

The Woods Hole Oceanographic Institution holds copyright to this transcript and provides access to the material strictly for non-commercial educational and research purposes. No reproduction, transmission, or other use of this transcript that extends beyond fair use or other statutory exemptions is permitted without the prior written permission of the Woods Hole Oceanographic Institution.

The opinions expressed in this interview are those of the interviewee only. They do not represent the views of the Woods Hole Oceanographic Institution.

WOODS HOLE OCEANOGRAPHIC INSTITUTION

JUDITH MCDOWELL ORAL HISTORY

Interview by Frank Taylor September 10, 2003

2 of 3 tapes transcribed by Arel Lucas, February 2005

- 1 TAYLOR: . . . 5 [burst of static]. [Tape stops and starts again.] Testing, 1, 2, 3, 4, 5, 6, 7, 8, 9,  
2 10. [Tape stops and starts again.] OK, I think we're off. [Microphone noise.] We are at the  
3 McLean Laboratory at the Woods Hole Oceanographic Institution for our third session with Dr.  
4 Judy McDowell. Judy, last time we were here we went up right through the point where you had  
5 come to Woods Hole. You worked with John Ryther, and I had asked you questions about how  
6 you kind of blend in, and all that sort of thing. You did have to go to sea, then, and what was  
7 your first seagoing experiences like for you?
- 8 MCDOWELL: Let's see, my first research cruise was on the *Gyre*, a ship run out of Texas  
9 A&M. And I brought one of my students and one of my techs with me, and we were gone for  
10 Thanksgiving. And the *Gyre*'s an interesting ship. It was a good ship. We were off the coast of  
11 Florida on our way to Puerto Rico to sample the plankton in that area, and we were specifically  
12 working on a couple of sites with Reed Colwell[SP?], and at the time there was some  
13 pharmaceutical disposal off the coast of Puerto Rico, and we were kind of interested in that  
14 problem. But it was the first cruise for the three of us, and Thanksgiving Day we had a big  
15 turkey dinner, but I'm afraid all I ate the entire time was saltines and drank Coca-Cola, and that  
16 was my diet for the three weeks that we were at sea. So the Thanksgiving dinner didn't appeal to  
17 me at all, and part of . . . . I was the one who would do all the microscope work. I picked the  
18 plankton. I set up the microrespirometers to look at plankton respiration, and, having a full

19 stomach and a rocking boat and doing microscope work: the three just weren't compatible. So I  
20 gave up food and just ate saltines, and that's what I ate for three weeks. [They laugh.]

21 TAYLOR: I always ask the scientists, "Do you get seasick, ever, when you go to sea?" And  
22 they almost all grin, and it's, "Ohh, sometimes big time." And the thing that I've heard most as a  
23 causative factor for seasickness has been when you start to use the microscope.

24 MCDOWELL: Yes.

25 TAYLOR: That really does you in.

26 MCDOWELL: Yes. And if you're taking Dramamine, I find that that [Phone rings.] does not let  
27 me really do careful microscope work, so I don't take Dramamine, and I just take a big box of  
28 saltines with me.

29 TAYLOR: What's the whole process, when you're getting ready to go to sea? You've got a lot  
30 of stuff. You've got to get yourself there.

31 MCDOWELL: Oftentimes you have to pack your materials way ahead of time and get them to  
32 the ship. And we would pack crates with all of our instrumentation to move to the ship. Much  
33 of what we had could fit into one crate, but we would get that crate shipped to the port ahead of  
34 time, and then unload the crate onboard, and we would set ourselves up in a small corner of the  
35 laboratory. But the challenge if you're going overseas with instrumentation is a little bit trickier,  
36 because you have to go through Customs, and your travel arrangements are that much more  
37 complex. I've gone on a lot of coastal trips--to Norwegian fjords, to Southeast Asia, Eastern  
38 Europe, throughout Europe, probably more so than long transatlantic expeditions, so you're  
39 shipping your material ahead of you, hoping that it arrives when you do. Oftentimes we'll end  
40 up taking some small materials, and certainly the glass respirometers that we used early on are  
41 pretty fragile, so I'd usually carry those with me.

42 TAYLOR: Is there much preplanning that has to go into that?

43 MCDOWELL: Quite a bit of preplanning: who's going to go on the cruise, what are you going  
44 to take, what stations do you want to sample, what particular analyses for us were we going to  
45 take? If we're going to spend quite a lot of work on biochemical analyses of plankton, we'd  
46 have to store the samples properly. That means freezing at very low temperatures, storing in  
47 liquid nitrogen--how do you handle all of that material? And in some respects, our work in  
48 Norway--we were working under the University of Oslo, so we would collect our samples, and  
49 we could immediately store our samples and analyze our samples at the University, but then

50 when we'd go further north, then we'd have to have a way of handling our samples so that they  
51 didn't deteriorate as we came back. But I've used the University of Oslo as a base of operations.  
52 I've used Chinese University of Hong Kong as a base of operations in the past. So different  
53 universities and different marine stations, because I am interested in coastal problems, I would  
54 have that base of operation, which is a little bit different than planning for a trip from Woods  
55 Hole to Bermuda. You'd have Woods Hole, and you'd have Bermuda as places where you could  
56 work on samples, but a lot more you're doing at sea, while you're at sea.

57 TAYLOR: Now, what's a workday like for you at sea?

58 MCDOWELL: Uh well, certainly depending on how many stations you'd be sampling a day,  
59 you'd get up very early. Most of my crew . . . . Because I would be one of only a few women  
60 early on, I would usually . . . My first trip, I think there were four women onboard. We had a  
61 bunk room together, and that's always, in the early days . . . . Mid-'70s were still early days for  
62 women going to sea, you'd have to . . . . The crew might not be used to having women onboard,  
63 but over the years that's become more . . . not much of a problem. There are women crew  
64 members now. But in the early days it could be a little bit of a problem. I remember one cruise,  
65 one of the mates had to fix a showerhead, [knocking] knocked on the door, walked in just as he  
66 would for any male crew member and caught a woman in the shower. She was not very happy,  
67 but these things happen. He didn't mean anything by it. So in the early days, there were some  
68 etiquette problems about women at sea. But for the most part if my crew would want to be [?]  
69 sample and running those samples, we'd start the day probably about 6 a.m. They'd all go for  
70 breakfast at 7:30 or 8. I'd skip that part of the day and just work. And we would work well into  
71 the evening, but it's a very enjoyable time, because you get to know--especially on a small ship--  
72 you get to know the crew quite well. You might have card games at night or watch videos or  
73 certainly take a lot of books. The first few days out, when other people aren't sampling they may  
74 be in their bunks trying to adjust to being at sea, but it's a very enjoyable time.

75 TAYLOR: One of the things I think a lot of people don't really understand: everybody in this  
76 country is kind of keyed to a 9-5 operation, and being at sea is a lot of work.

77 MCDOWELL: Well, that it is. There's really no down time, because you're worrying about  
78 your samples. You're worrying about your stations. You're worrying about the weather.  
79 You're worrying about whether or not you're going to be able to use your gear at each of the

80 stations. What's the sea state going to be like? But at the same time, it's an exciting time, and  
81 it's what we've all trained for, and what we all enjoy about our work.

82 TAYLOR: Is there ever any difficulty with the numbers of scientists onboard, getting your work  
83 done.

84 MCDOWELL: I've always gone on small ships, so that's never been a problem for me. And I  
85 don't know if it's been a problem for colleagues. But generally the group becomes very compat .  
86 . . . Every cruise that I've gone on, the group becomes very compatible very early on, and so  
87 there's a lot of sharing, and so if you don't need a student or a tech at one particular time, and  
88 someone could use an extra pair of hands, there's a lot of that sharing. So I think a really good  
89 camaraderie develops among folks. That's always been my experience at sea.

90 TAYLOR: So many of the people I've talked to have always talked about, "Oh, if you're not  
91 working, and someone needs help in something, you give them a hand."

