Early Design Software Cost Estimating— Demystifying the Process—p. 10



### Spring 2010 Vol. 29 No. 2

# PARAMETRIC WORLD

A Newsletter of The International Society of Parametric Analysts

### **INSIDE THIS ISSUE**

Chairman's Address
European Perspectives4
ISPA Historian Report5
2010 ISPA Board Elections6
Professional Award Nominations6
Jointness Committee Update6
Membership Report7
Ask a Parametrician – Q&A 8
Secretary's Report9
Conference and Training Workshop Speakers' Program15
Certified Parametric Practitioner (CPP) Exam15
2010 ISPA/SCEA Conference and Training Workshop16
Chapter News20
Calendar of Events22

# 2010 ISPA/SCEA Conference San Diego, California



### **PARAMETRIC WORLD**

ISSN 1072-3803

Editor	
Nina Tahir	
Email: NinaTahir@aol.com	
310-820-7756	
Chair, Board of Directors	
Jason Dechoretz	
jdechore@mcri.com	
Deputy Chair	
Andy Prince	
andy.prince@nasa.gov	
Secretary	
Greg Kiviat	203-386-7274
gkiviat@sikorsky.com	
Treasurer	
Bruce Minett	
bruce.h.minett@boeing.com	
Executive Manager	
Tom Coonce	
tom.coonce-1@nasa.gov	
Directors	
Arthur Griffiths	44-1256-338-383
arthurgriffiths@das-ltd.co.uk	
Rich Harwin	
richard.a.harwin@boeing.com	
Hervé Joumier	
herve.joumier@esa.int	
Andv Nicholls	.44 (0) 117-913-4219
Andy.Nicholls400@mod.uk	
Steve Sterk	
steve.a.sterk@nasa.gov	
George Stratton	520-545-6031
gstratton@ravtheon.com	
Devementaria World Chair	
Parametric world Chair	

#### **ISPA/SCEA** Joint International Office

527 Maple Avenue East, Suite 301 Vienna, VA 22180 Phone: (703) 938-5090 Fax: (703) 938-5091 Web: www.ispa-cost.org

PARAMETRIC WORLD NEWSLETTER, published by ISPA, is copyrighted in its entirety. Send editorial material to Nina Tahir, Editor. Email: NinaTahir@aol.com

### **ADVERTISING RATES**

Ad SizeRate per Issue\*1/4 page\$1501/2 page\$225Full page\$400

\*Members in good standing receive a 15% discount. Contact Nina Tahir for details.

### LETTER FROM YOUR EDITOR

#### BY NINA TAHIR



To kick off their first workshop of 2010 the ISPA & SCEA Southern California Chapters and our gracious and hard-working host Ann Fisher of Lockheed Martin Aeronautics Company put on a very successful

March 17 workshop. We didn't have green frosted donuts in honor of St. Paddy's Day, but we were spoiled rotten none-the-less. Read about the program and more in Chapter News.

Chairman of the ISPA Board **Jason Dechoretz** reports on his successful meeting with DACE and exciting news which I won't give away but it's in his Chair's Address.

I don't know about you, but I'm getting excited about San Diego. Before we know it, it will be conference time. Helpful information about the host hotel, transportation, and our keynote speakers is featured in the conference update by **Doug Druley**.

And we have a fantastic drawing prize for ISPA members at the conference — the *Apple iPod Touch MP3 Player*. Be sure your membership is paid up so that **Steve Sterk**, our Membership Chair, can put your name in the hat.

Despite her busy schedule **Sherry Stukes** of The Jet Propulsion Laboratory/California Institute of Technology and the VP of ISPA's Southern California Chapter, wrote a paper especially for *PW* on *Early Design Software Cost Estimation and Demystifying the Process*. Per Sherry, "This article provides an easy to apply process with guidance and lessons learned in generating software development cost estimates. Tips on where and how to obtain data are also offered."

Also in this issue **Joe Hamaker**, Editor of *Ask a Parametrician* — *Q&A*, along with his cache of experts in the field, share their views on the question "Does history support significant savings during DDT&E, *Production, or Operations, when technology projects precede DDT&E?*"

**Roy Smoker**, Chair of our *CPP Certification program*, has information in his column about the exam questions and other important details about test preparation.

**Madeline Ellis**, *PW* Chair, and I are very grateful for the support of our authors and wish to thank them for their articles and enthusiasm for what we do.

See you in San Diego. Bring sunscreen!

Kina Tahir Editor

### **CHAIRMAN'S ADDRESS**

By JASON DECHORETZ

#### Fellow ISPA Members,

es it is that time of year again. Spring is HERE! So that means it is time to gear up and make the final arrangements for our annual *Joint Conference and Training Workshop*. I've met with the Co-Chairs (Messrs. Doug Druley and Mike Thompson)

and they have outlined a very robust set of technical and training presentations. For those of you who have been fortunate enough to attend in the past, be forewarned! This year the training material has been revamped to reflect the latest developments in our industry's state of the art (as captured in the Parametric Estimating Handbook-PEH) and reflect the improvements made to the Cost Estimating Body of Knowledge (CEBoK). We have made great strides to make the training material from ISPA and SCEA more integrated and complementary. As a result there will be strong competition from attendees for the new training tracks. To help accommodate this we will continue with the tradition of a training only Tuesday and will have a "2nd showing" of what we expect to be the most popular technical presentations. In addition, we have broadened the spectrum of Key Note Speakers to give you a richer perspective on our industry and the government/ contractor environment in which we operate. Our venue for 2010 is one of our most popular — San Diego:

- San Diego's airport has many direct flights (several from discount air carriers) and is reachable by car by a large number of our members in the Southern California region,
- The hotel is located very close to the airport and has a FREE shuttle which makes car rentals unnecessary, and
- A discounted group rate is still available to make this a collaborative experience with your colleagues.

So please see Doug's article and visit the ISPA website for more details. A link is also provided on our website for the conference and hotel registration websites.

Per our normal practice the Board of Directors held a winter meeting and here are the highlights (additional details are available in dedicated articles in this edition of PW):

**European Liaison:** We reviewed the opportunity and benefit of setting up formal affiliation with the Dutch Association of Cost Engineers. There appeared to be a number of positive aspects for both societies and we entered into a Memorandum of Understanding which enables the members of each society to achieve these benefits. To that end both Societies have laid plans to establish a Special Interest Group which if successful will represent a Benelux ISPA Chapter. The relationship with DACE and the SIG is led by ISPA's Mr. René Berghuijs.

**Elections and Awards:** Mr. Rich Harwin continues to guide us through the formal Board of Directors Election process which recently closed nominations. The ballots have been sent out (by the time PW goes to press) so if you did not get one please contact the Joint Business Office. Rich really beat the bushes and we have more nominees than open positions which was one of the Board's goals for this year. Mr. Hank Apgar is likewise canvassing the membership to discover whose efforts warrant the formal recognition of the Society's Awards. May 15 is the deadline for nominations.

**Website:** We have finished the creation and re-hosting of YOUR website. The URL remains the same (www.ispa-cost. org) so give it a test drive and send in your comments. In the near future we will be adding functionality (on-line membership renewal and updates) and member's only resource material (historical PW and Journals). Many thanks to Mr. Steve Sterk for his leadership and efforts on this important resource to the members of ISPA.

A couple of other items to note: As always Ms. Nina Tahir (your *PW* Editor) and Dr. Stephen Book (your *JCAP* Editor) are always looking for written contributions from you and if you have any ideas for improvement please forward them along. By the time you receive this newsletter, the Southern California Chapter will have recently held its local meeting and plans are underway for a Southwest Chapter workshop. The Presidents, Mr. Kurt Brunner and Mr. Corey Hutchinson (respectively) are making these fantastic venues for networking and catching a couple of technical presentations, so I encourage you to participate in the next set.

