

Online newsletter does not show images.



## Division of Applied Experimental and Engineering Psychology

Division 21 of the American Psychological Association

### President

David Schroeder

### Past President

Gerald P. Krueger

### President-Elect

Doug Griffith

### Secretary-Treasurer

Richard T. Kelly

### Members-at-Large

James Driskell

Doug Wiegmann

Regina Colonia-Willner

### Representative to APA Council

Henry L. Taylor

### Program Committee Chair

Scott Shappell

### Membership Committee Chair

Ray King

### Fellows Committee Chair

Robert (Bob) Sorkin

### Student Representative:

Haydee Cuevas

### Newsletter Editor:

Susan Kirschenbaum

### Listserv Manager:

Henry Emurian

## Message From the President

*By David Schroeder, Division 21 President*

In support of the celebration of the first 100 years of flight, I thought it would be appropriate to recognize the efforts and achievements of founding members and early presidents of Division 21, many of who came from a military setting, often with a primary focus on aviation. The entrance of the United States into World War I marked the foundation of military psychology. At that time, psychologists were focusing much of their attention on mental testing for the selection, classification, and assignment of military personnel. This period also revealed the early roots of engineering psychology. Postwar advances in military and aviation psychology slowed, but did not stop. The merging of the Air Service Medical Research Laboratory (1918) and the School for Flight Surgeons (1919) into the School of Aviation Medicine (SAM – 1926) and its subsequent movement to Randolph AFB, TX in 1931 provided additional impetus for the involvement of aviation psychology. Its role stressed the importance of “the collection and analysis of performance data from pilots who were exposed (either in aircraft or in the laboratory) to the physical and physiological stresses studied (Alluisi, 1994, pg. 10)”. Engineering psychology continued to grow stronger and spread throughout aviation psychology and other research branches. One example of this growth was the pioneering efforts of engineering psychologists in the Physiological Research Unit of the Air Corps Material Division at Wright Field in Dayton, OH (Aero Medical Research Unit in the late 1930s) who influenced the design and operation of military aircraft that were used in the 2nd World War.

In 1941, the Army Air Forces Aviation Psychology Program was implemented and four short years later was guided by the leadership of “Colonels John Flanagan, Frank Geldard, J.P. Guilford, and Arthur W. Melton”. Much of this early work continued the focus on aircrew selection and classification. One year after the implementation of the AAF Aviation Psychology Program, Jack W. Dunlap was appointed by the National Research Council as director of research for the Committee on Selection and Training of Aircraft Pilots. Another pioneer in the

### Inside:

Message from the President

Spotlight on Education our Future Professions

Haydee M. Cuevas

Broadening Horizons with Creative Internship Opportunities

Matthew Hilscher

Mid-Year Symposium

Dave Schroeder & Hank Taylor

Representative to APA Council Report

Hank Taylor

Membership News

Convention Program

area of pilot selection and training was Alexander Coxe Williams Jr., who himself was a pilot and whose research was funded by the Civil Aeronautics Authority and the U.S. Navy. In 1946, he founded the University of Illinois Aviation Psychology Laboratory. During this same time period, Paul M. Fitts, generally considered as the founder of the field of engineering psychology or human factors engineering, edited the *Psychological Research on Equipment Design* #19 in the series "Army Air Forces, Aviation Psychology Program Research Reports". Not to be outdone by their U.S. Army and Army Air Corps colleagues, Franklin V. Taylor, Leonard C. Mead, and Arnold M. Small were intimately involved in the establishment of the first engineering laboratories in the Navy in 1945-46.

However, let us not forget the efforts made by the civilian sector. One such pioneer was Ross McFarland, who, in 1936, investigated the effects of exposure to a rapid ascent in an aircraft on aspects of human performance. In 1939, he studied the physiological and psychological characteristics of 200 Pan American Airways pilots in an effort to enhance pilot selection. Ross is perhaps most well known for his book *Human Factors in Air Transportation* (1953).