92 MCDOWELL: Exactly. Exactly.

93 TAYLOR: Simple as that. One of the things I . . . .

94 MCDOWELL: No one ever actually asked to volunteer to the microscope work, though, that's  
95 always . . . . They'd do anything not to do that, so [They laugh.]

96 TAYLOR: The microscopist is the green one over there. [Laughs.]

97 MCDOWELL: Right.

98 TAYLOR: I hear. I can remember one time sticking my head in an anchor cabinet, and the boat  
99 was heaving around. It hit me absolutely immediately, being in that little confined space and  
100 losing all kinds of orientation.

101 MCDOWELL: Um-hum.

102 TAYLOR: You had mentioned that you were one of the early women to go to sea. I've heard  
103 all kinds of reports on what that experience was like--every possible range of the spectrum, from  
104 anger to . . . . How did you handle that, to make it good for yourself?

105 MCDOWELL: I guess I wasn't one of the real early ones, not like Mary Sears or Betty Bunce. I  
106 mean by the time I had gone to sea, women had been going to sea for well over a decade, and  
107 longer. I mean Ruth Turner, Betty, Mary Sears--they're the real pioneers. But there was still a  
108 little bit of uncomfortableness among some of the crew members towards women. I have an  
109 older brother. I could tolerate anything after my older brother, so I think you just have to have  
110 an open mind, and people are people.

111 TAYLOR: Well, I asked that, because you mentioned like Betty Bunce. They were really  
112 unusual. There were very, very few women in the field then.

113 MCDOWELL: Exactly.

114 TAYLOR: They were really an oddity. You came along during the period where women were  
115 actively starting to come into the field.

116 MCDOWELL: Exactly. It's sort of like the first wave of a new generation. There weren't  
117 many, but there were more than just a few.

118 TAYLOR: Did it ever hit you that you were kind of setting the path for those that were going to  
119 follow after.

120 MCDOWELL: Not really. I just wanted to get my work done, and I'd get seasick and stuff, but  
121 really there's--between Betty and I--there were no tenured women. There were a few  
122 appointments here and there, but there weren't . . . . Betty was tenured, I think actually  
123 grandfathered into the tenure situation, and then there was me, many years later. So on staff  
124 here, there weren't many others who . . . . Actually, the chief scientist of the cruise I had gone  
125 on, the first cruise I had gone on, had another woman scientist who was an assistant scientist  
126 here. She left the Institution. So she was a bit of a role model. She was ahead of me by about a  
127 year or two, but she left the Institution before promotion and tenure. So there weren't a lot of  
128 role models. There were a lot of people starting to enter the field, but they still weren't a lot  
129 going to sea, and that certainly changed dramatically from the time I came on staff. Many others  
130 came on staff, and so I'd say the mid-'70s to early '80s. I mean certainly more and more women  
131 were going to sea, and it became less and less of an oddity.

132 TAYLOR: OK, the reason I'm kind of harping on that is because an awful lot of the story of  
133 women coming into the oceanographic field has really never been told.

134 MCDOWELL: Um-hum.

135 TAYLOR: And I think it should be. I have a daughter. I always wanted the best for her.

136 MCDOWELL: Um-hum.

137 TAYLOR: I wanted the best that she could possibly . . . with no glass ceilings or anything like  
138 that. When I asked Susan Humphris that question, she told me that when she came here as a  
139 Joint School . . .

140 MCDOWELL: Joint Program.

141 TAYLOR: . . . Joint Program student, that the Chemistry Department asked her to take a test in  
142 chemistry that the men were not required to take.

143 MCDOWELL: Oh, that's interesting, because Susan came . . . . When Susan finished her  
144 degree? We were here at the same time. I was a postdoc. She was a student. I think she got her  
145 degree about 1980, so she would have been . . . . But that wouldn't have surprised me for  
146 Chemistry. The first graduate in biology, Joint Program student in biology, was a women, Kathy  
147 Burns, and very talented, very bright woman, worked with John Teal and John Stegeman. But  
148 that's the kind of thing that I think women, even in the '70s and early '80s, had to cope with that.  
149 You're one of a few here, you're going to have to do something different. I didn't know that  
150 about Susan, though. It's interesting.

151 TAYLOR: She said, "My first question was, 'Do the men have to take this test?'"

152 MCDOWELL: Yeah.

153 TAYLOR: And they said, "No." She said, "Then I'm not going to take it either."

154 MCDOWELL: Yeah.

155 TAYLOR: And she certainly has proved to be . . .

156 MCDOWELL: Oh, yeah.

157 TAYLOR: . . . more than . . . .

158 MCDOWELL: Exactly, exactly. But I felt that when I came as a postdoc John Ryther was very  
159 supportive. George Grice, who was the department chair, was very supportive. Um Joel  
160 Goldman, who was my immediate colleague, supervisor, and was an assistant scientist; and he  
161 was very supportive. So I came into the system with a very supportive lab, a beautiful  
162 experimental seawater lab that John Ryther had built, funding to buy the things that I needed, a  
163 nice group of young techs that were working in the lab. So it was a very good group. We  
164 worked really hard. We had um some interesting questions to address. I didn't see many  
165 prejudiced at that time.

166 TAYLOR: Did you ever notice an prejudicial [clears throat] treatment, depending on upon  
167 discipline?

168 MCDOWELL: I think for women in biology, it was much easier, because women have had a  
169 presence in biology for over a hundred years, and in fact during World War I, the only Ph.D.s  
170 finishing in biology were primarily women, and the same happened in World War II. I think for  
171 other disciplines it was truly groundbreaking, to have a woman student or to have a woman

172 postdoc, but that's changed dramatically over time, and as you look around, some fields are still  
173 very male dominated--engineering fields, physical oceanography--although more and more  
174 women are successfully graduating and having successful careers in physical oceanography.  
175 And now they're sort of following along where biology was maybe 50 years ago. But I think  
176 women in biology have a lot of role models to point to. I do think that probably one thing that  
177 has changed dramatically for the better is that when you'd go to professional meetings you'd  
178 often be only one of a few women, and oftentimes senior men could make that very  
179 uncomfortable for young women--asking them out to dinner. "Why don't you ask the male  
180 colleagues out to dinner? I have no interest in going out to dinner with you." I think that has  
181 been . . . . To me, that's the more subtle change that's happened over the past 30 years. As an  
182 assistant scientist, I would feel very uncomfortable going to a national or--especially--  
183 international meeting, and being only one of a few women, and not . . . . Present a paper: people  
184 would love the paper that you presented, but then I have no interest in going to dinner with . . . .  
185 I mean dinner with a group of colleagues to talk science is one thing. Dinner with some sleazy . .  
186 . from who knows where was not in my interest, and I think a lot of women felt very  
187 uncomfortable in those kinds of social situations, that they wouldn't get the benefit of the  
188 conversation of colleagues because they'd be the oddity. They'd be one of only a few women at  
189 the meeting. Now that's totally changed. There's many men and women at professional  
190 meetings, and I think that's very healthy for our students and our young staff. That to me is  
191 probably the biggest change, and that's much more subtle than not being allowed to be on a ship,  
192 or being asked to take a test that your male colleagues didn't. It's that kind of undercurrent of  
193 putting you in a difficult situation and a somewhat compromising situation. Young postdocs--  
194 you don't want to tell a very esteemed colleague that he's a dirty old man and he should just  
195 mind his own business, but you're often presented with that kind of situation, especially at  
196 professional meetings, where I don't think that they were acting very professional.

197 TAYLOR: Now at one time I was the only girl's lacrosse coach . . .

198 MCDOWELL: Mmm!

199 TAYLOR: . . . in the United States, and [laughs] I sympathize with your feeling. I mean I know  
200 exactly what you're talking about with these . . .

