



# THE PROFESSIONAL ERGONOMIST

The Newsletter of the BCPE

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## DO WE SEE OUR EDGES CLEARLY?

by Jerry Duncan Ph.D. CPE  
Immediate Past President of BCPE

Paul Shephard, in his book "What Is Architecture?: An Essay on Landscapes, Buildings, and Machines" (1994, MIT Press), ... I highly recommend this book to anyone interested in design related disciplines ... expresses a view that "There is a great movement now for nothing to have edges. All the arts are striving to be like all the others ... and it's the same with all the sciences ... and all the professions are becoming like each other ...". His words made me think about conversations at BCPE meetings. How large is the ergonomics profession? How many people around the world are now ergonomics practitioners? 5,000? 10,000? 20,000? 40,000? How many people are practicing ergonomics at a "professional" level? 1,000? 2,000? 4,000? How many people are now acquiring knowledge, experience and skills with which they intend to fulfill a career as an ergonomist? How many people pursuing a career in ergonomics will seek life-long professional development and actively support certification of ergonomists? What distinguishes ergonomics from other professions? Where are the "edges" of our discipline ... of our profession?

In my mind, these are important questions because they affect how we look at our profession as it is today, how we see our profession's future, and how we express our BCPE vision. Currently, the BCPE has certified approximately 700 people. I believe this is a great achievement, and, if support continues as it has, we can expect to have over 1000 certificants within another four or five years. But is that adequate to the needs of the profession? Is that adequate to achieve the BCPE vision of "being a principal force helping to define and

unify ergonomics as a distinct profession", and "to be appropriately serving the needs of the large majority of ergonomics professionals"? Events in the next four or five years, and the BCPE response to those events, will undoubtedly determine if and when our vision is achievable. Navigating from our current reality to our future vision requires a clear, objective view of where we are and a consistent, conscious effort to get to where we want to be.

At our midyear meeting in April, the Board made a commitment, after considerable discussion and debate, to establish a plan in which the four levels of knowledge and skill described in the BCPE Fact Sheet will become the basis for our long-range certification program. The intent of this plan is to develop certification procedures that will define needed skills, knowledge, and experience for more than one level. This action was taken because we recognize that ergonomics IS practiced at different "levels" of knowledge and skills, and that it matches our vision ... it will get us to where we want to be. It was taken to provide a broader basis for consumers to judge what they are getting when they hire an ergonomist. It was taken also because we want to provide motivation and means for people at all levels of ergonomics practice to pursue life-long professional development and to support certification of ergonomists. Proposals for elements of this plan have already been drafted and will be discussed at our annual meeting in Philadelphia. Progress in implementing this action plan will be described in future issues of our newsletter (see Harris article).

Other decisions made at the midyear meeting that were particularly gratifying for me were the selections of our new Directors. Mr. David Alexander, Dr. Ian

Noy, and Dr. Robert Smillie will replace Dr. David Cochran, Dr. Steven Casey, and myself following the annual meeting in Philadelphia. Ms. Carol Stuart-Buttie is now serving in replacement of Ms. Ulrika Wallersteiner. These new Directors are outstanding ergonomics professionals who will strengthen an already strong Board. I wish them all well, and hope they will enjoy their participation in the BCPE as much as I have.

When I think of volunteers working diligently and unselfishly in serving a very high purpose, I will forever think of Steve Casey, Al Chapanis, Dave Cochran, Harvey Cohen, Colin Drury, Doug Harris, Hal Hendrick, David Meister, George Peters, Valerie Rice, Mel Rudov, and Ulrika Wallersteiner. When I think of a dedicated leader whose vision propels an organization to achieve a very high purpose, I will forever think of Dieter Jahns. Thank you all for all that you have done, and are doing, for the BCPE and the ergonomics profession ... our edges are better and more clearly defined because of your efforts.

## BCPE SETS "CET" AS NEW PROJECT

by Doug Harris, PhD, CPE

The Board of Certification in Professional Ergonomics (BCPE) plans to establish a new level of certification, Certified Ergonomics Technologist (CET), to satisfy the growing need for certification at a lower level of ergonomics practice than that of the Certified Professional Ergonomist (CPE). In establishing this level of certification,

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## BCPE SETS "CET" AS NEW PROJECT

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it is the plan of the BCPE to work closely with interested organizations to develop the certification requirements and procedures for the CET. The objective is to develop a single set of requirements and procedures that will satisfy the ergonomics certification needs, at this level, of the full range of ergonomics applications that currently exist, including equipment design, workplace design, injury prevention and occupational rehabilitation.