I look forward to seeing you in San Diego — please hunt me down and let me know what you like about ISPA but more importantly what improvements you would like to see made. As always you can reach me at the contact information below.

Aason Dechoretz

ISPA CHAIRMAN OF THE BOARD jdechore@mcri.com 703-506-4600 x0322

### EUROPEAN PERSPECTIVES

### Notes from René Berghuijs — Brussels, Belgium



urope had an unusually long winter, but finally spring has arrived. It was still cold on March 4 when we drove to the seminar on Parametric Analysis in Soest, the Netherlands, where about 50 people from the Benelux gathered for the

following presentations:

**Dale Shermon**, the Freiman Award winner in 2009, opened with *"Parametric Cost Estimating – what is it and how is it useful to you?"* He compared different estimating methodologies and then zoomed in on the parametric cost model.

Next came Jason Dechoretz, our ISPA chairman, with "How to Develop Cost Estimating Relationships." He outlined the general steps to generate a parametric CER and showed applications for CERs.

After the break **Marcel Smit** from TNO discussed the application of parametric analysis in the Netherlands. He is working on cost estimates for large, multi-role ships (Landing Platform Docks) and showed the method for converting the data into CERs.

The last presentation was titled "Space industry versus Process industry: differences and similarities in parametric analysis," which was given by Michel van Pelt from ESA and Bram Voslamber from Shell. They found out while working on this presentation that there are many similarities in their respective industries and that the gap is closing.



Arno Rol (DACE) and Jason Dechoretz (ISPA)

At the end of the afternoon a Memorandum of Understanding was signed between DACE and ISPA and a vote to form a Special Interest Group on Parametric Analysis was positively answered. Feedback indicates that this initiative is fully supported by the cost community in the Benelux, and we will now have an ISPA Benelux Chapter! The kick-off meeting will be at the end of April. Looking forward to seeing you all in San Diego!

### **Réne Berghuijs**

NATO Air Command and Control System (ACCS) Management Agency

### **Notes from Arthur Griffiths** — *The UK*



Spring has arrived, the daffodils are blooming and the temperature has noticeably risen. Just as we started to believe that the bleak winter had gone, back came the snow and with it the power cuts and traffic chaos. However, we are now in mid April and I am writing this in my garden where the temperature is in the low

70s and the sun is gratefully shining. The decorators are in and we are all looking forward to summer.

The UK Prime Minister last week announced the worst kept secret of the year by calling a general election on May 6. All the mums with schoolchildren had been told several months ago that the schools would be closed for a polling day (May 6). In terms of public sector programmes this timeframe begins a period of "no decisions." Of course much study work continues but contracts get delayed and things will not return to normal until at least 6 weeks after the election.

We already know that all Government Departments will be required to take a strategic look at their future requirements and out forward budgetary proposals within the expected sweeping financial constraints. One of the exceptions appears to be the Ministry of Defence's internal Cost Assurance and Analysis Services (CAAS) organisation that provide estimating and accountancy advice to the integrated project teams for budgeting and pricing of future defence programmes. CAAS has attracted some strong criticism in recent audit reports and earlier this year the Minister for Business (Lord Drayson) announced a £45m (\$72m) investment for improvement and growth in this area. Much of the investment is set aside for staff increase but some £10m (\$16m) has been ring fenced for improvement in training, tools and skills with an objective to provide a more comprehensive and accurate cost estimating service.

The last couple of years have already seen CAAS staff participate in training courses to gain CPP and CE/A certification. This is just the start. There are ambitious plans for improvement to be implemented over the next 3-5 years and this will hopefully place the organisation back at the forefront of costing innovation as well as stature within the Ministry of Defence. This can only be good for everyone in the business and should be applauded particularly during this immediate period of financial constraint. Of further benefit to the costing community as a whole is the old adage that suppliers usually duplicate up to meet the customer requirements and expectation. It is without doubt that contractor support will be required and proposals are already being considered. This can only be good for the Society and closer links should be encouraged.

#### **Arthur Griffiths**

Decision Analysis Services Ltd.

# Who was Keith Burbridge?

By Hank Apgar, ISPA Historian

### This is one of a continuing series of PW articles about our legacy and the people who shaped it.

eith Burbridge was an ISPA founder in 1978 and our first Treasurer. He continued to serve the ISPA Board of Directors in several positions, including our Support Contractor, until his death in 1996. Keith helped shape the structure of our society by writing our first charter and our by-laws. He set up our tax structure and prepared our legal documents. He was our Parliamentarian. For each of us on the first ISPA Board of Directors, many of whom had not previously served on any board, Keith provided a leather-bound copy of *Robert's Rules of Order*.

You may know of Keith by the *Keith Burbridge Service Award*, which is presented to a Society Member or group that has provided substantial volunteer service to ISPA in a manner supporting the principles and goals of the Society. This award was renamed in 1996 to honor Keith Burbridge and has been presented 24 times — 15 times since the name change.

**Charlie Hopkins** remembered his days at Lockheed Sunnyvale, working with Keith. *"I first met Keith when our team presented a study briefing at Edwards AFB. Keith had presented a lucid introduction to space systems reliability. Later, when I went to work for the new cost modeling office and we were looking for competent technical help, I thought of Keith and we hired him.* 

Keith and I were the only folks doing parametric estimating in our organization. However, our boss saw in Keith another special skill, organizing a group of cost engineers to keep up with what our customers and our competitors were doing in the field of space systems cost analysis. Keith called a meeting at Lockheed in 1977 and invited everyone we knew in the space systems and related businesses. Then, in 1978, the Air Force hosted a charter meeting of the organization known as the Space Systems Cost Analysis Group (SSCAG). Keith was installed as Secretary, a post he held for 19 years."

This year, SSCAG will mark its 100th meeting and it will be an occasion to remember our trusted friend.

Keith founded BFH Parametrics, with Charlie Hopkins and Tom Fenton, after retiring from Lockheed in 1980.

In the 1983 SSCAG Yearbook, Henry Keith Burbridge was identified as CEO of BFH Parametrics, whose responsibility was "to operate and manage a consortium of consultants, engaged in the provision of system and cost analysis services using mathematical models." I was fortunate to be one of Keith's consultants at a time when parametric estimators were the "wonder kids" of proposal and estimating teams. I marveled at his consistent ability to visually inspect a mechanical object and then, without benefit of tables or calculator, precisely proclaim its PRICE MCPLXS descriptor.

Keith is also known for his 1984 treatise on the historic origins of parametric applications, "A Touch of History." The many vignettes describe how ancient Greeks, Romans, and other ancients applied CERs to predict costs of ships, bridges, and other public works. Keith was a writer and a poet.

In his native England, Keith served during WWII as a pilot, flying Lancaster bombers across Europe. He was shot down more than once. Later in the war, he became commandant for a German POW camp in England. Keith kept in touch with many former POWs after the war. He earned a BSEE degree in 1941 from London University and, by 1983, had completed the academic requirements for his PhD from the London School of Economics.

Keith, we miss your British humor and your American "can do" spirit.



### 2010 ISPA BOARD ELECTIONS

he nomination period for the ISPA 2010 International Board of Directors Elections has now closed. The candidates' biographies and pictures will be posted on the ISPA website (www.ispa-cost.org/elections.htm). Additional election information may also be found there. The candidates are:

#### For Treasurer:

Bruce Minett (incumbent)

### For Board of Directors:

Andy Prince (incumbent) Greg Kiviat (incumbent) Arthur Griffiths (incumbent) George Stratton (incumbent) Madeline Ellis (new candidate) Kurt Brunner (new candidate) Mark Schankman (new candidate)

### The ISPA International Board Elections Committee:

Rich Harwin (Chair) Doug Howarth Erick Canche

ISPA Members may vote for up to five (5) candidates for the Board and one (1) for Treasurer by mail or in person at the ISPA/SCEA Joint Conference. A postage paid envelope will be sent out with the ballots to facilitate voting by mail.