201 MCDOWELL: Um-hum.

202 TAYLOR: . . . subtle undercurrents that go on.

203 MCDOWELL: Um-hum.

204 TAYLOR: It can be very difficult.

205 MCDOWELL: And it was almost more a way of undermining a young scientist's confidence.

206 TAYLOR: I was going to say, this must . . . . It would be very hard to stand up in front of these  
207 august people and give a paper if you've turned one of them down, or something like that.

208 MCDOWELL: Yeah.

209 TAYLOR: That's a difficult situation, where that does not happen with men.

210 MCDOWELL: No, no. And luckily it doesn't happen with women too much any longer. It  
211 probably does happen occasionally, but I think women feel that they have much more of a larger  
212 support group at the meeting, where who would you turn to if you were the only woman among  
213 50 colleagues at an international meeting, and I've even had male colleagues that I thought were  
214 really good friends and colleagues sit there and be embarrassed by this happening, but not do  
215 anything when a senior colleague is obviously totally out of line. Luckily that doesn't happen to  
216 me any more, [laughs] which is probably because I'm the senior colleague now, but that I think  
217 is probably the subtleties of that kind of compromising situation or putdown. That's what I think  
218 more women had to deal with in my generation. It wasn't blatant in any way, but it certainly  
219 created a very uncomfortable atmosphere.

220 TAYLOR: Well, to present a paper is difficult enough in itself.

221 MCDOWELL: Um-hum.

222 TAYLOR: I mean you not only have to have all your ducks in a row, but you're going to make a  
223 public speech. You're going to appear . . . . And there's a whole bunch of things that happen  
224 here. Does that mean, then, that women from your generation probably had to have a little  
225 something extra to go through that?

226 MCDOWELL: Yeah, I think if you looked around at the presentations made by women, they  
227 were clearer. They had a lot more punch. They probably took their best work, put it forward,  
228 projected future ideas. That's the other thing I think . . . it's probably . . . . What I would do  
229 when I present a paper, especially at an international forum. I'd give my results; then I'd open  
230 up avenues of research that not only me but many people could pursue. So I would leave the  
231 podium with people thinking, "Well, we could go that direction, that direction, that direction."  
232 And that's what I wanted people to remember me for. But then when you're in the discussion  
233 group at the break, and someone says, "Oh, have dinner with me, and we'll discuss this further."



234 And then you realize that the dinner is not with the group of colleagues you thought; it's with  
235 this slimy person., then you just withdraw, and you don't . . . . You just go back to your hotel  
236 and . . .

237 TAYLOR: [Simultaneously with McDowell] so then the conference doesn't have the same . . .

238 MCDOWELL: . . . you make a sandwich, so the conference . . .

239 TAYLOR: . . . meaning that it should have had to you.

240 MCDOWELL: Right. I mean the conferences in the past. Now they certainly do. But I think  
241 that was probably the biggest hurdle for the women of my generation to overcome, and  
242 especially from international colleagues. Because there were many women in their universities  
243 as well. They're not further ahead or further behind us, but it was just a way in which they  
244 treated you as a colleague that was very different, so I felt that women in the past maybe would  
245 not have benefited from that open collegiality that our male colleagues . . . going to the pub, or  
246 uh a big group dinner. And I would only go if I had a close colleague also at the meeting that I  
247 could rely on to protect me. And that sounds kind of funny, but it was a reality, that I could feel  
248 comfortable that if someone was saying inappropriate, this male colleague would intervene or  
249 change the conversation or something. And so that's where I think probably that was the biggest  
250 challenge.

251 TAYLOR: It must have been incredibly frustrating during that period, because many people  
252 here at the Institution told me in their early training at the Institution that why they considered  
253 one of the most valuable things that ever happened is when you could sit with an advisor on the  
254 porch over a couple of bottles of beer and talk science.

255 MCDOWELL: That's a male perspective. Yeah. Unless you had a woman advisor, it's not  
256 likely that a young woman colleague would do that, that a young woman postdoc would sit on  
257 the porch with her advisor and a couple beers. So there's that . . . .

258 TAYLOR: That's unfortunate.

259 MCDOWELL: It is. I mean so sit over tea or cookies or something like that.

260 TAYLOR: That would be the expected role.

261 MCDOWELL: Right, and you would probably be expected to serve the tea.

262 TAYLOR: Of course.

263 MCDOWELL: But that is something that I'd say that was probably the biggest challenge. How  
264 do you engage that collegiality without crossing that boundary of informality? And I think that

265 was probably the most difficult thing for my generation. Certainly we could go to sea. We could  
266 get into the programs. We could get into the classroom. We could be successful. But breaking  
267 that barrier down of being one of the guys. You're never really one of the guys.

268 TAYLOR: Were papers of women of that generation accepted as well as papers from men?

269 MCDOWELL: Oh, I think so. There are studies people have done that if you blind everything  
270 and you put initials versus a woman's name it gets reviewed differently, but I think for the most  
271 part. I mean many of my friends and women colleagues were giving papers at these meetings,  
272 and again they would be so crisp and so sharp, and so well thought out that they would be  
273 received very, very well. I think it's more that informal, social context that it was still quite  
274 difficult for women.

275 TAYLOR: Well, I've had a number of women in this institution say, "Thank god that Judy  
276 McDowell, coming through here first."

277 MCDOWELL: Through all the bruises . . . .

278 TAYLOR: Essentially that's what they said, that you really absorbed a lot of that kind of thing,  
279 and it sort of set a pattern.

280 MCDOWELL: Well, I remember, I've probably told folks this story. I probably wouldn't tell  
281 the people that were on my promotion committee, but I had . . . . When you're up for promotion  
282 from assistant to associate, they interview all your department members, and then they interview  
283 you, and I had just had a . . . recovering from a major illness of peritonitis, and I'd been  
284 hospitalized and out, and that was about the time I was getting a divorce from my first husband.  
285 And my committee . . . . I won't tell you who was my committee, but there was more than one  
286 divorce in my committee members. There were a lot of divorces in my committee members.  
287 One had a couple. Almost all of them had had at least one. I think of only one that's still  
288 married to his one and only wife, and they had asked one colleague who told me. I guess he  
289 never should have told me this, but said that the question that they had asked him was that was  
290 there anything in my personal life that should prevent me from being promoted--like my health  
291 or personal activity. Did you ever have that [??]? And he said, "No, that's ridiculous." Now I  
292 don't know if it was ever really true, but he told me it was true, and he didn't get promoted, and  
293 he also had two or three divorces on him. And I thought, "What a bizarre question to ask!" So I  
294 had my interview maybe the next day, and I had a pretty good publication record coming into  
295 promotion, but I've always been on the kind of fringe because I'm interested in . . . . What I

296 came to work with Ryther on was how contaminants in the environment affect physiological  
297 function in marine organisms. That was pretty . . . . I mean there's a lot of basic elements to  
298 that, but it's also pretty applied as well. And that was real questionable territory at the time for  
299 pure, blue-water oceanography. I had a lot of publications in a lot of good journals, and a lot of  
300 people that were very supportive of me, and a couple said, "You should be doing blue-water  
301 oceanography." And I had one scientist who shall remain nameless take sentences out of context  
302 in papers that I had written and ask me to defend that sentence. Then he would pull something  
303 else. He quizzed me for over 2-1/2 hours. I mean it was like the worst nightmare of your  
304 general exam. I don't know anybody to date that has ever been treated that way in my  
305 department, or anyone previous that had been treated that way in my department, and I thought .  
306 . . . I had just gotten out of the hospital. I had just come back to work. I had actually been out  
307 of the hospital for . . . . But I said, "If this is the way these guys are going to act, then they can  
308 have this place, because I'm not changing what I'm doing, and there are plenty of places that  
309 want me." I had plenty of job offers, and stuff. And so the very next day this person who was so  
310 obnoxious called me and said, "You know, I didn't think you had it in you to be as tough as you  
311 showed me that you could be." And he said, "You know, I liked your papers. They're OK. I  
312 work on blue water. You don't, but that's OK. But I didn't think you could be as gutsy as you  
313 showed me you could be. So I voted . . . . The committee voted unanimously that yeah, that you  
314 fit." It was that whatever test he wanted to give me was pretty extreme, I thought, and "if you  
315 could get through that, then I guess you can get through anything." And I went, "You know,  
316 that's not the way we should promote people." But for him it was a test, "How tough can you  
317 be?" Because I was the first woman to come up . . . . There was one that came up for  
318 promotion just prior to me, and she did not get promoted. She had publications, and she didn't  
319 have the program established. I had the publications. I had the program established. I know I  
320 had good letters from outside people. He just didn't think I was tough enough. And I didn't  
321 swear at him, but I could have sworn at them and stuff. But the whole idea that your health or  
322 your personal family situation, or because you were soft-spoken and shy should have anything to  
323 do with whether or not you were promoted to me is quite bizarre.

