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2005 AGENDA

Topic: Aeromedical Lessons from the Space Shuttle Columbia Accident Investigation

**Session I 8:30am - 10:00am – Moderator, Dr. Sam Pool**

Introduction / Mission Response Team  
30 minutes

Dr. Sam Pool

Primary Disaster Field Office, Lufkin, Texas  
30 minutes

Capt. James Wetherbee

Mishap Investigation Team -  
Barksdale AFB, Louisiana  
30 minutes

Dr. Philip Stepaniak

Questions

**Session II 10:30am - 12:00pm – Moderator, Dr. Sam Pool**

KSC Mishap Response Plan  
30 minutes

Dr. Philip Scarpa

Armed Forces Institute of Pathology  
30 minutes

Dr. Craig Mallak

STS-107 Crew Surgeon  
30 minutes

Dr. Smith Johnston

Questions

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Panel: **Aeromedical Lessons Learned from the Space Shuttle Columbia Accident Investigation**

Panel Abstract

Title: Introduction and Mission Response Team (MRT)

Author: Dr. Sam Pool, [sam.l.pool@nasa.gov](mailto:sam.l.pool@nasa.gov), Johnson Space Center, Space and Life Sciences Directorate, Mail Code SA, Houston TX 77058

**Introduction:** On February 1, 2003 the Space Shuttle Columbia, returning to Earth with a crew of seven astronauts, disintegrated along a track extending from California to Louisiana. Observers on the ground filmed breakup of the spacecraft. Debris fell along a 567 statute mile track from Littlefield, Texas to Fort Polk, Louisiana; the largest ever recorded debris field. At the time of the accident the National Aeronautics and Space Administration (NASA) flight surgeon on-duty at the Mission Control Center (MCC) in Houston, Texas initiated the medical contingency response. The DOD surgeon at Patrick Air Force Base was notified, NASA medical personnel were recalled and the services of Armed Forces Institute of Pathology (AFIP) were requested. Subsequent to the accident the NASA flight surgeons that had supported the crew on orbit now provided medical support to the crewmember's families. Federal Emergency Management Agency (FEMA), the National Transportation Safety Board (NTSB), the Federal Bureau of Investigation (FBI) and numerous other federal, state and local agencies along with the citizens of Texas and Louisiana responded to the disaster. Search and recovery was managed from a Disaster Field Office (DFO) established in Lufkin, Texas. Mishap Investigation Team (MIT) medical operations were managed from Barksdale Air Force Base, Louisiana. Accident investigation teams (Columbia Accident Investigation Task Force (CAITF) and Columbia Accident Investigation Board (CAIB)) appointed immediately after the disaster included current and former authorities in space medicine. In August 2003, the CAIB concluded its investigation and released its findings in a report published in February 2004.

**Educational Objectives:** Understand the concept of operations and initial response of appointed teams to the search, recovery, family support and investigation of the Space Shuttle Columbia accident.

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Panel: **Aeromedical Lessons Learned from the Space Shuttle Columbia Accident Investigation**

Draft Abstract

Title: Primary Disaster Field Office (DFO), Lufkin, Texas

Author: Capt. James D. Wetherbee, [james.d.wetherbee@nasa.gov](mailto:james.d.wetherbee@nasa.gov), Johnson Space Center, Office of the Chief Engineer, Mail Code AG, Houston TX 77058

**Introduction:** On February 1, 2003, the Space Shuttle Columbia broke apart during atmospheric re-entry on mission STS-107; the complexity of such an event cannot be underestimated. The Lufkin Disaster Field Office (DFO) served as the primary DFO for all operations, including staging assets and deploying field teams for search, recovery and security. There were many organizations that had operational experience with disaster recovery. Offers to help came from many groups including the White House Liaison Office, the Department of Defense (DOD), branches of local, state and federal government, the Federal Bureau of Investigation (FBI), the Federal Emergency Management Agency (FEMA), the Environmental Protection Agency (EPA), state police, fire departments, the Texas Forestry Service, the Texas Army National Guard, medical groups, various rescue forces, contractor companies, the Salvation Army, local businesses, and citizens of our country and especially East Texas. The challenge was to know how much help to accept and how to efficiently incorporate their valuable assistance into a comprehensive and cohesive operational plan. There were more than 2,000 people involved with search and recovery.