The Elections Committee is following our established schedule for conducting the 2010 elections:

# **Ballot Distribution by mail** 30 April 2010

#### *Voting Period Closes* 3 June 2010 by mail

(Must be received no later than this date)

9 June 2010 at 12:00 noon if voting at the conference

### *Newly Elected Board Members* will be announced 10 June 2010 (at the ISPA/SCEA Awards Banquet).



The Elections Committee looks forward to your participation in this election!

**Rich Harwin, Chair** 2010 ISPA Elections Committee richard.a.harwin@boeing.com (562) 797-3869 or fax (562) 797-5618

# Professional Award Nominations

The 2010 ISPA Professional Society Awards Committee has received several nominations for the Service, Parametrician, and Freiman Awards. The committee will meet during the San Diego conference and the award winners will be announced at the banquet. Cut-off date for new nominations is May 15.

### Henry Apgar

2010 ISPA Professional Awards Committee Chair hapgar@mcri.com (805) 402-4132

### **Jointness Committee Update**

ur Joint Journal editors reported they are ready to publish our Winter–Spring 2010 issue of JCAP which should be received by members before the June conference. A second issue, the Summer — Fall 2010 issue, will be received closer to the end of the year. Publishing only two issues per year became necessary due to the limited availability of quality articles robust enough to pass the referee process.

Efforts continue on behalf of selecting and negotiating with a commercial publisher, to manage the journal process effective with the 2011 season. The Joint Journal Publications Prospectus has been sent to ten publishing candidates.

### Hank Apgar

*Member* — *ISPA/SCEA Jointness Committee* hapgar@mcri.com



# iPod Drawing for ISPA Members at Conference Banquet — San Diego

BY STEVE STERK

f you feel left out because your kids or friends are the proud owners of a slick iPod but sadly, you are still listening to elevator music, do we have exciting news for you. We will once again have a drawing at the conference and the prize will be an *iPod Touch MP3 Player*! The catch is you have to be a paid up member to participate in the drawing. Be sure to stop by the ISPA table at the conference to get the details. Don't miss out on the opportunity to win this great gift.

ISPA remains healthy despite hard economic times and our membership continues to grow. Below is a list of 51 members who signed up between March 2009 to March 2010. If you meet them at workshops or conferences, please welcome them to our community:



Bopha Seng Dominique Arnal Gunnar Gross Tracey Clavell Sheree Hancock Christopher Adams Reyna Alfaro-Joya John Aynes **Ryan Bagley** Brittney Bench Debra Boler Anthony Caldwell Karla Cervantes **David Charles** Marcos Chu Jaime Dieckhaus Amber Foster Nancy Graham Samantha Hirai Larry LaPlante Ly Layser Keith McCallister Trent Nielsen Francisco Renteria Kimberly Schenken Angela Whittaker Robert Hunt Ann Fisher **Rick Garcia** Lee Smith William Jarvis Alexander Ante Jami Levy Janis Yee Steven Ikeler \* Robert Burns Dale Shermon\* Jonathan Laurie

LA Air Force Base AIRBUS AIRBUS **BAE Sys. Australia BAE Sys. Australia** Boeing EDS Galorath Inc. Lockheed Martin MCR LLC MCR LLC NASA HO NGIA Northrop Grumman Northrop Grumman **ODASA-CE** Patriot Machine PRICE Systems **PW Rocketdyne** 

Roderick Evans Willie Hamer Paul Killingsworth Eric Sommer Hoyt Sumerel Duncan Tovar Heidi Rose Mitchell Bostelman William Christie Dave Chaitali William Latshaw Kate Styers Mark Bruce Qualis/TEAS AFMC AAC/XR SMC/FMC SMC/FMC Sumerel Consulting U.S. Army SMD Wyle Laboratories Inc.

\* Life Time Member

For those of you whose ISPA certification (CPP) is up for renewal, please see Dr. Roy Smoker's article in this issue for details on the CPP exam at the conference in San Diego and information about CEU credits that can be used for recertification.

Please remember to stop by and see me at the ISPA table at San Diego.



Steve Sterk (CPP) ISPA Membership Chair steve.a.sterk@nasa.gov (661) 276-2377 EDITED BY DR. JOSEPH W. HAMAKER, PHD, CPP

his issue's question for our Q&A column comes from **Vickie Gutierrez** from NASA Johnson Space Center. Vickie has been involved with the cost analysis for NASA's Constellation Program which is being significantly redirected and one of the redirections is that of spending funds on maturing technologies for use in later full scale development programs.

### **VICKI'S QUESTION:**

"Does history support significant savings during DDT&E, Production, or Operations, when technology projects precede DDT&E, and if so what were the driving factors that contributed to the reduction? What are the critical, insightful, questions that estimators should ask when evaluating technology demonstrators, or Technology Development projects, for impacts on DDT&E, and/or Production and/or Operations cost?""

### **ANSWER:**

As editor of this column I submitted Vickie's very timely question to several of our ISPA experts: *Barbara Stone-Towns* (NASA), *Ed Dean* (Design for Value), *Ron Larson* (NASA), *Dr. Humbolt Mandell* (University of Texas) and *Andy Prince* (NASA). From these experts I have compiled the following answer to Vickie's question.

First, there is a general, almost automatic belief that technology investment will reduce development, production, and/or operations cost. But this is not always the case. Sometimes the technology is needed just to make the project work and does not contribute to lowering cost. Even if the technology is one that is supposed to make things work better, if the project's thirst for performance outstrips the technology's ability to provide that performance or the technology proves not to be as effective as believed, cost suffers. For example, the Department of Defense invested heavily (through DARPA) for detector technology to support missile defense. The state-of-the-art for seekers was advanced faster than normal but since the specifications called for that cutting edge performance it did not seem to translate into cost reductions.

There are examples in the aviation field that have worked out better. "HAVE BLUE" was a concept for a stealth aircraft developed by Lockheed Aircraft and it competed in a poleoff (since the proof-of-concept involved putting a model of the aircraft on a pole and performing radar testing) against the competing Northrop entry "TACIT BLUE." In this case, both entries led to subsequent development: HAVE BLUE became the F-117A prototype and TACIT BLUE technology was later incorporated into the B-2A.

However, in NASA there is scant evidence that illustrates the impact of a technology program on development cost. In the 1990s some studies were done projecting the cost benefits of advanced technology but they were

basically judgmental factors which had guestionable justification. Also in NASA, early pre-development work (i.e. Phase A) is sometimes undertaken (and/or extended) for political or funding availability reasons. In such cases, it is difficult to efficiently apply the available resources to pre-development work that will pay dividends later in the project's life cycle, especially if the requirements are still a "moving target." A specific example is the Space Shuttle Program. The technology demonstrators were the high pressure rocket engine and the thermal protection system, both of which were started before the main program. But NASA didn't give enough lead time, so both held up the program (the engine partly because of a protest by P&W but also due to developmental problems). R&D to advance technologies must be specific to the program, or program planners will either re-do it or ignore it. It must also be planned into the overall program plan, with close monitoring by program team members to insure acceptance, and it must have adequate lead time.