324 TAYLOR: I was going to use the word "bizarre." You said that a lot of the women's papers and  
325 whatnot were really clear, really concise, well-thought. Were any [??]

326 MCDOWELL: Oh, I'm sure they were. I'm sure they were. I'm sure they still are. Well, they  
327 shouldn't be. I mean there's plenty of room for good, original thinking that crosses gender lines,  
328 but um I see . . . . The other major change is there's a woman who came up right after me--a few  
329 years after me--Pat Glibert. Well, no one had ever taken . . . . No woman staff scientist had ever  
330 taken a maternity leave, and she was appointed as an assistant scientist, and then she announced  
331 that she was pregnant. And, "Ohmigod, what are we going to do?" Well, there's nothing for you  
332 to do. It's her decision, and stuff. And her husband was a postdoc, and they left the Institution  
333 to go to Maryland, and then they kind of . . . . He took the tenured role, and she took the lesser  
334 position, and then they'd flip-flop over the years, but they had both have had a very strong  
335 career. But again, she was another real groundbreaker, because she said, "OK, it's time for us to  
336 have family leave. I'm going to have a child and I want to continue working here." That simply  
337 revolts them[?]. So it wasn't just me. It was a number of people, through that time, just said,  
338 "OK, we deserve the same benefits. We deserve to be respected as colleagues. We shouldn't  
339 have to go through these extra hurdles. You shouldn't have to quiz me for 2-1/2 hours on this,  
340 that, and the other thing, to see if I'm tough enough," but those were the hurdles people had to go  
341 through.

342 TAYLOR: Well, it's interesting, I've asked a number of the men here at the Institution who  
343 have husband-and-wife careers, . . .

344 MCDOWELL: Um-hum.

345 TAYLOR: . . . when children came along, they made the decision that one career would have to  
346 slow down to . . .

347 MCDOWELL: Um-hum.

348 TAYLOR: . . . care for the children. [Laughs.] I always asked them, I said, "Well, how did you  
349 arrive at the decision that it was going to be her career that was going to . . ."

350 MCDOWELL: Um-hum.

351 TAYLOR: . . . "slow down?" And usually that's 10 minutes of dead space on my tape,

352 MCDOWELL: Yeah, yeah.

353 TAYLOR: . . . because they didn't expect this to be . . . . And one fellow said to me, "You  
354 know, I really never confronted that in my own mind."

355 MCDOWELL: Um-hum.

356 TAYLOR: "That's just the way you did things."

357 MCDOWELL: Um-hum.

358 TAYLOR: So it's interesting. Well . . . .

359 MCDOWELL: But I think if you look at the genera . . . . Now my husband John and I adopted  
360 our children. I was 42 when we adopted our son, so I'm a senior scientist adopting children, and  
361 I can't really compare where we're going from some assistant scientist[?]. I really admire my  
362 colleagues who had children young and balanced things. But it's both spouses doing the  
363 balancing, I think, today. And I think that's probably quite different. If you look at most of the  
364 women that are my age, in ocean sciences. If they weren't married in graduate school and had  
365 children, many of them aren't married, and never have married, and never have had children.  
366 And I think sometimes they feel that you couldn't "do it all." I think you can only--men or  
367 women--I think you can only have the balance of family life and professional life if you truly  
368 agree that it's a partnership. I mean that's certainly the way it is for the women on staff here  
369 who have children. There's no . . . . It's a true partnership--husband and wife--picking up  
370 children at school, and doing all of the activities. It's not one or the other.

371 TAYLOR: That's a real healthy change that's gone on in society. I mean my generation--the  
372 whole process of giving birth. The males were totally pushed aside.

373 MCDOWELL: Yeah.

374 TAYLOR: I remember bringing my wife to the hospital and the nurse looking coldly at me and  
375 saying, "Go home."

376 MCDOWELL: Yeah, yeah.

377 TAYLOR: And now my son and son-in-law--I mean they're in there clipping umbilical cords.

378 MCDOWELL: Right, right.

379 TAYLOR: So that's a very positive change that's taken place.

380 MCDOWELL: Yeah, and I find in the schools . . . . Now, we're very fortunate, I think in  
381 Falmouth. A lot of us do live in Falmouth. The schools are very welcoming for parent to come  
382 into the classroom and help in whatever way they can. You're as likely to find dads in there as  
383 you are moms. My children are now in middle school and junior high, so they have their own  
384 chall . . . . Parents don't go in that much, but I would take one child once a week and go do the  
385 computer lab with the kids, or I would do something else with them, or I would go on a field trip  
386 and yet still have their flexibility as a scientist to be able to do that with . . . . Sure, you work  
387 long hours. I'm usually working at 5 a.m., so that I can . . . . Now that my son is in junior high

388 and is totally overwhelmed with the amount of homework he gets, I try to get home early enough  
389 so to sort of guide him. Not to . . . . I mean, he can do it perfectly well on his own, but he is so  
390 overwhelmed with, “What do I start first? I have poems to write. I have Spanish to translate. I  
391 have 20 math problems to do. I have science to do. I don’t know where to start. Where do I  
392 start first.” [??] through that. And then I’ll work late at night and stuff. So I think we do have  
393 that flexible schedule to be able to facilitate that.

394 TAYLOR: But it does take a total commitment to a certain lifestyle to do what you’re talking  
395 about.

396 MCDOWELL: It does. It does. We don’t have any time to uh go to a fancy restaurant. No  
397 time! Or you have very little time in the day to read the book that you want to read, like that.  
398 But that’s the choice we make. Now that we have two active soccer players, they have soccer  
399 practice. They have their premier teams on, and my son’s going to the ODP trials on Saturday.  
400 He’s invited to participate. And but they have rich, full lives, and our social circle, if it isn’t  
401 revolved around schools, it’s revolved around their sports and but we do. Soon enough they’ll be  
402 in college, and you won’t be able to do that, and you’ll be, “Oh, what are we going to do now?”  
403 But I find that every . . . that the scientists, especially the two couple scientists . . . . I think  
404 within certain respects that we’ve really kind of built a network of interaction. I’m very close  
405 friends with a couple women staff. I’m not that close with others, but we always feel that we  
406 could be a resource for one another. I’m not that close because I don’t see them in that kind of  
407 situation, but I think everybody feels that if they needed advice, they’d have someone they could  
408 talk to.

409 TAYLOR: So then you’ve got . . . . Perhaps it would be informal, but a very definite support  
410 group.

411 MCDOWELL: I think so, yeah. I think so.

412 TAYLOR: Women seem to like the idea of support groups more than men.

413 MCDOWELL: I think women tend to ask for advice more. “What do you think I should do in  
414 such and such a situation?” Whereas maybe the men don’t.

415 TAYLOR: They’re afraid to.

416 MCDOWELL: I mean I don’t think of it as a support group where we’re all sitting around  
417 talking about our problems, because none of us have time for that, but they’ll say, “Gee, this  
418 problem came up. What would you do? Do you have some advice?” And I do think women do

419 that more often than men. Men might just sort of sit there and kind of be miserable and try to  
420 solve their own problem, whereas women would see people about what to do next.