**Educational Objectives:** Understand the role of the primary disaster field office at Lufkin, Texas, and investigation and management of multiple federal, state and local organizations in search and recovery efforts.

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Panel: **Aeromedical Lessons Learned from the Space Shuttle Columbia Accident Investigation**

Draft Abstract

Title: Mishap Investigation Team (MIT) - Barksdale AFB, Louisiana

Author: Dr. Philip Stepaniak, [philip.stepaniak1@jsc.nasa.gov](mailto:philip.stepaniak1@jsc.nasa.gov), Johnson Space Center, Medical Operations, Mail Code SD2, Houston, Texas 77058

**Introduction:** The Shuttle Program is organized to support a Shuttle mishap using the resources of the MIT. The afternoon of Feb. 1, 2003, the MIT deployed to Barksdale AFB. This location became the investigative center and interim storage location for crewmembers received from the Lufkin Disaster Field Office (DFO). Working under the leadership of the MIT Lead, the medical team executed a short-term plan that included search, recovery, and identification including coordination with the Armed Forces Institute of Pathology. Temporary operations was set up at Barksdale Air Force Base for two weeks. During this time, coordination with the DFO field recovery teams, AFIP personnel, and the crew surgeons was on going. In addition, the crewmember families and NASA management were updated daily. The medical team also dealt with public reports and questions concerning biological and chemical hazards, which were coordinated with SPACEHAB, Inc., Kennedy Space Center (KSC) Medical Operations and the Johnson Space Center (JSC) Space Medicine office. After operations at Barksdale were concluded the medical team transitioned back to Houston and a long-term search, recovery and identification plan was developed.

**Educational Objectives:** Understand the overall medical response and support provided by the Mishap Investigation Team at Barksdale AFB, Louisiana.

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**Panel: Aeromedical Lessons Learned from the Space Shuttle Columbia Accident Investigation**

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Title: Kennedy Space Center (KSC) Mishap Response Plan

Author: Dr. Philip Scarpa, [Philip.J.Scarpa@nasa.gov](mailto:Philip.J.Scarpa@nasa.gov), Mail Code TA-C2, Kennedy Space Center, FL

**Introduction:** KSC Medical Operations, in exercising the KSC Psychological Triage Plan, provided crewmember family support following notification of the Columbia accident. KSC Medical Operations also provided field support in working with FEMA and EPA to assure adequate occupational medicine and environmental health care of KSC workers. In addition, the development of policy and procedures for handling and clearing biohazardous debris material in the KSC reconstruction hangar was prepared and implemented.

**Educational Objectives:** Understand the KSC Medical Operations response and support to NASA following the Columbia accident.

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**Panel: Aeromedical Lessons Learned from the Space Shuttle Columbia Accident Investigation**

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Title: Armed Forces Institute of Pathology (AFIP)

Author: Dr. Craig Mallak, [mallak@afip.osd.mil](mailto:mallak@afip.osd.mil), AFIP/OAFME, AFIP Annex 1413  
Research Blvd, Bldg 102, Rockville, MD 20850

**Introduction:** The AFIP and NASA relationship was developed in an effort to appropriately respond to a space shuttle mishap. This briefing discusses the AFIP/NASA relationship with special emphasis being placed on search, recovery and identification activities.

**Educational Objectives:** Understand the AFIP support to NASA following the Columbia accident.

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Panel: **Aeromedical Lessons Learned from the Space Shuttle Columbia Accident Investigation**

Draft Abstract

Title: STS-107 Crew Surgeon

Author: Dr. Smith Johnston, [smith.l.johnston@nasa.gov](mailto:smith.l.johnston@nasa.gov), Johnson Space Center, Medical Operations, Mail Code SD2, Houston, Texas 77058

**Introduction:** NASA Crew Surgeons (CS) provides medical support to crewmembers assigned to a space flight. Upon this mission assignment, CS's develop close working and personal relationships with crewmembers, their families and close friends. This discussion covers the role of the NASA CS from start of a mission assignment through its completion. Specific emphasis is placed on events associated with the Columbia accident to include; pre-mission planning, initial family medical support, interface with the astronaut Casualty Assistance Control Officers (CACOs), AFIP relationship and on-going care for the families.

**Educational Objectives:** Understand the role of the NASA Crew Surgeon's preparation for a contingency, and the initial and on-going support during the Columbia space mission assignment.

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