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## Kent Fanning oral history interview by Lucy Jones, October 29, 2003

Kent Fanning (Interviewee)

Lucy D. Jones (Interviewer)

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USF Florida Studies Center  
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TOPICS OF DISCUSSION

*Dr. Fanning came to USF in 1973 as an assistant professor of marine science.*

*Arrival at USF*

Dr. Fanning arrived in January of 1973. He thought that he was going to start teaching then, but it turned out that for administrative reasons he would not start working until February, so he began that month. His reason for coming to USF was simple, he had finished his doctoral dissertation at the University of Rhode Island and he needed a job. He applied to various places and had a number of interviews before deciding that this was the best available option. Peter Betzer, now the dean, was at URI with Dr. Fanning. Dr. Betzer came to the school first and encouraged the marine science department to bring him down for an interview. Everything worked out well.

*Initial impressions of the campus*

It was very different from URI, even the buildings and labs. The URI College of Oceanography was an older and more sophisticated program. He was taken with the “can do” attitude on the part of the people at USF. The program was just starting up, and his laboratory had once been a kitchen. He was working in the old MSL Building that had previously been a living area for students. There were vestiges of the building’s old purpose all over. It was not set up for research and science so they had to make do with whatever they had.

He was in that lab until about seven years ago. When the KRC building went up he moved his research into a lab that was designed as a chemistry lab. Things improved over time and he brought in equipment so it wasn’t always a struggle. He moved his office around the MSL building over time.

There were all sorts of different people working together in the same building. At one time the whole St. Petersburg Campus was in the MSL building. The modern day student lounge for marine science students was once the library for the entire campus. Where the KRC and FMRI buildings stand was once old wooden structures that held classes and a cafeteria. It was good to take the wooden buildings out because they were structurally unsound, but Dr. Fanning does miss them a little bit.

### *Classes he taught*

He taught graduate students marine science in their core courses and chemical oceanography courses. They also taught seminars in ocean science as needed and he has been directing students in their research for a long time. He now teaches the only undergraduate course that is offered on a regular basis, Introduction to Oceanography. He has been teaching this for at least a decade. He works with another faculty member on it, Norm Blake. They work on it through distance learning which is tough. Class sessions run in the library because there is a television classroom there and the course can be sent to the Sarasota/Bradenton campus, the Lakeland campus or the Tampa campus.

### *Who else was on the faculty when he arrived?*

Harold Humm was chair; Norm Blake, Larry Doyle, Peter Betzer, Kendall Carder, Tom Pyle, Tom Hopkins, and Ron Baird were the faculty members. When Dr. Fanning joined he was the ninth faculty member. The college has grown, and they have thirty-one faculty members now. Initially they were the Department of Marine Science not the College of Marine Science. The Department became a College three years ago.

### *Changes in Marine Sciences*

It covers more aspects of ocean and environmental studies than it did before. Changes in technology have contributed to this. For example while there was little satellite use in observing oceans before, they now share a facility with FMRI (a state agency), which collects data from satellites. The technology to do this didn't exist when Dr. Fanning began. They have also expanded into other aspects of ocean studies. They didn't have a program to measure ocean currents or study trace metals, but they can now do these things. The department grew in size, but also into other areas of ocean studies. They made a conscious decision to expand because they wanted the students to be well versed in the whole field of ocean science.

### *Research interests*

Dr. Fanning is interested in studying nutrients in the upper ocean. To understand why one must realize that sunlight can travel hundreds of miles in air, but can only go a few hundred feet in seawater, which absorbs light very well. The oceans ecosystem works similarly to the land's ecosystem. Plants are at the base of the food chain. The plants in the ocean have to be within 200 feet of the surface of the ocean, while the average depth of the ocean is 200 miles. Plants have difficulty surviving away from the beach because they need to be near sunlight. They become floating single celled organisms. In this process they affect the nutrients they need to grow. In order to be in the upper area of the ocean the plants take nutrients from the water. So all over the ocean you find that the concentration of nutrients in the upper levels of the ocean are very low because that is where all the plants are. The nutrients need to come from somewhere, so Dr. Fanning's research involves "trying to understand those processes that are affecting the nutrients up in this upper part of the ocean where they are in such low concentrations." He doesn't work on all aspects of the research, he is focusing on the continental shelf just thirty miles off the coast. He finds pulses of ammonia, a good nutrient, which seem to persist for a while. This is surprising because the plants are supposed to suck up the ammonia and don't seem to be doing it. He has many students working with him on this research.