Finally, in 1956, the determined efforts of those legends in our field culminated in APA's recognition of the Society of Engineering Psychologists (Div. 21). Franklin V. Taylor, Karl Kryter, and Harry Older founded the division at the same time the Human Factors Society was established on the west coast.

Much of the information above came from Alluisi's chapter "APA Division 21: Roots and Rooters" in Taylor (1994).

What you may not know is that many of the subsequent presidents of Division 21 were either colleagues or students of these individuals. Indeed, a quick scan down the list of Division 21 past presidents reveals a veritable who's who in the field. In addition to those mentioned above, who hasn't heard of A. Chapanis, E.A. Alluisi, G.E. Briggs, H.M. Parsons, E.A. Fleishman, and J.W. Senders, to mention a few. That tradition of excellence is still being carried on by members who are involved in aviation-related research at the University of Central Florida, the University of Illinois, Ohio State University, the University of Texas, and other academic institutions and governmental laboratories. I cannot help but wonder, who are the next leaders in our field and how will the field expand over the next decade?

In one last reflection on the history of flight, I had the opportunity to hear Tom Crouch, Senior Curator, Division of Aeronautics, National Air and Space Museum, talk about the Wright Brothers and the first successful flight on two occasions this past year. He has a wealth of information about the events that influenced the development of the first aircraft and the four flights that took place at Kitty Hawk, NC in 1903. One of the points he made during his presentation was that their fourth and longest flight of the day, a remarkable 852 feet in 59 seconds, pales in comparison with NASA's Pioneer space exploration vehicle that is nearing the edge of the solar system and traveling some 470 miles in 59 seconds. The advances that have made this possible would not have occurred without those early pioneers in our field.

For those of you who are following the controversy associated with the Institutional Review Board (IRB) process, the National Academies Press has a prepublication version of the book *Protecting Participants and Facilitating Social and Behavioral Sciences Research* available on their website. This book is a complement to the Institute of Medicine's Committee report that addressed high-risk research. The NRC panel responsible for preparing the report indicate that their work primarily addressed three issues: (a) developing more effective means of helping individuals make an informed voluntary decision about participation, (b) potential threats to confidentiality associated with large databases and new technologies, and (c) review procedures commensurate with the risk associated with the research. Several of their recommendations for the Office of Human Research Protection involve the development of additional guidance designed to improve the flexibility of IRBs to review social and behavioral sciences research.

On a more practical matter, we need to continue to work toward providing a sound financial basis for our division. Some of you may recall that when I was secretary/treasurer for the division I indicated that we had been habitually spending more money than we were taking in. That practice has continued over the past few years, even though our midyear symposiums were financially a success and contributing to the coffers. However, we have a limited ability to raise additional funds over the division dues, currently at \$30.00. Of our dues in 2004, \$16.00 will be allotted for the *Journal of Experimental Psychology: Applied*. That means that we need to accomplish our other activities on \$14.00 from each member.

Unfortunately, this is further complicated by the fact that senior members of the division who receive dues exempt status by APA (age 65 or older and have been an APA member for 25 years or more), are no longer required to pay the division dues. As of 1998, we had 37.9% of our membership who were in that age grouping. They are required to pay for the journal only if they wish to receive it. Since we have a significant percentage of our members in this age category, this further restricts our financial resources.

The largest expense each year involves the printing and distribution of the three newsletters. Payment to APA, who formats and prints the newsletter, ranges from \$700 to \$1,000 per issue, depending on the size of the newsletter. An additional \$200 to \$300 per issue is spent on mailing the hard copy. The executive committee has explored several options regarding reducing the overall costs. One option would be to move to a purely electronic distribution of the newsletter. We currently post the newsletter on our website at the time it is sent to APA for formatting and distribution. We also provide information via the division's list serve. A problem with this approach is that only around 30% to 50% of our membership has their e-mail address included on the listserv. Since APA mails the newsletters at present, it would not be feasible logistically to provide an electronic copy for some members and mail a hard copy to others. Another alternative is to reduce the number of newsletters from 3 to two, reducing our expenses by a third. Each of these approaches would reduce the yearly expenses incurred by the division.

