

2002 NASA/ASEE SUMMER FACULTY FELLOWSHIP PROGRAM

**JOHN F. KENNEDY SPACE CENTER
UNIVERSITY OF CENTRAL FLORIDA**

KSC HISTORY PROJECT

Patrick K. Moore
Assistant Professor
Public History Program Director
Department of History
University of West Florida

Dr. Shannon Roberts, Ph.D.
Associate Director, XA
NASA KSC Colleague

ABSTRACT

The 2002 NASA/ASEE KSC History Project focused on a series of seven history initiatives designed to acquire, preserve, and interpret the history of Kennedy Space Center. These seven projects included the co-authoring of *Voices From the Cape*, historical work with NASA historian Roger Launius, the completion of a series of oral histories with key KSC personnel, a monograph on Public Affairs, the development of a Historical Concept Map (CMap) for history knowledge preservation, advice on KSC history database and web interface capabilities, the development of a KSC oral history program and guidelines of training and collection, and the development of collaborative relationships between Kennedy Space Center, the University of West Florida, and the University of Central Florida.

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Introduction

Since July 24, 1950, with the launch of a modified German V-2 rocket called Bumper 8, the focus of the United States space program centered on the areas of Cape Canaveral and what would later become the Kennedy Space Center. In 1958, faced with a growing Cold War military threat, the United States Congress created the National Aeronautics and Space Administration to oversee the development of the nation's civilian space program. By the nature of that Act, Congress designed the agency to cultivate new avenues for space exploration and, in contrast to the Soviet Union, to keep the developments of the operations "open to public inspection." In keeping with that mission, NASA proceeded to face the challenges of exploring not only the earth's outer atmosphere, but also the other planets of the solar system and the cosmos beyond. In time, the obstacles facing NASA evolved from a Cold War mission to one of technical and scientific exploration. For KSC, despite the national and international issues surrounding the agency, they remained dedicated to safe and successful Spaceport operations. As part of that process, the American public, as well as much of the global population, focused their attention on the evolving activities and took ownership of the NASA program and the Kennedy Space Center in both its triumphs and its tragedies.

While the NASA operations encompass Centers and field operations across the country, for many people, Kennedy Space Center became the focal-point of the space program because of the highly visible launch and landing operations. Despite this international attention directed at the Center, the process of collecting and preserving its rich history was occasionally lost between the transition of programs and amidst the excitement of launches. Because of this, the KSC Public Affairs Office and the KSC Archives actively set out to create a formal history preservation program that would enable the Center to acquire, preserve, and interpret its history before the institution loses the pioneers of the many important programs and their personal papers and collection. As part of this endeavor, Public Affairs secured funding for a visiting faculty fellow to assist in the accomplishment of this monumental task. During the summer of 2002, the collaboration between Kennedy Space Center and the University of West Florida resulted a series of seven history initiatives for the ongoing mission of the KSC History Project. These projects included:

1. Co-author, with Dr. Roger Launius, *Voices From the Cape*.
2. Complete 4 oral histories of key KSC officials.
3. Complete historical monograph on KSC public relations.
4. Develop Concept Map prototype using UWF's Institute of Human and Machine Cognition's C-Map technology.
5. Advise KSC on development of KSC history database and web site interface capability.
6. Advise KSC on development of "KSC Training of Oral Historians" capability.

7. Develop collaborative framework for future history-related activities between KSC, the UWF Public History Program and Institute of Human and Machine Cognition, the University of Central Florida, and other universities and colleges, as appropriate.