### *Marine Science students*

Many of them have little knowledge of what marine science or oceanography is. They are probably not as unaware as they used to be because there are many marine science courses being offered all over the country. They haven't gotten the basics of how the discipline works when they arrive. Some have come thinking that "oceanography is the study of fish or marine organisms." There is a common misconception "that oceanography is marine biology." Marine biology is in fact a small part of oceanography but many students arrive with a biological focus and realize early on that ocean physics (for example) is also important to the study. They never consider the other various factors that work into the study of oceans.

There has been an increasing number of female students in the college. About sixty percent of the last entering class was female. They don't try to bring that about, it just happens that way. A few years ago there was an influx of Chinese graduate students, which has tapered off a little bit. He has a graduate student who contacted him from Russia while she was an undergraduate. They get email from undergraduates all over the world: China, Australia, and various nations in Southeast Asia. They have a web site and publish in journals all over the world so there is a global communication, which didn't exist thirty years ago. This is a sign that the college has been successful because "you are known by the product you produce" and when people get papers and abstracts from people related with the program it can be very beneficial. They can find out about you more quickly through electronic communication.

His students have been very successful and they are now doing a study initiated by President Genshaft to locate where the PhD graduate students are. They have had the Ph.D. program for twenty-one years and they have ninety-two Ph.D. students who have graduated in twenty-one years. They found out where eighty-seven of them are and what they are doing. About forty percent are university faculty or university researchers. Another large percentage work in laboratories focusing on scientific research. Some have gone into industry. Two of the graduates went into other disciplines, one into veterinary work and the other is an attorney. They have some students who are now faculty at Penn State, the University of Georgia, University of Mississippi, the University of Maine, and the University of North Carolina. One former student is a researcher at Caltech, and they have a number at smaller institutions. There is one at the University of California Irvine.

Some students stand out. The one who is at Penn State, Lee Kemp, is probably the brightest student Dr. Fanning ever taught. He is a geo-chemist, and works as a full professor in the department of geological sciences at Penn State. While at USF he did work on the history of oxygen in the earth's atmosphere. The earth is over four billion years old and from what we can tell it did not form with oxygen in its atmosphere there are some sentiments left from about two billion years ago and they seem to have been formed in an oxygen free atmosphere. The earth began oxidizing in its atmosphere and he was interested in seeing how that happened and if it continues to change.

He can't think of any other students that stood out at this level. Lee Kemp was a bit above the rest. Some went through very fast and got good positions quickly. The student who went to the University of California Irvine was named Sunny Jiang; she was a Chinese student who studied marine microbiology. She was interesting to have around and got involved in community affairs. She used to give lectures at USF St. Petersburg, trying to teach people Chinese. She was very good at it and people enjoyed the lectures thoroughly. The position that she got at UC Irvine is quite prestigious.

#### *Campus and community involvement*

The first effort they made in community involvement was a series of lectures open to the public called "Ocean Discovery," which consisted of talks designed for people with little background in the subject matter. They eventually shifted the emphasis, with a great contribution from then-chair Peter Betzer, about twelve years ago. "Studies had been done that indicated that between middle school and high school was a time when girls would become turned off to science." They decided to do something that would raise the interest level in younger girls. The department decided to establish the "Oceanography Camp for Girls." The focus on community involvement developed from this program, bringing in teachers and who were sent out to the schools. They have an intern program for high schools to come and work with the department, run by Hope Botterbush. This is successful in bringing in juniors and seniors and letting them get an indication of what happens in the labs. This has been done in the past, but Ms. Botterbush has organized it so it is different. There are other internship programs in the Pinellas County Schools to give students an idea of what a job in marine science might be like. Some community people have become interested in the program, which has led to endowments.

#### *Interaction between marine science and other departments at USF.*

The interaction usually "starts and ends in most cases on lower levels." For instance graduate students may have needs for their Ph.D. dissertation committee that cannot be met by someone in the department. The student and the thesis committee must then work with someone outside of the department.

Many faculty in the college have participated in joint research projects. Recently they won an award from the National Sciences Foundation that went to a team headed by a geology professor and Pamela Hallock-Miller, who is both a biologist and a geologist. They have interaction that is not long lasting, but important. There is something in the works right now to have a central university in the state of Florida "serve as a clearinghouse for data on water, all aspects of water" and USF is in the running for this. This might change the university "dramatically."