421 TAYLOR: Which probably all in a way plays into how women were accepted in the field, and  
422 how things have changed.

423 MCDOWELL: Yeah.

424 TAYLOR: It's just a man-woman kind of thing.

425 MCDOWELL: Yeah.

426 TAYLOR: But with all you have to do, then going out on a cruise of any kind must be almost a  
427 vacation, be almost a relief.

428 MCDOWELL: Oh, yeah. [Laughs.] Actually I just go into a meeting and, in a way it's a bit of  
429 a relief, but in another way, you're constantly worried about what's going on in this aspect,  
430 what's going on in that aspect, what's going on and stuff. But people are able to balance things.

431 TAYLOR: This is going to sound like a strange question, but when you talk about going to  
432 international meetings, you talk about going to sea, all your other commitments, and whatnot, are  
433 there times you just go to work feeling really lousy because you don't want to lose touch with  
434 what's . . . ?

435 MCDOWELL: No, I've never come here feeling lousy, I mean in over 28 years. I've never  
436 come in feeling . . . . I've come with a cold, maybe, and felt lousy that way, but I've never come  
437 in feeling, "What am I doing here? This is not for me," or "This is boring," or "This is . . . ."  
438 I've never felt that way. And I have gravitated to the kinds of jobs that I really do like. I like  
439 running Sea Grant because I like the fact of translating science for the people.

440 TAYLOR: Before you get into that, I'd like to kind of look at this in terms of a progressive sort  
441 of thing.

442 MCDOWELL: OK.

443 TAYLOR: You kept your biology going, still.

444 MCDOWELL: Um-hum.

445 TAYLOR: But you got involved in all kinds of other things that might not be consid . . . . The  
446 only other person I can think of that has done the number of different kinds of things, perhaps,  
447 you do, is Dave Ross.

448 MCDOWELL: Yes. Don't compare me . . . .

449 TAYLOR: You know what I mean.

450 MCDOWELL: Yes.

451 TAYLOR: I think of you guys almost in

452 MCDOWELL: Don't say that I didn't even want to be compared to Dave Ross. I like Dave a  
453 lot. So [Laughs.]

454 TAYLOR: You're almost like the last of the great generalists in the field. You can do a lot of  
455 different things in this field.

456 MCDOWELL: Uh-huh.

457 TAYLOR: You've got your biology, then Sea Grant.

458 MCDOWELL: Um-hum, but see Sea Grant is a logical extension from my biology, because I'm  
459 interested in looking at critical questions on contaminant cycling in the environment, by using  
460 good basic research and making that link to policy development. That's what I've always done.  
461 And I've served on dozens of National Research Council committees and commissions to do just  
462 that, to bring the science into policy development. I'm not a marine-policy specialist. I just want  
463 good science available to ask questions. So the Sea Grant is a logical extension for me. Sea  
464 Grant is a tiny job. It's only a couple of months a year. But what I have brought to it, I think, is  
465 a really good, critical and thorough evaluation of the science and the proposal process, and we  
466 have been able to provide opportunities for people in a lot of different ways. The program's  
467 really grown. I have a really good staff who are interested in the outreach aspects. I don't do  
468 that so much myself. I serve on a task force for the Commonwealth of Massachusetts, and I still  
469 do work for the National Research Council, but it's my staff that are really good communicators  
470 and extension folks, and they've made a really nice link of translating the science to the public.  
471 So that's a very logical extension of my work.

472 TAYLOR: But yet, I look at it, and I say, Sea Grant is such an eclectic kind of thing. I mean I  
473 look over what's going on in the course of a year, and it's everything from solid, basic research  
474 down to painting fireplugs or painting "Don't Put Fish in Here."

475 MCDOWELL: But that's the really nature. I mean we've grown the budget to support probably  
476 ten good, solid research projects a year. The way it had been heading, a lot of programs only  
477 support a couple. We're about a million dollars a year. We're not likely to get much bigger,  
478 given the current budgets, but I take so little salary in order to put that salary in to other projects,  
479 and we've built a newsletter with MIT that's won awards.

480 TAYLOR: "One If by Sea"?



481 MCDOWELL: *Two If by Sea*.

482 TAYLOR: I love that paper.

483 MCDOWELL: Yeah. And Tracy prints, a lot of [??] problems articles . . . .

484 [END OF SIDE 1]

485 MCDOWELL: . . . to co-fund some of the positions and so then we bring in that whole county  
486 cooperative extension, U. Mass. cooperative extension, into the equation, so that now, I think the  
487 Sea Grant program at WHOI has always been criticized that we're being too provincial or too  
488 focused on basic research, and not engaging others within the Commonwealth. And now we  
489 really have established a very nice network, which really leverages our dollars. So the fact that I  
490 only take a couple months' salary a year to do all of that really provides the money to really  
491 leverage so many more programs within the Commonwealth, which I think is real important. So  
492 that's a logical extension of the kinds of things that I like to do. I've always been on government  
493 commissions--both national and international. I've always been on important commissions  
494 within the Commonwealth of Massachusetts, and so those are the kinds of things that I use my  
495 science expertise to bring to the public more. So to me that's a logical, and not so much a  
496 stretch. I mean I'm not really interested in feathering my own path with that. We probably have  
497 the most streamlined process of any of the programs. We're a thin administrative layer, whereas  
498 other programs use a lot of their funds for a director, an associate director of this, an associate  
499 director of that, and an associate director of something else. We don't have any of that here. We  
500 just have people working in the trenches. And I think also that Sea Grant, in the eyes of the  
501 Institution, has really grown as the Institution thinks more and more about its coastal research or  
502 its outreach. The Institutes--a very large part of the Institutes is outreach to the community, and I  
503 think they look to Sea Grant as a model for facilitating that outreach to the general public, to  
504 educators, to schoolchildren, to policymakers, decision makers. So to me that was a very logical  
505 step.

506 TAYLOR: But still it's a whole different kind of thinking.

507 MCDOWELL: Oh, yeah, I'm a different kind of person. [They laugh.] It is a different kind of  
508 thinking, and it's not one that everybody wants to do, but the whole nature of my research to do  
509 better science, to make better policy decisions--it's always been one of the aspects of my  
510 research, so it fits.

511 TAYLOR: It brings up an interesting question in my mind from something that's happened  
512 recently. What you do has real application, . . .

513 MCDOWELL: Um-hum.

514 TAYLOR: . . . OK?

515 MCDOWELL: Some of what I do. I do other things which are very esoteric, but a lot of what I  
516 do has real application.

517 TAYLOR: OK. Kind of your heart and soul has a real application, I think.

518 MCDOWELL: Um-hum.

519 TAYLOR: And I mentioned that to another scientist here at one time where we were talking  
520 about what this particular person did, and I made the comment, "Well, gee, that really has good  
521 general application." And this person looked at me . . . . I mean he was stunned when I said  
522 that. He just, "I didn't intend it that way."

523 MCDOWELL: Oh, like it was an insult.

524 TAYLOR: Yeah, I really felt, "Oh, my heavens, I've just insulted this . . ."

525 MCDOWELL: Yeah.

526 TAYLOR: . . . "person." And I thought I was paying him a compliment. So I can see your  
527 trend in thinking in terms of what you do biologically, very definitely has an application.

528 MCDOWELL: Um-hum.

529 TAYLOR: And then now this other, with the outreach and all that. Just as an example, for the  
530 past two or three years, between Sea Grant and the Information Office, and all that that had those  
531 teacher-outreach programs . . .

532 MCDOWELL: Um-hum.

533 TAYLOR: . . . down there, which have been very successful.

534 MCDOWELL: Very successful. We're having one in October with WBNERR, Pat Harcourt at  
535 WBNERR.

536 TAYLOR: Yeah I know her.

537 MCDOWELL: We sent a bunch of postcards out. We really had a wide mailing to attract just . .  
538 . . Postcards just went out a week ago. It's already filled. People from all over New England,  
539 and I think that's a really nice way to connect teachers with the science going on here.