The BCPE selected this core-certification approach after concluding that a single core of ergonomics knowledge can be defined for the full range of current and anticipated applications at this level, and that a core approach to certification would be most consistent with maintaining ergonomics professional-practice standards. Moreover, the BCPE identified techniques that will permit certification testing to be adapted somewhat to an individual's area of specialization, thus recognizing and accommodating areas of specialization in the certification process.

A one-year development schedule is being implemented to assure proper coordination with potential stakeholders in this new certification effort.

## SPRING 1996 TEST RESULTS AND NEW CERTIFICANTS

Thirty candidates sat for the April 1996 BCPE certification exam at various locations around the nation and one in Canada. Seventeen ergonomists successfully passed the BCPE's April certification examination to earn the CPE credential. Four candidates were successful in earning the Associate Ergonomist Professional credential. Test scores were statistically consistent with those of previous candidates (Fall 1994, Spring 1995, October 95), and the overall "pass rate" for applicants now stands at 67%.

Those successful in sitting for the Spring exam were:

Thomas C. Adams, ME, CPE  
Joanette Alpert, MS, PT. CPE  
Daniel R. Baker, PhD, CPE  
Jose Carlos N Banaag, MS, CPE  
Deanna M. Bérubé, BS, AEP  
Thomas F. Callaghan, MS, CPE  
Gregory A. Deal, PhD, CPE  
David DelVecchio, MSIE, CPE  
Ellen M. Kraft, MSE, AEP  
Frederick V. Malmstrom, PhD, CPE  
Karl J. Marion, MS, CPE

Kirby L. Mask, BS, CPE  
William A. Mecham, MS, AEP  
Karl F. Van Orden, PhD, CPE  
Donald R. Robinson, BS, CPE  
Jeffrey A. Smagacz, BSE, CPE  
James M. Stewart, MS, CPE  
James J. Tassin, MS, CPE  
Scott A. Valorose, MS, AEP  
Candice Woodward, BS, CPE  
Michael L. Wynn, MBA, CPE

Twelve other applicants for the Associate title qualified for certification without taking part one of the exam based on their educational degree from an ergonomics/human factors degree program accredited by an IEA Federated Society.

They are:

Ann Baker MS AEP  
Elizabeth A. Damann MS AEP  
Fadi A. Fathallah PhD AEP  
Charles A. Green PhD AHFP  
Daniel P. Kelaher MS AEP  
Wendy R. Key MS AEP

Pieter Kruithof Jr MS AEP  
Kevin P. McSweeney MS AEP  
Robert C. Nerhood II MS AEP  
Michael A. Szczepkowski MS AHFP  
Brian R. Sherman MSISE AEP  
Carolyn M. Sommerich PhD AEP

These certificants have been added to the August 1996 edition of the BCPE Directory of Certificants which is now available (to certificants for \$19.95 and to non-certificants for \$34.95). Current totals of BCPE certificants are 677 CPE/CHFPs and 16 AEP/AHFPs.

Outcomes for the 28 applicants taking the Fall exam given in Philadelphia PA on the first of September will be available in another month or two.

## BCPE CERTIFICANT'S INVENTION A LIFE SAVER

(from Alumni Newspaper from Loyal Academy in Chicago, IL)

An idea that Frank J. Formeller, MS, CPE had 30 years ago helped save the life of Air Force Capt. Scott O'Grady when his plane crashed in Bosnia last June (95).

As an aerospace physiologist in the Navy Medical Services Corps in 1964, Formeller and a team of experts designed and produced the prototype of the survival vest (SV-1) worn by O'Grady. Originally intended for pilots and air crewmen in Vietnam, the SV-1 vest has been utilized by all military personnel ever since. Examples are displayed at the Air & Space Museum of the Smithsonian in Washington, D.C.