Voices From the Cape

In 1999, the NASA History office published Glen Swanson's "*Before This Decade Is Out. . .*": *Personal Reflections on the Apollo Program*. This work that incorporates edited oral histories of fourteen prominent participants in the Apollo program including Center Directors, engineers, astronauts, and others. While the work was quite successful with readers, both NASA employees and the general public, its focus was strictly on the early lunar programs and the residual Skylab and Apollo Soyuz Test Project between 1961 and 1975. Although important, the Space Shuttle and International Space Station programs during the following twenty-five years offered an equally important aspect of the NASA story. Based on this, historians conducted a series of interviews between 2000 and 2002 that highlighted the entire scope of Kennedy Space Center History. Designed to celebrate the 40th Anniversary year of KSC, the project completed the final interviews for *Voices From the Cape* and began the initial development for publication in early 2003. Developed chronologically, with the earliest pioneers at the Cape and ending with the current Center Director, each chapter is a specific individual's story, an introductory essay, and a biography that provides a cohesive connection between sections. Potential interviews include key individuals Wernher von Braun and former Director Kurt Debus, but may also include the following:

Ike Rigell – Retired NASA engineer. First came to KSC as contractor to work on launches in 1953, worked on Redstone project and later came to KSC for the early Space Shuttle programs.

JoAnn Morgan – Engineer, Director of External Relations and Business Development. Started at the Cape in 1958 as one of first female engineers that paved the way for future women at the Center. Influence and experiences continue to the present.

Richard (Dick) Smith – Former KSC Center Director. Worked on the Redstone project, talks about working with Von Braun and Debus. Discussion of his career as aeronautical engineer, positions at other space centers, work before KSC on Space Shuttle programs.

Lee Solid – NASA engineer. First came to Cape in 1960. Previously worked as contractor with Rocketdyne and U.S. Air Force. Witnessed nearly every human launch. Covers Atlas, Mercury programs through to the present Shuttle program.

Gene Thomas – Retired NASA engineer. First came to the Cape in 1962. Covers his early background, changing nature of his career at KSC. Discusses Mercury through Space Shuttle programs and Challenger disaster.

George Page – Retired aeronautical engineer. Came to KSC in 1963 to work on Atlas program. Covers his early background, changing nature of his career at KSC. Addresses Atlas program through early Space Shuttle program.

Paul (Ernie) Reyes – Retired NASA engineer. Started with NASA during Mercury program and continued during Gemini, Apollo programs. Details Apollo 1 fire. Covers changing nature of his career at Kennedy from Gemini through Space Shuttle programs.

Hugh Harris – Former KSC Chief of Public Affairs. Started with NASA (Glenn Research Center) in 1963, came to KSC permanently in 1975. Covers his career in NASA media relations, and KSC's relationship with the press and public between Apollo and Shuttle programs.

Alan Parrish – Retired NASA engineer. Came to KSC in 1964 to work as a television systems engineer. Covers KSC's relationship with the outside press and discusses Apollo through Space Shuttle programs.

Bob Sieck – Medical engineer. Came to KSC in 1964. Covers his early background and changing nature of his career with KSC. Discusses Gemini through Space Shuttle programs.

Robert (Bobby) Bracken – NASA engineer. Came to KSC in 1966 out of college and discusses end of Gemini through the present. Covers the changing nature of his career at KSC.

John Straiton – NASA engineer. Came to KSC in 1968 right out of college. Went to Vandenberg briefly, then came back to KSC. Discusses pre-Space Shuttle, through the present. Covers the changing nature of his career at KSC.

General Forrest McCartney – Former KSC Center Director, long career in the U.S. Air Force. Came to Patrick AFB in 1971 and to KSC in 1986. Discusses differences and similarities between the military and NASA and the recovery from Challenger.

Lisa Malone – Deputy Director, External Relations and Business Development. Started at KSC as a journalism co-op student in 1982. Interview covers changing role and treatment of the press corps, nature of public relations and visitor interactions at KSC.

Roy Bridges, Current Center Director. Previous commander of Patrick Air Force Base, astronaut who flew aboard STS-51 F, and came to KSC in March, 1997. Covers career and experiences including the focusing of KSC into a Space Technology Center

In order to have the completed product of *Voices From the Cape* available for the concluding Celebration of the 40th Anniversary Celebration in July, the following represents the projected abbreviated timeline for the project:

September 30: Completed Selection of subjects, interview quotes, and draft intro essays.

November 15: Completed review of materials by KSC and NASA Headquarters.

