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WOODS HOLE OCEANOGRAPHIC INSTITUTION

ORAL HISTORY OF JOHN FARRINGTON

Interview by Frank Taylor, February 2, 2005

Tape 1 of 8 tapes transcribed by Arel Lucas, November 2005

TAYLOR: . . . 5, 6. [Tape stops and starts again.] We're here at the Clark Laboratory of the Woods Hole Oceanographic Institution to talk with Dr. John Farrington today about his history. I've been looking forward to this one, because interesting enough, three or four years I was doing an oral history on a former department head here, and I asked him at one point to tell me three or four things that he did with the Institution that he felt were significant to the . . .

FARRINGTON: Um-hum.

TAYLOR: . . . Institution. He said, "Well, first, John Farrington."

FARRINGTON: [Laughs.]

TAYLOR: [Laughs.] So I've been looking forward to this since.

FARRINGTON: Right.

TAYLOR: Just to start off with, John, could you tell me where you were born?

FARRINGTON: I was born in New Bedford, Massachusetts.

TAYLOR: New Bedford, Mass.

FARRINGTON: Just across the Bay here from the Institution.

TAYLOR: Tell me something about your mom and dad: names and what they did.

FARRINGTON: (Tsk.) Well, my mother was uh Hazel Farrington, and I don't mind having this as an oral history: my mother and father were not married, and so one of the issues that I had to deal with when I was growing up is the fact that I never knew my father. He actually died when I was four years old, and my mother and I lived with her

sister and her sister's husband, who I called "aunt" and "uncle." But in reality, since it was such an extended family my mother was born into, that they were like grandparents to me, and so in growing up in New Bedford, we lived there with them, and also in the summertime my uncle had built a cottage at Crescent Beach in Mattapoisett, so I used to go down to this cottage in Crescent Beach, Mattapoisett, and enjoyed that very much. I thought, when I became uh 10 years old or so and all my friends in the city were getting to play Little League baseball, that I was really missing out on things, because I had to go down to this wonderful beach every summer. [They laugh.] Looking back on it, though, it was quite . . . quite an experience, and I had a wonderful uh supportive family and upbringing, and my mother worked very hard as a registered nurse. And she inculcated in me a love of reading, of books, and I have to this day been blessed by that fact that I really like to read a lot of different things.

TAYLOR: You know, it's interesting; later on I'm going to ask you what you read for entertainment, because my wife is a librarian, and she always asks me when I get back, "Did you ask them what they read for enjoyment, for entertainment?" So we'll get to that. Did this uncle serve sort of father-figure role for you?

FARRINGTON: He did, but as I said, it was more like a grandfather, and he was a typical English Yankee. He didn't have necessarily a lot of things to say, was quite a . . . a I realized when I grew up, looking back on it, and in fact I realized it when I was in high school and then beyond: he was an individual who went into business on his own as a sheet metal worker in the middle of the Depression and managed to build up a business. And interestingly enough, his business was located on the waterfront in New Bedford, and we used to go down to his shop on the weekends to make sure the kerosene heater was still working and so on. So while he was taking care of that, I used to wander out down to the fishing pier and so that was my introduction to the waterfront, if you will, in New Bedford, plus being at the beach in Mattapoisett and wandering around through the marshes and doing some shellfishing and that sort of thing.

TAYLOR: So that was the kind of thing you did as a young man?

FARRINGTON: I did. Uh I . . . I was very interested in different things. I mean I had a chemistry set.

TAYLOR: The old Gilbert chemistry set with those little wooden . . . ?

FARRINGTON: The old Gilbert chemistry sets. I doggone near burned our house down one time by building a distillery in the basement that kind of got out of hand—not too bad, but it certainly introduced me to the need to be safe working in the laboratory.

[They laugh.] And I like sports very much. We used to play baseball and football and so on, and I till this day still chuckle thinking about Bill Cosby’s recordings in which he talks about: “Now,” playing football, “you go down to the green Ford and cut right to the red Mercury, and I’ll hit you there.” Because in reality that’s what we did in the street that we lived on in New Bedford.

TAYLOR: Actually, though, it was a very different kind of upbringing than kids today face. You did play in the street.

FARRINGTON: Oh, yes.

TAYLOR: Things like Little League baseball were really pretty new then.

FARRINGTON: They were, but there was, as I said before, Little League baseball was something that I felt all my friends in the city got to do in the summer and I didn’t, because it was too far to commute to go up in those days from the beach.

TAYLOR: OK. Tell me something about your schooling before college.

FARRINGTON: Um-hum. Right. Well, it was all in the public schools in New Bedford. I wouldn’t say that I was necessarily a . . . you know, an A student all the way through. I had to struggle a bit here and there. I was of the generation, though, that we would call the “Sputnik generation,” so that it was expected that any of us who had any talents in science and engineering, and you got that feeling that if you did it was like a national responsibility to go into science or engineering, and that’s how I headed into what was—in junior high school—called the “science track,” which then eventually I got into what was called “C2,” or the college curriculum in high school to go for.

TAYLOR: Well, you bring up a very interesting point, then, because I was teaching then. I can clearly remember that, and my subject—which at the time was general science—went from a three-day-a-week to a full five-day-a-week. Sputnik went up, and all of a sudden, sciences became a national priority in the schools, . . .

FARRINGTON: Right.

TAYLOR: . . . and those were the years that I would get all kinds of requests as to “What kind of telescope should I buy the youngster at Christmas? What kind of microscope

should I buy,” and all that sort of thing. So you happened to hit at a time when this was really prime.

FARRINGTON: That’s correct.

TAYLOR: And you liked science.

FARRINGTON: Well, I did like science, but I was, quite frankly, more a person who liked sports and so forth. I went out for the football team when I could at junior high school at New Bedford, and unfortunately had a knee injury which then blew out a cartilage, and so that was the end of that. I was told, you know, “Don’t engage in any kind of sports” by the doctors. Now, nowadays they would have, you know, taken care of that right away, but they didn’t do any surgery on it, just said, “Don’t do it.”

[Thumps.] So when I went to high school, which in those days was grade 10 through ua 12. The freshman actually was . . .

TAYLOR: Right, that was junior high school.

FARRINGTON: . . . part of ninth grade in junior high school, seventh, eighth, and ninth. And it was in ninth grade when I played high-school . . . I’m sorry, junior-high-school football.

TAYLOR: Which was essentially the freshman team in those days.

FARRINGTON: It was essentially the freshman team. That’s correct. So when I went to the high school in New Bedford, you had two options. You either did sports—which I’d been told by the doctors you couldn’t do [thumps]—or you got involved in what they had in those days was high-school ROTC. New Bedford was one of the few cities that had ROTC. And I got involved in that and became interested in that, and so reality, even though I had strong science interests and did very well in the end in science, even in high school, my original idea was to uh . . . was to be a military officer.

TAYLOR: Really!?

FARRINGTON: Right, to be a flyer, basically, aviator.

TAYLOR: Well, that would be a very seductive field to be in. But I’m interested in your science interest. Was this something that was just going on in school, or was it something that was talked about at home, or . . . ? I’m trying to get a feeling for how the interest developed.

FARRINGTON: Well, I think the interest developed primarily through encouragement just to do whatever I was interested in, and I recall this love of reading, which I was saying my mother was very much engaged in getting me involved with. There were a series of books put out at that time, which you could buy one book a month came for teenagers called Landmark Books, and interestingly enough one of the books I liked very much was uh was a book called *Madame Curie*, which, you know, even in those days it was recognized that Marie Curie was an extraordinary scientist and woman. So I read about Pierre and Marie Curie and their discovery of radioactive elements and so on, and that piqued my interest, but I still was sort of balancing that against the idea that I had a national obligation to go into the military, because about that time was when President Kennedy was coming along elected president, and there was a whole bunch of the Cold War was still a major . . . major issue. So I had an alternate appointment to the Naval Academy, and I had an appointment to the Coast Guard Academy. I actually went there, but in the summer when they had what they called Swab Summer, which is really kind of hell on wheels, uh I can still say all of the things that you have to learn, you know, as a plebe at these academies. But one of the questions was, "Did anybody ever play football?" And of course you [thumps] have to . . . you're supposed to tell the truth no matter what. But that's a strict honor code at the military academy, so those of us who had raised our hands and so the question came, "Why haven't you tried out for the team?" And "So we want to have you try out for the team," and the person asking the question was the coach, who happened to be one of these football giants of the age called Otto Graham. And so then I went out for that and . . . and, you know, all heck broke loose again with my knee, and that was the end of it, and so I came back to New Bedford at the end of the summer, out of the Academy. [Thumps.] "Where do I go to school? I don't have any money." My family I was the first to go to college in my family. So I enrolled Fortunately there was an opening, and I enrolled in textile chemistry in New Bedford Institute of Technology, which was the predecessor of what is now U. Mass. Dartmouth.

TAYLOR: And it morphed into SMU in between?

FARRINGTON: It morphed into Well, it morphed into SMTI—Southeastern Massachusetts Technological Institute, then Southeastern Massachusetts University and now U. Mass. Dartmouth.

TAYLOR: Right, right. A couple of things I'd like to ask you about.

FARRINGTON: Sure.

TAYLOR: I was the first one in my family to go to college, and my parents' reaction was very interesting to that. I mean they kind of, in a sense, wanted to live a college life through me, if you will, what was going on. Did you have the same kind of experience with your family, when you . . . ?

FARRINGTON: No, it was a little bit different, because I was uh Because it was in New Bedford, I was living at home. I'd always had strong support from everybody in the family to go to college. That was recognized clearly as the thing that you needed to do in order to advance yourself or to have Not necessarily to advance yourself, but to have more options in life. And uh you know, in the beginning it wasn't all that easy. I mean I was kind of disappointed about not being at the Coast Guard Academy, and I had to work in the evenings. I was fortunate to get a job as assistant mechanic on automatic pinsetters in a bowling alley. Now you can picture this: first half of the evening three nights a week from 6 to midnight you do all the preventive maintenance, and then you can study the rest of the time, if you can block out the noise, and you're available for all of the, you know, the different things that would happen with the machinery, but it turns out that was a great thing to do, because I became very comfortable working with things with my hands, with machinery and learning about, you know, electricity, electronics components, and things like that, which later on I found very helpful when I started to go to sea and we started worrying about instrumentation. I wasn't afraid of working with it. [Thumps.]

TAYLOR: Well, see, those are questions I'm going to get to, because I have been really amazed over the past four or five years, in doing these oral histories, to find out the mechanical abilities of so many of the scientists: you know, the ability to actually work with instruments and help design them and all that kind of thing. But we'll get into

FARRINGTON: OK, I'm sorry to get ahead of the game. [Laughs.]

TAYLOR: No, no, no. That's quite all right. So you weren't one of these youngsters that went to school and could send home and say, "Dad, send money." [Laughs.] You had to kind of push yourself through.