On the other hand, we could increase our dues (usually the last alternative in most organizations), currently \$30 for members and affiliates and \$15.00 for students. At current rates we end up subsidizing the cost of the newsletter for students. These and other options will be reviewed during our executive committee meeting in Toronto. A recommendation and proposal will be brought forth during the business meeting for a vote. We are interested in your opinions.

We will also be working on developing an expanded vision for the division. What should be our focus the next 3-5 years? Parsons (1999), in his history of Division 21, points out some of the difficulties the division has experienced in the past decade with regard to increasing our membership. How can we develop a new vision that will effectively support a drive for increased membership? I know that Henry Emurian

feels that we should expand our vision to include more of our colleagues involved in HCI activities.

In August, my year as president will be over. I would like to say that I have accomplished my objectives during the year. However, that would be difficult to prove, given our continued financial difficulties and membership. We did have an excellent midyear symposium and I would like to again thank Scott Shappell for his excellent work as chair of the program committee both for the midyear (additional details are provided elsewhere in this newsletter) and for the APA convention. I would also like to thank: (a) Gerald Krueger, who ensured that details regarding the midyear symposium preparation were resolved and also served as chair of the awards committee, (b) Doug Griffith for his support and activities as chair of the nominations and elections committee, (b) Hank Taylor for his support as the division's representative to the APA council, (c) Jim Callan who assumed the duties as secretary/treasurer upon the resignation of Richard Kelly (Scott has agreed to serve as our next secretary/treasurer, starting with the August meeting), and (d) Henry Emurian who facilitated communications with our membership by maintaining our website and the listserv for the division, and other members of the executive committee for their involvement this past year. Susan Kirschenbaum's efforts as the newsletter editor are also appreciated. We have all benefited from your publications. Unfortunately, Susan can no longer continue as the newsletter editor. If anyone is interested in this position, please contact Doug Griffith who will take over as president in August. A final thank you goes to Haydee Chuevas who has diligently prepared newsletter columns and other information for student members. Your enthusiasm, involvement, and expertise are to be commended.

When I started work on this column SARS appeared to no longer be an issue in North America. However, the latest news today is that SARS is again a health concern in Toronto. Hopefully, the health issues associated with SARS will be over by August and I will have an opportunity to see many of you in Toronto. We have a good program, including two excellent CHI panels prepared by Henry Emurian. Please take a look at the Division 21 program in this issue and plan to attend.

Parsons, H.M. (1999). A history of Division 21 (Applied Experimental and Engineering Psychology). In D.A. Dewsbury (Ed.) *Unification through division:*

*histories of the divisions of the American Psychological Association.* (Vol. III (9), pp. 43-72). Washington, DC: American Psychological Association.

Taylor, H.L. (1994). *Who made distinguished contributions to engineering psychology.* Washington DC: American Psychological Association, Division 21.

## Spotlight on Educating our Future Professionals

*Haydee M. Cuevas, Student Representative*

### Student Forum

The following article is the next piece in our continuing series aimed at spotlighting the future generation of Applied Experimental and Engineering Psychologists. Matthew Hilscher is currently working on his doctorate in Applied Experimental and Human Factors Psychology, through the department at the University of Central Florida. He is a private pilot who has a passion for applied aviation research. He has explored human factors issues in the areas of air traffic control, flight fatigue, child restraint systems, and airport security performance. In this article, Matthew illustrates how an internship can be both challenging and rewarding, and how a creative internship experience can successfully promote students' professional development.

### Broadening Horizons with Creative Internship Opportunities

*Matthew Hilscher, University of Central Florida*

In a few short years I envision myself as a human factors researcher employed in a global company. In order to achieve this goal, I realized that I needed first-hand experience with foreign economics, business practices and cultures. In today's global market, employers are not just looking for applicants with professional experience; they are looking for applicants with professional experience in an international setting. To this end, I entertained an opportunity to embark on a 3-month internship experience in the heart of Europe. At the end of May last year, I found myself for the first time in my life arriving alone, without any knowledge of the French language in a train station on the Eastern side of Paris. This was the start of my journey, the chance to gain a unique perspective, as well as insight, into various the working and living aspects of a European culture.