December 31: Completed manuscript for publication. Submit for design and layout

February 28: NASA Headquarters send to print

KSC Oral Histories

Although the NASA/ASEE project agreement stipulated the completion of four (4) oral histories during the summer program, as a result of the demands for the historic monograph and *Voices From the Cape*, Dr. Moore completed eighteen (18) oral history interviews. Primarily focusing on Public Affairs media and visitor operations, completed interviews, with transcripts pending from KSC contractor, include the following:

Howard Benedict, AP Reporter, 1957-1990
Hugh Harris, KSC Public Affairs, NASA 1963-1998
Jim Ball, Visitor Complex, ISS Research Park, 1980-Present
Bill Harwood, CBS News, 1984-Present
Col. Kenneth Grine, CCAS Public Affairs Officer, 1956-1962
Barbara Grine, CCAS Employee, Contractor, 1956-1972
Jay Barbree, NBC News, 1959-Present
George English, KSC Executive Officer, 1960s-1990s
Larry Mauk, KSC Visitor Complex, 1965-Present
Arnold Richman, KSC Public Affairs, 1964-1995
Sue Butler, Independent Reporter, 1958-Present
Jack King, reporter, 1958-60; KSC Public Affairs, 1960-1970s
Manny Virata, KSC Public Affairs, 1974-Present
Dennis Armstrong, KSC Public Affairs, Web operations, 1986-Present
Kathy Hagood, Spaceport News, 1998-Present
Dan LeBlanc, Delaware North operations, 1996-Present
Bruce Buckingham, KSC News Chief, 1985-Present
Diana Boles, KSC Media Services, Coordinator, 1965-Present

Fueling the Fascination: Kennedy Space Center and the World's Spaceport Romance

Building on Dr. Moore's research specialization as a historian specializing in Cold War Culture, his monograph addressed the changing patterns in which Kennedy Space Center and its Public Affairs operations recognized the population's intrinsic interest and connection with the institution and worked, at varying levels, to cultivate their intrigue, communicate the intricacies of the operation, and capitalize upon this interest in furthering both the Center's and NASA's spaceflight mission. Originally expected to be forty pages in length, the final eighty page version charts Public Affairs' evolving press and visitor operations through three periods in KSC's history.

This begins with the Cold War years between 1957 and 1975 when the United States succeeded in its competitive quest for the Moon. During that period, press access evolved from the military denial of repeated missile launches to the NASA coordination of thousands of press and visitors attending the historic Apollo 11 and subsequent lunar missions. For curious visitors to the site, the process began with "drive-thru" car tours of the Cape in 1963 and later emerged into formal bus tours in 1966 and the opening of the Visitor Information Center in 1967.

During the next phase of KSC public operations from 1976 to 1986, the Center changed from a Cold War driven institution to one based in science and technological exploration. For the

press, they too began adjusting their views and celebrated the return of a human to space in 1981 with the successful launch of the orbiter *Columbia* on STS-1. For visitor operations, this too was a time of change. No longer could Public Affairs rely on guests arriving at the site simply to embrace the history of the operations. Following the opening of Walt Disney World in 1971 and of Epcot in 1983, suddenly guests expected better service and more captivating presentations. As a result, the Visitor Information Center began discarding the trade-show displays of the past and concentrating on maintaining the new market.

The final period between 1986 and the present marked the greatest transition for KSC from both an operational and a Public Affairs perspective. Following the terrible *Challenger* accident, relations between the Center and the press dramatically changed. Because of the lack of an agency-wide contingency plan, NASA failed to quickly respond to reporters' informational demands. Although relations improved during the later years, the era where the press accepted NASA operations as a given changed to a more inquisitive and questioning approach. Regardless of the change, KSC managed to develop new methods for disseminating information including the use of the Internet for broadcasting program updates and Shuttle launches and landings. For Public Affairs, the growing tourism market demands led KSC to select a new concessionaire for their Visitor Complex and responded to the guest expectations in opening a series of new facilities and shows with the cornerstone being the extraordinary Apollo Saturn V Center. Incorporating both the educational and entertainment approaches, KSC continued the quest of sharing the past, present, and future of the NASA program to a new young audience of future participants and leaders in the quest for space.