FARRINGTON: Well, I was supported by my family, certainly. I didn't have to pay any rent at home, and I wouldn't say that I ever went You know, I didn't want for anything. On the other hand, I And I was lucky I had a couple of scholarships that were made available [thumps.] for tuition, especially. And I . . . I don't think I ever wrote, you know, that famous [thumps] telegram, you know, "Dear Dad, Send mon. No fun. Your son." And you know, the reply was, you know, "Too bad. So sad. Your Dad." I never got one of those. [Laughs.]

TAYLOR: I knew a father that used to send his kids letters that always said, "Send money" [laughs] . . .

FARRINGTON: Right.

TAYLOR: . . . back to him. That was a real disappointment, the Coast Guard Academy.

FARRINGTON: It was, but I tried one more time after that through the Platoon Leader class in Marine Corps, and I'm one of the And I did go down to Quantico for the summer, and I thought I'd strengthened the knee enough and so forth, but it . . . it didn't work out that way, not necessarily that I would have made it through there, either. That was pretty tough. I mean there were uh The platoon sergeants were the cream of the crop of the drill instructors at Perris Island, and so you can imagine how they pushed the people around, you know, pushed them through, and at that point it was done, and they took an x-ray of my knee at the Naval Hospital and said, "You're out." And so I've got I'm one of the few people, I think, who has an honorable discharge as a private, United States Marine Corps (medical) [spells out "parentheses"]. [Thumps.] So when I figured when I was done with that, and at the end of my sophomore summer that I'd better get serious about another career, and so I really started to return to the chemistry part, and I was fortunate at that time to have a professor at . . . at New Bedford Institute of Technology, Dwight Mowry[SP?], who was the head of the chemistry department, and he turned me on to chemistry like nobody else had ever done. I mean he was a dedicated professor and was doing research under rather difficult circumstances, 'cause he didn't have up-to-date equipment, and so on and so forth, but he was an inspiration to all of us

who were in the class.

TAYLOR: So that was in a sense your mentor, teacher there?

FARRINGTON: Well, I wouldn't say he was a mentor so much as he was somebody who inspired us. He was not somebody who you would, you know, say, "Let's go out and have a beer afterwards." That wasn't his kind of approach to things, but he inspired us all by his example, and just simply by the honor and the reverence with which he approached teaching and also the subject of research.

TAYLOR: So then in a sense, in those early days, you got a real feeling for the discipline, for research, and also for what a good teacher was.

FARRINGTON: That's correct. I had another teacher, Louis Finall[SP?], whose voice was difficult to understand because he had suffered from an accident in the chemistry lab, which affected his vocal cords, and yet he—every single semester—would go in and continue to lecture and present materials, and it certainly couldn't have been a comfortable thing for him to be doing, but he was dedicated too.

TAYLOR: Was chemistry difficult for you?

VOICE: [??] One second. [Tape stops and starts again.]

TAYLOR: When you started into your college chemistry, was that a difficult subject for you? I mean was it something you really had to work at?

FARRINGTON: No, in retrospect I have to say that in my first two years I majored in fraternities and pool. [They laugh.] And I wasn't what you could call a scholar. I was still, as I said, sort of recovering from the Coast Guard Academy disappointment and trying to think about what I was going to be doing in the future. And so I, you know, I studied enough to get by, but I didn't have extraordinary grades. I had B's, you know, B-. Physical chemistry, which is what we took with Dwight Mowry[SP?], was a tough subject, and it always was viewed and I think still is, to some extent, in many curricula as the make-or-break class for chemists. So I got turned on to chemistry through physical chemistry, which was difficult, and I worked really hard to understand that and catch up, because I'd sort of blown it the [laughingly] first two years. And then uh "Organic Mechanisms," which Mowry[SP?] also taught, was a very difficult class, but by then I began to pick up speed, and so you could look at my grades and see, you know: he was

goofing off in his freshman and sophomore year, and then all of a sudden, you know, we started getting B+'s, A's, that sort of thing in the senior year.

TAYLOR: In many ways you're replicating the way I went through myself, and I look at myself, and I say, well, really, it was more of a growing-up period to really start to see this it's something I want to do and that it was important, and that you could do it if you applied yourself.

FARRINGTON: That's correct.

TAYLOR: And when you talk about something like organic chemistry, I'm reminded of this gentleman that works for me at a testing service that is a chemistry professor—or was—at U. Mass. Bridgewater, and he wears a shirt that he gives to all his students that says, "I survived organic chemistry," you know, with a lot of little formulas on it and so on. So it was kind of a tough field to go, and it's also something you have to be very organized at as you go through.

FARRINGTON: That's right. Organic chemistry, especially as it was taught then, was a lot of memorization, and you had to get through all of that till you get into the really fun part, which was figuring out how the whole thing worked in terms of reaction mechanisms. And I had a very strong interest in biochemistry, and so the more I got into the biochemistry side of it, the more I really enjoyed it, because it was really understanding chemistry related to life.

TAYLOR: Well, in those days, an awful lot of the science the first couple of years you were essentially learning a vocabulary, and then you It's not the same way any more, but then you started to get into some of the real stuff that you were really doing.

FARRINGTON: Right.

TAYLOR: How did the bio fit into the interest in chemistry? Can you talk about your thinking about that, or your inquisitiveness about it, how it happened to hit you?

FARRINGTON: Well, I think in order to get that, I have to talk about what I wanted to do after I graduated.

TAYLOR: OK, this is good, because we can make a point here. When you're finishing up your undergraduate work, . . .

FARRINGTON: Right.

TAYLOR: . . . to me there's a huge decision. You have to make a decision as to whether you're going to go on to graduate school, and if you are where are you going to go? And how far you're going to go with all this. So maybe you can take it from that point.

FARRINGTON: Well, I had had, along the way, a number of I started off in textile chemistry, which was something that the New Bedford Institute of Technology, was one of the few places probably a half dozen—no more than that—in the United States that offered such an undergraduate curriculum. Then my junior year I switched into chemistry as a focus, but I had taken courses in textile chemistry up to that point, and those are very much descriptive courses. You talk about learning the lingo and so forth. It was a very specialized lingo, and it was really—even though there's science to it—there's a lot of art and craft, if I could use that term, to figuring out print pastes, and things like that. So when I was in my senior year, trying to decide what to do next, the options were, you know, obviously get a job, or think about going to graduate school, and not to foreclose on any options, I did sign up for the interview process, and I went uh to several interviews, and I was asked to go to these interviews I think in part because I had that textile chemistry background. So I went to interview with sort of a long list of uh chemistry companies at the time—Rohm and Haas in Philadelphia, Dow Chemical, DuPont, uh, Allied Chemical in new York, and I did actually have job offers from Allied Chemical and DuPont and Dow and Rohm and Haas, all four, to go in different places. The most interesting was Allied Chemical, which took me to New York City. They owned the Times Square Building at the time, and my job there would be the technical consultant in a way to their salespeople, and so I would have had an office in the Times Square Building. I forget what floor, but I was looking out on Times Square and [thumps] be the consultant who would say whether or not [thumps] we could dye such a color on such-and-such a cloth and that sort of thing. And they also sent me at the time to Pittsburgh for a follow-up interview to a group called Psychological Consultants for Industry, and that was my first exposure to consultants who tried to figure out whether you had any leadership potential or not, and I must have gotten through that OK. They offered me the job. But the thing I really found interesting, and which ultimately made a difference for me is that they said, “OK, you have the job, and here are your options. [Thumps.] Here are the three towns you can live in. One in New Jersey or two in

Connecticut. And here are the three country clubs [thumps] we'll buy you a membership in." And I thought, eh, this is a little too structured for me. And that was the time I decided [thumps] I'd . . . I'd rather try research and graduate school, but then I came up against the fact that I'd goofed off [thumps] in my first two years, and so, for example, I know now, having been involved in graduate admissions for a long time, that if I had looked at my file [They laugh.] I wouldn't have got past the first cut. [Laughs.] So they were starting a Master's degree program at what was then SMTI—it had officially become SMTI—in chemistry, and I was the first of three people [thumps] who were in the Master's degree program, and I actually have the first [thumps] Master's degree in chemistry from what is now U. Mass. Dartmouth. And at that time is when my interest began to really focus on biochemistry, and I did my Master's thesis research on enzymes of coldwater fish—actually halibut out on Georges Bank.

TAYLOR: Was the interest—when you say “biochemistry”—was the interest also involved with marine?

FARRINGTON: No. Not really. In fact, it was only the animal subject. I mean basically I was comparing lobster . . . I'm sorry, not lobster but the fish, the halibut enzymes with uh [thumps] enzymes in rabbit, which were sort of the classic that they were studying at the time, and I was looking at energies of activation. And I was going through the process of actually purifying and crystallizing the enzyme, and the only contact I had with the marine environment was to come down and make arrangements to get fresh fish from the National Fisheries Service people down here. What happened was I was thinking, really, of going to medical school. In fact, I had applied, thinking about going to the University of Miami Medical School, which had a combined MD-PhD program, and the thing that turned everything around [thumps] was the fact that I came down to use the MBL Library at the time. It was joint with the WHOI Library, but it was called the MBL Library at the time. Because U. Mass. Dartmouth didn't have a very extensive library, and this was one that my advisor at the time, Dwight Baker, knew that this was an excellent library from his own experience in his PhD at Columbia, and he had spent some time here in the summer. So I went to use the library, and it was like—for me—who had this background in, you know, books and reading and so forth. My exposure in libraries had been you went up to the front desk, and, you know, you asked

with . . . almost on bended knee from the librarian, “Would you please get me the book?” or whatever you needed, and to be told, “Oh, you’re a guest student. Sign up here.” And then, “Here’s,” you know, “here are the stacks. You can go sit at a table in the stacks with all these journals around you that you can read.” And so I spent hours and hours, days and days coming back and forth from New Bedford, studying in the library there and making notes, ‘cause there weren’t any . . . no Xerox machines available to us at the time, so you made your notes in your notebook or on [thumps] file cards. And it got tiring after awhile, and I wandered down the street one day around noontime in the spring, and there were a bunch of people crossing the street from the then drugstore going into Redfield Building, and so I just asked the person who was selling lunches from a pushcart on the street what was going on. They said, “Oh, they have these [thumps] noon seminars. Anybody can go. It’s about oceanography.” Oceanography. I didn’t know the difference between the Marine Biological Laboratory and the Oceanographic Institution, but I went into Redfield, and I sat there, and I have tried many times to remember who was giving the talk, and I can’t say for certain. I don’t know whether it was Val Worthington or It was physical oceanography, basically, and they’d just come back from a cruise, and they were talking about some of the results. And my take on this was [thumps] that here are a group of people who are exploring and having fun. What is this oceanography all about? So I went back and started thinking about that, and that got me into applying [thumps] to the graduate school of oceanography at URI, because I didn’t know there was a Joint Program here, and I doubt I would have gotten in, anyway, given my [laughingly] undergraduate record.

TAYLOR: But it sounds as though you were also willing to take a risk, because during that particular period, you could go into a science laboratory lacking a PhD. You didn’t have to have one, and they could find a spot for you.

FARRINGTON: Um-hum.