Inserting technology into a program can certainly have negative consequences on cost. If the technologies are not mature at the start of development, schedule delays and standing army costs that otherwise would not have occurred in the development program will result while the project slowed everything down to wait for the technology to catch up. One problem is that we always assume the technology is more mature than it really is.

When we estimate cost we view the object to be estimated through the eyes of a shopper in a store. To understand cost reduction, a different perspective is required. Cost arises from the doing of something. Cost and duration are quality measures of *an action taken upon an object. Cost is the measure of the effort* required to do something. *Duration is the measure of the time* required to do something. *Difficulty is a measure of the "action taken upon" and complexity is a measure of the "object."* Together, *difficulty and complexity drive both cost and duration:* the greater the difficulty, the greater the cost and the greater the complexity, the greater the cost.

Note that an action upon an object can be described by the combination (verb phrase, noun phrase), known as a function. The doing of the function can be described by the combination (verb phrase, noun phrase), known as an activity or process. A high level example we are all familiar with is the process (develop, system). Thus,

### **SECRETARY'S REPORT**

to reduce the cost of developing a system we need to reduce either the difficulty of the development or the complexity of the system. If a technology development project will decrease the difficulty of the development process, it will reduce the cost of (develop, system). If a technology development project will decrease the complexity of the system without increasing the difficulty of developing the system, then it will reduce the cost of (develop, system).

### Questions that should be asked by the cost analyst:

- Is the program directly involved in the technology program, or have people who are?
- How does the technology contribute to the organization's goals? How relevant is the up-front effort to the product ultimately produced and operated?
- What is the rationale for the proposed early development efforts, the basis for the expenditure of such funds prior to requirements freeze and was an analysis of alternate strategies undertaken?
- When will the technology program reach high TRL levels, relative to when the program is started?
- How much money is being spent on the technology demonstrator, compared to the cost of the main program? What has to be developed and demonstrated on the ground before this technology can be flown, and how would the technology be tested on the ground?
- How comprehensive are the technology programs? For example, what percentages of the total systems are represented by the technology demonstrators?
- How focused is the technology study? How new is "new"? Is the technology closer to the pure research side? Technology investments require a very tight objective, or the money gets spent without accomplishing very much. Technology investments are not research for research's sake.
- What else does the technology investment depend upon? Is it tightly coupled to other investments, or can it stand alone?



And a thorough understanding of the value engineering process and its focus on (develop, system), (produce, system), and (operate, system) will do wonders for your ability to ask the appropriate questions.

Joe Hamaker, Editor Ask a Parametrician — Q&A

#### BY GREG KIVIAT



As the 2010 joint conference approaches this June, membership participation and benefits are always a key concern for the ISPA Board. Recent comments by a few members and other interested parties indicated a belief that ISPA is

relatively narrow in focus, primarily to "promote the use of parametric tools for cost estimates." This implies that parametric estimating is simply a small subset of the overall estimating world that includes traditional estimating (bottoms up/analogous), proposal preparation, financial analysis, government acquisition regulations, etc. While the advancement of parametric analysis and tool development is one of ISPA's key objectives, it is by no means its only focus.

The parametric toolset, and the associated processes, training and skills needed to execute a good estimate is just the visible portion of ISPA's goals. A key ISPA objective as noted in the bylaws is the "use of parametric analysis in the furtherance of public welfare." My interpretation of this bylaw is that the overall ISPA mission is to improve outcomes of the programs we work on by providing managers, engineers and customers (often from our membership) with timely and accurate information enabling earlier and better design decisions based on both performance and cost impact. Secondarily, but important as well, is professional development and networking that occurs at conferences, training sessions, workshops and certification activities.

Nearly every week there are news reports on program cost overruns and inadequate planning based on overly optimistic expectations for cost and technical feasibility. The parametric method, when applied by skilled analysts, can mitigate overly optimistic expectations for cost and technical maturity that can help limit these program risks. Using these tools as part of an overall Systems Engineering approach provides a strong framework for balancing system capability, cost and schedule throughout the product lifecycle. The process enables Program Managers, along with Engineering, Operations and Supportability, to understand the relationships between program capability and cost to make logical design trades.

I like to think that ISPA is one of the few organizations that straddles the lines between Engineering,

Continued on page 22.

# **Early Design Software Cost Estimation** Demystifying the Process

BY SHERRY STUKES, THE JET PROPULSION LABORATORY, CALIFORNIA INSTITUTE OF TECHNOLOGY



reating software estimates for high technology systems early in the life cycle with little or no existing software architecture information can be a daunting task. This article provides an easy to apply process with guidance and lessons learned in generating software development cost estimates. Tips on where and how to obtain data are also offered.

The key to creating a software estimate is to begin with a comprehensive understanding of the work that needs to be performed. This understanding will improve over time as the program progresses. Once an understanding is established, even a very top level one, the estimating process can begin as shown in **Figure 1**.



### Figure 1. Software Cost Estimating Process

To scope the effort, it is best to refer to the program requirements and make an attempt to decompose the software portion of the requirements to the lowest level of detail available at the time. Early in a program, when very little detail is available, the decomposition should be at a high level. There is no need to guess at information that is not yet known.

After the system level requirements have been split between hardware and software, a software work breakdown structure (WBS) can be developed. The software WBS will consist of the decomposed software system to subsystems and further decomposed subsystems to the functionality that the system needs to perform the tasks. This decomposition can continue to the lowest level practical at the time. **Figure 2**. illustrates the decomposition of a software system effort in a graphical WBS format.

Continued on page 11.



### Figure 2. Software System Decomposition

As the software is being decomposed, definitions should be developed for each of the elements identified so that it is clear what is included in and/or excluded from the content of the elements being estimated. **Table 1.** presents the WBS in a tabular format and includes a column for each element description.

### Table 1. Tabular WBS Showing Software Element Descriptions

WBS #	Title	Description			
0.0	Program	Level 1 (system-level requirements)			
1.0	Software Development	Describes the software portion of the system-level requiremen			
1.1	Subsystem 1	Provides a summary of the functional requirements			
1.1.1	Function 1a				
1.1.2	Function 1b	Software functional requirement, usually corresponding to Level			
1.1.3	Function 1c				
1.2	Subsystem 2				
1.2.1	Function 2a	Follows the same pattern as for Subsystem 1			
1.2.2	Function 2b	Subsystem			
1.3	COTS	A commercial off-the-shelf package that will be interfaced to the operational software			

As part of scoping the work effort and creating a WBS, it is important to begin documenting ground rules and assumptions so that there is an audit trail to the software estimate. Ground rules are stated facts such as the software being developed and tested to a particular standard. Assumptions are explanations for unknown events such as a software module being able to be reused from a previous program. Until a formal reuse evaluation has been conducted, it is only an assumption that the code can be reused. Ground rules and assumptions specific to software may be divided into three categories: technical, programmatic, and cost. Technical ground rules and assumptions include performance characteristics, such as the complexity of the code or the amount of real time code that will need to be developed. Programmatic ground rules and assumptions include activities managed at the program level such as milestone and program review schedules. Cost ground rules and assumptions include the economic factors such as labor and inflation rates. The process of recording ground rules and assumptions *Continued on page 18.* 

### 2010-SAN DIEGO



# 2010 ISPA/SCEA Conference in San Diego, California

Come join cost community experts from government, industry, and academia to share ideas while attending stimulating keynote speeches, panel discussions and training.

# Invited Conference Speakers

**Wednesday morning, June 9** our Keynote Speaker is **Dave Burgess**, Director NAVAIR 4.2, who will talk about *"The Integration of Cost Estimating in Program Management at NAVAIR."* Mr. Burgess was selected to the Senior Executive Service in 2001 as Director of the Naval Air Systems Command (NAVAIR) Cost Department. As such, he currently serves as NAVAIR's principal spokesman and technical advisor for naval aviation cost analysis, cost estimating, and Earned Value Management (EVM). He leads a national organization comprised of four major sites and over 300 personnel.