As a central aspect of the KSC operations, *Fueling the Fascination* marks the first scholarly evaluation on the subject of Public Affairs operations. Upon review, the work should be published as part of the NASA *Monographs in Aerospace History*.

Historical Concept Mapping (CMap) and the History Database

Working with the University of West Florida's Institute of Human and Machine Cognition (IHMC), Dr. Moore and the UWF Public History Program developed new and important research tools. Coined "concept mapping," these tools are based upon IHMC computer-driven models for acquiring, organizing, presenting, and preserving institutional knowledge. Unlike a book or report that reads from start to finish, these "cognitive prostheses" allow both researchers and audiences to identify and address materials through significant interrelating concepts rather than through the rigid, and often inflexible, framework of conventional publications. Since the original collaboration between the IHMC and UWF Public History Program to develop better knowledge acquisition techniques, we have applied these tools to several projects and realized the benefits of concept mapping to historical research and evaluation. As part of the history initiatives at Kennedy Space Center, Dr. Moore worked to create a CMap prototype to address the Center's history and create a cognitive tool for working with the various aspects of its development.

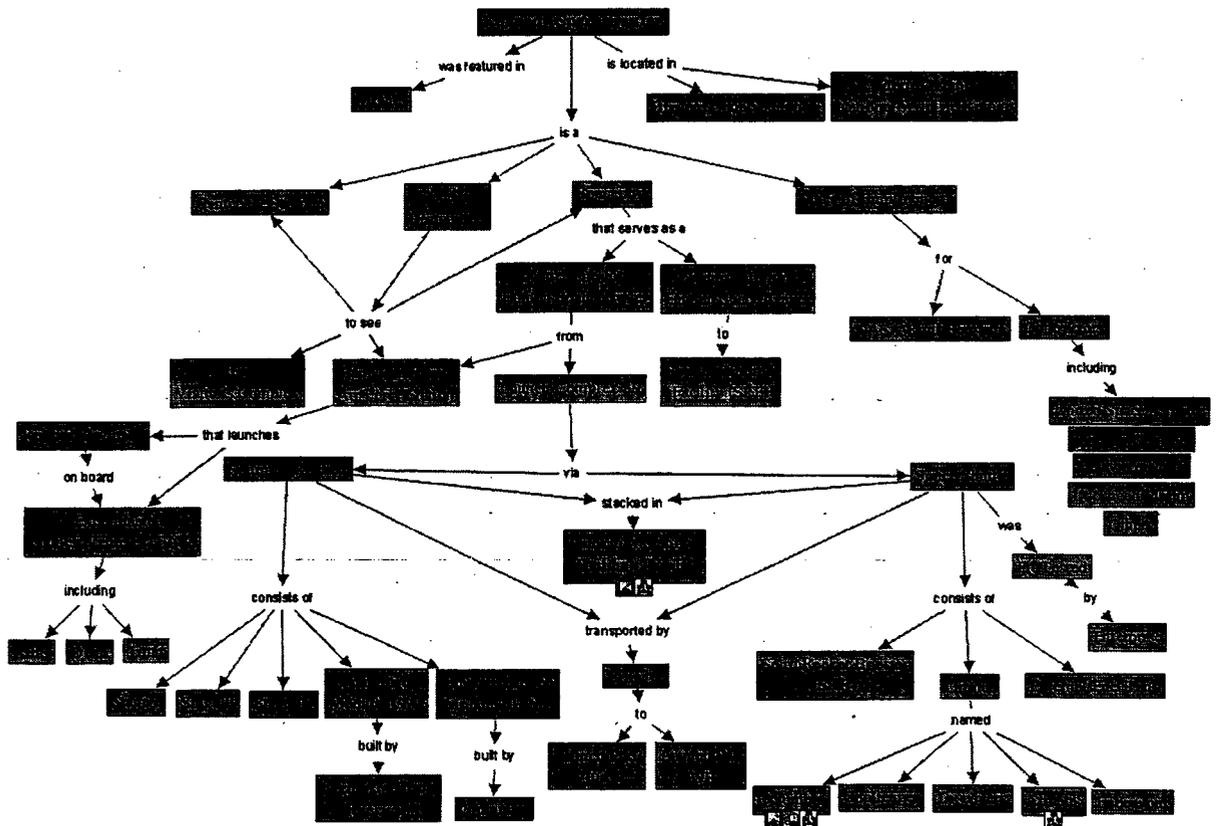


Figure 1.

