

## **Curriculum Vitae: James S. Voss**

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### **Professional Experience**

2016 – Present	University of Colorado	Scholar in Residence
2009 – 2016	University of Colorado	Scholar in Residence and Roubos Chair
2008 – 2013	Sierra Nevada Corporation	Vice President of Space Exploration Systems and Dream Chaser Spacecraft Program Executive
2007 – 2008	SpaceDev, Inc	Vice President of Engineering
2005 – 2007	Transformational Space Corporation	Vice President of Space Exploration Systems
2003 – 2005	Auburn University	Associate Dean of Engineering and Professor of Aerospace Engineering
2002 - 2003	NASA	Deputy for Flight Operations, Mission Integration and Operations Office, International Space Station Program
1987 – 2002	NASA/US Army	Astronaut
1984 – 1987	NASA/US Army	Vehicle Integration Test Engineer
1972 – 1984	US Army	Army Officer

### **Academic Experience**

2009 – Present	University of Colorado	Scholar in Residence
2003 – 2005	Auburn University	Associate Dean of Engineering and Professor of Aerospace Engineering
Summer of 2004 and 2005	University of Colorado at Boulder	Visiting Professor
1978 – 1981	US Military Academy	Assistant Professor, Department of Mechanics

### **Education**

2001	PhD	Honorary	University of Colorado
1974	MS	Aerospace Engineering Sciences	University of Colorado
1972	BS	Aerospace Engineering	Auburn University

## **Biographical Sketch**

Obtained a BS in Aerospace Engineering from Auburn University in 1972 and upon graduation and commissioning as a 2nd Lieutenant went directly to the University of Colorado to obtain a masters degree under the Army Graduate Fellowship Program. After receiving the MS in Aerospace Engineering Sciences, attended the Army Infantry Officer Basic Course, Airborne and Ranger schools. Then served with the 2nd Battalion 48th Infantry in Germany as a platoon leader, intelligence staff officer, and company commander.

On returning to the United States, attended the Infantry Officer Advanced Course, and then taught Thermofluid Dynamics for three years in the Department of Mechanics at the U.S. Military Academy. While an assistant professor at West Point, received a Summer Faculty Fellowship at the Marshall Space Flight Center to conduct research on the Space Shuttle main engine turbopumps. Selected as the outstanding professor at West Point for 1981-82. After attending the U.S. Naval Test Pilot School and the Armed Forces Staff College, assigned to the U.S. Army Aviation Engineering Flight Activity as a Flight Test Engineer/Research and Development Coordinator. Involved in several major flight test projects before being detailed to NASA's Lyndon B. Johnson Space Center in 1984.

As a NASA vehicle integration test engineer, supported Shuttle and payload testing at the Kennedy Space Center for numerous Space Shuttle launches and landings. Participated in the *Challenger* accident investigation, and supported the resulting reviews dedicated to returning the Space Shuttle safely to flight. Selected as an astronaut in 1987. Then worked as a flight crew representative in the area of Shuttle safety; as a CAPCOM, providing a communications interface between ground controllers and flight crews during simulations and Shuttle flights; and as the Astronaut Office Training Officer supervising two astronaut candidate classes.

Flew as a mission specialist astronaut on Space Shuttle flight STS-44 in 1991 and STS-53 in 1992, was the payload commander on STS-69 in 1995, and again was a mission specialist on STS-101 in 2000. Retired from the Army as a colonel in 1999, moving to a Civil Service position in the NASA Astronaut Office. Served as the back-up crewmember for two missions to the Russian Space Station *Mir*. During this time lived and trained for 2 years at the Gagarin Cosmonaut Training Center in Star City, Russia. During 2001 flew on Shuttle flight STS-102 to the International Space Station where he lived and worked for 163 days on board as a member of the Expedition 2 crew. After five space flights became one of our country's most experienced astronauts with 201 days in space, including four spacewalks totaling 22 hours and 35 minutes of extravehicular activity time. Remained with NASA as a management astronaut for 2 years working in the Space Station Program Mission Integration and Operations Office as the Deputy for Flight Operations.

Retired from NASA in 2003 to become Associate Dean of Engineering for External Affairs at Auburn University, assisting with student projects while teaching the senior space design course in Aerospace Engineering. Was responsible for development activities in the College of Engineering, supervising the eight person office tasked with raising \$190 million in a five year campaign. Consulted with numerous aerospace companies and provided expert commentary on space and Space Shuttle launches for CBS and ABC.

In 2005, assumed the role of Vice President for Space Exploration Systems at Transformational Space Corporation with responsibility for the design and construction of human spacecraft. Then was the Vice President of Engineering for SpaceDev, Inc responsible for all engineering activities. With the acquisition of SpaceDev by Sierra Nevada Corporation in 2008, became VP of Space Exploration Systems, SNC Space Systems Group. Program Manager for the NASA Dream Chaser human spacecraft program. Retired from SNC in 2013 but remains a strategic advisor/consultant for SNC.