TAYLOR: So you could have had jobs, and yet you chose to go on, and you say one of the things that really made it was listening to someone down here talking about oceans. I’ve always called oceanography kind of the “Indiana Jones science.” It’s the one that’s got the adventure and exploration, along with the sciences.

FARRINGTON: Right, well that was the impression I had at the time, but I also knew that it was rigorous, too. Because they were talking about interpretation of numerical equations and things like that. And physics was not my strong suit, I can tell you that, when I was an undergraduate—mainly because I goofed off. But there was a sense that not only was it adventuresome, but it was a quantitative science. It just appealed to me.

TAYLOR: It struck a real responsive cord.

FARRINGTON: There was no way to say anything other than it was almost like, gosh, I think it was the combination of, you know, thinking you've practically died and gone to heaven, being in that library, and then coming down and listening to this intellectual discourse over a brown-bag lunch that captured my attention, because up to that time, everything I had been exposed to was much more formalized learning in college and univer . . . you know, people with ties and sports jackets, and you took the sports jacket off, but you put the lab coat on. You know, that sort of thing [thumps], and there was none of that here, none of that [thumps] at all.

TAYLOR: It's another one of the stories of how people got into . . .

FARRINGTON: Right.

TAYLOR: . . . oceanography, or the ocean thing. To quickly relate: I was cutting class one day because everything was necktie and I was bored with it, and went in to see the movie, "The Creature from the Black Lagoon"?

FARRINGTON: [Laughs.]

TAYLOR: And as I walked in, here were three or four divers hovering in the middle of the screen, and I remember saying, "I've got to do that." [Laughs.] And so there's different ways of getting into these things.

FARRINGTON: Right.

TAYLOR: What schools did you consider for your PhD.?

FARRINGTON: Uh University of California at San Diego (Scripps), University of Washington, and the graduate school of oceanography at URI, which I had heard about from some people, and it was nearby, and I went over to interview there. Interestingly enough, I applied for what was called At that time it was the Atomic Energy Commission, and they had a series of health physics scholarships, and selection for that was based on [thumps] your academic record but also letters of reference and how well

you had done in the Graduate Record Exams, which you took, and I had taken [thumps] at that time. And University of Washington I proposed to do a study that was joint between the health physics department there and the oceanography school, looking at radioactivity in the marine environment, and the uptake of radioactivity by marine organisms. It's not anything I knew that much about, but seemed to me like something that we really ought to be paying attention to, given what was going on with nuclear-weapons tests: you know, fallout that we had heard about, obviously in the news, and that sort of thing. I got this very nice letter—form letter—from the graduate school, saying, you know, that . . . that uh my application wasn't as strong as perhaps it should be, and in addition, it was very diffi . . .

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FARRINGTON: . . . out the entire application and submitting it. Instead, I had already gone for the interview at the oceanography school at URI, and I liked the people who were there and the people I talked to. Again, it was very much like the people that I had seen in Redfield Auditorium. That was sort of my sense. I felt comfortable. There was a genuine interest in the students and what you were interested in among several of the professors I talked to.

TAYLOR: Now, was this the area that kind of slopes downhill and then drops off into the Bay down there?

FARRINGTON: Yeah, that's the Bay Campus down there. That's correct. There was another factor, and that is, my wife and I . . . I had married my high-school uh sweetheart—if you want to call it that in the old terms—and we had a little girl. And my wife was a registered nurse, and we were . . . I was thinking we could go to graduate school, and it'd be nice to be closer to our families. Her family was in New Bedford too. So all those things sort of added up to looking at the oceanography school. But in the meantime, I got this very nice telegram from the Atomic Energy Commission, said that I had been awarded this national competitive Health Physics Fellowship to study at the University of Washington, followed a few days later by another telegram from the University of Washington that said, you know, “So glad you're coming.” So I quickly figured out, you know, if you had money for graduate school, you could overcome a poor

record, and that So I wrote back to them and said, no, I already made up my mind to go the University of Rhode Island.

TAYLOR: But, now correct me if I'm wrong: I would think it would be kind of a tough decision, then, to go on, because you had a wife. You had a child. There wouldn't be an awful lot of money coming in.

FARRINGTON: No.

TAYLOR: So you really had to take a chance.

FARRINGTON: Well, I had a very supportive wife. I mean Shirley was very supportive of this, and she had been the first in her family to go beyond high school, having gone to a three-year nursing school and doing very well. Actually, I keep saying that she is actually the brains in the family, because she was in the honor society in high school, and the top academic in her nursing class, and president of the class, but in any event, she'd been very supportive. There were times, I'm sure, when . . . and I know there were times when my in-laws said, "What's the matter with that young man? He's got a Bachelor's degree—a college degree—and he's got a Master's degree. Now who does he think he is, going for a doctorate degree?" [Laughs.] But we . . . it all came out fine in the end.

TAYLOR: Well, I wondered about that, because when you're the first person in your family to go to college, you don't get an awful lot of advice. At least, I didn't, from my family, 'cause they had no experience with it, and there were two ways of looking at going to school. One was you went to college to be able to earn more money, and another one was you go to college to be able to educate yourself further, . . .

FARRINGTON: Yes.

TAYLOR: . . . and in my situation, it was, well, gee, you go to college so that you can make a bigger paycheck . . .

FARRINGTON: Right.

TAYLOR: . . . later on. Did you have a similar kind of situation as that?

FARRINGTON: No, I think it was that certainly you want to have more education. You certainly want to go to college to be able to have more opportunities to be successful in life, to make sure that you have a paycheck, if you want to call it that. But I would go back to the fact that the encouragement, my mother's encouragement, was always to learn. And I got the same sense of encouragement to do what you thought was important

from my aunt and my uncle, and there was no doubt they were always expressing, in my uncle's case, a very quiet pride. I mean I don't think he ever came out and gave me a hug or a pat on the shoulder or anything like that, but there were times when he shook my hand and said, you know, "Nice going," you know, when I was older, and that sort of thing. And our extended family—my cousins and other people—all were very supportive of going to co Nobody ever said, you know, "What a jerk! Why don't you go get a real job?" Nobody ever said that to me. They just wondered, you know, "Why are you doing this? You've got a family." And of course when I was in graduate school, we, you know, we decided we wanted to have another child, and so we had Our son was born then. Our daughter was born when I was doing my Master's study. And our son was

TAYLOR: What are the children's names, so I can get it down?

FARRINGTON: Karen. Karen is our daughter, and she was born in 1967—actually 7/7/67. I can remember that one. And Jeff was born in 1970, and it was December 6, and I can remember that one 'cause it's the day before Pearl Harbor Day. So easy enough to figure out.

TAYLOR: And what do they do now?

FARRINGTON: Karen is a schoolteacher, a seventh-grade schoolteacher in Sandwich, and Jeff is a high-school biology teacher in Bourne.

TAYLOR: Educations run strong in your family.

FARRINGTON: Only Karen started off that way. Let me think about that. Jeff has a Ma They both have Master's degrees. Jeff has a Master's degree in wildlife biology, and I think eventually, you know, it's balancing between whether he's going to be a teacher or whether he'll try to get some job in ornithology or something like that, but the answer is yes, but not by design. I mean Jeff, in his—especially Jeff—in his teenage years, would talk about us. And he's going to get upset that I said this on tape. [They laugh.] I think it's funny, in a way. He said, "Oh, you're not bringing another one of those Woodsholians home for dinner, are you?" Because he was worried that all we were talking about was science, and he claimed he didn't have any interest in it, and then he got a Bachelor's and a Master's degree. [Laughs.]

TAYLOR: Children do this to you all the time.

FARRINGTON: Right.

TAYLOR: OK, so tell me a bit about your experiences at URI, and I'd like you to comment on how you picked the kind of research you were going to do, what your dissertation was going to be, any professors that perhaps you remember . . .

FARRINGTON: Certainly.

TAYLOR: . . . fondly.

FARRINGTON: Um-hum.

TAYLOR: That sort of thing. And kind of general pictures of what it was like during that period.

FARRINGTON: Well, I remember that . . . that I had Everybody had to take courses in what they called the four core courses: biological oceanography, geological oceanography, chemical oceanography, and physical oceanography. And for me it was interesting, because in order to take geological oceanography, you had to have undergraduate geology. I had never had an undergraduate geology course. I actually took undergraduate biology, but when I was getting my Master's degree, because I was interested in biochemistry, but I had never had any biology up to that point, only physics and chemistry, so I was OK going to biological oceanography, and I remember uh the courses first. I want to talk about those professors; then I can talk about the advisors, but basically one of the biology professors was a fellow named Dave Pratt, who got his doctorate degree at Harvard, and he was a wonderful professor in terms of teaching about biological oceanography, and very inventive, and I say that because one of the exams in the middle of the semester was a take-home. And it was a . . . a instruction for us to write a science-fiction piece, but based on recent knowledge related to biological oceanography, biological sciences [thumps]—something along those lines.

TAYLOR: That's great stuff.

FARRINGTON: And . . . and, you know, some people went [thumps] really wild, but I remember going home and thinking, like, "This is really exciting! I'd like to do something with this!" And so, my piece, to make a long story short [thumps], was about marine mammals, and . . . and their acoustic communications. We couldn't really understand what was going on, but they were basically going to tell us, if we could understand that, that they had an altered genetic code in certain of the marine mammals

that had been imprinted by the lost civilization of Atlantis, and once we had known enough to understand what was going on, then clearly we would be ready for all the knowledge that could be unlocked, having this key. And the idea was the lost civilization of Atlantis had been disrupted by a catastrophic earthquake caused by plate tectonics, and that they knew that this was going to happen, and so they had gone to all this trouble, getting this going. I mean it was a stretch, obviously, but there was a connection to what was going on at the time in geological sciences, which was the plate tectonics revolution, and I was a graduate student—not in geology. But it was fascinating and exciting to have of these people come through and talk about completely new ways of looking at the earth. TAYLOR: And it was a very interesting time geologically, because there were many people out there who had built their whole career on what turned out to be a false notion, and they still defended that [Laughs.]

FARRINGTON: Oh! I would be up on the main campus as a graduate student, you know, taking this freshman geology class, with its lab, you know, scratch plates and all that stuff, because I had to—you know, not for credit, but I just had to get through it. And I would listen to the instructor talk about the old theories, obviously of, you know, mountain building, orogeny, and all that sort of stuff, and then I would go down to the oceanography campus, and they'd have the latest seminar speaker come in and talk about plate tectonics and how do you interpret these things, and they still had one fellow come through talking about the expanding earth as being the driving force behind plate tectonics. I remember that seminar. About a third of the way into the semester, I started asking questions in the freshman class, saying, "Well, how can that be if," you know, "we have all these other things going on?" And the professor took me aside and basically said, "Look, I'm teaching this class, and I know there's all this rubbish going on down there, but don't contaminate my lectures!" [They laugh.] So I just kept my mouth shut and kept going. [Laughs.]