The afternoon keynote is a "mini panel" on the topic of "The Widening Role of Cost Estimating in Program Execution and Contracts" with:

- Kathy Hedges, SAIC Senior VP, Corporate Director of Program Execution and
- Susan Coté, Northrop Grumman VP, Corporate Contracts, Pricing and Supply Chain

*Kathy Hedges* is an expert in program management and controls, with over 30 years of experience in a wide range of areas including nuclear weapons targeting, alternative energy systems, information technology, aerospace, proton accelerator medical treatment, range systems, and transportation. Ms. Hedges now serves as the Director of the SAIC Corporate Program Execution Office and is focused on facilitating a cooperative, interdisciplinary, and disciplined approach to program execution across SAIC.

*Ms. Coté* is responsible for maintaining an effective risk review process, providing corporate-wide policy, direction, training and oversight of contracts and pricing matters and ensuring that all Northrop Grumman sectors meet acceptable performance standards in these areas. She serves as the principle interface with the Defense Corporate Executive regarding all governmental accounting, contract and pricing matters, government procurement policy and oversight.

The morning program for **Thursday**, **June 10**, will feature **Stan Soloway**, CEO PSC, who will speak about current acquisition legislation.

*Stan Z. Soloway* is President and CEO of the Professional Services Council, the principal national trade association of the government professional and technical services industry. PSC is widely known for its leadership on a full range of government acquisition/procurement and outsourcing and privatization issues. In recognition of his leadership at DoD, Mr. Soloway was awarded both the Secretary of Defense Medal for Outstanding Public Service and the Secretary of Defense Medal for Distinguished Public Service.

# Training Workshop

We plan to again offer the successful training program and plan to have a combined 35 sessions in each of three tracks: **Fundamentals**, **Practitioner**, and **Integration**. Please see the article by **Sherry Stukes** in this issue for the details.

The Training Workshop will be an opportunity for networking, learning, and enjoying the scenery of the beautiful San Diego Bay, just steps away from our hotel.

ISPA Specific Training based on the *Parametric Estimating Handbook* 4th edition will be offered to attendees to learn parametric estimating techniques and also prepare for the CPP exam. The exam will be held *Saturday morning June 12*. For the first time ever, CEU credits will be given not only for training but also for certain professional presentations.

# Proceedings

We currently have 89 Papers that are planned for presentation in the following 7 tracks:

### EVM/Schedules Management Methods Software & IT Models Risk Estimating

There is a presentation for every cost estimating discipline. We have a large number of presenters so plan to stay for the entire conference or you will regret not having heard in person the paper that will help you solve your work problems.

# Exhibits & Sponsors

The following companies will be exhibiting and will have representatives available for discussions of their products and services:

ACEIT – Automated Cost Estimating Integrated Tools\*, Boeing\*, Booz Allen Hamilton\*, Dekker Ltd., EcoSys, KSJ & Associates, Inc., MCR LLC\*, PRICE Systems\*, ProPricer, Quantech Services, Inc., SEER by Galorath\*, TASC, Technomics, Inc.\*, and Wyle.

The companies with an asterisk (\*) are Sponsors. In addition *Lockheed Martin* and *Northrop Grumman* will not exhibit but are also conference sponsors.

On Tuesday 4 Exhibitors will be presenting a demonstration of their products/Services EcoSys, ACEIT, Booz Allen Hamilton, and ProPricer. Price Systems and SEER by Galorath will be having user meetings on Tuesday as well.

# The Thursday banquet is in the San Diego Air and Space Museum.

When the conference banquet at the Air & Space Museum in Balboa Park. This San Diego museum is a Smithsonian Museum affiliate and you will have admission to tour the museum exhibits before and after the banquet. Buses will be provided and will run from the hotel to the museum and back. This is a fun and exciting museum so plan to see it at the conference banquet. The admission fee is included in the conference registration or guest fee as part of the banquet.



### 2010-SAN DIEGO



# Conference Planning

The Conference attire is *Business Casual*. San Diego in June has temperate weather and summer clothes for our beach community are the right thing to bring.

Conference Dates: 06/08/2010 - 06/11/2010

**Host Hotel:** Sheraton San Diego Hotel and Marina - San Diego, California - across North Harbor drive just minutes away from the San Diego International Airport (SAN); use the phone at the hotel's kiosk in the terminal for free shuttle service provided by the hotel every 30 minutes.

**Meals:** The conference program includes continental breakfast served Tuesday through Friday, mid-morning and afternoon breaks, and lunch served Tuesday through Thursday. Also included is a welcoming reception in the hotel on Tuesday afternoon and the conference banquet on Thursday evening.

**Informal Guest Program:** The hotel is perfectly situated for convenient access to all San Diego attractions. Attendees can walk along the picturesque streets to go dining and shopping, or rent a car and drive to Mission Beach, the San Diego Zoo, the Gaslamp District, Old Town, Temecula Wineries, and four world-class theme parks (including Sea World and Legoland). We plan to have a San Diego Convention and Visitors Bureau representative and a society guest Host to assist your guests in planning visits to San Diego locations on Tuesday and Wednesday morning. Here is a link to the San Diego Convention and Visitors Bureau web site where you can get updated information and activities around the city: http://www.sandiego.org/nav/Visitors/VisitorInformation

**Parking Information:** Self-parking at the Conference hotel is available for \$22 per day, with in/out privileges. A nearby lower cost parking option for \$16 per day is available at the SAN Airport Long Term Parking facility at 3015 North Harbor Drive. Users may take the parking lot shuttle to the airport terminal and connect with the free hotel shuttle. Information on Long Term Parking operated by the airport facility is available at http://www.san.org/sdia/parking/default.aspx. Information on other independently operated parking facilities is available at http://www.aboutairportparking.com/san-diego-international-airport-parking.

Hotel reservations can be made by calling 1-877-734-2726 and requesting the "ISPA/SCEA 2010" rate of \$199 available until May 17 or until the room block is sold out. To make reservations online: http://www.starwoodmeeting. com/StarGroupsWeb/res?id=0912115434&key=BDE4A.

The government rate is \$147 per night. For government rate rooms, reservations can be made by phone (request the "ISPA/SCEA Government Block") or by going to the following website: http://www.starwoodmeeting.com/ StarGroupsWeb/res?id=1001118097&key=5F978.To be eligible for the government rate, a valid government ID or government travel orders must be shown at check-in. If attendee is ineligible for a government rate room, regular hotel rates will apply. Please take advantage of any corporate rates your company may offer in addition to the conference rate.

**Internet Access** is available in hotel rooms for \$11.95 per day. The Conference hotel offers *complimentary internet access* in the hotel lobby "connection destination," which provides free Wi-Fi access. Free PC workstations and printing capability are also available in the hotel lobby for registered hotel guests.

# 2010-SAN DIEGO

## **Conference and Training** Workshop Speakers' Program

Preparations are on schedule for the presentation of over 80 excellent workshop papers. Despite some expected attrition, we are still on pace to have the largest number of workshop papers ever at a joint ISPA/ SCEA Conference. Given the large volume of papers, the track chairs have had more responsibility (and workload!) than normal in making sure all the papers come in on time and that the information is correct. Despite the extra work (and having to put up with me, Andy), these people are doing an outstanding job and we could not make this conference a success without them. Our track chairs for this year's conference are:

- Estimating: Bob Hunt/Greg Hogan
- EVM/Schedules: Hank Apgar/Brian Kolstad
- Life-cycle Cost: Claude Freaner/Francisco Rojo
- Management: Kurt Brunner/Jesse Celis
- Methods: Leigh Rosenberg/Angela Vu
- Models: Herve Joumier/Diane Butler
- Risk: Jairus Hihn/Rick Collins
- Software/IT:Parl Hummel/Andrew Drennon

In addition to the efforts by the track chairs, *Erin Whittaker* of the Joint Office, assisted by *Lisa Yedo*, have been very busy reviewing all submissions for completeness and consistency and are now pulling together the papers, presentations, biographies, and abstracts for the conference proceedings.