540 TAYLOR: Um-hum, plus one thing that we seem to have difficulty getting across to the State  
541 here is that an extremely high percentage of the employment opportunities in the state are based  
542 on the fact that there's oceans here, and there are clean . . .

543 MCDOWELL: Um-hum.

544 TAYLOR: . . . clean oceans, swimmable beaches, things like that.

545 MCDOWELL: Yeah.

546 TAYLOR: And they never think, well how come there are so many hotels and bed-and-  
547 breakfasts down on the Cape.

548 MCDOWELL: Yeah, exactly.

549 TAYLOR: There's a reason for that.

550 MCDOWELL: Exactly.

551 TAYLOR: So, I've always felt that teachers in this state should be passing on to students the  
552 importance of their oceans and . . .

553 MCDOWELL: Um-hum.

554 TAYLOR: . . . what goes on in them, and so forth, but this is a very nice program for that.

555 MCDOWELL: Um-hum.

556 TAYLOR: And as I say, plus, when I look at your newspaper and I'll see something like that,  
557 and I'll see something like the "Don't Put Fish in This Drain," and then I'll see . . .

558 MCDOWELL: Yeah, the next issue has a uh pictorial essay on the osprey that Andrea Thuold,  
559 this beautiful photograph of the osprey that made their nest right out of Sheri and Tracey's office  
560 window.

561 TAYLOR: That the one they've got the videocam on?

562 MCDOWELL: The videocam on, yeah. Yeah, her pictures are phenomenon. Just used a digital  
563 camera with a telephoto lens, so those are going to be in the next paper.

564 TAYLOR: So a lot of your thinking, though, is to make science, which, for an awful lot of  
565 people is a very, very difficult subject, to something understanding and interesting.

566 MCDOWELL: Yes, yeah.

567 TAYLOR: You want to get a message out.

568 MCDOWELL: Yeah, I don't want to people to be afraid of science. I want them to think that  
569 scientific information is useful for their management decisions. I don't want them to be satisfied

570 with some information collected 20 years ago, when there might be new approaches, so all of  
571 that is of interest to me, moving science management to be . . . .

572 TAYLOR: Just an opinion question on this: would you like to see the Institution doing more  
573 with public schools?

574 MCDOWELL: Um, well, when I talk to colleagues, they think they're going to rewrite  
575 curricula, and I say, "The curriculum is fine." I would like to see more kinds of teacher  
576 workshops, and workshops in informal education, like through the Co-Sea[SP?] Program, and  
577 we're going to partner with New England Aquarium, although New England Aquarium is having  
578 such difficult financial problems right now. I mean I hope we can continue with that. But I  
579 don't want to go in and tell a teacher what they should be teaching. I don't want to go into a  
580 classroom and change what a teacher feels that she or he has working well for their students. I  
581 think the science . . . the middle-school science textbooks that they use in Falmouth are quite  
582 good. They're not perfect, but they're quite good. They're introduced to a wide array of topics--  
583 plate tectonics, basic geology, classification, ecosystem structure and function. I don't think they  
584 need new curriculum. I don't think they need oceanography on the [??]. But I do think where  
585 the workshops are valuable is to provide ocean examples for basic features of physics, chemistry,  
586 biology, and I think that's why the teachers respond to it. I don't know how much more of a  
587 mission . . . . I don't think we have the resources to push too much further than more than a few  
588 teacher workshops a year, but NSF is asking for more and more significance of your work. What  
589 are the broad implications of your work? And I think, through teacher workshops, and activities  
590 we can do that. I don't think they should become a training ground. I see a lot of people just  
591 conducting these workshops because they think that's what someone wants, and it's the same  
592 thing over and over again, or they're trying to introduce oceanography standards in the  
593 curriculum. I don't want to do any of that. I just want them to have a good understanding of  
594 basic physics, biology, and chemistry, and if they're interested in the oceans, great. Apply your  
595 basic knowledge to study the ocean. I'm very against oceanography undergraduate majors,  
596 marine-biology undergraduate majors. I think that's far too soon. Oceanography high-school  
597 courses--far too soon to begin specializing.

598 TAYLOR: Um-hum. I just looked at oceanography. You always have to get a kid's attention  
599 when you're teaching them.

600 MCDOWELL: Um-hum.

601 TAYLOR: And oceanography's a wonderful way to get their attention.

602 MCDOWELL: Um-hum.

603 TAYLOR: OK, I was just interested in that aspect.

604 MCDOWELL: I think the workshops have worked quite well, and getting scientists and teachers  
605 talking together. Because I think sometimes the scientists will go, "I'm going to tell you what  
606 you need to know." No, the teacher's going to tell you what she needs or he needs for the  
607 classroom that's going to work. And so I think that kind of dialog component of the workshops  
608 they've had have been very successful, because teachers and scientists come in as equal partners.  
609 I'm not lecturing to you from this high pedestal. We're coming in together to talk about how to  
610 exchange information. So that's the kind of level. I'd like it always to be with that kind of equal  
611 partner.

612 TAYLOR: Hopefully that's what CoSea[SP?] will be, . . .

613 MCDOWELL: Um-hum.

614 TAYLOR: Although I understood it was a little light on teachers on the program and a little  
615 heavier on the scientific staff, and stuff like that.

616 MCDOWELL: Well, this first year is only basically to look at the resources that they have, and  
617 um but the Aquarium, they only have one half-time person on it, Andrea Thorrold, and the  
618 Aquarium--they've had their difficulties this year. We would really like to have more of the  
619 workshops and so forth. Now other CoSeas[SP?] have basically just taken what they were  
620 already going and then just putting the CoSea name on it, which is not what this one wanted to  
621 do. And handing out . . . . Tracey'd gone to the meeting. One group had said that they had  
622 delivered this much paper to every teacher. Well what good is that much paper if it's not useful.  
623 And I know I think some of the folks from MME had felt that all it was going to be was to give  
624 them money to go to workshops and conferences here, there and everywhere, but the whole  
625 proposal was based on evaluating the workshops that people have in place, and how much is it?  
626 How are these things really influencing change? So I think that there's a lot of  
627 miscommunication as to who was what where?

628 TAYLOR: Well, I know there is with MME, because I'm a board member with MME, and I  
629 know they are . . . . But it's part of the . . . . For teachers it's kind of like the first women in  
630 science. They're so used to being the bottom end of the stick . . .

631 MCDOWELL: Yeah, yeah.

632 TAYLOR: . . . that they always see the bad side of everything.

633 MCDOWELL: But the funding for NSF, for the CoSea[SP?], came from the research budget,  
634 not from the education budget, and the proposals were supposed to be written with a way of  
635 evaluating how the research material could be used and implemented in workshops during the  
636 first couple of years, and then [??] And that all got lost in the translation, I think, because the  
637 Aquarium said one thing, Enrolment said another thing, and the whole evaluation piece, which  
638 was what the critical component was supposed to be during the first year, well who knows  
639 whathappened. [Laughs.] I think the project is moving the way it's supposed to be, but I know  
640 there were some hard feelings and . . . .

641 TAYLOR: But like any birth, it's going to be a painful process . . .

642 MCDOWELL: Yeah, yeah.

643 TAYLOR: . . . is what you're saying.

644 MCDOWELL: Yeah, and it's not like that there is an incredible amount of money to do much of  
645 anything, that it wasn't just going to divvy up here, throw out the money to whoever wanted it  
646 and stuff. But, anyway, hopefully it'll transition.

647 TAYLOR: So, but basically, it's all going well and this working with Sea Grant, where you say  
648 it's only two months out of the year, it's still got to be on your mind a lot of the time.