In 2009 assumed a teaching role at the University of Colorado as Scholar in Residence and Roubos Chair. As of 2017, Scholar in Residence teaching undergraduate and graduate classes associated with Bioastronautics and human spaceflight.

Has spoken to hundreds of audiences across the United States about his space experiences.

## **Leadership/management skills**

Held leadership roles throughout a 27-year military career, from supervising a small military staff office to commanding an infantry company of 150 soldiers. As an engineer, led numerous successful teams and working groups with specific objectives and goals. Led his academic group at West Point and managed the Engineering Development Office at Auburn University. Led and managed several industry teams in developing human spacecraft. Team building and influencing the group efforts were major parts of all jobs including leading flight-test teams, astronaut crews, and engineering teams.

## **Teaching and Communications Skills**

Taught as an Assistant Professor for three years in the Department of Mechanics at the U.S. Military Academy at West Point. The class was Thermofluid Dynamics, a third year class that included thermodynamics, fluid mechanics, and aerodynamics. The third year, served as the Course Director, supervising and coordinating the classes of four other professors to insure uniform teaching content across the classes. Was selected as the Outstanding Professor at the U.S. Military Academy.

At Auburn University, developed and taught the senior space design class for two years. The two semester class focused on the design of human spacecraft and included lectures on space environment, spacecraft systems, and the design process. Was selected as the Most Outstanding Faculty Member in the Aerospace Engineering Department.

During two summers at the University of Colorado at Boulder, taught classes on the fundamentals of human spaceflight (ASEN 2519/3519).

In 2009 assumed a teaching role at the University of Colorado. Teach undergraduate (ASEN 3036 Introduction to Human Spaceflight) and graduate (ASEN 5018 and 6028 Graduate Projects in Bioastronautics) classes associated with Bioastronautics and human spaceflight.

As an astronaut, completed hundreds of speeches and presentations on the US Space Program to professional groups, schools, and general audiences. Frequently briefed officials at the highest levels of NASA management, industry, and the US Congress.

## **Professional Organizations**

Association of Space Explorers

American Institute of Aeronautics and Astronautics, Fellow

Experimental Aircraft Association

## **Professional Service**

NASA Advisory Council, Human Exploration and Operations Committee (2014 – Present)

National Space Biomedical Research Institute Board of Directors (2005 – 2016)

Auburn University Aerospace Engineering Advisory Council (2004 - 2018)

NASA International Space Station Independent Safety Task Force (2006 - 2007)

NASA Constellation Program Mission Operations Standing Review Board (2009 - 2010)

University of Colorado Engineering Advisory Council (2003 – 2011)

University of Colorado at Boulder Aerospace Engineering Sciences Bioastronautics Program Review Committee Chair (2012)

Experimental Aircraft Association Technical Councilor and Flight Advisor

### **Awards and Recognition**

Theta Xi Fraternity Man of Distinction Award (2022)

CU CEAS Top 20 Teaching Faculty Recognition (2017)

AIAA Haley Space Flight Award (2016)

Auburn University Lifetime Achievement Award (2015)

American Institute of Aeronautics and Astronautics Fellow (2014)

Russian Spaceflight Medal of Achievement (2012)

Alabama Aviation Hall of Fame (2011)

Southeastern Conference Story of Character (2008)

Auburn University Distinguished Auburn Engineer (2006)

Most Outstanding Faculty Member, Aerospace Engineering Dept, Auburn University (2005)

American Institute of Aeronautics and Astronautics Associate Fellow (2005)

Distinguished Summer Faculty, University of Colorado (2004)

University of Colorado Distinguished Engineering Alumni Award (2003)

National Aeronautic Association Gagarin Gold Medal (2003)

Alabama Engineering Hall of Fame (2002)

National Infantry Association Order of Saint Maurice (2002)

Distinguished Veteran Award, City of Auburn, AL (2002)

Honorary Doctorate from the University of Colorado (2001)

NASA Space Flight Medal (2001)

NASA Distinguished Service Medal (2001)

NASA Space Flight Medal (2000)

U.S. Army Distinguished Service Medal (1999)

Auburn University Department of Aerospace Engineering Outstanding Alumni Award (1996)

NASA Outstanding Leadership Award (1996)

NASA Space Flight Medal (1995)

NASA Exceptional Service Medal (1994)

NASA Space Flight Medal (1993)

Defense Meritorious Service Medal (1993)

Defense Superior Service Medal (1992)

NASA Space Flight Medal (1992)

Outstanding Student Award, US Naval Test Pilot School (1983)

William P. Clements, Jr. Award, Outstanding Professor at the U.S. Military Academy (1982)

Meritorious Service Medal (1982)

NASA Summer Faculty Research Fellowship (1980)

Commandant's List - Infantry Officer Advanced Course (1979)

Army Commendation Medal (1978)

Honor Graduate and Leadership Award – US Army Ranger School (1975)

