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Tanya Atwater (right) and R/V *Knorr* shipmate look over mid-ocean ridge rocks.

# The Women of FAMOUS

*Remembrance of Times Past*

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I visited the research vessel *Knorr* during a Woods Hole port call in May 1997, twenty-three years almost to the day since Paul Johnson (now at the University of Washington) and I had first gone aboard the ship to install paleomagnetism equipment that Dalhousie University had committed to Project FAMOUS (French-American Mid-Ocean Undersea Study). *Knorr* has been stretched since then, and is no longer propelled by cycloids, but the labs and passageways were still familiar enough to bring back vivid memories.

My FAMOUS story begins during my first year in graduate school at Dalhousie University in Nova Scotia. I was developing a thesis proposal to study the geochemistry of a deep drill core that had been recovered from a volcano on the island of Sao Miguel in the Azores. Fab Aumento, my supervisor, knew that I needed to do some fieldwork to verify the project's feasibility, and that I loved to work at sea. So he suggested that I be one of the Dalhousie group supporting FAMOUS. Of course, I accepted immediately! A few weeks later, Dalhousie Postdoctoral Fellow Paul Johnson and I set off for WHOI to install our suite of paleomagnetism gear aboard the ship.

Women at sea were by no means

commonplace in the early 1970s. *Knorr's* scientific rosters show that 38 people sailed as members of the scientific parties during the various FAMOUS voyages. The eight women among them probably represent the first significant female participation at sea in a large oceanographic program. We were quite a diverse group. All of us had been to sea before, but our experience level varied from that of senior technical staff (like Helen Hays and Rosamund Corr) to very junior graduate students (Margaret Leinen, Pat McGraw, and Kathy Sullivan). Our jobs included surveying, coring and dredging, data and sample logging, subsampling, and initial analysis. I'm sure we all dreamt of diving in *Alvin*,

but that was not to be. None of us had been in on the front end cruise planning and proposals, for one thing. But, even if we had been, the belief at the time was that women could not be supported aboard *Lulu*, *Alvin's* catamaran tender, ostensibly because of a lack of facilities. "Lack of facilities" was the euphemism commonly used in those days for "there's no bathroom devoted to females" (as if any of our home bathrooms were devoted to females).

FAMOUS was by no means just another cruise. It was a very high profile effort, involving the first use of manned submersibles for mid-

## The FAMOUS Women (1974)

**Susan H. Anderson**, Administrative Coordinator, Woods Hole Oceanographic Institution

**Margaret Leinen**, Graduate Student, Oregon State University

**Rosamund F. Corr**, Research Associate, Harvard University

**Patricia A. McGraw**, Graduate Student, Dalhousie University

**Helen C. Hays**, Senior Research Assistant, Woods Hole Oceanographic Institution

**Tanya M. Atwater**, Assistant Professor, Massachusetts Institute of Technology

**Anne L. Holland**, Research Assistant, Harvard University

**Kathryn D. Sullivan**, Graduate Student, Dalhousie University



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**Rosamund Corr analyzed near-bottom water and sediment samples for Dick Holland of Harvard University aboard R/V *Knorr* during Project FAMOUS.**

to people being very heavy-handed about rank or adverse to having women aboard. For example, Margaret Leinen and I were once enlisted to haul crates of dive samples into a lab and, of course, took advantage of the moment to pick up one or two of them for a look. When one of the senior diving scientists found us at this, we got seriously chewed out. This seemed to me like a great overreaction, and one that would never have happened to a male member of the scientific party. I've since learned that there was an explicit cruise policy (which was not explained to us when we came aboard) that samples were never to be handled until they were properly tagged and logged in by the curators, and that plenty of folks got chewed out for violating it.

There were, of course, some times when a gender bias was quite apparent during the cruise. *Knorr's* bos'n wouldn't allow Leinen to assist with the deployment of the coring gear because women, he said, were a distraction on the fantail. He drew a chalk line across the deck and told her to stay behind it. (Since one of his good friends subsequently married Margaret, he is reminded of this frequently!). And then there was the VIP in-port visit near the end of the expedition with many senior officials from both France and the US scheduled to come aboard. The captain's wife stopped me

ocean ridge research, substantial international collaboration, and major national media interest. (At the time, I considered the term "manned" to encompass all human beings—now the phrase we use is "human occupied.") All these factors combined to create considerable pressure to succeed both on Woods Hole as an institution and on the cruise leaders individually. It's clear in hindsight that these factors had some major effects on shipboard policies and individual behavior, though I, for one, really didn't recognize this at the time and attributed some events

in the lab the day we made port and informed me that I was to serve hors d'oeuvres during the VIP reception. Needless to say, I didn't take too kindly to this suggestion. Mustering what few shreds of civility I could, I tersely told her that I planned to be representing my university in the laboratory, and other waitresses would have to be found. WHOI scientist Bill Bryan came to my aid, peeling me off the ceiling and deflecting any further requests for members of the scientific party to be cross-assigned into the mess division.

On my four previous cruises I had felt well accepted as a member—albeit a junior one—of the scientific party. The FAMOUS experience brought valuable early lessons, happily through minor and silly incidents, about how gender and seniority are sometimes played against an individual. Though I didn't like it at the time, the experience toughened me up and made me think about how to handle such situations in the future.

When asked to write this piece, I got in touch with several FAMOUS shipmates, male and female, and collected a wonderful array of memories and anecdotes from several of them. The pressures, difficulties, personal challenges now all sit in a broader perspective for all of us, and we are glad we got to be a part of such a pivotal expedition. At least one of the FAMOUS women has passed on (Helen Hays), and I've lost track of a few. Tanya Atwater left MIT some years later and is now professor of geological sciences at the University of California, Santa Barbara. Margaret Leinen finished her master's degree at Oregon State and went on to a Ph.D. at the University of Rhode Island (URI). She joined the URI faculty and is now the Vice Provost for Marine Programs and Dean of the Graduate School of Oceanography.

As for me, I finished my Ph.D. at Dalhousie and went into the space program, thinking I was giving up my dreams of diving in *Alvin* for the chance to fly in space. I was pleased to find that "facilities" were not a problem in anybody's mind aboard space shuttles, despite infinitely more crowded spaces and less privacy. But by some great good fortune, and to my great delight, I would meet *Alvin* again—22 years after FAMOUS—for a dive on the active vent fields of the East Pacific Rise. In a clear triumph of common sense, the "facilities problem" has evaporated. More to my delight, women are now aboard (at least at WHOI) as members of ships' companies and scientific parties, as graduate students diving in *Alvin*, and as chief scientists.



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**Susan Anderson, at right, joins scientists and crew observing preparation of sampling gear aboard R/V *Knorr* in 1974. Susan was Administrative Coordinator for WHOI Geology & Geophysics Department Chair James R. Heirtzler, US Chief Scientist for Project FAMOUS.**

*Following a stint as Chief Scientist for the National Oceanic and Atmospheric Administration, Kathy Sullivan moved to her current position at COSI, one of the country's leading hands-on science centers. She is also a member of the WHOI Corporation.*