We have also been putting together the final schedule. The larger number of papers combined with the usual requests to avoid conflicts has made the scheduling job very interesting, but doable thanks in part to the large number of meeting rooms at the conference hotel. Paul and I are very excited about the breadth and depth of the topics to be presented, and look forward to seeing you at the joint conference. As always, if you have any questions about the workshop please contact Paul or myself.

We look forward to seeing you in San Diego!

Andy Prince andy.prince@nasa.gov (256) 544-8360

Paul Marston pmarston@mcri.com 978-528-4394

# Certified Parametric Practitioner (CPP) Exam — June 12, 2010

here are a number of members who need to update their certification by submitting CEUs or retaking the CPP Exam. To submit CEUs, send me a letter of justification for recertification to the email below noting when you last took the CPP Exam and what CEUs you have accumulated **since your exam or last recertification**. Please log in to www.ispa-cost.org — go to the *Professional Development* tab at the top of the page and click on *Certification*. You will see the ISPA requirements and forms for maintaining your CPP. You must earn at least 75 CEUs every 5 years to retain your certification without taking the test again.

If you need to take the CPP Exam, it will be administered on Saturday, June 12, 2010 following the June 8-12 ISPA/ SCEA Joint Conference in San Diego. I encourage you to attend this conference because there are four training days of courses on parametrics and estimating.

An outline of the content of the CPP exam is provided in the table below to help students prepare. Exam questions have been developed from each of the chapters of the *Parametric Estimating Handbook (PEH)* and select appendices. The exam questions will be multiple choice (75), true and false (15), fill in the blank (5), and matching answers (5). If you would like a set of sample questions, drop me an email.

Source of questions	Number of questions
PEH Introduction	3
Chapter 1 Overview	10
Chapter 2 Data Collection	5
Chapter 3 CERs	10
Chapter 4 Company Models	6
Chapter 5 Complex HW Models	5 5
Chapter 6 Complex SW Models	10
Chapter 7 Government Compli	ance 10
Chapter 8 Other Parametric Ap	ps 9
Chapter 9 International Parame	etrics 3
Appendix A,B,C,I	16
Problems using Parametrics	13
Total	100

Two exam preparation sessions will be held prior to the testing date at the conference. Check your conference schedule for the exact times and dates.



Dr. Roy Smoker, (CPP) Chief Parametric Practitioner rsmoker@mcri.com

# **Professional Development Program — Education and Training**

BY SHERRY STUKES, ISPA EDUCATION AND TRAINING CHAIR

oint integrated training will be offered again this year at the Conference and Training Workshop to be held in San Diego, California. What this means to attendees is a training-rich environment for all skill levels and interests. Three parallel training tracks to address different learning needs will include the following:

- **Fundamentals** for junior level analysts seeking to become proficient in cost estimating or experienced estimators that are interested in a refresher course
- **Practitioner** for the experienced cost estimator/analyst to gain more insight and hone their estimating skills
- Integration for the more advanced attendees to build on complex topics and subject matter

The complete integrated training schedule is being finalized and will be available at the SCEA web site (http:// www.sceaonline.net/) soon. The training schedule posted on the web site will include the day, time, and trainer for each of the following training sessions. The ISPA training classes from the *Parametric Estimating Handbook* (*PEH*) are in green.

Fundamentals	Practitioner	Integration
Cost Estimating Overview/Basics	Parametric Analysis Overview	Monte Carlo Simulation
Cost Estimating Techniques	EVMS Basic Concepts	Government Compliance
Contract Pricing	Complex Hardware Models	Integrated Baseline Review (IBR)
Economic Analysis	Company-Developed Complex Models	Government Cost Data Sources
Learning Curve	Cost Estimating Relationships (CERs)	Software/Systems Acquisition Measurement
Analysis	Data Collection and Analysis	Basic Critical Path Scheduling
Basic Data Analysis Principles	Technical Baselines	Schedule Risk Analysis
Linear Regression	Prediction Intervals and Risk	Other Uses of Parametrics
Data Normalization and Inflation	Multiplicative-Error Regression	Software Cost Estimating Schedule
Probability and Statistics	Complex Software Models	PEH Appendices Overview
Basic Cost Risk	Development of Work Breakdown Structures	International Use of Parametrics
Multivariate Regression	Advanced Cost Risk	
Manufacturing Cost Estimating		

This robust training includes preparation training for both the ISPA and SCEA certification programs — the Certified Parametric Practitioner (CPP) and the Certified Cost Estimator/Analyst (CCE/A) — as well as training for general purposes. Attendees are welcome to mix and match topics to fit their training needs.

In addition to the certification training topics, examination preparation sessions are being scheduled to assist those trainees planning to sit for one of the exams (see article contributed by Roy Smoker for details). Remember, in order to take the exam for either society, you must be pre-qualified and pay the requisite examination fee.

For those attendees planning to take the CPP examination, the listing of the CPP courses and instructors is provided in the following table. These courses are mapped to the *Parametric Estimating Handbook* to aid the trainee in course selection. A brief abstract of each training course will be available in the conference materials provided at the workshop. Biographies are also included to provide general background and qualifications of each instructor.

Continued on page 17.

Continued from page 16.

Parametric Estimating Handbook Chapter Title	Certified Parametric Practitioner Training Title	Instructor
Parametric Analysis Overview	Parametric Analysis Overview	Roy Smoker
Data Collection and Analysis	Data Collection and Analysis	Dan Galorath
Cost Estimating Relationships	Cost Estimating Relationships	Don MacKenzie
Company Developed Complex Models	Company Developed Complex Models	Hank Apgar
Complex Hardware Models	Complex Hardware Models	Greg Kiviat
Complex Software Models	Complex Software Models	Dan Ferens
Government Compliance	Government Compliance	Jerry McAfee
Other Parametric Applications	Other Parametric Applications	Kurt Brunner
International Use of Parametrics	International Use of Parametrics	Dale Shermon
Appendices (A, B, C, E, G, H, I, K)	Appendices Overview	Roy Smoker

If you have any questions regarding the CPP or general training, please feel free to contact me.

Sherry Stukes The Jet Propulsion Laboratory, California Institute of Technology sherry.a.stukes@jpl.nasa.gov (818) 393-7517



# 2011 ISPA/SCEA Joint Annual Conference & Training Workshop

June 7 - 10, 2011 Albuquerque, New Mexico

Come join the International Society of Parametric Analysts (ISPA) and the Society of Cost Estimating and Analysis (SCEA) for the 2011 ISPA/SCEA Conference in Albuquerque, NM. This event will feature training and networking opportunities you won't want to miss!

For information about registration, exhibits/sponsorships, or presenting a paper, contact the SCEA & ISPA Joint Office at 703-938-5090, scea@sceaonline.org.



### Continued from page 11.

will continue throughout the estimating process and will be captured in the final estimate documentation.

Once the elements are identified, the next step is to size the software at the lowest level identified. The best size data will come from within an organization, but the problem is that many organizations do not have a comprehensive, centrally located software database where software size can be obtained.

