

AVETeC Celebrates “Women With Wings”



A photograph of Springfield native Caro Bayley Bosca captured during her time as a WASP pilot in World War II.

To celebrate the heritage of some of our nation’s unsung heroes, AVETeC’s own Creative Director

Mike Madero will unveil a documentary about the Women Air Force Service Pilots (WASP) program

of World War II at the Springfield Museum of Art on Dec. 16.

The documentary screening will be followed by audience interaction with a panel of aviation pioneers, including Springfield, Ohio native and WASP pilot Ms. Caro Bayley Bosca.

Bosca recently visited the AVETeC offices as part of a final interview to be used in the documentary.

“Caro has such an interesting story to tell about her time in the WASP program,” remarked Madero. “All of the women we’ve spoken to each have a remarkable story with their own unique experiences to color the common bond.”

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Accelerating American Innovation

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DICE Presence Felt At SC’06 International Convention

In November, AVETeC’s Data Intensive Computing Environment, or DICE Program, made big strides in establishing its presence in the supercomputing industry by participating in the premier international conference on high performance computing, Supercomputing’ 06 (SC06).

“We made a number of new contacts, reconnected with our partners and learned

about some interesting new developments in the supercomputing industry,” said Roger Panton, Executive Director of DICE. “The conference was an opportunity for our staff to familiarize itself with our current and potential partners and the industry.”

Panton said he was impressed with the dialogue initiated by strategic (continued pg 3)



AVETeC Network Planner Jon Skelley and Director of Commercialization Bob Richards in the AVETeC display area at SC’06.



Astronaut To Students: Sky Is Not The Limit

Astronauts can even send email from space, according to former astronaut Mark Brown who addressed community members at the Springfield Museum of Art on Thursday Nov. 30, 2006 as part of NASA's Aerospace Design Exhibit Lecture Series.

Brown, who currently serves as the Chief Operating Officer of MTC Technologies in Dayton, Ohio spent much of the evening sharing with audience members his experience as a NASA astronaut. The audience, which ranged in age from elementary students to senior citizens, sat eagerly as Brown discussed what it was like to be in space.

"At first, you kind of feel like an actor in a science fiction movie," Brown remarked. "You're thinking, 'This can't be real.'"

Brown explained the experience of going from three "G's" to weightlessness in a second and a half by describing the feeling of his stomach sliding upward in the absence of gravity.

Brown also let every aspiring astronaut in the crowd know that they were capable of success. "You don't have to be a perfect, straight-A student and a star athlete to become an astronaut.



Former Astronaut Mark Brown encourages an aspiring astronaut during his community lecture, which was part of the AVETeC sponsored lecture series at the Springfield Museum of Art.

But you do have to work very, very hard."

Brown ended with the uplifting message that the future is limited only by the imagination. And as evidenced by his own experience – the sky is **NOT** the limit.

The Aerospace Design exhibit will continue until Dec. 16 and still includes a variety of fun and educational activities for the community. The final lecture in

the series will take place on Dec. 7 from 6:30 - 8 p.m. and will be led by engineer Tom Benson from NASA Glenn, who will discuss WWII aircraft. The final day of the exhibit will feature the "Women with Wings" heritage celebration from 1 - 4 p.m.

For more information, please visit the AVETeC Educational Outreach website at www.avetec.org/education.htm or call Springfield Museum of Art Educator Deena Pinales at (937) 324-3729.

Students, Would You Like to Learn With the Experts? Apply to Become a Wright Scholar!

Applications for the Wright Scholar Research Assistant Program are available. The program is open to current high school juniors and seniors interested in careers in science and technology. Wright Scholars will be research assistants at the Air Force Research Laboratory at Wright Patterson Air Force Base in Fairborn, Ohio. The program gives selected students a variety of opportunities, including hands-on experiments, field trips and weekly lectures.

The application process will be open until January 12, 2007. For more information on the program, and to download an application visit www.avetec.org/education.htm.

Research Profile: Virtual and Hardware-in-the-Loop Testing



AVETeC Chief Technology Officer Dr. Jeffrey Dalton leads AVETeC research on virtual and hardware-in-the-loop testing.

AVETeC's Chief Technology Officer, Dr. Jeffrey Dalton is working closely with several AVETeC partners to extend research in virtual and hardware-in-the-loop testing. As this research continues, engineers will be able to take advantage of the established research to improve efficiency of the design, development, and qualification processes of modern weapons systems.

Currently these processes are complex, time intensive and expensive. Virtual test and hardware-in-the-loop testing coupled with modeling and simulation technology may offer an approach that reduces the number of iterations in the design-

build-test cycle prevalent in the industry. This combination will reduce the cost of full system validation. More often than not, proof of concept does not truly occur until very late in the design process. Furthermore, the tight coupling between system components puts the entire system at risk when a single sub-component design is flawed. Hardware-in-the-loop testing replaces virtual component testing with physical hardware in the system as the hardware becomes available.