TAYLOR: But the one you talked about that had you do the science fiction; that fascinates me. I actually taught a course once in science fiction with the Essentially it was trying to get kids to say, "What if?" What if this were true? And that's what this person was doing: what if that was the way it happened with those dolphins. It's out of the box.

FARRINGTON: He was trying to get us to expand our minds, basically, and to explore what we knew about the evolving science at the time, so that we could then use that to sort of dream, if you would. And that's a great . . . I always thought that was a great aspect. I mean he had other exams later that were, you know, factual types of things.

TAYLOR: But in a sense it was really starting to get you zeroed in this, well, for a lack of a better term, this interdisciplinary approach that you were talking about, like biological subjects. You're talking about a geological subject, and you're starting to look at an environment, so to speak, . . .

TAYLOR: That's correct.

FARRINGTON: . . . rather than just the single thing. So that's really terrific. Now when we got into that the question that I first asked was: you have to make a decision somewhere along the line . . .

FARRINGTON: Right.

TAYLOR: . . . of what you're going to research.

FARRINGTON: That's correct.

TAYLOR: And that's a whole kind of nervousing thing, because you get the golden fleece at the end there, which is . . .

FARRINGTON: Um-hum.

TAYLOR: . . . the PhD.

FARRINGTON: Right.

TAYLOR: And you've got to get through all this and develop a whole program and be questioned, peer-reviewed, and all that.

FARRINGTON: Right.

TAYLOR: That's a difficult time, so tell me about yours.

FARRINGTON: Well, I had originally written the idea of what I would like to study, was something that was a continuation of some of the things that I had done with my Master's degree in entomology, and that was the essay that I had written to get into graduate school. But as we all know at this time, once you get into graduate school, you sometimes end up doing something different, and I was assigned in my first semester The support that I received came from a Sea Grant—it was the beginning of the Sea Grant program—from a Sea Grant graduate research assistantship which was assigned to

a professor by the name of Jim Quinn, and he had been appointed just six months before as an assistant professor. He came from a background in biochemistry research, but not in the marine environment, and so I had a commonality of interest with him. [Coughs.] (Excuse me.) But what happened was that this was a new building they had built, so the first semester [clears throat] I was basically helping them move furniture into the lab and paint the walls of the lab, and that sort of thing. I'm going to have to get a drink of water here, if you don't mind. [Coughs.]

TAYLOR: Sure. While you're getting yourself a drink of water, [sound of water filling vessel] prior to getting your doctorate, you also had a chance to work at the biochemical research lab for Dow Chemical?

FARRINGTON: Oh, yeah, that was I'm glad you brought that up, because that was very . . . very informative. That was uh what It was quite similar to our summer student fellowship program, [drinks] except it was for students who were in graduate school who might later go to work for Dow Chemical, and so I went to their corporate biochemical research labs in Midland, Michigan, and it was uh very nice. It was a good salary for the summer. And I learned modern techniques of insect-tissue-cell culturing that were just being pioneered there, plus human liver cells, looking for third-generation pesticides, screening toxicology and so forth. And I never even thought that I would be using that information or understanding later on. My biggest discovery there was that, in their literature searching—and they had just brought online computerized literature searching there and databases. This is one of the early days—that people who had thought about the project had missed a very critical paper in the *Proceedings of the National Academy of Sciences*, and in fact one of the premises about developing third-generation pesticides was false—one of the ones that they were looking at. That in fact the enzyme wasn't present only in insects but also was important in transferring uh sugars across the renal tubules in human kidneys, and so that's You know, you don't develop an enzyme target for pesticides that [laughs] . . . that is important to human biochemistry. So I learned a lot from that experience, and it was a [thumps] wonderful experience, because every Tuesday, for the morning, in the summer [thumps], they would take us to meet one of their chief corporate officers, and they would explain to us what they did. So there were like 15 of us as students from all over the place [thumps], not just

biochemistry lab [thumps], but from other labs, and we'd learn about how the treasurer of the company, chief financial officer, had to worry about how their funds were being transferred on the market and what the exchange rates were between the different companies in the countries they operated in. We got to talk to uh Julius Johnson, who was the director of research about how they planned connectivity between research and products going to market, how the board of directors worked, things like that, so it was an extraordinary experience.

TAYLOR: Yeah, pretty early, you got a taste of what the administration of science is like, too, then.

FARRINGTON: Well, in that case it was the administration of a huge uh multinational company.

TAYLOR: OK, you were

FARRINGTON: [Simultaneously] I

TAYLOR: I was just going to ask you: how many other people were in this situation with you?

FARRINGTON: [Coughs.] I recall about 15 or 20.

TAYLOR: OK. Can you talk some in terms of I would think that would be a fairly stimulating group to be in.

FARRINGTON: It was.

TAYLOR: You'd spend your days in the labs.

FARRINGTON: Um-hum.

TAYLOR: How about evenings? You get together?

FARRINGTON: Well, we were all living We There were only a few of us who were married, and we were all living in something the equivalent of our Oyster Pond housing units in a way, but in the city of Midland, Michigan. Anybody who's ever been to Midland, Michigan, knows that that is a Dow Chemical town. I mean there is the Grace Dow Memorial Library and the Herbert Henry Dow, Jr., Sports Arena, and so on and so forth. And so there were a number of things that went on, and we did talk with each other, but it wasn't The people I talked with a lot, for example, the next door neighbors to us who had a little boy who was about Karen's age, our daughter's age—he was in computer sciences. And the other fellow who lived in the same housing unit with

us, and his wife, he was in marketing. So we got to talk about, you know, all the different aspects of what they were interested in doing and what the latest stuff was going on in those different arenas.

TAYLOR: Well, I asked you that question because two or three years ago, in talking with one of the Joint Program students, . . .

FARRINGTON: Um-hum.

TAYLOR: . . . he made an interesting comment to me. He said one of the most valuable things that he did here was like during the summer, when you could—just down on Pond Street—just sit kind of on the porch and have a beer with one of the scientists here and just talk.

FARRINGTON: Yes.

TAYLOR: They really felt that was a terrific experience, and I wondered if you had a somewhat similar kind of experience when you were there.

FARRINGTON: Well, it was more of a structured environment. In other words, it was more of a . . . a eight-hour-a-day type of work environment, even though it was a corporate research lab? And it was a different way of doing science. Uh but I was glad that I had that experience and exposure, and I realized uh at that time, you know, some great science was being done, even though it wasn't in a university setting. So I've never felt like, you know, those in the ivory tower have a leg up over these other people, 'cause they were very bright. They were doing very innovative things, and . . . and discovering some pretty interesting stuff that was going on.

TAYLOR: And of course probably this wasn't part of your thinking process then, but you were really being educated from a whole bunch of different angles here, leading into what you were, in fact, doing. I mean you were talking with marketing people. You were looking at how . . .

FARRINGTON: Sure.

TAYLOR: . . . science is really done. You also had the university experience and how they . . .

FARRINGTON: Right.

TAYLOR: . . . do it, so a lot things that were coming in here that became part of what you became.

FARRINGTON: Right. In those days they would tell us a story, and some of it may be folklore, but I think most of it is true, about the development of Saran Wrap, which was a signature Dow product at the time. And there was a scientist who was playing around with these polymers, and polymer chemistry, and polymer films, and they would measure a whole variety of things, including how much oxygen diffuse through them, and different gases and that sort of thing, and he noticed that this had a particular tendency to cling to things, and it didn't exchange oxygen very quickly. So he thought it might be a good product, and he thought it would be useful in the kitchens of American households, and he thought that because he happened to be a bachelor and did all of his own cooking and things in his own house. And he was a contemporary of Herbert Henry Dow, Sr., the founder. And one of their innovative scientists, this person, so he went to him and said, you know, "I think we've got something here." And said, "Well," you know, "take it to the Board and to the marketing people," and that sort of thing, so they did a marketing survey and so forth, and came back and said, "No, no, nobody's ever going to use that thing." You know, in the classical sense this guy was stubborn and so he went to the Dow Senior and . . . and uh he put some of his own money into it—not the company's money—to do an actual prototype and not just a survey but actually test-market it, and of course the rest is history. It took off. But that was an example of what they told us of, you know, make sure you take into account a number of different things and think outside the box and listen to the wild idea that comes along, and don't discard it just because it doesn't fit to your conformity of the methodology you're using, no matter whether it's in marketing or whether it's in research and science.

TAYLOR: It may have been one of the most valuable lessons you ever learned, come right down to it.

FARRINGTON: That's right. That's true.

TAYLOR: Now, again, what was the title of your doctoral research?

FARRINGTON: Well, my doctoral research was actually called, "The Benthic Lipids of Narragansett Bay," "benthos" being uh bottom animals and sediments, and I got into that with Jim Quinn [thumps], who I had been assigned to as a graduate research assistant, and I began talking with him and thinking about, well, this is some interesting lipid chemistry that's going on, but early on my career, we talked to the other graduate

students, the most senior students. They said, “For heaven’s sakes [thumps],” you know, “don’t study with him. He’s brand new. Nobody knows about him. He’s not even an oceanographer, and you’re getting a PhD in oceanography.” And I went to talk with Professor Quinn, with Jim Quinn, about possible study topics, and he said, “Look, I want to be up front with you. I don’t know anything about oceanography. I’m learning about it. Maybe we can learn about it together. You could probably teach me as much as I teach you. I know a lot about lipid biochemistry, and I’m pretty sure there’s a lot of really interesting things to be done in research on those types of chemicals in the marine environment.” And on that basis [thumps], I said, “This is the guy.” I was really impressed by his honesty, his organization, everything else, and so I started doing my thesis research with him, and I wrote a . . . a For a fellowship to what was then called the Health and Water I can’t remember the exact title, but it eventually morphed into the Federal Water Quality Administration, and they had a lab next door across on the campus in Narragansett, and I went to talk to the director, and he said, “Oh, no, we don’t have any [thumps] fellowships like that. You must be mistaken.” And I thought, “Well, OK, there’s confusion in the Federal Government. That’s not unusual.” And so I forgot about that, and then in about six months later I got this letter that said, “Congratulations, you’ve been selected,” you know, “as the person to get this fellowship.” And we were all excited about it, because getting a stipend and tuition support really meant that I could do my thesis research without having to worry too much about doing other stuff which was part of the graduate research assistantship for teaching.

TAYLOR: So it worked out pretty well for you up through that period?

FARRINGTON: It worked out very well, and Jim was one of these people who said, you know, “I want,” you know. “Don’t spend your entire life here. You don’t have to do all of your best research while you’re a graduate student.” And he was saying that having come through a more classical graduate education, whereas in oceanography in those days, at the oceanography school and also at Scripps, it wasn’t unusual for people to spend, you know, eight years [thumps], nine years, because they were also sometimes full-time employees or three-quarter-time employees who were allowed to take one-quarter-time class work and so forth. So I was very fortunate. I got through my doctorate degree and finished my thesis defense in less than three years, and people were

very worried about that when I was finishing, because by that time I knew I had a postdoc here at Woods Hole, and some of the professors who were more oceanographers in the [some kind of construction work in background] long-time tradition were coming up to me and saying, “Now, you know, you’re the first person to get a Ph.D. from URI who’s got a postdoc at Woods Hole Oceanographic Institution, and,” you know, “a lot of our reputation is riding you, and” so on. And finally, after several of these discussions, I said, “So what you’re really telling me is to be quiet and continue to learn.” And I said, “I can do that. Don’t worry.” And that’s what I did.