If source code from completed analogous programs is available, a code counter can be used to obtain the number of source lines of code (SLOC). Some organizations have code counters in use. If not, code counters are widely available on the internet. Even though the most important factor is using a consistent code counter for an organization, it is best to use a code counter that will be consistent with industry and customers. The current industry standard is the University of Southern California (USC) code counter, *CodeCount*. This tool is available at no cost from the USC Center for Software and Systems Engineering (CSSE) web site located at: http://sunset. usc.edu/research/CODECOUNT/

If historical data is not available and there is no source code to count, the next best sizing data comes from the opinions of company personnel. With one or more subject matter experts (SMEs), a Delphi session may be conducted to identify a range of size estimates (least likely, most likely, highest likely) that reflects the uncertainty in the magnitude of the effort. If there are one or more software elements that are missing sizes, industry data widely available on the internet can be located and used until better data is available.

As part of the software sizing process, the capability to reuse existing software should be considered. Think about previous programs that may have had similar software functions and decide if the function could be reused for the new program. Formal reuse evaluations will be conducted once the program is under way. In the mean time, an assumption will need to be made (and documented) for potential reuse candidates. Care must be taken in a reuse evaluation to ensure that the software is appropriate and will perform the required functionality. If it's not, it may be better to start from scratch than it is to reuse software that will require more effort to make it fit than if it is developed as new code. Another consideration for reused code is the amount of effort that will be required to make the code fit into the new program. Generally, this effort entails the percentage amount of re-design, re-coding, and re-test required. For code that is reused "as is" there is usually no re-design or recoding. For code that is modified, the percent depends on the extent of the modification needed. In either reuse case, the reused code should plan to be 100% re-tested and integrated with the new code being developed.

Software		New		Resuse				Reuse			
Element	Low Likely	Most Likely	High Likely	"As Is"	% RD	% RC	% RT	Mod	% RD	% RC	% RT
Function 1a	Estimate from historical data,		From	Will gene	erally	100%	From	For mino	r	100%	
Function 1b	analogy programs, can use		Code	be 0.			Code	mode~10	0%,		
Function 1c	Delphi technique from one or		Count				Count or	for mediu	im 5% if		
Function 2a	INDIA 2MIES	)						anaiogy	over 50%	, treat	
Function 2b									as new		

 Table 2. illustrates a software sizing data summary containing new, reused "as is", and reused modified code.

### Table 2. Software Sizing Data

Where:

%RD = Percent Re-design

%RC = Percent Re-code (re-implementation)

%RT = Percent Re-test

Once a size estimate is complete, a notion of complexity or how difficult the software is going to be to develop, integrate, and test should be identified. This is information that may be required as part of generating the software

Continued on page 19.

### Continued from page 18.

estimate depending on the method selected.

There are many methods for generating software cost estimates and it is a good idea to use more than one method to serve as a "cross-check" to the primary method selected. Several of these methods produce probabilistic (or a distribution of estimates with associated confidence levels) estimate versus a deterministic (or point) estimate. This should be a consideration in the method selected.

The most common estimating methods include:

- Engineering estimates the number of hours per function, usually based on experience or "engineering judgment"
- Internally developed models these may be a good reflection of local experience, but ensure that the model has been audited by and is acceptable to the recipient of the software estimate
- Factors such as hours per source line of code (hrs/SLOC), derived from historical programs
- Commercially available models such as:
  - TruePlanning for information see: www.pricesystems.com
  - SEER-SEM for information see: www.galorath.com
- "No Cost" parametric model, COCOMO II, available at: http://sunset.usc.edu

In addition, the organization (or customer) will influence the method or methods to use for generating a software estimate.

As part of your software estimate, don't forget the effort associated with commercial-off-the-shelf (COTS) software. There is effort required to evaluate and select the appropriate COTS product(s) and, of course, don't forget the code needed to interface the COTS software to the system software. The interface code is often included in the system development code.

After the estimate is complete, a validation should be performed to ensure that the estimate is reasonable and credible. The estimate may be compared against previous experience, if any, and/or against industry standards. Don't panic if the estimates don't match initially. There may be an "apple to oranges" comparison that requires adjustments to determine if the estimates are similar. Check to see if the content is the same. As an example, the COCOMO II model estimates fewer phases than the SEER-SEM model so the additional phases could be removed for comparison purposes. Carefully review the estimate content including the software activities and labor categories to ensure the content is the same.

An important activity that should be performed throughout the estimate is the recording of information, ground rules and assumptions, and decisions made. This documentation should be comprehensive enough to allow another cost analyst to replicate the software estimate. Documentation may be a formal report or often times PowerPoint slides are used. When using PowerPoint slides, it is a good idea to annotate the slides in the notes section.

In summary, software cost estimating is not difficult. Follow a repeatable process and document all work. It is important that the software estimate reflect the best information at the point of time in the program. The estimate can only be as good as the data available. As the program progresses and better information becomes available, a higher fidelity estimate will be possible.

One final comment, as part of the software life cycle cost, software maintenance cost needs to be considered in addition to the software development cost, but this is a topic for a separate article!

Sherry Stukes

### **CHAPTER NEWS**

# **ISPA Southern California Chapter News**

BY KURT BRUNNER, CHAPTER PRESIDENT AND SHERRY STUKES, CHAPTER VICE PRESIDENT













Mike DiNicola



**Ralph Smith** 

Doug Howarth

Karen Mourikas

Henry Apgar

Mostain Dara Billah

Peter Frederic

ortunate and lucky were the Saint Patrick's Day attendees at the most recent joint ISPA/SCEA workshop on March 17 2010 hosted by the Lockheed Martin Aeronautics Company in El Segundo, California. Even those who didn't wear green were treated to a day of stimulating presentations, comfortable surroundings, and scrumptious refreshments. The Lockheed Martin Company also provided various souvenirs and door gifts for all! Even though no green beer or corned beef and cabbage was on hand for the 85 participants (including 8 virtual attendees), all agreed that the day was a resounding success. Our workshop attendance continues to climb!



ISPA/SCEA Workshop hosted by Lockheed Martin Aeronautics Company — 3/17/10

It is clear to see why the workshops hosted by the Southern California Chapters have been so successful as evidenced by the thought-provoking topics below presented at our March 17 workshop:

- **Ralph Smith**, Director of Estimating, Lockheed Martin Aeronautics Company (Fort Worth), *"Welcome Address: An Overview of Cost Estimating at LM Aeronautics"*
- Doug Howarth, ADP Parametric Estimating Lead, Lockheed Martin Aeronautics Company (Palmdale), "Market Mapping for Product Optimization"

- Karen Mourikas, Operations & Systems Analyst, Boeing (Huntington Beach), "Estimating Simulation-Based Experimentation Projects"
- Henry Apgar, MCR (El Segundo), "Complex Hardware Models"
- Mostain Dara Billah, Senior Cost Controller, Jain Irrigation Inc (Ontario), "Cost Analysis Process in Mid-Size Companies"
- Mike DiNicola, Cost Engineer, JPL (Pasadena)., "Joint Cost-Schedule Risk Assessment: An Intensity Approach using Copulas"
- Peter Frederic, Chief Scientist, Tecolote (Santa Barbara), "Budget-Constrained Cost and Schedule Assessment Approach"

Many, such as Mr. Smith who took time from his very busy schedule to come from Fort Worth, Texas, traveled considerable distances to address the group. After sharing details regarding the Lockheed Martin cost estimating structure and his thoughts on the challenges we face as a group, Mr. Smith mingled and participated in the day-long briefings with the workshop attendees.

If you would like a copy of the workshop briefings please go to our website (ispa-cost.org) and log in, then locate our chapter on the listings, the date of the workshop, and then the title or author of the paper. Or you may contact Mr. Henry Apgar at hapgar@mcri.com.

