

## ***Biographical Data***

**Dafydd (Dave) Williams (M.D.)  
Canadian Space Agency Astronaut -  
Retired**



### **PERSONAL DATA:**

Born May 16, 1954, in Saskatoon, Saskatchewan.

Dave Williams is married and has two children.

He enjoys flying, scuba diving, hiking, sailing, kayaking, canoeing, downhill and cross-country skiing.

### **EDUCATION:**

Education: Attended high school in Beaconsfield, Quebec. Graduated from McGill University, Montréal, Quebec, with a Bachelor of Science, Major in Biology (1976). Obtained a Master of Science from the Physiology Department, a Doctorate of Medicine and a Master of Surgery from the Faculty of Medicine, McGill University.

### **EXPERIENCE:**

Dave Williams pursued postgraduate studies in advanced invertebrate physiology at the Friday Harbour Laboratories at the University of Washington, Seattle, but his interests shifted to vertebrate neurophysiology when, for his master's thesis, he became involved in basic science research on how adrenal steroid hormones modify the regulation of sleep-wake cycles.

His clinical research in emergency medicine has included studies evaluating the initial training and skill retention of cardiopulmonary resuscitation (CPR) skills, patient survival from out-of-hospital cardiac arrest, the early identification of trauma patients at high risk, and the efficacy of tetanus immunization in the elderly.

In 1988, Williams became an emergency physician with the Department of Emergency Services at Sunnybrook Health Science Centre, while also lecturing with the Department of Surgery at the University of Toronto.

From 1989 to 1990 Williams served as an emergency physician with the Emergency Associates of Kitchener, Waterloo and as the medical director of the Westmount Urgent Care Clinic. In 1990, he returned to Sunnybrook as medical director of the Advanced Cardiac Life Support Program and also as the coordinator of postgraduate training in emergency medicine. Subsequently, Williams became the director of the Department of Emergency Services at Sunnybrook Health Science Centre and assistant professor of Surgery at the University of Toronto. He is currently an adjunct professor of Surgery at the University of Toronto and McGill University.

### **SPACE EXPERIENCE:**

In June 1992 the Canadian Space Agency selected Williams as one of four successful candidates from a field of 5330 applicants to begin astronaut training. He completed basic training, and in May 1993, was appointed manager of the Missions and Space Medicine Group within the Canadian Astronaut Program. His assignments included supervising the implementation of operational space medicine activities for the Canadian Astronaut Program Space Unit Life Simulation (CAPSULS) Project. During this seven-day simulated space mission, which was conducted at the Defense R&D Canada, Toronto (Formerly DCIEM), Williams was the principal investigator of a study to evaluate the initial training and retention of resuscitation skills by non-medical astronauts. He was also one of the crew members and the crew medical officer.

In January 1995 Williams was selected to join the international class of NASA mission specialist astronaut candidates. He reported to the Johnson Space Center (JSC) in March 1995 for a year of training and evaluation. Following his successful completion of this training in May 1996, he was assigned to the Payloads and Habitability Branch of the NASA Astronaut Office. As a representative of the Office, he participated in the JSC Institutional Review Board and Science Merit Review Committee, the Independent Advisory Team for the International Space Station Crew Health Care System (CHeCs), the JSC Radiation Constraints Panel and was involved in the development of the Human Research Facility.

From July 1998 until September 2002, Dave Williams held the position of Director of the Space and Life Sciences Directorate at the Johnson Space Center in Houston, Texas. With this appointment, he became the first non-American to hold a senior management position within NASA. He concurrently held a six-month position as the first deputy associated administrator for crew health and safety in the Office of Space Flight at NASA Headquarters in 2001.

In addition to these assignments, Dave Williams continued to take part in astronaut training to maintain and further develop his skills. In October 2001, he became an aquanaut through his participation in the joint NASA-NOAA (National Oceanic and Atmospheric Administration) NEEMO 1 mission, a training exercise held in Aquarius, the world's only underwater research laboratory. During this seven-day exercise, Williams became the first Canadian to have lived and worked in space and in the ocean.

## **SPACE FLIGHTS:**

### **STS-90**

In April 1998 Dave Williams participated in STS-90 as Mission Specialist 3 aboard Space Shuttle Columbia. During the 16-day flight, called Neurolab, the seven-person crew served as both experiment subjects and operators for 26 individual life science experiments. These experiments, dedicated to the advancement of neuroscience research, focused on the effects of microgravity on the brain and the nervous system. Williams also functioned as the crew medical officer, the flight engineer during the ascent phase, and was trained to perform contingency spacewalks. Columbia orbited the Earth 256 times, covered over 10 million kilometers and spent over 381 hours in space.

## **NEEMO 9**

In 2006, Dave Williams took the lead of NEEMO 9 as the crew commander of this mission dedicated to assess new ways to deliver medical care to a remote location, as would be done in a long space flight.

## **STS-118**

Dave Williams flew on his second space flight, Mission STS-118/13A.1 from August 8-21, 2007. During the 11-day mission, to add a truss segment and relocate solar arrays on the International Space Station, Dave Williams completed three spacewalks, and set two new records during his final EVA on Saturday, 18 August: he is the Canadian with the most spacewalks (3); and he passed Canadian Astronaut Chris Hadfield in total EVA time. Williams ended Saturday's EVA with a total of 17 hours, 47 minutes of extravehicular time. He was the second Canadian to lead an EVA, after Chris Hadfield, who led an EVA during STS-100.

## **CURRENT STATUS:**

Dr. Williams announced his retirement as an astronaut on February 29, 2008, effective March 1, 2008.

In April 2008, Williams was recruited by McMaster University as physician scientist where he is the director for the new McMaster Centre for Medical Robotics at St. Joseph's Hospital.

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