TAYLOR: [Laughs.] But they were right. URI was relatively new at that point, and in terms of . . .

FARRINGTON: In terms of . . . well, it had had a marine-science program, but John Knauss had gone there as dean, and he was building up the program, and in fact . . . in fact I took physical oceanography [hammering in background] from John Knauss at the same time he was a member of the Stratton Commission, an early presidential commission in the ‘60s, late ‘60s on ocean sciences. So we’d be in class waiting for John to show up, and Phil Richardson, who’s here in [thumps] Woods Hole now on the . . . or was. He’s retired now, but he was on the physical oceanography scientific staff here. He was our teaching assistant, so he’d come running into the class saying he was substituting for John Knauss, who had just landed at the airport in Providence. He should be there any time now and that sort of thing, but . . .

TAYLOR: But you had someone that was coming out of some pretty good things that were going on in oceanography in those days—the . . .

FARRINGTON: Yes.

TAYLOR: . . . Stratton Commission, things like that, and Knauss—pretty much the father of oceanography at URI.

FARRINGTON: Well, he took over from Marie and uh Charlie Fish, who had established the marine lab there, and he was brought in. In fact, Marie and Charlie Fish were people that folks here interacted with a lot. There are some interesting stories about Hank Stommel getting into the car and driving over to the seminars at the oceanography school or the marine lab in Narragansett, and people over there getting in their cars and driving over [thumps] here to listen to the . . . to the talks over here too.

TAYLOR: When you go in for your oral, is that a nervousing time?

FARRINGTON: Yes. We had what are called comprehensive exams, sort of a general exam for the PhD, and it was written, and it was—memory serves—three days of written exams. I mean people here complain about a day. And then we had about a two-hour oral exam, and it was really examining your background knowledge in areas of oceanography, and then specific knowledge for your thesis topic, which in my case was about lipids, fatty acids, hydrocarbons, but not pollution. I wasn't looking for pollutant hydrocarbons. I stumbled on those. That was an interesting problem. [Coughs.]

TAYLOR: I'm going to ask about that, because that's certainly a huge part of your career here.

FARRINGTON: Um-hum.

TAYLOR: OK, now you've got that PhD, and you've got to do something with it.

FARRINGTON: Right.

TAYLOR: And what were the options open to you at that point?

FARRINGTON: Well, if I can back up to doing the thesis research in Narragansett Bay, the original hypothesis was that we could use lipids from land plants, which were different in their composition than lipids from marine plants and animals, to trace sewage effluents down in Narragansett Bay. And so I went out to try to do that, and the problem was that [clears throat] we were trying to look for hydrocarbons that were part of the waxy coating on things like fruits, like apples and that sort of thing. And when I tried to analyze for the hydrocarbons in the effluent samples that we took from the sewage-treatment plant in Narragansett, up in Providence, rather, on Narragansett Bay, the signature I got out of the gas chromatograph didn't look anything like what it should for the standards, and for several weeks Jim Quinn was absolutely convinced that it was I, that I was doing something wrong, and I didn't know You know, something in the extraction isolation or some way of injecting the sample in the gas chromatograph: whatever was happening was wrong. And I had a whole bunch of these gas chromatographs, and I basically put all these hydrocarbon gas chromatographs up on a shelf [clears throat] and continued on with the fatty-acid work, which was going pretty well. And it was only when I was reading the literature—and Jim had assigned each of the three students he had at the time (Phil Meyers^[SP?], John Patton, and myself) [clears

throat] to read “x” numbers of journals in the library, and then we would talk with each other about that every week, what articles were interesting, which ones everybody ought to read, and which ones you could forget about. One of the journals I was assigned was [thumps] the *Bulletin of the American Petroleum Geology* (I think it was.), and they had an article in there about analysis hydrocarbons in a reservoir, oil reservoir which had been uplifted near the surface, and groundwater was coming in with oxygen and nutrients. And as I looked, going across the reservoir, the type of gas-chromatographic signature that you’d see for oil sort of disappeared, and you ended up with sort of a nondescript hump in your gas chromatogram, which eventually we called the end-result-complex mixture, but that looked exactly like the thing I was getting out of the sewage-treatment-plant stuff and the sediments in the upper part of Narragansett Bay, and all of a sudden it clicked, and I said, “We’re looking at oil input here.” Now in . . . in hindsight, you know, oh, of course, that’s obvious, all of the oil dripping down sewers and stuff, but nobody had paid any attention to that up to that point.

TAYLOR: Oh, non-point sources were not taken into consideration in those days.

FARRINGTON: That’s right.

TAYLOR: Pollution wasn’t a huge issue then.

FARRINGTON: No.

TAYLOR: It was with some scientists, but not the general public.

FARRINGTON: Well, it just But see

[END OF TAPE 1]

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WOODS HOLE OCEANOGRAPHIC INSTITUTION
ORAL HISTORY OF JOHN FARRINGTON

Interview by Frank Taylor, February 2, 2005

Tape 2 of 8 tapes transcribed by Arel Lucas, November 2005

1 TAYLOR: . . . tapes. We interrupted you at the point where you were talking about your
2 gas chromatography results,

3 FARRINGTON: Right.

4 TAYLOR: . . . and could we go on from there?

5 FARRINGTON: Sure. What . . . what basically happened is we were finding chronic
6 contamination of oil in both the sediments and the shellfish in upper Narragansett Bay,
7 and we had a sort of a gradient of contamination coming down the Bay, and it was pretty
8 clear, looking at it, that it was not from oil spills, but it was more from the chronic oil
9 input down in the sewage treatment plants. At the same time, in 1969, over here, in
10 Woods Hole Oceanographic Institution, up in West Falmouth, there was the oil spill that
11 had become one of the first . . . clearly now—we didn't know it at the time—but now it is
12 one of the classic studies of oil spills, but Max Blumer and Howard Sanders were
13 studying that, and Max Blumer was one of the uh pioneers in marine organic
14 geochemistry, and he had one of the few, at the time—in fact the only—gas
15 chromatograph mass spectrometer that was available in marine sciences. So learning
16 how to do that, and the fact that Max was looking at oil pollution in the marine
17 environment was a stimulus to come and talk with him. And so Jim Quinn and I did
18 come to visit with him. And in fact we had met him uh at a Gordon Conference in
19 organic geochemistry. These are these conferences that are held in the summer up in the
20 schools in New Hampshire there, the private schools. It's one of the things the schools
21 are used for for the summer, and the idea is you go there to talk and exchange ideas, but
22 nothing's ever published. So I got talking with Max there, and so I had become aware of
23 his research, and was aware that Woods Hole had postdoc [thumps] opportunities and
24 fellowships, but they were very few and far between. But I did apply for one, and I came
25 over to [thumps] talk with Max about it, but unfortunately the day I came, that evening
26 before, he had heard that his mother was very ill, or that day before, and so he had to fly
27 back to Switzerland. So I did have an interview here [thumps], and I talked with John
28 Ryther about doing some stuff with his aquaculture program, growing shellfish on
29 sewage and analyzing things there, and I also talked with John Hunt, who was the chair

30 [thumps] of the Chemistry Department at the time, and John said, “I have to be very
31 candid with you. Very few people can be admitted to the program, and even more so
32 hardly anybody ever meets Max Blumer’s standards.” So I figured, OK, that’s the end of
33 that. [Thumps.] So I went back to Rhode Island, continued my thesis research, and I
34 applied for a number of different positions, including a postdoc in . . . in England at the
35 University of Bristol with uh Jeff Eglinton, who was considered also to be a . . . one of
36 the pioneers in organic geochemistry at the time, along with John Hunt and Max Blumer
37 and Egon Degens, who was here, and uh at one point in—I think it was around—March,
38 middle of March, in 1971, I received a phone call in the lab. Jim Quinn came in and said,
39 “There’s somebody named Werner Deuser on the phone for you.” And I’m trying to
40 racking my brain. Who’s Werner Deuser? He said, “He’s from Woods Hole.” And I’m
41 thinking, what’s that all about? And it turned out Werner was the department
42 representative on the fellowship committee, and he was calling to tell me that I’d been
43 selected for a fellowship, for a postdoc fellowship, and I that had my option of picking
44 either working with John Ryther or Max Blumer, and that sort of thing, and I thought
45 Ryther was a very bright guy, but Max Blumer was more along the directions that I was
46 interested in, and so I said I was quite interested in it, and certainly I would accept it, and
47 he said, “Well, wait till you get the official offer, but you may want to talk with Max,”
48 and . . .

49 TAYLOR: You must have done very, very well on that interview, because, without
50 betraying any secrets, John Hunt is the one that told me you were one of the significant
51 things he did here at this institution, was bringing you in.

52 FARRINGTON: Well, he . . . he was uh There’s . . . there’s a story behind that,
53 too, that he was the department chair when both I mean he did hire me as the
54 [thumps] assistant scientist. He also hired Bob Gagosian as an assistant scientist, too, at
55 the time. Those were very exciting [thumps] days in the department. We’ll get to
56 Maybe we’ll get to those in a little while in the interview. But I talked with Max on the
57 phone and [thumps] said, “Gee, I’m,” you know, “I’m just so honored,” [thumps] and so
58 forth, and he was just such a gentleman. I mean his standards were exacting. There’s no
59 doubt about that. And he said, “Well, I’ll tell you,” he said. “I have . . . you have two
60 opportunities.” He says, “I have a postdoctoral investigatorship also I recently found out

61 about,” and it was funded by what in those days [thumps] was called the International
62 Decade of Ocean Exploration. That was when the NSF budget was doubled all of a
63 sudden in marine sciences, and he said, “But I only have room for one postdoc in my lab,
64 so you can take the fellowship. Certainly you would probably have more freedom with
65 that, but if you took [thumps] the postdoc investigatorship you could also be working on
66 [thumps] things that we talked about, which was looking more at . . . at contaminants—
67 hydrocarbons and so forth—in the coastal and the open ocean environment.” So then I
68 talked with Jake Pierson, who was at that time the assistant to the dean, who was the
69 secretary to the fellowship committee, and he told me, you know, the differences between
70 a postdoc fellow, which was for one year, and the postdoc investigator, which could be
71 renewed for another year, if you wanted to. And, thinking of my family situation
72 [thumps], in which we had just had another [thumps] little fellow born, I said, “Boy, I’m
73 [laughs] I’ll have to think about this.” And then I asked Jake, I said, “Well, what
74 happens to the postdoctoral fellowship if I take the postdoctoral [thumps]
75 investigatorship?” And he said, “Well, it . . . you know, it’ll go to somebody else.”
76 [Thumps.] And I asked Max what would happen to the postdoctoral investigatorship, and
77 he said, “Well, I have to give the money back, ‘cause I don’t have any more room
78 [thumps] in my lab,” so there was no-brainer at that point. I mean everything pointed in
79 the direction of declining the fellowship and taking [thumps] the investigatorship. So I
80 did that. Now one of the outcomes of that is interesting. Nobody ever said that to me,
81 but that meant that my year at the postdoctoral investigator, since I was not a fellow, I
82 was an employee [thumps] of the Institution. That counted [thumps] toward [laughingly]
83 my retirement day. [They laugh.] [Thumps.]