It was my goal that an internship experience would enable me to acquire and develop professional skills in another culture. So I decided to follow up on recent conference contact and initiated a few e-mails. I was successful in negotiating a task for myself within the EUROCONTROL agency. While my place of employment was in set in "the city of lights," the organization of my employ was an amalgamation of European Community representatives. This organization is a mixture of all European nations working on the common goal of unifying the air space over Europe.

The mission of the Eurocontrol Experimental Centre is to carry out Research and Development in order to support the improvement of Air Traffic Management (ATM) in Europe. It is their position, that ATM in Europe can be improved only through the research, innovation, and the testing of new concepts. Because ATM systems are expected to remain human-centered for the foreseeable future, the roles of people are still believed to be an essential element in the ability to deliver ATM services. People will play a key role in achieving system safety and capacity enhancements.

In light of this, a human factors laboratory was established as a testing platform for the development of tools and guidelines for team resource management, human error management, and human-technology integration and solutions for human factors issues in computer-enhanced ATC systems. It was within this laboratory where I began my sojourn. Specifically, my task was to develop a procedure for the use of ambulatory measurement of heart rate variability as an indicator for cognitive workload.

This task was accomplished with a fair amount of struggle and set-backs. The greater experiential goal was also achieved. Living in Paris afforded a significant exposure to cultural activities outside of the internship environment. Indeed the coffee culture alone takes on a high art form, and the food in general challenged me into new territories. I left Paris with a deeper level of self-confidence and maturity. In this relatively short time, my horizons had been broadened with a range of work and life experiences. I was much more aware of the outside world, and grew in my ability to be flexible and adaptable. This experience has certainly reinforced my career goals. I highly recommend this type of exposure to students of the world.

## **Mid-Year Symposium**

*Dave Schroeder, President Division 21*

*Hank Taylor, President Division 19*

Division 21 (Applied Experimental and Engineering Psychology) was joined again this year in co-sponsoring the Mid-Year Symposium by APA Division 19 (Military Psychology) and the Potomac Chapter of the Human Factors and Ergonomics Society. The meeting was held on March 6<sup>th</sup> and 7<sup>th</sup>, 2003 at the Fort Belvoir Officer's Club, in Picturesque Fort Belvoir, VA. the theme for this year's symposium was *Measuring and Maintaining Performance in Complex Environments*. The annual Mid-year symposium provides an outstanding forum for presenters and attendees who are interested in research designed to assess human performance on the battlefield, in military and civilian aviation, air traffic control, and other complex work environments. This year a special emphasis was placed on advances in the measurement of operator performance and human error. Over 100 professionals and students participated in the meeting.

Scientists and students for the University of Central Florida made presentations focused on "Optimizing Cognitive Readiness Under Combat Conditions," based on Army supported research. Presentations for scientists from the FAA's Civil Aerospace Medical Institute and the William J. Hughes Technical Center and Northrup Grumman Mission Systems were focused on "Measuring and Maintaining Performance in Air Traffic Control." "Cutting-edge Research from the Military Academies – U.S. Military Academy and USAF Academy" was the theme for presentations by professors and students from U.S. military Academies. Research conducted in support of the Navy by scientists at Pacific Sciences and Engineering Group emphasized "Knowledge Web (K-Web): Improving Knowledge Exchange During Operation Enduring Freedom." Scientists from the FAA's Civil Aerospace Medical Institute and the University of Illinois's Institute of Aviation described research surrounding general aviation pilot performance "Measuring and Maintaining Performance in Flight."

A student poster session was also included as an integral part of the meeting. Division 19 provided recognition for the best undergraduate and graduate student presentations. Division 19 awards were presented in honor of Dr. Jimmy Mitchell who had a distinguished career as a military psychologist, both as an enlisted member and an officer in the Air Force. He was a long-time supporter of the International Military Testing Association. Throughout his military career, teaching positions, and work with the Institute of Job and Occupational Analysis he influenced the career choice and development of many behavioral scientists. Awards were presented by Hank Taylor, President of Division 19. The winners were:

Graduate Poster to Jennifer Ross, University of Central Florida – Performance, workload, and stress with temporal and spatial task demands.