649 MCDOWELL: Oh, sure, yeah.

650 TAYLOR: So this is another added--"burden" is the wrong word. It's another added task,  
651 another . . .

652 MCDOWELL: Um-hum.

653 TAYLOR: . . . something you have to do. What else do you do here?

654 MCDOWELL: I'm the associate dean.

655 TAYLOR: [Laughs.] Associate dean of what?

656 MCDOWELL: Academic programs. And so for that, that's probably like major job now, I  
657 guess. I overlook all the graduate students, how they're supported, their curriculum, their  
658 committee structure, their advisor interaction, basically all aspects of their academic program. I  
659 help out with the other academic programs, which would be the K through 12, and some of the  
660 student fellows, the undergraduate program, and postdocs, but my primarily responsibilities are  
661 for the K through 12, and the graduate students. That's a big job.

662 TAYLOR: [Laughs.] Yeah, on top of one job that you say isn't such a big job, and on top of  
663 another job which is your life's work.

664 MCDOWELL: Right, but I mean I still write. I have so much data that I still write a paper or  
665 two a year, so I'm active in a number of National Research Council committees, just finished the  
666 big volume on oil in the sea that was issued this year. Just finished reviewing another big  
667 volume for them. But what I really like about working with the graduate students . . . . I don't  
668 consider myself a people person. I'm not one to give big public speeches, but I think I am a  
669 good person on one-on-one interactions with students when they're having difficulty finding the  
670 right niche or they're finding difficulty with their courses. I help them through those kinds of  
671 hurdles to the graduate program, so I really do the nuts and bolts of the Joint Program. I look out  
672 for their funding forecast for the next five years, their academic progress, their requirements,  
673 their committee members, co-advisors.

674 TAYLOR: It's a very important job. I did Jake Pierson's oral history.

675 MCDOWELL: Uh-huh.

676 TAYLOR: And there were a couple of times we were just walking across campus and visiting  
677 postdocs or people that had been through the program. I would hear a yell from way across the  
678 field, and people running with open arms.

679 MCDOWELL: Yeah.

680 TAYLOR: It's so important, because it's . . . . Well, for lack of a better term, you become their  
681 parent during this particular period.

682 MCDOWELL: Well, in some respects, yeah, you become their confidante and I'm totally  
683 different than Jake. And you know Jake held this position before, but in a way it's a very  
684 different position than it was when Jake held it. But Jake is someone that I really admire and  
685 always did admire from the . . . one of the first persons that I met when I first came here, and so  
686 when Jake was retiring and they wanted to fill the position with someone from the scientific  
687 staff. That was really what I wanted to do. I mean I thought that I could take my breadth of  
688 advice and really provide good advice to students, especially in the multidisciplinary aspects of  
689 ocean sciences.

690 TAYLOR: Can you comment on the program now, because when Jake first came in, when they  
691 were still trying to decide whether it was going to be Harvard or MIT, back in the . . .

692 MCDOWELL: Um-hum.

693 TAYLOR: . . . really early days, and it was very, very controversial here at the Institution, and  
694 then it's grown and grown and grown. Has it changed significantly from those early days in  
695 terms of acceptance?

696 MCDOWELL: I just did a big data set on biology students from the mid-70s on, and I still think  
697 we attract the same kind of students--bright; good, solid background in biology. Certainly the  
698 breadth of research activities has changed. We find a lot more students incorporating molecular  
699 biology into their study. That fits well with the MIT Biology Department. But we also find the  
700 students using signal processing for tracking marine mammals or looking at social behavior of  
701 marine mammals, and so they're doing a whole course sequence in electrical engineering and  
702 computer science at MIT, which is another big challenge. I think we continue to attract  
703 applications from very strong students. The funding is still solid. I think it just gets better and  
704 better each year. I think the multidisciplinary aspect continues to grow. A student is interested  
705 in biology and engineering or chemistry and geology, or chemistry and physical oceanography--  
706 that this continues to grow.

707 TAYLOR: Is it difficult to select a student? Now let me put this in context, like who's going to  
708 make my soccer team?

709 MCDOWELL: Um-hum.

710 TAYLOR: And who am I going to cut?

711 MCDOWELL: Um-hum. It is. Certainly we average about 175-200 applications each year.  
712 Half of those will be in biology. The other half will be in the other four disciplines, so we work  
713 very hard to critically evaluate every single application, and each of the disciplines will come in  
714 with a short list, and then the entire committee, which is comprised of two members from each  
715 department, plus myself as chair, will review all the applications. So someone from Physical  
716 Oceanography is reading the top applications in biology and vice versa. At MIT our colleagues  
717 are reviewing the files there as well, but only the physical oceanographers will look at physical  
718 oceanography; only the biologists look at biology. Here at WHOI we really believe in having  
719 that cross-discipline look. And it is very difficult. The top students would rise to the top in  
720 anybody's evaluation scheme. The weak students fall to the bottom. It's the ones in between.  
721 It's the ones . . . . We rank them--this is Jake's old system--into four groupings: Group One--no  
722 doubt; Group Two--little doubt; Group Three--some doubt; Group Four--lots of doubt. Group  
723 Four hardly ever get in. Group One always get in. It's the Group Two and Group Three that are



724 difficult--where someone has great letters, good grades, ummm GREs are iffy. Or another one:  
725 great research experiments, terrible grades, outstanding letters--is that person a good tech or  
726 would they really be Ph.D. material? So we work very hard on that process, and at the same time  
727 the top students are also being attracted by other universities. But we've always been pleased  
728 with the selection we've made.

729 TAYLOR: About what percentage male and female now are applying?

730 MCDOWELL: Fifty-fifty.

731 TAYLOR: That's wonderful.

732 MCDOWELL: Yeah. Different disciplines--I mean engineering still has a smaller percentage of  
733 women than the others, but pretty much 50-50 across the board. We always have a few more  
734 women in biology, and a few less women in engineering, but pretty much evens out.

735 TAYLOR: Well, it's the whole idea of working with living things, . . .

736 MCDOWELL: Um-hum.

737 TAYLOR: . . . with the biology.

738 MCDOWELL: Yeah.

739 TAYLOR: What stamp do you hope this Joint Program . . . ? There's been a whole bunch of  
740 different themes. Every one of them's had a certain kind of effect on it. Well, in the group  
741 you're in, what kind of effect are you hoping to have with this program?

742 MCDOWELL: Yeah, but I'm not a dean, I'm just a mechanic. I mean I'm the associate dean  
743 and stuff . . . .

744 TAYLOR: Oh, I know, you have absolutely no say in any of this. [Laughs.]

745 MCDOWELL: Well, I mean I think the deans, like John Farrington and Charlie Hollister and  
746 [??] they had bigger visions, but I think I share the vision with John. I mean I'd certainly like to  
747 continue to find ways to recruit more minority, underrepresented groups, continue to expand the  
748 fellowship opportunities, especially for women in engineering, to provide those opportunities for  
749 women to come into engineering, foster the interdisciplinary studies--across disciplines and  
750 make it not as difficult for a student who's interested in biology and physics to be able to take the  
751 general exams and succeed in those interdisciplinary things. A lot of what I do is making sure  
752 that there's a solid funding base for the students, not only for their stipend but for their research  
753 as well.

754 TAYLOR: So your job is essentially--you're the guardian angel for this group.

755 MCDOWELL: Pretty much, yeah. Yeah, if something is going with an advisor [??] or going  
756 wrong with the student, I'll find out what's going wrong, coursework-wise. Maybe they  
757 shouldn't be in that track that they thought they were in. Maybe they should be doing something  
758 different.

759 TAYLOR: Now, how do you bring them into the Institution? I didn't ask that well. When they  
760 come there's got to be a certain amount of nerves, there's got to be a certain amount of "What's  
761 going to happen now?"