The interactions between Marine Science and the St. Pete campus are not always positive. The college has been criticized on occasion. On the other side of the coin, faculty members from the other campus sometimes say they would like to come and join the college too. This isn't surprising because sometimes when a particular group succeeds at a high level, tensions can grow. Dr. Fanning hopes this is minimal because the people in the University might find that the department can be beneficial to everyone.

### *Outstanding faculty or administrators*

President Frank Borkowski is the first one that comes to mind. One of the Marine Science Department's biggest expansions that may have brought them the most national recognition is the Coastal Geology Division of the United States Geological Survey, which is in St. Petersburg. There was a national competition. The group that became the CGD of the USGS was originally at the Woods Hall Oceanographic Institute, the second largest oceanography institution in the United States. There were internal problems and the CGD of the USGS decided to look for a new residence. They looked around and USF put together a proposal, during which time Frank Borkowski ended up meeting with the USGS people. He was not president yet but he committed the University to giving them six new faculty positions that would focus on the research needs of the United States Geological Survey. This was "a bold move and he delivered; they came and it all worked."

Carl Riggs was the Vice-President for Academic Affairs. In the late 1970s the Board of Regents decided to set up all the Oceanography programs in the State University System. They also set up a program to identify a center of excellence in each state university, in any academic field. Each university picked one program and Carl Riggs chose the Marine Science Department. They were the center of excellence at USF and they got nine positions out of that. For most of his tenure as Vice President for Academic Affairs he supported the program. He came to the school from the University of Oklahoma, he was an Ichthyologist and he introduced Peter Betzer to the Knights, who were friends of Dr. Riggs. The Knight Fellowship is the premier fellowship that they give every year. The Knights founded a national corporation and they were wealthy. Mr. Knight had a place in the Bahamas that he liked to visit. He got to know Dr. Riggs and they would visit in the Bahamas and fish. They would talk while fishing. Mr. Knight wanted to do something for young people and Carl Riggs persuaded him to endow fellowships in Marine Science at USF. They gave the initial endowment, and then sold the house in the Bahamas. The money from this sale went to the University. The KORC building is the Knight Oceanographic Research Building.

Jack Lake, the publisher of the St. Petersburg Times, was probably the most outstanding community member when it comes to supporting the program. He was very interested in the development of the city of St. Petersburg. He had a lot to do with getting the land in St. Pete for the University to expand. When they evaluated the marine science programs statewide in the late 1970s or early 1980s, a team of reviewers was coming through. Some people thought that it might be good for the reviewers to see the community support. They made contact with St. Petersburg Commerce, a business group that wanted to emphasize growth and development. They organized a session to talk to the panel so the panel could get an idea of the community's interest in higher education in St. Pete. The department had begun a plan to request a Ph.D. program, which had to be supported by the Board of Regents. Jack Lake got a group of business leaders and they exerted as much influence as they had to get that Ph.D. program. Carl Riggs was actually very involved too, but in terms of community involvement Jack Lake was the driving force. They now have a Lake Fellowship given to graduate students that was endowed by the St. Petersburg Times. One of the city officials who participated in this was Paul Getting who

was in the city planning office and ran the chamber of commerce for the city. He was very interested in Marine Science and helped out with the legislature. When the USGS expanded they needed to get into another building. The old Studebaker building has another similar building attached to it so the city leadership tried to get the USGS into this building, which is now called the Getting Building. There is also a Getting Fellowship. The availability of all these fellowships allows the college to recruit new students and it gives a “lift” to the program because there is a fellowship competition every year and a ceremony honoring the winners. Established universities do these kinds of things and the College of Marine Sciences has thirteen awards given annually to fifteen people (some have multiple winners). There are 127 graduate students in the college. There is no undergraduate program although they do offer undergraduate courses. Of the 127, fifty to fifty-five of them are Ph.D. students.

#### *Personal accomplishments*

Dr. Fanning is most proud of a few things. He is proud of his “involvement with all this development” especially since he was “in on it from the very beginning.” He personally wrote a lot of the necessary documents. He was chair of the department building committee for the KORC. This took a lot of time but there was “great satisfaction when that was finally finished, even though it ended up being about six inches lower than it was supposed to be.” They were supposed to be able to fit large transport trucks to the loading dock under the building, but the building ended up being six inches too short. No one will admit to building the structure too low, but it was designed to allow these trucks to come in and they cannot fit under the loading area.