The 35-pound vest holds a personal radio communicator, basic first aid kit, smoke signal and flares, a map and enough survival gear to "escape and evade" the enemy. In military aircraft, it is worn between the shoulder harness of the parachute and the straps of the seatpan so that, as in O'Grady's case, the

pilot is able to use the survival gear even after ejecting from the aircraft.

O'Grady was on a routine patrol over Bosnia when his fighter was split in half by an anti-aircraft missile. After several days in hiding from Serb forces, he was finally able to use his vest radio to contact another U.S. patrol plane and devise a rescue plan.

CDR Formeller, now retired from the Navy and living in Silver Spring, Maryland, said he feels fortunate to have been involved in the vest's invention and is grateful it has served its purpose so well.

He and his fellow researchers worked on the SV-1 project for several months. The challenge was to determine the minimum number of articles needed to escape and evade in any situation.

"We took various safety items which had normally been kept in the seat pan and the flight suit and moved them to the pockets in the vest," he recalled. "We

tested various combinations in a swimming pool and in open sea rafts. The Marines ran through survival drills with the vests in San Diego and expert parachute jumpers at El Centro, California wore them on a number of jumps at different altitudes and air speeds. Within a rather short period of time, the vests were approved, manufactured and available for Vietnam based military personnel."

The vests have changed very little in 30 years. The current model is larger than the original and contains a gun, a satellite global positioning receiver, but otherwise they are essentially the same.

"At the time, we didn't know how important it was. This was just one of the many things we did," said Formeller, who also helped develop an underwater breathing device, a heart rate recording system and an in-flight water bag while serving in the Navy.

# SELLING SHORT IN ROW 12

## A VERY SHORT STORY

by Steven Casey, PhD, CPE

If my own experiences are representative of our profession, Ergonomists are less likely than most professionals to openly state what it is we do for a living. I can't count the number of times I've wondered to myself just how easy it would be to describe my career to inquisitive strangers if I had become the Architect or Pediatrician as suggested by those professional interest inventories I took my first year of college twenty-six years ago. "Architect." "Pediatrician." That's all I would have to say. The words are so easy to pronounce and simple to understand. Everybody knows what those people do for a living. What a pleasure it would be to respond effortlessly to that occasional, curious person who pokes his head into my business office or pops the dreaded question at a party: "And what do you do for a living?" Unfortunately, my answer to such a reasonable question never seems to be as reasonable as I would like. My reply often starts off with something like: "Ah, well, ah, I..." Then I commence with the most convoluted and incomprehensible description of my profession ever heard by man or woman.

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But I recently experienced something of a revelation and discovered an answer to this thorny problem during another one of those interminable cross-country plane flights where I found myself packed once again inside an aluminum can for another four hours with two hundred other soles... ah, I mean, souls. Despite the generally bleak circumstances, the immediate situation looked promising. The seat next to me was actually empty, of all things, just about the only empty seat on the entire plane. The door was about to close and we were ready to push back from the gate. I was looking forward to finally doing a little reading and getting caught up on some paper work.

But into the plane ran one final breathless passenger in that very last second at the gate before the door was closed tight. She plopped her bags on the floor and proudly displayed her boarding stub to the awaiting flight attendant. Well, she looked like a pleasant enough person, but I knew right where she was headed. So much for the extra elbow room. I reached

down to the floor and slid my briefcase over to the space directly under the seat in front of me just as she appeared in the aisle and stuffed her belongings into the remaining space in the overhead bin.

My new neighbor settled in and we exchanged a few verbal pleasantries. She was a convivial individual after all. Had been out to "the coast" for the past two weeks visiting her grandchildren and was now flying back home. I heard all the details about where her daughter's family had settled and how wonderful the beach and weather had been.

I listened, tried to maintain a semblance of a smile, and even made a few polite inquiries about her other recent travels. But I knew exactly where this rather one-way conversation was headed. She popped the question just about the time we had reached cruising altitude.

"And, if you don't mind me asking, what kind of work do you do for a living?"

Oh, it was that dreaded question again! Why couldn't I just memorize a simple and concise definition of ergonomics and human factors, one that everybody would understand and immediately comprehend? Why did this always have to be so awkward? How did I always manage to get myself into this situation? Must have been the polite smile.