84 TAYLOR: You were in an awful lot of the right places at the right times for your career.

85 FARRINGTON: [Laughs.] But that was You know, if anybody had said, you need
86 to think about that at the time, I would have said, “What are you crazy?”

87 TAYLOR: I know, but it does come to all of us sooner or later.

88 FARRINGTON: Right.

89 TAYLOR: But interestingly, when the barge *Florida* went up and . . .

90 FARRINGTON: Yes.

91 TAYLOR: . . . spilled the oil in Wild Harbor, Max Blumer did really the original
92 research on oil spill kind of thing, and Howard Sanders. And then it became very
93 interesting to me. I read some of the reports on that. There was a gentleman, a geologist
94 from Texas A & M who absolutely, in an article, tore that report apart.

95 FARRINGTON: Yes, um-hum.

96 TAYLOR: Of course my first thought was, “Hmm, a geologist at Texas A & M. I
97 wonder if this is one of those bought scientists I’ve heard about, who the oil company’s
98 going to say, ‘Here, defend us in this!’”

99 FARRINGTON: Right.

100 TAYLOR: But they did work then that actually set the baseline for how they do all of
101 this kind of investigation now.

102 FARRINGTON: Well, I think that certainly the Max Blumer, Howard Sanders and,
103 in the marsh research, John Teal, and John had a graduate student at the time—Kathy
104 Burns, who did her thesis. She just happened to be beginning to do thesis research at the
105 time that the oil spill happened, so she did her thesis research on the hydrocarbons in the
106 marsh. That combination of people who had a very strong fundamental science
107 background and brought it to bear on this topic. The big difference was prior to that time.
108 People said, “Well,” you know, “there’s a spill. There’s a slick around for awhile, and
109 then it disappears, and it’s gone.” [Thumps.] And what Max proved beyond any
110 reasonable doubt was that the oil persisted [thumps] longer than a few days, persisted for
111 weeks; then it was months. What John Teal and what Howard Sanders showed in the
112 biological systems was that the presence of the oil continued to have a biological impact,
113 and then actually what Howard showed is when that sediment that was contaminated
114 expanded, moved along with sediment transport in the bottom, in the shallow water areas
115 in the West Falmouth area, moving offshore into Buzzard’s Bay, that the effect of the oil
116 continued. [Thumps.] And then we had a unique partnership with George Suzu[SP?] at
117 the time, who was the town shellfish warden, who became interested in the whole
118 question of what about the shellfish? And Max analyzed the shellfish and showed that
119 [thumps] the oil was still there. Now the people in Gulf Coast area weren’t using
120 analytical chemistry so much as they were using what are called organoleptic analysis at
121 the time and that is, you know, you taste the oyster and [thumps] it’s OK. And in fact the

122 parts of the petroleum that imparted some sort of an oil taste to the oyster disappeared,
123 but the other compounds were still there. And . . . and this was a . . . you know, this was
124 very difficult for times for industry in the United States, because all of a sudden the
125 operating rules were changing. You know, you can't just discharge anything you want to
126 into the environment, whether it's done in effluent or any other place. This again was
127 leading up to Earth Day, as I said, and so all of these things were coming together, and
128 one of the things that is often missed is the fact that in '68 there was this huge oil spill in
129 Santa Barbara, the blowout, and the argument was, "Yeah, it's a mess and," you know,
130 "looks terrible all that sort of thing, but don't worry, there aren't any long-term effects."
131 And now along come these folks here in the . . . on the coast of Buzzard's Bay, saying,
132 "Well, that's not quite true. There are effects."

133 TAYLOR: But there's an awful lot of things that came in together here. First of all, and
134 this is not quite on the subject, but I think it's kind of important. You talk about a Max
135 Blumer. You talk about a Howard Sanders. I've had people like Bob Hessler—you
136 remember him? He used to be here?— . . .

137 FARRINGTON: Yes, right.

138 TAYLOR: . . . tell me that as far as he was concerned he not only worked for Howard
139 Sanders, but Howard Sanders was almost like a father to him.

140 FARRINGTON: Um-hum.

141 TAYLOR: He saw it that way. There was a real nice, almost family feeling here at the
142 Institution in terms of the way you folks . . .

143 FARRINGTON: Sure.

144 TAYLOR: . . . dealt with each other. Because you were going into at that time, and I
145 wanted to ask you this anyway, . . .

146 FARRINGTON: Right.

147 TAYLOR: . . . if you had any idea, as you were finishing your PhD and getting into the
148 field, the enormous complexities of making your way through this field? I mean, boy, to
149 go from assistant to associate to senior, you know, that's a tough road to follow.

150 FARRINGTON: Well, I didn't really think about that coming for the postdoc. The
151 postdoc was just going to be a . . . a sort of a polishing experience, if you would, and then
152 I would probably go somewhere else.

153 TAYLOR: Oh, OK.

154 FARRINGTON: And I did get to do a lot of very interesting research. I mean, it was a
155 lot of fun. I mean Ollie Zafiriou , for example, was an assistant scientist in Max
156 Blumer's lab at the time, and so And in my first summer as a postdoc here I actually
157 came as a postdoc before I got my degree officially, 'cause you can only get your degree
158 twice a year at URI, and mine was going to be in January of '72, but I actually came here
159 in July of '71. I actually defended my thesis in August. That's not allowed any more,
160 but once you turned in the thesis you could come. And my office mate during that
161 summer was Dan Sturmer[SP?], who was a graduate student here at the time, who is now
162 currently our vice president for Board relations and director of development, and that's
163 another long story. At some point you need to get his oral history. But we were all
164 together in one place, and it was really exciting times. A lot of new and innovating
165 things going on.

166 TAYLOR: Really, and funding was still pretty good then. The Cold War was still on.

167 FARRINGTON: Oh, funding was . . . was really not a major problem at that time. I
168 mean, you still had to worry a little bit about writing a proposal and getting the funding,
169 but for example I just told you Max Blumer had so much money he was going to give
170 some of it back if I didn't take one of the assistantships, and the way assistant scientists
171 got started, anyway, at that time, was that senior scientists or people with tenure would
172 write a proposal in which they would add another scientist in, and so you came in already
173 with a couple of years' funding, and then they would introduce them to the ONR program
174 manager and then from that point on you'd get some funding.

175 TAYLOR: Now at some point I'd like you to talk about funding and funding . . .

176 FARRINGTON: Sure.

177 TAYLOR: . . . changes over the years, because if I talked to Dean Bumpus, as I did a
178 couple of years ago, he had no idea where his money came from. It came from the
179 Institution.

180 FARRINGTON: Right.

181 TAYLOR: You know, those were the days when Columbus Iselin and . . .

182 FARRINGTON: Right.

183 TAYLOR: . . . Brackett Hersey and whatnot would sort of parcel out money they got . . .

184 FARRINGTON: Right.

185 TAYLOR: . . . from the government. There were days during that period where, gee,
186 you might have had a spokesman for you somewhere in Washington that would help you
187 . . .

188 FARRINGTON: Um-hum.

189 TAYLOR: . . . through these things, and it's changed enormously over the years.

190 FARRINGTON: Right.

191 TAYLOR: So we'll get to that. When you were doing your postdoc here, was there any
192 talk at all about having you come back as a permanent member of the staff?

193 FARRINGTON: No, I began to think about, OK, I'm coming out toward the end of my
194 first year, and I had a few feelers out in a number of different places, and I remember
195 talking with John Hunt one time, passing through the Redfield lobby, saying that . . . that
196 uh . . . He said, "Well, I'd like to," you know, "talk with you about your reappointment
197 as a postdoc investigator." And I said, "Well." At that time I knew enough about what
198 was going on to say, "Well, I really need to be moving along." I mean this was the time
199 when I was beginning to think, OK. I need to get serious, to make sure that I have a
200 longer-term career that's not driven only by the science so much as it is by my concern
201 about, you know, the family and being in a position to support them in the long-term.
202 And so I said to him, and it was a rather bold move on my part. I said, "Well, I'm not
203 sure I can, you know, accept another postdoctoral investigator appointment. I've got to
204 think about getting a more permanent appointment in the long run." And he basically
205 said, "Well, don't . . . Let's talk some more about it." Then about a month later I was
206 coming in the door of Redfield lobby going back to my lab. I think I'd been across to the
207 drugstore to get . . . get something, and John Hunt came tearing down the stairs from the
208 office up on the third floor, and he said, "I'm on my way . . ." I forget where he was
209 going, to Washington or someplace like that. "And I'll be back in several days, but I
210 want to know. We're going to appoint you an assistant scientist." There was none of that
211 formality up front in which you prepare your file; you talk to everybody, and this sort of
212 thing. They'd taken my CV out of some proposal I had, or something, and he had,
213 [thumps] you know, then talked with the people in the department about it. But I never
214 knew I was being considered. But thinking back on it, I had actually given a seminar

215 recently in the department at his suggestion and so forth, so there was none of this up-
216 front formality about, “Oh, yeah, we’re going to consider you,” and you know, “Who
217 shall we write for letters?” And all that sort of thing. So I was appointed, and of course I
218 thought I’d . . . again I thought I’d died and gone to heaven. I mean this was, you know,
219 the greatest thing going.

220 TAYLOR: That’s what I like to hear: a real feeling of emotion. Here’s this guy rushes
221 through and gives you this information.