He has had some good research experiences. He spent almost sixty days “practically circumnavigating Antarctica on a Coast Guard icebreaker. He has also worked on a Norwegian icebreaker in the Dark Sea of Norway. He also worked with a team that discovered that Tampa Bay has higher radium levels than any other estuary in the U.S. They don’t know why this is, it might be natural – it might not be. This was an interesting discovery.

Dr. Fanning is glad that he has been able to “take advantage of large data sets on the global ocean because of the advent of computers.” This allows him to “go into his office close the door and play God with the Pacific Ocean.”

#### *Direction of the Marine Science Program in ten years.*

In the United States we have a problem: we are an advanced civilization that is built on science. Dr. Fanning thinks there is a gap between what “scientists do and what everyone else knows.” He is not sure why the gap is there, but believes that it is growing because of the pace of technology and scientific discovery. People like the gadgets, but the gap between understanding science from a scientist’s perspective and the public’s perspective is growing.

One of the fastest growing initiatives of the National Science Foundation is not the attempt to support research, but outreach into the general public. The Lecture Series on Ocean Discoveries and the Oceanography Camp for Girls were initial stages of this. This

is done through students and Dr. Fanning would like to bridge that gap with adults as well. He wants to do this in effective ways and isn't sure how this can be done. He hopes that the program becomes a leader in this effort in the next ten years.

He hopes to continue on the scientific path that they have been on "because of mechanisms of remote sensing of the oceans." They have developed two sensor systems for parts of the ocean. The PORTS system (Physical Oceanography Real Time System) is set up for Tampa Bay. "There are a series of installations in Tampa Bay" that were set up after the Skyway bridge disaster. The disaster happened because a freighter misjudged the winds and currents, ran into the bridge and knocked it down, killing about thirty people. They set up the PORTS system to measure tide, temperature, winds, and current speed at critical points in the bay. This information is available even on the telephone. Boaters use it to be safe and it was partially funded by the Harbor Pilots who want to make sure that they can be safe. They have another one on the continental shelf called the COMPS system. This was set up with a special allocation from the legislature because a storm came in the 1990s that no one had predicted. They need a system of "measuring the critical parameters and modelers" to find out what is going to happen. Both of these systems are run out of the College of Marine Science at USF St. Petersburg.

There is also a national movement to "instrument the continental margins of the United States" with current readers to send the data back to collection centers. Hopefully then there will be a system for all the centers to swap data. This might be funded at some level and lot of their people will be working in it. Dr. Fanning would like to see the college become a leader in this program. This might help with the gap between scientist and public, because people, especially those who live near the coastline, need to be aware of the scientific terms that affect storms and currents.

The city of St. Petersburg will help support these goals and some of that initiative comes from the USF campus in St. Petersburg. The city has always been a strong supported of the campus. The "pseudo-independence" on the St. Petersburg campus is a bit of a concern. The College of Marine Sciences is administratively a part of the Tampa campus but "logistically a part of the St. Petersburg campus." This has worked out pretty well so far, but it doesn't seem like the best way to run the operation.

*How did the College of Marine Sciences come under Tampa's review?*

The Tampa campus set up the operation in the MSL Building independently of the St. Petersburg campus. They always had a "separate link" to the Tampa campus. Initially they weren't a department, they were kind of like an institute and the original director of the institute became head of the department. He was hired out of the Tampa campus, which established an independent connection. Since the Tampa campus set up the administrative linkages, they maintained those linkages.

*Final Thoughts*

"Universities in Florida started out in kind of a strange way, because they are out in the boonies." USF was put in Tampa as the third state university in Florida and was set down in what would become a major metropolitan area. The total number in the area

served by USF might be around five or six million people, providing access to a lot of resources. He doesn't see why USF isn't "higher up in the ranks than it is, the University hasn't realized what it could do." They were fortunate in St. Petersburg because there was little competition, but there is a lot of other stuff going on in Tampa. It didn't seem like the University administration realized what it had and if it ever does the school could become "an incredible university." This doesn't happen without the necessary resources. The state of Florida is not poor, but they don't fund education like they should. There may be good reasons why this hasn't happened. He hopes that Marine Sciences will serve as a model for how things could be done and there is willingness in the department to share their knowledge.

*End of Interview*