Undergraduate Paper to Jennie Hattman and Michelle Kratch, US Military Academy – Measuring situational awareness in the field and assessing its relationship to hardiness in field training exercises: A twofold study.

Undergraduate Poster to Simon Boyd, Mark Juntunen, and Kelly Schachtler, U.S. Military Academy – Effects of cueing and presence of distracting task on detecting change in battle icons.

The student presentations were of uniformly high quality and the poster session provided an excellent venue for direct interactions with students regarding their research and sharing of additional research opportunities.

An APA policy hour with Drs. Heather Kelly, Senior Legislative and Federal Affairs Officer and Dianne Marantano, Director of Psychology in the Workplace provided attendees with up-to-date information regarding efforts to promote behavioral research in the U.S. Legislature and the status of issues of concern for scientists. A question and answer session included a discussion regarding recent concerns associated with proposed Intuition Review Board (IRB) legislation.

Dr. Scott Shappell from the FAA's Civil Aerospace Medical Institute served as the program chair for the meeting. He developed an excellent meeting that was well attended and provided cutting-edge research on performance measurement issues in air traffic control, general aviation, on the battle field, and in other military settings. Plans are underway for the 2004 Mid-Year Symposium. The meeting will be held around the same time of the year at Ft. Belvoir. Look for the announcement to prepare for the next Mid-Year Symposium.

Below are additional scenes from the 2003 MYS.

## **Representative to APA Council Report**

### **Henry L. Taylor, Division 21 Council Representative**

The Council of Representatives met at the Capital Hilton Hotel, Washington, D.C. February 14-15, 2003. The planned meeting for February 16, 2003 was canceled due to weather. A plenary session of council was conducted February 13, 2002, prior to caucus/coalition meetings; the consent agenda was approved.

### **2003 Final Budget**

The Council approved the 2003 final budget of \$87,020,100 with a surplus of \$ 385,300.

The Council also authorized the CEO to do what is necessary throughout 2003 to ensure that the net from operations stays within the parameters provided for in the 2003 Final Budget. Last year Council requested the CEO to develop a plan to achieve a balanced budget by 2004 including substantial progress toward a balanced budget in 2003. The balanced budget was achieved one year early.

### **APA Real Estate**

APA real estate investments are doing well. The 750 First Street building showed an audited 2001 net profit of \$2085K and is 100% leased. The 10 G Street building showed a net of -\$642K for 2001 and improvement from -\$2671K in 1998 the first year of operations. This should continue to improve.

The Council has approved the refinancing of the two buildings with a \$20-25M over barrow.

### **Reasons to refinance the APA real estate**

Restore working capital, best interest rate in 40years, bought-out NASW 8% interest. The refinancing provides an increase in working capital from about \$33M to \$55M and eliminates the need for a line of credit. The blended rate of a debt of \$120M will be 5.99%.

### **Cash Flow**

Cash flow prior to refinancing averaged \$2.670K for the past 10 years and is expected to increase to

\$5,990K for the next 10 years. \$2M of the increased cash flow would go to APA operations and the balance (about \$3,990K) would go to increase APA net worth. APA had a negative \$12.2M from operations for 2000-2002. The percentage of APA operating expenses for 2000 was 48.2% and for 2002 it was 27.1%. The goal is to have 100% of net worth to operating expenses.

### **Investments**

APA had a net loss of approximately 1/3 of its \$39.5 long- term portfolio from 2000-2002. The portfolio is currently worth about \$211m

### **New Business Item**

Division 21 was a co-mover with Division 19 to rescind the APA ban on DOD advertising for military psychologists in APA publications. There is substantial support for this new business item.

### **Recognition of Sports Psychology as a Proficiency in Professional Psychology**

CRSPPP recommended approval and Council approved the request.