In conjunction with our ISPA membership drive **Steve Sterk** of the ISPA International Board of Directors and Membership Chair raffled off prizes that were donated by the Lockheed Martin Company, which included 'Skunk Works' shirts, caps, and coffee mugs. The lucky winners are pictured on the next page.

Only ISPA members were eligible for the drawing, so if you are not currently a member or if your membership has expired, please join or renew to have a chance to

Continued on page 21.

### **CHAPTER NEWS**

# Southwest Chapter News



he weather is starting to heat up in the southwest and so is our chapter. We've had several new members join the chapter since my last writing for Parametric World. While it is unfortunate that some unforeseen events precluded us from conducting our planned April workshop, we are gearing up for a rescheduled workshop in the not too distant future. We hope to reconfirm the wonderful presentations committed from Raytheon Missile

*Systems, Reifer Consulting, DCAA* and others. As our agenda and schedule firm up, we'll be sure to put the word out as everyone is certainly welcome to attend and participate in the workshop which will be held at the *Boeing Mesa* facility. We look forward to attending the upcoming ISPA/SCEA Conference & Training Workshop



in San Diego and getting to see and meet with our many industry colleagues who will be in attendance.

Corey Hutchinson Southwest Chapter President corey.s.hutchinson@boeing.com



### Mid-Atlantic Chapter Contact: Ron Larson

ronald.k.larson@nasa.gov



Drawing Winners L to R: Nina Tahir, Kurt Brunner, Willie Hamer, Jane Han, Steve Sterk, Ann Fisher

### Continued from page 20.

win at future drawings. The \$55 annual membership is an exceptional value for a great investment in your career! Contact Steve Sterk, ISPA Membership Chair, at steve.a.sterk@nasa.gov or (661) 276-2377 and he will sign you up.

Be sure not to miss our next scintillating joint **ISPA**/ **SCEA Fall 2010 workshop** which will be hosted by **MCR in El Segundo, CA, on 23 September 2010**. We have a dynamic program lined up, full of enlightening presentations by dynamite speakers, along with a CPP training topic. Additional details about the workshop will be provided in the next issue of Parametric World and will also be posted to the ISPA Web site under the Southern California Chapter section. Also, if you attended a previous workshop and your e-mail address is up upto-date, you will have received an e-mail notification and reminder to save the date by now.

The Southern California Board of Directors consists of:

- President Kurt Brunner
- Vice-President Sherry Stukes
- Secretary/Treasurer Charles Wheeler, III
- Directors Hank Apgar; Doug Howarth; Paul Killingsworth; Nina Tahir; and Scott Tobin

We look forward to seeing you at the next workshop!



### Kurt Brunner

President, ISPA Southern California Chapter kbrunner@tecolote.com (310) 536-0011 x144



*Otherry Obtukes* Vice President, ISPA Southern California Chapter sherry.a.stukes@jpl.nasa.gov (818) 393-7517

### **CALENDAR OF EVENTS**

#### May 19, 2010

SEER by Galorath Users Conference Williams Formula 1 Conference Center Grove, Wantage, Oxfordshire, UK Information: Keith Garland + 44 (0) 207 788 9042 kgarland@galorath.com

### June 8-11, 2010

ISPA/SCEA Conference & Training Workshop Sheraton San Diego Hotel and Marina San Diego, California Information: Erin Whittaker, Joint Business Office scea@sceaonline.org or (703) 938-5090

### June 12, 2010

ISPA CPP Certification Exam Sheraton San Diego Hotel and Marina San Diego, California Information: Dr. Roy Smoker rsmoker@mcri.com

### July 11-15, 2010

INCOSE 20th INTERNATIONAL SYMPOSIUM Hyatt Regency O'Hare Rosemont, Illinois Information: www.incose.org/symp2010

### **September 16, 2010**

DON Cost Analysis Symposium Quantico, Virginia Information: http://www.ncca.navy.mil/doncas/

### September 21, 2010

SCAF Annual Conference Royal Institution of Naval Architects, Victoria, London Information: Max Murray-Brooks mmbrooks@dstl.gov.uk or www. scaf.org.uk

#### **September 23, 2010**

ISPA & SCEA SoCA Chapters Workshop Host: MCR Doubletree Hotel - El Segundo, California Information: Kurt Brunner kbrunner@tecolote.com

#### October 6-8, 2010

PRICE Systems 29th Annual International Symposium Gran Hotel Princesa Sofia, Barcelona, Spain Information: www.pricesystems.com Barcelona2010@pricesystems.com

### November 23, 2010

SCAF Workshop Theme: Whole Life Costing Case Study — At the Concept Phase The BAWA Centre, Filton, Bristol Information: Max Murray-Brooks mmbrooks@dstl.gov.uk or www. scaf.org.uk

### Continued from page 9.

Programs and Finance and other departments engaged in developing, producing and supporting new products.

ISPA provides a common and professional context to support crucial feedback to the engineers and managers engaged in the design process by relating key engineering and program data to program cost with supportable, repeatable, timely and (hopefully) accurate estimates. When included in a Systems Engineering plan, parametric estimates provide senior managers with the levers to make decisions before most cost drivers are established.

Not to be too narrowly focused on parametrics, it's also clear from the comment that parametric practitioners should be sure they understand the wider world of traditional cost estimating, finance and regulations for government acquisition. Career growth as a "parametrician" is best supported by both a deep understanding of cost estimating and a solid understanding of the financial and program world where this information is used. I think the really interesting part of our jobs is the wide view it provides of industry, markets and technology and the fact that the results of our efforts can help guide programs to successful outcomes.

### **Greg Kiviat**

**ISPA** Secretary



# Proudly serving our Federal Government for over 60 years

Wyle is one of the nation's leading providers of independent analytic, engineering and testing services to the Intelligence Community (IC) and the Department of Defense.

We are rapidly growing our cleared IC support team in the National Capital Region and are actively seeking qualified candidates to join our world-class team of professionals currently providing support in the following areas:

- Cost Estimating and Analysis
   Budget Analysis
- Financial Management
- Acquisition Management
- Earned Value Management
   Program Control
- Program Management
- Strategy and Operations

These positions require an active TS/SCI and Counter Intelligence (CI) Polygraph or Full Scope (FS) Polygraph or eligibility to obtain this level of clearance.

Wyle provides an employee friendly environment, exciting and challenging work, competitive salaries, and comprehensive benefits packages.

# Let Wyle be the key that unlocks your future.



For more information about our current job openings visit our website at <u>www.wyle.com</u> or email your resume to <u>aerorecruiting@wyle.com</u>.

# MEMBERSHIP APPLICATION

Date:	🛛 Renewal	New Member	Change of Address
Name: Business Affiliation: Mailing Address: City, State, Zip, Count Alternate Address: City, State, Zip: Dues Amount (US\$): Credit Card:  Visa Card Number:	try: \$55.00 Annual M \$30.00 Student I Mastercard	Title: Voice: Fax: Email: Home: Country: lember □ \$100.0 Member □ \$550.0 □ American E	00 Two-Year Member 00 Life Member Express xpiration Date:
Signature: Amount Enclosed: \$ Amount Charged: \$			
Make all c	hecks payable to "ISPA". Se ISPA/SCEA Joint In 527 Maple Avenue East–S Fax: (703)	end checks and corresp ternational Office uite 301, Vienna VA 221 938-5091	ondence to: 80
ISPA/S 527 Ma Vienna Phone Fax: (7 Web: v	CEA Joint International Offic aple Avenue East–Suite 301 I, VA 22180 : (703) 938-5090 03) 938-5091 vww.ispa-cost.org	e	