222 FARRINGTON: Right. And then I, you know, I waited and waited and waited, and I
223 actually asked Max Blumer about it, and of course Max was a wonderful scientist, and he
224 was somebody who was very dedicated to science, but he wasn’t what you would call,
225 uh, uh, you know, a person who would invite everybody to come in and have a chat. You
226 would have, uh uh you know, we would have discussions. Every afternoon we’d have tea
227 or coffee at 3 o’clock or something, and, you know, there’d be general discussion, and
228 then we’d go back to what was going on. But I talked with him, and he said, “Well, I
229 think,” you know, “you need to talk with John about the details. He’s the department
230 chair, but, yes, we would like to appoint you. You’re doing very well.” All that sort of
231 thing, and that was good news, because just several months before that I had been called
232 along with Max and George Grice and a couple of other people who were here at the
233 time—George Harvey and Charlie Remsen, who were involved in this IDOE project, in
234 to talk with Vaughan Bowen, who at that time was, you know, the senior scientist . . .
235 senior scientist in the department. He’d been there since . . . you know, he’d been hired
236 by Alfred Redfield, [laughs] OK. And he was considered to be a terror in a way. I mean
237 people walked on eggshells around Vaughan Bowen. And I later got to know him, and I
238 got along with him fine, but that point they would sit there, and we were sitting in the
239 office and trying to decide, “OK, what samples are the priority for John to start working
240 on and doing a little research on this project,” and it had gone around to different people:
241 “I don’t know; what do you think, [thumps] Max?” “I don’t know; what do you think,
242 George?” “I don’t know; what do you think, Charlie (or Tony, as he was called)?”
243 “What do you think, George?” And around a couple of times, so I foolishly thought,
244 “Well, they’re waiting for me to speak up, since I’m the one who’s doing the research,”
245 right? So I said, “Well, I think I ought to start on the midwater organisms that have been

246 collected. That's because there's no information known about them, and we really need
247 to know about contamination in the open ocean. We know a little bit about the coastal
248 ocean, and so I think I should get started on figuring out methods to analyze those," and
249 so forth. And Vaughan sat back in his sea like he I found out later he normally did,
250 you know, and sort of rocked in his chair and put his . . . steepled his hands like this and
251 said, [in a deeper voice] "How could you be so naïve?" and I thought, "That's it!" You
252 know, [thumps] "My career is done!" [They laugh.] But I found out later that that was
253 his way of—and it was a tough test by fire—but that was his way of finding out whether
254 you'd back off, or whether you . . . you know, you were really committed and you'd
255 thought through what was going on. And uh . . . and so I said, "Well, I really, you know,
256 I [thumps] don't understand why that's being naïve." I could feel my face getting red,
257 though, and stuff like that. And Max Blumer jumped in and said, "Well, you know, I
258 think John has a point here, Vaughan." So [thumps]

259 TAYLOR: But I've been told by people that work in the Joint Program that the breaking
260 point as to whether a student is going to make it or not going to make it is when they can
261 take a research and say, "here's where I think we should go with this."

262 FARRINGTON: yes.

263 TAYLOR: And that's exactly what you did at that point.

264 FARRINGTON: Well, I . . . yeah, we were supposed to do that. I . . . I . . . I have to say
265 at that . . . at that time, in the generation of marine chemistry, and it's very unfortunate,
266 but there was a sense that . . . that you really had to go through a trial by fire of these
267 leading scholars, and they were very bright people, but their approach was brutal. I mean
268 people like [thumps] uh the You know, I don't want to speak ill of the people that
269 passed on, but Harmon Craig and people who are still alive like Wally Broeker and Karl
270 Turekian and Ed Goldberg and so forth. I mean they Getting involved in a
271 discussion with them about science sometimes could be brutal. I mean they wanted to
272 see could you take it? Which is kind of ridiculous, in a way. I mean it's There are
273 other ways of going about it, of being a little bit more humane.

274 TAYLOR: But that must have been a modus operandi then, because I've talked to
275 several people in different disciplines: physical oceanography, and so on. One said, "Oh,

276 god, when I had Arnold Arons he was absolutely terrified, but that's what kept me going
277 in the field." It seemed that that was the way they did it then.

278 FARRINGTON: Well, but there were ways of being . . . of being strict, like Max Blumer
279 would be strict and had high standards, but he didn't engage in that type of conversation
280 which some of them did, I mean which were four-letter words and things like that. I
281 mean I was present at a meeting where . . . where [thumps] Ed Goldberg had to call . . .
282 you know, basically said, "I think we're reaching a consensus" when two people were
283 literally with almost punching each other out, standing up in this crowd, arguing over
284 something. Now that is not I mean for graduate students I mean I was beyond
285 graduate-student stage at the time, but that's not very encouraging . . .

286 TAYLOR: No, it's not.

287 FARRINGTON: . . . for people coming into a field, and fortunately they were few and
288 far between, but there was a period of time when I was first coming into the field, when
289 you couldn't go to a meeting where there weren't some of those very difficult discussions
290 that went on.

291 TAYLOR: Well, that's what I say. Did you have any comprehension of the difficulty of
292 the field you were getting into? I mean it's a tough, tough field. I said to myself the
293 other day, would I have had the courage to risk not having a base salary and base
294 everything I did on this merit that goes through. I think it's very hard.

295 FARRINGTON: Well, we The funding wasn't that difficult at the time, and . . . and
296 we You know, they were heady times with expanding funding, and there were
297 things going on, and there was no sense that . . . that the funding in science was going to
298 be in trouble in the United States at that point, because of all the different things we were
299 doing. The I want to go back to the point that I was talking about, though, yeah,
300 this was going with the marine geochemists, the senior people—some of them, not all of
301 them. OK, there were also wonderful people out there who were . . . who were, you
302 know, extremely nice gentlemen and so forth. There weren't that many women—and so
303 I can say "gentlemen"—at the time. And I had been exposed to people who were
304 gentlemen too, like Howard Sanders and John Teal and uh different people here at the
305 Institution. It was mainly people outside the Institute that were like that. And there was
306 this wonderful gadfly running around called Egon Degens, who We, the assistant

307 scientists would say, “You know, he has a thousand ideas a week.” And he would, and,
308 you know, and we’d say “Nine hundred and ninety-nine of them are absolute crap.”
309 (Pardon my English.) But that that one other idea was worth all that other stuff going on,
310 and so he was stirring the pot, and . . . and, you know, having all sorts of fun. I mean he
311 would give a seminar in which he would say things like, “Well, I’ll tell you that Watson
312 and Crick are wrong about how DNA is put together. They should have considered such
313 and such.” You know, now this was [thumps], you know, amazing stuff, some of it far-
314 fetched. But was fun, nonetheless.

315 TAYLOR: And it was part of the community here. This place is significantly different
316 than, let’s say, Scripps or maybe Lamont.

317 FARRINGTON: I can’t say for sure. I’ve heard that, and I’ve heard that from people
318 who’ve been to Lamont and Scripps and have been here. I’ve never been for any period
319 of time at either of those two places. I’ve heard that, but I’m sure that there are good
320 things about those places. In fact, I’ve heard good things about those places, too.

321 TAYLOR: Oh, sure, yeah, I’m sure. Well, you know, I had this whole series of
322 questions here on how the position at the Institution came about and what was the whole
323 process, the interviews. But you’ve just talked about that. And what I was going to ask
324 next, but I’m not sure it’s even germane. When you come to a place like WHOI, were
325 you given sort of a break-in period, or were you . . .

326 FARRINGTON: um-hum.

327 TAYLOR: . . . expected to hit the ground running?

328 FARRINGTON: Oh, you were expected to hit the ground running in terms of doing
329 science, and doing analysis and writing papers, and finishing . . . finishing your papers
330 from the PhD thesis, getting papers written, and When I was appointed as an
331 assistant scientist it was pretty clear to me that one of the things that was expected from
332 me, in a way, was that I had an interest in . . . in going to sea and getting more away from
333 the shore. I did most of my thesis research in Narragansett Bay, and Max Blumer did not
334 go to sea. He was a laboratory chemist, a geochemist. He didn’t like to go to sea, and I
335 think that I was looked upon to some extent—along with George Harvey, who had been
336 here . . . was here as a scientist working at the PCBs at the time he was hired for that
337 purpose—as taking organic geochemistry in the water column and surface sediments for

338 lipid class compounds to sea. And so very quickly, after I got here, I went on a cruise to
339 the New York Bight. We got additional samples there in mud and so forth, on the
340 *Gosnold*, which was, you know, as I said, one of the At one point, when somebody
341 retired around here, it was Hovey Clifford retirement I think I went with Hovey on that
342 cruise with Gil Rowan and a few other people that uh was one of the world's great
343 appointed yachts if you were a dreamer. [Coughs.] If it made 5 knots with the tide going
344 down on Vineyard Sound you were in good shape. And in any event I did that, and I
345 went to sea with John Teal and Olli Zafiriou in 1972.

346 TAYLOR: There's always that instance of the first cruise. This was something you
347 wanted to do.

348 FARRINGTON: Right. Well, I actually As part of your graduate education at the
349 Oceanography School at URI, you had to go on a deep-ocean cruise, and I did. I went on
350 one on their research vessel, the *Trident*. We flew to Bermuda and we got onboard the
351 *Trident* there, and uh this is an interesting aspect of this cruise. There was A
352 graduate student was the chief scientist, and . . . and not only was it a graduate student,
353 but it was a female graduate student, Bonnie McGregor[SP?], and we had, I think, three
354 or four other females onboard at the same time, and this was uh 1969, in the summer of
355 1969, August, I think. And so when I came to Woods Hole, for example, and everybody
356 started talking about women going to sea [thumps], I said, "But what are you talking
357 about? You know, I've been sea with women. In fact, [slap as of hands on clothing] you
358 know, one of my fellow graduate students was the chief scientist." But we went out,
359 anyway, and . . . and immediately went out into the Sargasso Sea a little bit to the east of
360 Bermuda, and we got socked in in the northeast quadrant of a hurricane. And so my . . .
361 my initial introduction to watchstanding was getting seasick on the first night because of
362 the swells coming in, and you know, doing the (tsk) PGR watch and the magnetometer
363 and the course corrections and all the things you did, because all research vessels in those
364 days would run a standard set of geophysical, geological instrumentation when you were
365 under weigh. And then when it came time to . . . to We knew we were in this
366 hurricane, finally. We had to get the magnetometer in so that they could . . . the captain
367 could change course and get us in a better sea-state situation. But the magnetometer was
368 hauled in manually, so my introduction was my officemate, fellow graduate student Phil

369 Meyers[SP?], who was a naval officer—so he knew a little bit about going to sea—and
370 several graduate students were out on the fantail of the *Trident*, and we literally had to tie
371 ourselves in, and we'd haul on the magnetometer when the fantail [thumps] was going
372 down. And then we'd get it in, and then we'd hang on while we went down even further
373 and got buried either over our head or up to our shoulders and then hang on tight when it
374 went up again, and another one came, you know, came down again, and we'd haul a little
375 bit more. And we were out there it seemed like forever, and I remember thinking about,
376 you know, "Is this what you really want to do?" [They laugh.] But then the rest of the
377 cruise was fine, once we got out of the hurricane, and I learned a lot of things on that uh .
378 . . .

379 TAYLOR: That's a tough way to make a first cruise, when you run into those kind of
380 conditions, and I love the fact that you brought up that you got seasick. You're very
381 familiar with the Massachusetts Marine Educators, and they have the . . .

382 FARRINGTON: Yes.

383 [END OF SIDE 1]

384 TAYLOR: . . . you know. And the first thing he did was put up a picture of himself
385 hanging over the port rail. [They laugh.] He had them right in the palm of their hand
386 from that point on.

387 FARRINGTON: Right.

388 TAYLOR: OK, that was the first cruise. I would really like to get into the whole idea of
389 being on a cruise. Any youngster that might hear this is going to picture a laboratory
390 someplace with white walls, someone in a starched white coat and nice, pristine
391 surroundings, and your laboratory pitches, yaws, rolls. Weather is tough. I mean it's
392 really something. When you go to sea, what's the whole procedure? You've got to get
393 ready for going to sea. You have to make sure a certain kind of instrumentation is going
394 to get there.