### **Recognition of the Assessment and Treatment of Serious Mental Illness as a Proficiency in Professional Psychology**

CRSPPP recommended approval and Council approved the request.

### **Renewed Recognition of Industrial and Organizational Psychology as a Specialty in Professional Psychology**

CRSPPP recommended approval and Council approved the request.

### **Task Force on the Psychological Effects of Efforts to Prevent Terrorism**

The Council voted to suspend the rules to consider this new business item. The Council approved the expenditure of \$5,000 from contingency funds for the Task Force. A publication of a report is the expected outcome.

**Membership News**

**New Student Members**

Lauriann M. Jones is a Ph.D. Student at UCF hoping to earn her degree in 2006. She is a Research Assistant for the Institute of Simulation Training and the University of Central Florida.

Danielle L. Paige is a Graduate Student in the Industrial/Organizational Psychology program at Rice University. She is also a member of Human factors and Ergonomics Society, the Society for I/O Psychology, and the Psychology Law Society

**Fellow Nominations Due**

*Robert D. Sorkin, Fellows Chair*

I would again like to solicit your nominations for members of our division to be elected to Fellow status in APA. The APA Bylaws state that members are eligible for election to Fellowship if there is "Evidence of unusual and outstanding contribution or performance in the field of psychology." There are men and women in our division who meet that criterion but have not yet been given that recognition. Please think about the people you know who deserve that honor. Check whether they are Fellows by going to the Division directory website at <http://nasa1.ifsm.umbc.edu/divisions/div21/Directory/default.asp>. (You'll need your APA membership number to check in.). If they are not Fellows, send me their names along with a brief description. The Division 21 Fellows Committee will send you the form needed for the nomination and will take over the process from there. The Committee would appreciate receiving nominations as soon as possible, preferably before August 1, 2003. Please send potential Fellows Nomination to:

Air Force Office of Scientific Research AFOSR/NL  
 Program Manager: Perception & Cognition Program  
 (att: Robert D. Sorkin)  
 4015 Wilson Blvd., Rm. 713  
 Arlington VA 22203-1954  
 Phone: 703-696-8421 Fax: 703-696-8449  
 email: [robert.sorkin@afosr.af.mil](mailto:robert.sorkin@afosr.af.mil)

**From the Editor:  
 Stepping Down**

Some of us, young “seniors” or senior *baby-boomers*, are not in the “sandwich” generation, but in the double-decker generation. We have both aging parents and grandchildren. Our “parents” might be intellectual programs that have fostered our scientific curiosity for decades and our “grandchildren” might be the intellectual off-spring of those parents, or they might be our biological parents and grandchildren. On the one hand, grandchildren are wonderful! There is no argument about that. On the other had, we have responsibilities to our parents that we can’t neglect. How do we address the needs of both? My intellectual “parents” (operant conditioning???) and my intellectual (applied cognitive research) children make demands. Now my children’s generation (the research of my many colleagues) is producing children of their own. One of those children is the Navy’s discovery that *people* are key to employing technology! The engineers call it “Human Systems Integration” (HSI) and claim it is an important part of Systems Engineering. We knew that all along! It is also true that the emphasis on the human is more feasible and important than ever. More feasible because of the excess computing power available and more important because of the number of choices that the computing power gives us.

So, why do I write about this here? I have taken on new responsibilities guiding and nurturing the HSI grandchild. Because of that, in addition to my continuing parental responsibilities to my research, I am stepping down as Editor of this Newsletter. I am sorry to be stepping down as editor of this Newsletter. I know that it should be a minimal job, but I can’t manage it just now. I have too many other responsibilities, both professional and personal. Some, like playing with my grandson or guiding the direction that HSI takes in my organization, are pleasures and some (nameless) are not.

Now it is your turn. Who is going to take over? I can help with the transition, but *you or you or you* must become the peanut butter that makes this Newsletter!

## ***Newsletter***

Volume 28, No 2 Spring, 2003 9

**Note: The APA Convention Program is posted on the Division website under the Meetings link.**