Distinguished Graduate – US Army Infantry Officer Basic Course (1974)

US Army Graduate Fellowship (1972)

## **Languages and Other Training**

Fluent in Russian

Human Space Flight Mission Analysis and Design Course (2003)

National Outdoor Leadership School (2002)

NASA International Space Station Training Course (1998- 2001)

Canadian Space Agency Manipulator Robotics Operator Course (2000)

Russian Space Station Mir Training Course (1997-1998)

NASA Space Shuttle Training Program (1989-1996)

NASA Astronaut Candidate Training Course (1987-1988)

US Naval Test Pilot School (1982)

Armed Forces Staff College (1981)

Army Infantry Officer Advanced Course (1978)

Army Nuclear, Chemical and Biological Officer Course (1976)

Army Ranger School (1975)

Army Airborne School (1974)

Army Infantry Officer Basic Course (1974)

SCUBA Open Water Certification PADI (1974)

## **Research**

While at West Point, conducted research for the Marshall Space Flight Center Propulsion Laboratory on the Space Shuttle main engine high pressure turbopump seals. Published results in *NASA CR-161511*. At Auburn University conducted research on innovative crew restraint systems for NASA contractor, Transformational Space Corporation. University of Colorado research has been in support of Orbital ATK Corporation and the NASA Next Space Technologies for Exploration Partnerships (NextSTEP) Program in development of a space habitation module.

## **Publications**

Voss, J. S., Soyuz-TMA Cue Cards and Reference Information for International Space Station (ISS) Training. Training Document 03.T0002, NASA Johnson Space Center, Houston, TX. Sep 2001.

Voss, J. (2001): "Homebuilding in Space" Sport Aviation Magazine.

Voss, J. and Sanchez, M. (1990): "Astronaut Candidate Training Program", NASA Johnson Space Center Publication.

Voss, J. (1979): "Leading the Problem Soldier", *Leadership Papers, US Army Infantry School*.

## **Technical Reports and Papers**

Zea, L., Over, S., Gonzales, S., Stroud, K., Sanchez, M., Voss, J., and Tanner, J., "A Dream Chaser Orbital Vehicle Cockpit Early Architecture Development and Evolution", 2015

Krevor, Z., Howard, R. Mosher, T., Curry, J. Sanchez, M. and Voss, J. (2013). The Advantages of a Hardware Based Design Methodology. AIAA Space Conference, San Diego, CA, Sep 2013.

Sanchez, M. and Voss, J. (2005): "From ISS to the Moon, Mars and Beyond – Applying Lessons Learned", AIAA 2005-0705, AIAA Conference, Reno, NV, Jan, 2005.

Voss, J. (2005): "Crew Exploration Vehicle Crew Compartment Restraint System Concept Development", Auburn University Research Report for Transformational Space Corporation, Auburn AL, May, 2005.

Voss, J., Helms, S. and Usachev, Y. (2002): "International Space Station Expedition Two Crew Report", NASA Technical Report.

Horowitz, S., Halsell, J, Voss, J., Helms, S., Usachev, Y., Williams, J. and Weber, M., (2000): "Space Shuttle Mission STS-101 Crew Report", NASA Technical Report.

Walker, D., Voss, J., Newman, J., Cockrell, K. and Gernhardt, M. (1996): "Space Shuttle Mission STS-69 Crew Report", NASA Technical Report.

Cabana, R., Voss, J., Walker, D., Clifford, R. and Bluford, G. (1993): "Space Shuttle Mission STS-53 Crew Report", NASA Technical Report.

Voss, J., Henricks, T., Gregory, F., Runco, M. and Musgrave, S. (1992): "Space Shuttle Mission STS-44 Crew Report", NASA Technical Report.

Nagata, J., Voss, J. and Williams, R. (1984): "Preliminary Airworthiness Evaluation AH-1S (MC) Helicopter with Eternal Fuel Tanks Installed", *Final Report, USAAEFA Project No. 84-09.*

Voss, J. (1984): "Preliminary Airworthiness Evaluation of the TH-1S/PNVS Surrogate Trainer", *Final Report, USAAEFA Project No. 84-12.*

Bender, G., Voss, J. and Murrell, R. (1984): "First Article Preproduction Tests of the AH-64A Helicopter", *Final Report, USAAEFA Project No. 84-10.*

Voss, J., Bishop, G. and Reynolds, T. (1984): "Evaluation of the Solar Heating of the UH-60 Fuselage Skin", *Final Report, USAAEFA Project No. 84-29.*

Voss, J. (1980): "Fluid Dynamic Analysis of the Space Shuttle Main Engine High Pressure Oxidizer Turbopump Slinger Seal", *NASA CR-161511, Research Reports - 1980 NASA ASEE Summer Faculty Fellowship Program.*

## **Presentations:**

Frequent speaker on our Nation's space program to K-12 schools, universities, professional conferences and organizations, service and social organizations, and government groups.