762 MCDOWELL: Oh, I don't know. They don't ever seem to be nervous. [They laugh.] Well, we  
763 do . . . most of them come in for the summer before they start at MIT. I still think that is a great  
764 opportunity that we provide them. We provide them with a fellowship for the summer. They  
765 come in. They spend the summer here. They go on an SEA cruise with their incoming students.  
766 They spend 10 days at sea. They get involved in a research project in their advisor's laboratory,  
767 so they really get a good introduction of the community at the Oceanographic in that first  
768 summer before they go off to MIT to take courses. I find that students . . . . If they can't do that,  
769 and they just come in September, sometimes they miss out on the bigger picture of what  
770 oceanography is all about. But they are members of each of the departments, and they'll have an  
771 advisor, both at MIT and an advisor in Woods Hole, and we make sure we provide travel support  
772 for them to come back and forth. They take courses, either over the video link, or commuting  
773 back and forth to take courses, so we really like to engage them in the community of students.  
774 And I think it's a small, about 130 students, split among five disciplines, and there are . . .  
775 Senior students in the department will really serve as mentors for the junior students, to  
776 assimilate.

777 TAYLOR: It's a pretty unusual group, though.

778 MCDOWELL: Yeah, yeah.

779 TAYLOR: I mean just being able to get into MIT in the first place puts you in a certain stratum.

780 MCDOWELL: And there's a lot of international students. There's a young woman from  
781 Bulgaria that just started in physical oceanography. There's students from Russia, students from  
782 Japan, students from China, Norway, France, Canada. We have really from all over.

783 TAYLOR: What would your perfect job be if you could.

784 MCDOWELL: This is my perfect job. [They laugh.]

785 TAYLOR: That's great to hear.

786 MCDOWELL: Yeah, I mean this is my perfect job. Yeah, I'd like probably the funding to be  
787 secure for all of these students, but in many respects it is. I mean it's a good . . . . I'd like my  
788 colleagues to get their grades in on time, but that's my worry. This is my perfect job.

789 TAYLOR: You're very lucky.

790 MCDOWELL: Oh, yeah. I've gravitated to these things, because this is what I really like to do.  
791 Bob Gagosian is always after me to become department chair in biology. I don't want to be  
792 department chair. I don't think that's a fun job. This is a fun job.

793 TAYLOR: Let me ask you a fun question. My wife always . . . . My wife is a school librarian.

794 MCDOWELL: Um-hum.

795 TAYLOR: I'll come home, and she'll say, "How did the interview go today?" And then she'll  
796 say, "What does she read?"

797 MCDOWELL: Mystery. Mysteries by women authors--Marcia Muller, Sue Grafton, P. D.  
798 James, um Agatha Christie (I've read all of those, though), Elizabeth George, Elizabeth Peters--  
799 women mystery authors. I read philosophy, too, but that's not as much fun, [They laugh.] on a  
800 train ride or something.

801 TAYLOR: Well, I read Nevada Barr.

802 MCDOWELL: I read Nevada Barr.

803 TAYLOR: Her latest is out, which is a self-examination. It's not a mystery. She's writing  
804 about herself for the first time.

805 MCDOWELL: Oh, that's interesting.

806 TAYLOR: If you become director of the Institution, . . .

807 MCDOWELL: That would never happen! [They laugh.]

808 TAYLOR: . . . would you take the Institution in any other directions than it's going now? Or  
809 any things you'd add?

810 MCDOWELL: Well, um I said that would never happen because it's not a job I ever want to do  
811 because it doesn't seem that much fun, too much schmoozing. I'm not a schmoozer. Uh no, I  
812 think the Institution is on the right track. I think um sometimes I worry a little bit about the  
813 Trustees wanting us . . . one trustee or another saying they want us to more applied. I don't think  
814 that an outside group should tell the scientists what they should be working on. And I think that  
815 this promotion [??] promotion, that was so bizarre. I'm also interested in the basic physiology  
816 and adaptations of different organisms in different habitats, and I was working on a problem at

817 the time of crustacean endocrinology, and which was a very interesting basic problem, but also  
818 interfaced well with how crustaceans responded to pesticides, because it would disrupt their  
819 basic endocrine function. So I will tell you the chair of my promotion committee was Bob  
820 Gagosian, and he said that his committee felt that I should be doing more of this basic crustacean  
821 endocrinology and forget the contaminants or make that a very minor part, and I said, “Why  
822 should they tell me what I should be interested in? Here I’m very well funded. I’ve got papers  
823 in very good journals. I’m working on what I want work on. What’s it to you?” [They laugh.]  
824 Now I mean think back. That was like 1980, almost 25 years ago. Now the Trustees are asking  
825 him to tell people to do more of the more socially relevant kinds of things. I would say the same  
826 thing to him. If it doesn’t interest you . . . . I mean what he asked me to do did interest me, but it  
827 interested me within the context of understanding the basic physiology and development of the  
828 organism, and then putting that within the context of how these perturbations occurred. If it  
829 didn’t interest you, why would you do it? And so I feel that the core of this institution is to  
830 preserve what we do best, and what we do best are looking at the questions that drive our sense  
831 of discovery, and, yes, outreach to Washington is fine. Outreach to the community is fine,  
832 providing dialogs between teachers and scientists; but what we do is science, and a place like this  
833 should not . . . . It’s not Bell Labs. If I wanted to work for Bell Labs, or I wanted to work for  
834 Battelle or any of those other entities, I’d get a lot more money than I’m getting now, because I’d  
835 would be doing what they asked me to do, not what I wanted to do. And that’s the unique part of  
836 this institution, is to . . . .

837 TAYLOR: So this is a lifestyle.

838 MCDOWELL: I think so, yeah. And you’re here because you want to ask questions about the  
839 oceans that maybe nobody else is asking, or maybe a small group of colleagues if asking, and  
840 you’re interacting with them around the world. I think that’s the unique nature of this institution,  
841 and certainly yes, the funding arena may changed, but the funding arena has always changed. I  
842 mean NSF didn’t even exist during the 1940s. I don’t see us getting more corporation money to  
843 do . . . . I don’t see us becoming a Rand, or a Raytheon, or anything like that, and I don’t see us  
844 driven by those kinds of questions. So I think the real challenge is to preserve the way people do  
845 things, without sacrificing quality.

846 TAYLOR: Is there anything that you thought I was going to ask you that I didn’t?

847 MCDOWELL: No, no. What do I do after I retire, maybe. [They laugh.]

848 TAYLOR: Well, this is the whole thing. You will probably wince when I saw I see you as a  
849 mid-career . . . .

850 MCDOWELL: Oh! [Laughs.]

851 TAYLOR: . . . oral history.

852 MCDOWELL: That's probably true, probably true.

853 TAYLOR: But I find that the creative people here--they're never going to retire. They're  
854 always . . . .

855 MCDOWELL: They might retire to do something else.

856 TAYLOR: Yeah, but you'll do something.

857 MCDOWELL: Yeah.

858 TAYLOR: Like people ask me, "Oh, you're retired now." I say, "No, I'm down at Woods Hole  
859 doing oral histories." I left what I was doing for 36 years.

860 MCDOWELL: Um-hum.

861 TAYLOR: I am doing something else now and am as committed to that as I was . . .

862 MCDOWELL: Um-hum.

863 TAYLOR: . . . to the teaching.

864 MCDOWELL: Yeah.

865 TAYLOR: So yeah I think folks like you will never retire. What I'd like to be able to do is to  
866 maybe a few years from now come back and kind of update this oral . . .

867 MCDOWELL: Sure, sure.

868 TAYLOR: . . . history, where we are at this point and . . .

869 MCDOWELL: Yep. That'd be fine.

870 TAYLOR: . . . any changes, anything like that, assuming I'm still able to sit up and take  
871 nourishment and all that kind of thing.

872 MCDOWELL: No, I'd be happy to. It's been fun.

873 TAYLOR: OK, well, thank you very much. I really . . .

874 MCDOWELL: And I'll tell my son you were a soccer player.

875 TAYLOR: [Laughs.] Incidentally, I put water over there. I forgot to tell you. In case you were  
876 getting dry.

877 MCDOWELL: Oh, thank you, no.

878 TAYLOR: You know, I . . . turn this off.

879 [END OF TAPE 3]