395 FARRINGTON: Um-hum.

396 TAYLOR: You've got to make sure the instrumentation is working. You've got a
397 definite plan of what you're going to be looking for, how you're going to go about
398 getting it, how you're going to . . .

399 FARRINGTON: Yeah.

400 TAYLOR: . . . preserve it, and get it all

401 FARRINGTON: Yeah.

402 TAYLOR: Could you go through that, like what would be a typical cruise for you and
403 mention the hours that you work?

404 FARRINGTON: On the cruise . . .

405 TAYLOR: Yes.

406 FARRINGTON: . . . or before you go? [Laughs.]

407 TAYLOR: Well, the whole thing. Starting, you know, from inception.

408 FARRINGTON: Well, the inception of cruise planning is something that happens almost
409 two years ahead of time, when you think about where are some of the places that you
410 really want to go to to get additional samples, to investigate some phenomenon that you
411 think is taking place there or to verify something you've seen somewhere else. You
412 submit a [thumps] proposal to the Office of Naval Research or the National Science
413 Foundation with this idea, and then that goes through a peer-review process, and you get
414 feedback in six months, or maybe eight months—a little bit longer. Your funding will
415 show up a year later down the road, and as part of that process of funding you then get
416 assigned certain ship time. You can request certain types of ship time, a particular type
417 of vessel, or a specific vessel which has certain characteristics, and you explain why you
418 need that particular ship, whether it's a specialized winch or a specialized deck space, or
419 whatever it might be. And sometimes you get that, and sometimes you're told, "Well, it
420 might be not the ideal, but we'd like you to go on this other vessel. Is that OK?" And
421 rather than being in March it might be in April. And you may have specified a window
422 of three months, or something like that, if it's important that you either miss, for example,
423 a hurricane season, or you be present when there's a certain type of phenomenon going
424 on, either in the water column biologically or in the sediments. [Thumps.] So once
425 you've done that, then you start thinking about what is it, in my case, that you need to do.
426 And we had to think about mostly how we were going to sample and how we were going
427 to preserve the samples, freeze them and so forth. We did some preliminary workup a
428 couple of times on samples at sea, so we'd have to bring along a lot of the extraction
429 gear. We had a lot of glassware. We eventually had In 1972 we bought a portable
430 lab for organic geochemistry, which gave us a hood so we could work with solvents at

431 sea, safely—that sort of thing. And then you plan out how long it is that you’re going
432 need to sample at a particular location, and what, you know, . . . figure out [thumps] at
433 least you’re going to have two or three weather days, if they allow you to put those in.
434 Uh and you get all the information together [thumps], and, you know, you have the
435 understanding very clearly that once you leave the dock there is no hardware store that
436 you can go to, and there is no stockroom. You know, that’s at the dock somewhere, or if
437 you’re shipping things to another port you have to make sure you get everything ready
438 and shipped months ahead of time to get on the ship. If you’re leaving from Woods Hole
439 you try to make sure everything is tied down [laughs] before you leave, and you’ve got
440 everything ready to go. So that’s the planning part.

441 TAYLOR: Which is very involved, isn’t it?

442 FARRINGTON: It’s very involved. You have to interact with people in Shipping and
443 Receiving in the shipping area of the Institution. Clearly there are things that you have to
444 do in the legal arena these days to get permission for the ship to be wherever it is. You
445 have to make sure that’s happening. You have to do a little planning with the captain and
446 other people to make sure that everybody understands what’s going on on the cruise, if
447 you’re the chief scientist, which interestingly enough I was several times, because I was
448 one of the few people in the Chemistry Department at the time—Peter Brewer and I—
449 that actually had [thumps] a PhD in chemical oceanography. Everybody else had come
450 in from other areas of science, so they hadn’t learned about aspects of going to sea.

451 TAYLOR: I’m going to do a thing on being a chief scientist, because . . .

452 FARRINGTON: Sure.

453 TAYLOR: . . . it’s kind of a neat area.

454 FARRINGTON: Right.

455 TAYLOR: OK, you get all this stuff, and it’s important that your instrument is ready
456 when you’re on location. It still isn’t buried somewhere back in the hold.

457 FARRINGTON: That’s right.

458 TAYLOR: You had all the skills as a chemist. Where did you pick up the skills of being
459 able to deploy and recover? That’s not easy to do. I mean a ship maybe heaving just four
460 or five feet, which isn’t much, but that’s an awful strain on an instrument that’s in the
461 water.

462 FARRINGTON: Well, you . . . you clearly As I said, we were required to go to sea
463 and learn some aspects of . . . the rudimentary aspects of things as we were . . . when I
464 was a graduate student, and part of that was fundamental things like what's the breaking
465 strength of the wire? How do you handle things on deck? Uh worry about The
466 operating rule of any oceanographic sampling gear is the number of working parts ought
467 to be one. That rules out the bucket with the bale handle, you know, that's real clear.
468 And the other rule, which is, "Be prepared to lose anything you put over the side."
469 [Thumps.] You know, sort of tongue in cheek, but you learn safety aspects. You learn
470 that you need to interact with the crew—with the boatswain in particular, that the
471 boatswain is there to help you get the things . . . you know, to operate things. So I
472 learned very early in the process to do that.

473 TAYLOR: They're very important, aren't they, the boatswains?

474 FARRINGTON: Oh, absolutely. Extremely important, and I learned that at URI, in the
475 oceanography school, and I learned about the teamwork there, and I learned The
476 first cruise I went on, as I said, on the *Gosnold*, and then I went out on the *Atlantis II* with
477 John Teal as chief scientist, and I watched [thumps] what was going on. The next several
478 cruises that I went on, I was the chief scientist, and so it was then making sure you
479 understand what goes on, and you pay attention to what's happening.

480 TAYLOR: Now supposing one of your instruments wasn't working properly. Did you
481 have any? You told me you had some mechanical ability. Were you able to repair
482 any of this kind of . . . ?

483 FARRINGTON: Well, most of the things that I was working with were sampling things.
484 Like most of the stuff I was after was sampling sediments and mud, and uh, you know,
485 we had to get involved in trying to fix some of those things and interacting with the crew
486 on occasion to fix those, but you're pretty much on your own, and then we had pingers
487 and things like that, and we could do, you know, rudimentary things, but we couldn't,
488 you know, completely rebuild those things at sea.

489 TAYLOR: But it strikes me that one of the big differences between a seagoing scientist
490 and a land-based scientist is that when you're out there you've got to be a master of just
491 about every single thing that you're going to be dealing with. You can't get a repairman
492 to come up and, "Here take a look at this and get this squared away for me, will you?"

493 FARRINGTON: Well, we have here at the Institution—and this is a very important
494 point—we have technical staff people and research assistants (full time people), and I
495 don't mean students or postdocs, who also help out. But these technical staff people are
496 very skilled, and they know what's going on, too. And so when I went to sea, a lot of
497 times I would have people with me who'd been many times before, who knew what was
498 going on.

499 TAYLOR: OK, like the Bruce Tripps of the world?

500 FARRINGTON: Oh, Bruce Tripp, but also uh people from the G & G Department, like
501 Hartley Hoskins, who knew about operating [thumps] the PGR and the uh, you know, the
502 sonar systems, and things like that, and people who could operate the salinometer, who
503 was experts in that particular area, so that one of the things that I tell the graduate
504 students now is that they take a lot of things for granted here at this Institution that they
505 have available to them because we have an extraordinary group of technical people here.
506 And . . . and they learn Like when I became more senior I had a go-to-sea person in
507 my group—Hovey Clifford, OK. And I would turn to Hovey and say, [thumps] you
508 know, “We're going to go sampling in the area off of Peru, and these are the days.
509 We've got to ship the stuff to Mexico. It's got to get on in Guayaquil, in Ecuador, and
510 we're going to get off in Lima, Peru, and you know all the stuff we need to take.”
511 [Thumps.] And we'd sit down and have a discussion about it and plan, [thumps] and talk
512 about all the other people who were going, but I could be absolutely confident that I
513 could get on that ship in Guayaquil, Ecuador, and we'd haul stuff out of the hold, and it
514 would be there, and I could just turn everything over to Hovey to get everything ready on
515 the deck. You know, and I'd work alongside of him and other things, but I didn't have to
516 worry about was the box core going to be there? Was all the equipment we needed going
517 to be there, and that sort of thing. And the same was true with Bruce Tripp when we
518 went to sea together, too.

519 TAYLOR: Well, it is really kind of an amazing relationship here. I mean you've got
520 engineering. You've got these specialists, and you've got the science. It all kind of
521 works together. I mean I look at the engineers, and I think, well, gee, before Galileo
522 could make those great discoveries he needed a telescope, and that's where the engineers
523 come in, you know, . . .

524 FARRINGTON: Right.

525 TAYLOR: . . . and give you folks better instruments to work with. Now when you get
526 back from a cruise, what's the procedure then? You've collected all these specimens or
527 samples, and . . .

528 FARRINGTON: Um-hum.

529 TAYLOR: . . . you say Did you do much with them onboard?

530 FARRINGTON: Sometimes we did some things, especially with water samples or with
531 sediment trap, particularly [??] samples. We might extract them and process them, but a
532 lot about what we did with the cores would be we would slice them up, and that would
533 take a long, long time, because we were interested in preserving them, so would spend
534 hours, you know, two or three centimeters at a shot, from the box core, putting them into
535 glassware, and making sure it was frozen, and that sort of thing. There were some real
536 challenges. I mean one cruise—the last major cruise I went on that we got off in
537 Guayaquil . . . (I'm sorry) in Callao, Peru, in 1987—was in the middle of a two-day
538 national holiday, and that was one that Hovey was helping out with, and we literally air-
539 freighted the . . . all of the mud, frozen mud that we had collected. It was back in Woods
540 Hole 33 hours after we tied up at that dock. OK, one ton was what we air-freighted on
541 Lon Choy[?]. It went into New York and then came via truck. OK, and so we had to
542 make arrangements for, since it was a holiday, you know, the agent, the ship's agent had
543 to go visit the person who was in charge of uh customs at the port, at his home, and get
544 his approval. Then we had to go visit the person in charge of airport customs and get his
545 approval, and there were all sorts of fees associated with this, and then the truck came,
546 and we had to pay for the truck to take everything out to the airport, and then we had to,
547 you know, call back here to the Institution in the process to get the stuff insured, because
548 they weren't going to insure it for us, and so I had to get on the phone and talk with
549 Maurice Tavares in Grants and Contracts, who said, "Everything's fine. Don't worry
550 about it." I had to talk to the shipping people to say, "OK, if we do it this way, can you
551 arrange for somebody to pick it up in New York?" So it's a team It's a team effort.
552 You have to become a logistics person, a shipping agent, and we'll talk a little bit more
553 about how this whole cruise happened, without any official legal permission. [Laughs.]
554 How's that for an ending? [They laugh.]

555 TAYLOR: That's great. [They laugh.] That is

556 [END OF TAPE 2]

557