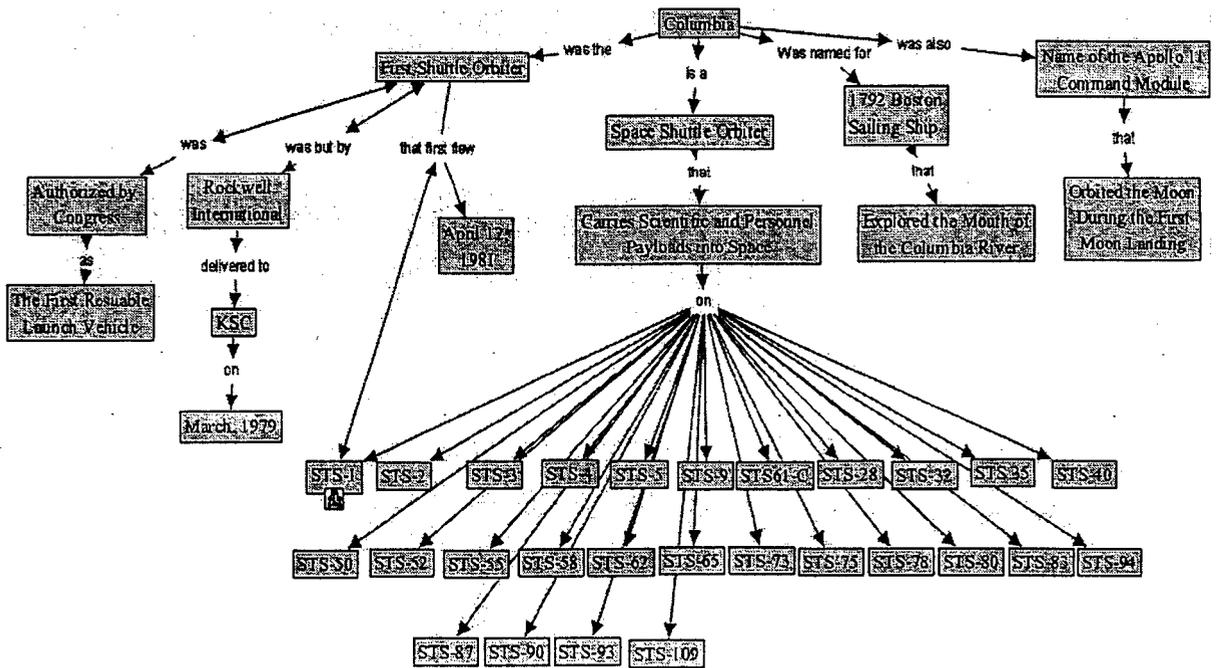


Figure 2.

Starting with the "KSC Master Map" (Figure 1) the structure provides key current and historic activities, or "concepts" connected by linking phrases. Once fully "populated" (containing icons for access to secondary maps and supporting materials), each of the concepts on the Master Map will contain specific key materials and maps. Examples of these are below the Concepts for the "Vehicle Assembly Building (VAB)," the "Columbia," and "Atlantis." Please note that these maps are explanatory prototypes and are far from fully populated. Users can either click on photographs, video clips, interviews, and other materials to explain the specifics of the concept. To explore the concept at a deeper level, users can then click on the secondary maps icon to open a new map.

Opening the secondary map under "Columbia" users find themselves at the "Orbiter Columbia Map" (Figure 2). In this map, users can explore the history of the specific orbiter as well as the purpose behind the vehicle and specific missions. Again, in a fully populated map this too would provide a spectrum of materials pertaining to the specific orbiter. For this exercise, however, the user would select the map under on the "STS-1" concept opening the "STS-1 Mission Map" (Figure 3). At this level, researchers and interested parties can work their way through the mission specific concepts. Once fully populated, additional materials, including yet another round of detailed photographs, video clips, oral history interviews, report selections, and others would provide detailed discussion of the mission, its crew, its successes, problems, and resolutions.