A white paper on AVETeC's research on virtual and hardware-in-the-loop testing is available upon request. For further information, contact info@avetec.org.

DICE at SC'06 (continued from pg 1)

partnerships with other exhibitors, such as Yotta Yotta, Mercury Computer, Juniper, NASA, Department of Defense (DoD) and ViON Corporation, which demonstrated DICE capabilities in their exhibit spaces. In addition to the exhibitor's demonstration, Yotta Yotta, NASA, DoD and ViON presented technical papers on DICE projects along with a data intensive panel discussion sponsored by AVETeC.

The show furthered the DICE Program's mission to investigate

technology solutions that address challenges associated with creation and use of large quantities of geographically dispersed data. DICE provides a multi-agency environment to speed the time to solve complex data intensive problems.

"It was great to see our staff immersed in the supercomputing show and trying to absorb all the knowledge they could gain," said AVETeC President Robert Evans Miller.

"There was something for each staff member to take away from the show,

from personal contacts to expanded understanding about the challenges with data intensive computing that we are working so hard to address."

Miller said AVETeC plans to expand its presence with a larger exhibit and increased collaborator involvement next year when the show is held in Reno, Nevada.

For further info regarding the DICE Program visit www.avetec.org/dice.htm

Women With Wings (continued from pg 1)

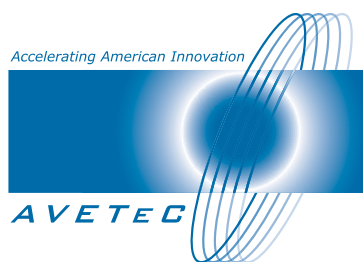
Beginning with a visit to the Experimental Aircraft Association's annual fly-in at Oshkosh, Wisconsin, Madero and Public Relations Coordinator Sarah Ammar interviewed Bosca, WASP pilot Nadine Nagle of Kettering, Ohio and several other WASP participants. Each woman expressed her deep desire to serve her country and her intense love of flying.

Bosca, 84, who is a lifetime resident of Springfield, joined the WASP program as soon as she turned 21.

"I had wanted to serve in this program as soon as I heard of it, but I was too young. You had to be 21 to join," Bosca remembered. "So as soon as I could, I was on my way!"



Bosca viewing a three-dimensional demonstration during her recent visit to the AVETeC office.



30 Warder Street, Suite 210
Springfield, OH 45504
Phone: 937.322.5000
Fax: 937.325.6284
www.avetec.org

info@avetec.org

Managing Editor:
Sarah Ammar

Communication Director:
Melanie Wilt

What is AVETeC?

The Advanced Virtual Engine Test Cell (AVETeC) is a not-for-profit, public benefit research organization located in Springfield, Ohio. AVETeC is committed to expanding the field of science and technology through educational outreach, collaborative research, and practical development.

One goal of AVETeC, through research and collaboration with it's partners, is to develop a fully functional, accurate, virtual modeling and simulation environment. This will allow engineers to design, test, and modify engines in a virtual setting, which will ultimately save both time and money.

AVETeC is also dedicated to the field of science and technology as a whole and, as such, is committed to engaging the community in every way possible. AVETeC knows that educational outreach is important in order to develop the future leaders of the science and technology fields, and will continue to engage the minds of youth and the community as a whole.

AVETeC is committed to
[Accelerating American Innovation!](#)

Words of Wisdom

- *"History will be kind to me for I intend to write it." ~ Sir Winston Churchill*
- *"Any sufficiently advanced technology is indistinguishable from magic." ~Arthur C. Clarke*
- *"The important thing in science is not just to obtain new facts, but to discover new ways of thinking about them." ~ Sir William Bragg*



President's Corner



AVETeC has experienced an extraordinary 2006. As I look back on the year we've had, I reflect with pride our continued breakthroughs in collaborative

research and education thanks to the outstanding team assembled in Springfield, Ohio and connected to our partners across the country.

Our propulsion system simulation research continues to advance the

state-of-the-art. The DICE program is growing as new partners and collaborators join our efforts to eliminate data management problems that plague industry, government and academia. Our educational outreach programs continue to develop and immerse many bright young men and women in cutting-edge science and technology.

The AVETeC staff has more than doubled this year to 29 full- and part-time employees. The research questions and academic and community development that AVETeC seeks to address are all extremely important, and we are privileged to have such

a world-class team of professionals working on each issue.

As the New Year approaches, I look forward to further growth and development in all areas of the company. I sincerely hope you have a wonderful holiday season. Thank you for the part you have played in AVETeC's successes in 2006.

Sincerely,

Robert Evans Miller