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My mind raced through the repertoire of definitions and possible responses. I had to quickly give a short and sweet answer that this peripatetic lady would understand. Not that I had any reason whatsoever to question her ability to comprehend any reasonable answer, mind you. I was the one with the problem, the one who never seemed to find a way to clearly and simply describe what it was that I did for a living, the one who knew that one of these days I would have to find an answer to this unremitting dilemma.

But, really now, let's face the facts. Just what kind of a term, area of study, or, for that matter, name for a profession is human factors? I certainly know what it means, but how many times have we all seen the term misused or misapplied, at least with respect to our own peculiar uses and definitions. Simply saying, "Oh, I do human factors work," was the lazy way out. Could I really expect her to have any inkling of

my meaning of the term or that it meant that I spent my time designing technology to meet the characteristics and needs of people. I could have certainly said, "Oh, I do human factors work," but, who knows, she might have gone home thinking that I was a minister or even a massage therapist! Human factors? No, that would not do.

The alternative, of course, was to ask her a question: "Have you ever heard of the field of human factors?" But this simply wasn't right, or very polite, for that matter. How rude it would have been of me to answer her question with a question. If I said anything about human factors it seemed only appropriate that I say that I was a human factors engineer or a human factors professional.. Ah, but then again, I am not really an engineer and there was still that problem with that term human factors. Just what in the world could I expect her to think it would mean? No, this wouldn't work either.

Another possibility was to tell her that I was an engineering psychologist, something that is certainly true but not very comprehensive of all of my work. This title says something about the behavioral aspects of design but absolutely nothing about users' physical characteristics and their reflection in the design of tasks and interfaces. And that psychologist part always threw them off. "Hum, an engineering psychologist," they would say slowly. "So, what is it that you do exactly? Sounds kind of like that touchy-feely stuff to me. You make sure people feel happy about their new cars or something?"

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By this time more than a few seconds had passed since the lady in 12B had asked the question. It was time to step up to the plate and show just what I was made of. I thought about giving a good and thorough definition of my profession, like: "I work with other designers to apply information about people to the design of tools, machines, systems, tasks, jobs, and environments for productive, safe, comfortable and effective human functioning," but it was simply too much to say and always seemed to bring the conversation to a screeching halt. Not exactly what one might call a "user-friendly" response to her question.

So I turned to her and enthusiastically said "Well, I help make things easier and safer for people to use."

"Oh," she said. "So you're an Ergonomist?"

"Yes!"

# MEET THE BCPE HEADQUARTERS STAFF

## Kris Alvord, Administrative Assistant

The timing couldn't have been better; I was unemployed and BCPE was seeking a temporary employee to help with the growing stacks of applications submitted to meet the deadline for Phase I certification. Although the position was only temporary, I figured "Why not? With 2-3 tubs of applications arriving daily, I should have a job at least until 1996!" Besides, after having worked for four years in retail sales, I was ready for a career change and opportunity appeared to be knocking on my door. Well, that was back in December '93 and thankfully, I'm still here. After spending most of 1994 reading every page of every application (in order to sanitize the applications for the evaluation process), I was offered a permanent, part-time position as BCPE administrative assistant. I was happy to accept the position contingent upon two things: 1) my work schedule would remain flexible since I had decided to return to school

and would need to work around an ever-changing class schedule and 2) I wouldn't have to spend any more time sanitizing applications!! With this agreed upon, my skills have been better utilized for tasks such as preparing the Directory of Certificants, corresponding with individuals inquiring about BCPE certification and on occasion, with a bit of arm twisting, writing brief articles for the newsletter. I have enjoyed working for BCPE, its been a great learning experience (especially since I hadn't even heard of ergonomics prior to my working at BCPE), and I hope to continue my part-time employment while I pursue my bachelor's degree in Exercise Science at Western Washington University. Who knows? With Dieter's subtle persuasion, I may be seeking BCPE certification in the future. Of course, the examination would have to be revised.....

## 1997 CERTIFICATION EXAM SCHEDULE

### Spring Exams:

April 7, 1997

Applications due February 7, 1997

Given at various locations in the USA and Canada

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May 4, 1997

Applications due March 4, 1997  
Palo Alto CA

### Fall Exam:

September 21, 1997

Applications due July 21, 1997  
Albuquerque NM

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