis of Estimate
BOP	Business Operating Policy
CAM	Control Account Manager
CDC	Centers for Disease Control
CEG	Cost Execution Guidance
CEPE	Cost Estimation and Program Evaluation
CER	Cost Estimating Relationship
CFO	Chief Financial Officer
CMM	Capability Maturity Model
COTS	Commercial Off The Shelf
CR	Continuing Resolution
CRA	Cost Risk Analysis
CUA	Cost Uncertainty Analysis
CURA	Cost Uncertainty and Risk Analysis
DA	Design Agency
DBOT	Downblending Option for Tritium

DPBPS	Defense Programs Business Process System
DS	Decision Support
EAC	Estimate at Completion (also known as Total Cost)
EOC	Elements of Cost
EPAT	Enterprise Portfolio and Analysis Tool
EPIC-R	Engineering Program Internal Change – Request
ES&H	Environment, Safety and Health
ETC	Estimate to Complete (also known as Remaining Cost)
EU	Enriched Uranium
EVM	Earned Value Management
EVT	Earned Value Type
FAR	Federal Acquisition Regulation
FPM	Federal Program Manager
FPO	Federal Program Office
FY	Fiscal Year
FYNSP	Future Years Nuclear Security Program
GAO	Government Accountability Office
GOCO	Government owned, Contractor operated (Facilities)
GWBS	Government Work Breakdown Structure
HALEU	High Assay Low Enriched Uranium
HEU	Highly Enriched Uranium
IBR	Integrated Baseline Review
IC	Integrated Contractors
ICE	Independent Cost Estimate
IFMS	Integrated Financial Management System
IP	Implementation Plans

LIST OF ACRONYMS CONTINUED

IPL	Integrated Priority Lists
LCCE	Life Cycle Cost Estimate
LEU	Low Enriched Uranium
LOE	Level of Effort
ML	Machine Learning
MTS	Machine Tool Services
MTU	Metric Tons Uranium
NA-MB	NNSA Office of Management and Budget
NDAA	National Defense Authorization Act
NFS	Nuclear Fuel Services
NR	Naval Reactors
NVA	Non Value Add
NWBS	National Work Breakdown Structure
NWC	Nuclear Weapons Council
NYSE	New York Stock Exchange
O&S	Operating and Support
OCL	Obligational Control Level
OMB	Office of Management and Budget
P&PD	Planning and Programming Directive
PA	Production Agency
PDM	Program Decision Memorandum
PE	Project Engineer
PM	Program Management
PMB	Program Management Baseline
PMO	Program Management Office
PPBE	Planning, Programming, Budgeting and Evaluation
PPFG	Planning, Programming and Fiscal Guidance

PRT	Product Realization Team
PWS	Performance Work Statement
QRA	Quantitative Risk Analysis
R&D	Research and Development
RBA	Risk & Benefit Analysis
REU	Repurposed Excess Uranium
RFP	Request for Proposal
RIMS	The Risk Management Society
RIMS-CRMP	RIMS Certified Risk Management Professional
ROTs	Requirements over Target (aka Unfunded Requirements)
SA	Summary Account
SCURA	Schedule and Cost Uncertainty and Risk Analysis
SGA	Strategic Gap Analysis
SME	Subject Matter Expert
SOW	Statement of Work
TAC	Total Available to Cost (or New Budget Authority plus prior year Uncosted Obligations)
TCMF	Total Cost Management Framework
TOC	Total Ownership Cost
TRA	Technology Readiness Assessment
TVA	Tennessee Valley Authority
USAF	United States Air Force
USN	United States Navy
VOC	Voice of Customer
WA	Work Authorizations
WBS	Work Breakdown Structure
WDCR	Weapon Design and Cost Report

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ANNOUNCEMENTS

EVENING SOCIAL

Please join us for a Networking Social
in Historic Downtown Livermore at
The Aviation Rooftop Bar & Kitchen
2470 First St. 3rd Floor
from 5pm to 7pm
https://www.aviationlivermore.com/

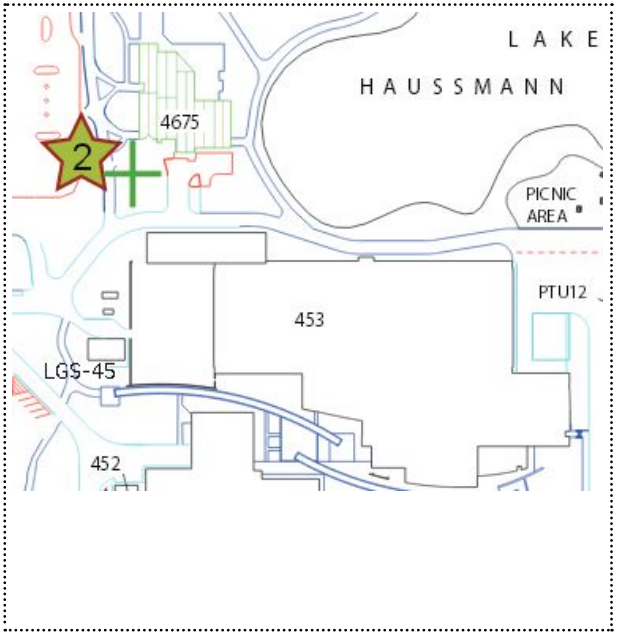
CECOP SYMPOSIUM 2020

August 4–5, 2020, at Sandia National Laboratories in Albuquerque, NM

For Rescue or Medical Response

Call 911 (925-447-6880 from a cell phone) and provide the following information:

- Type of emergency
- Location of the victim
- Condition of the victim
- Any dangerous conditions
- Do not move the individual unless authorized by a medical authority, or it is obvious that delay in movement would be detrimental



Shelter in Place

Notification to Shelter-In-Place will be made by Fire Dispatch, using the Emergency Voice Alarm (EVA) System; or by uniformed Fire Department or Protective Force Officers. Notification announcements will identify whether the threat is hazardous materials or a security concern.

If directed to do so, all facility occupants shall proceed to the following safe gathering points within the facility.
Location 1: 2nd Floor Northwest Hallway
Location 2: 1st Floor 1130 Loading/Staging Area

Further Information

Fire Department Dispatch (Non-Emergency): 925-422-7595
Protective Services Operations: 925-422-7222
Public Affairs Employee Notification: 925-424-LLNL
Emergency Programs Office: 925-424-6045

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U.S. DEPARTMENT OF ENERGY

National Nuclear Security Administration

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COST ESTIMATING ANALYSIS GROUP