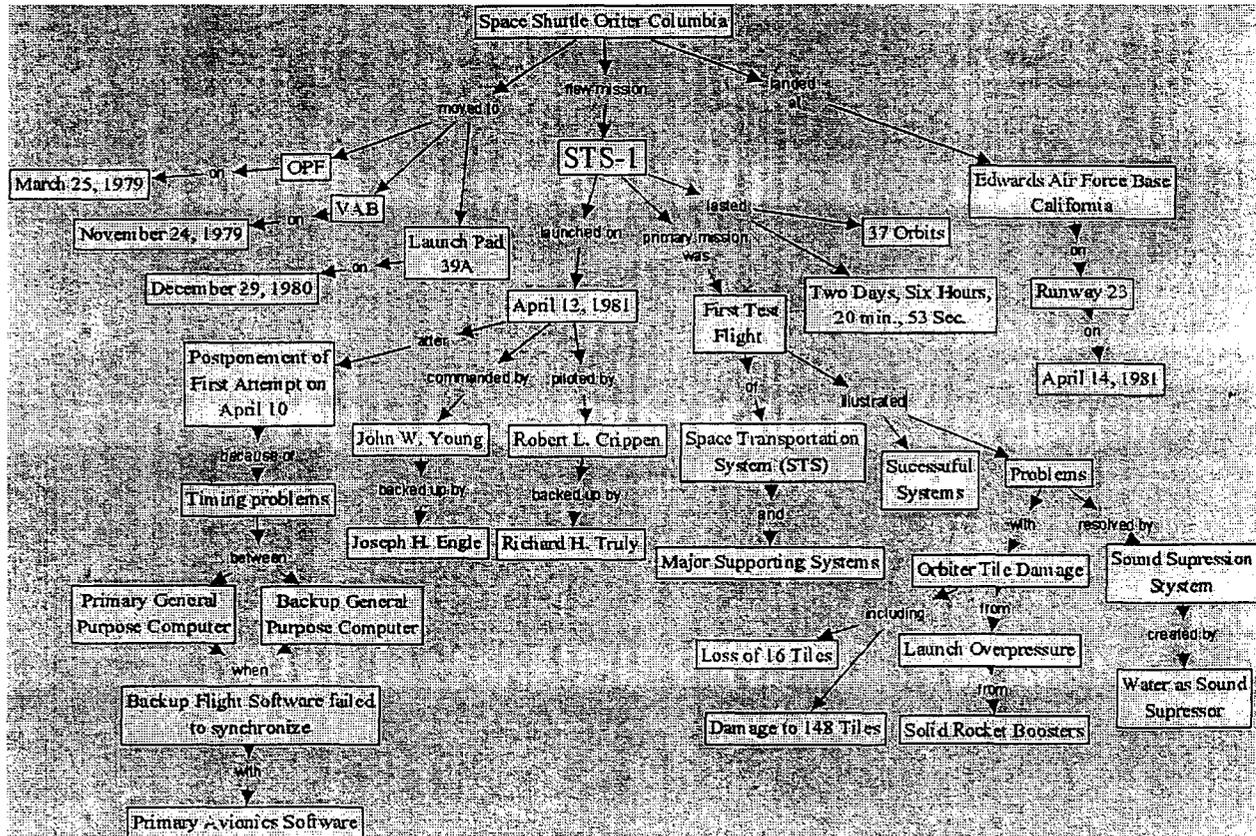


Figure 3.

By incorporating the existing KSC History Database into the CMap frame work, the tools will provide all interested parties, including researchers, policy planners, engineers, historians, and many others, with a conceptual framework for understanding all aspects of Kennedy Space Center. Further, by applying these tools to the existing Kennedy Space Center Website, Internet users all over the globe can access and understand the depth of the Center, its history, and its personnel.

KSC Oral History Program

As one of the most valuable and informative resources for collecting history, Kennedy Space Center began the task of collecting oral histories during previous programs and with the assistance of the NASA History Office. Building on this background, KSC desired additional focus to the collections process. From this, Dr. Moore, who previously served as Director of the Arizona Historical Society Oral History Program, prepared a framework for the KSC Oral History Program.

The Kennedy Space Center Oral History Program is dedicated to the recording and preservation of the memories and experiences of the Kennedy Space Center, Cape Canaveral Air Force Station and other locations as deemed appropriate. These memories and experiences include those of individuals of all ages, sexes, ethnic or national heritages, social and economic classes, education levels, and backgrounds.

Within this framework, Dr. Moore developed a set of materials that represent the proposed mission, focus, policies, procedures, and pertinent forms and documents associated with the National Aeronautics and Space Administration, Kennedy Space Center Oral History Program. The materials for this program are based on the most current approaches and methods of the discipline as accepted by professionals in the field and from the Oral History Association. These approaches, however, reflect current trends and, as with any program, should constantly evolve to reflect new approaches and accepted standards.

Collaborative Framework

As the final initiative of the summer KSC History Project, Dr. Moore, in conjunction with Dr. Shannon Roberts and Dr. Gregg Buckingham, created a series of opportunities for future collaboration between Kennedy Space Center, the University of West Florida, and the University of Central Florida.

For the UWF and KSC interaction, Dr. Moore identified a series of opportunities for the placement of interns with the UWF Public History graduate program. As part of the existing curriculum, students must complete a 200-hour internship during which time they complete a project within their area of Public History specialization. Working with the specific graduate program fields, Dr. Moore arranged the framework for students to work in three areas of the KSC operations. The first is within the KSC Archives where students can complete a variety of archival-management and history-focused projects as well as CMap development. The second is with Delaware North Park Services where students concentrating in museology (museum studies) can help develop exhibits, interpretive presentations, and other projects. The final area is working with the Webcast studio where students specializing in media and documentary production can develop historic pieces on KSC and program histories for broadcast over the Internet.

To fund these projects, the collaboration between UWF and KSC creates the unique opportunity for grant submissions to numerous humanities, history, and space related funding operations. Although as a federal agency guidelines prohibit NASA from applying for grants, the university relationship enables UWF to obtain funds for the completion of various projects. From this, the benefits extend to both the graduate students in the completion of their projects and to Kennedy Space Center for the furthering of their History preservation and interpretation goals. To formalize this agreement, upon return to the University of West Florida, Dr. Moore will work with UWF and KSC officials to craft a formal memorandum of understanding. This in turn will validate the ongoing cooperative venture between the two entities.

Beyond the KSC-UWF arrangement, Dr. Moore and Dr. Shannon Roberts also initiated communication with units at the University of Central Florida. Building upon the CMapping technology from the UWF Institute for Human and Machine Cognition, representatives tentatively explored the future collaboration opportunities with the UCF Institute for Simulation and Training. Upon completion of the first operational CMap from the materials obtained during the summer 2002 work, representatives from both organizations will meet to explore future interactive and funding opportunities. Also at the University of Central Florida, Dr. Moore and Dr. Roberts met with representatives from the UCF Department of History. Where working relations currently exist with the department for the collection and preservation of NASA's influence on Brevard County, further opportunities could well develop in the future. Following a comprehensive faculty search, the UCF Department of History will hire a new tenured historian to start a new Public History Program in the Fall of 2003. Based upon the focus of that new program, collaborative efforts between the ongoing UWF Public History Program activities and KSC could well provide a wealth of new opportunities.

Conclusion

As a result of the 2002 Summer KSC History Project through 2002 NASA/ASEE Summer Faculty Fellowship Program, the Kennedy Space Center has a number of valuable new resources. From this framework now exists continued history collection, preservation and interpretation through the creation of the CMap prototypes, the KSC Oral History Program Policies and Procedures, and the collaboration between the University of West Florida and Kennedy Space Center. Second, the Center now has the completion of a significant work on the history of the KSC press and visitor operations and a completed series of eighteen new oral history interviews. Finally, upon the completion of *Voices From the Cape*, Kennedy Space Center will have a significant historical publication in celebration of its 40th Anniversary.