

1 KM: So I did have to pick, just for the assignment, between focusing on your experience as a
2 student and your experience as a professor, and I was advised to go with your experience as a
3 professor. But, personally, I have an interest in both, so I'm going to ask a little bit about both,
4 but the latter part might be the only part that I'm able to put in my paper. So my first question is:
5 What is your educational background? In terms of what institutions you went to and when you
6 went there

7 RO: I went to Illinois Institute of Technology in Chicago for my undergraduate degree –do you
8 want to go all the way farther back or just college?

9 KM: Um...I'd like to know.

10 RO: I went to St. Joseph and St. Anne Grammar School in Chicago which was run by nuns at
11 that time, and then I went to St. Rita high school in Chicago, which is run by Augustinian priests.
12 I did spend my freshman year though in an Augustinian seminary, but I got kicked out, so I'm
13 not going to talk about that...because I was unruly...and then I went to Illinois Institute of
14 Technology. I entered there in 1969, graduated in '73. Actually I graduated in '72, but I
15 graduated a semester early but I stayed around because I was going to go to graduate school and
16 I didn't want to stay there for graduate school, they wanted me to but I didn't, and I didn't get
17 my degree in December but I had everything satisfied so I just took a lot of extra courses the last
18 semester. Then I went to Purdue, and I got my masters and PhD there. Finishing in '79.

19 KM: That's pretty fast...or is it? That just seems fast to me.

20 RO: '73- '79, that's six years

21 KM: Is that the normal track?

22 RO: Yeah, about 6 years.

23 KM: What would you say is the difference between your personal college experience and the one
24 you perceive students to have here?

25 RO: Well, I would say there were a lot of apathetic professors in the sense of they just taught
26 material and went through it and didn't really care if students understood well. In particular I can
27 think of an advanced math course I had that he just did 'proof there, proof there,' so I never did
28 any homework problems or applications of it or anything like that. Unfortunately, a friend of
29 mine took the course by someone else who did what I would have loved, seeing the
30 applications...because it was supposed to be an applied math course. So I saw that in several
31 courses, that I didn't think the professors were as involved in teaching. And of course this was a
32 research institute; in graduate school you're kind of expecting that but as an undergraduate I still
33 felt...now, that does not mean there were not some who were stellar...and I...do you want me to
34 talk about them?

35 KM: Sure, yeah.

36 RO: There were...one that really convinced me to be a physics major because I started out as a
37 math major...and I like applied math and not abstract math...and so I had him for the second
38 semester physics. He was Chinese. He just was very caring and I'd go in and talk to him a lot
39 about physics and that and he'd tell me more and show me what he's doing so I really got
40 interested; I appreciated the time he spent with me. And then I switched majors after another
41 semester and I so had to take a course to catch up, which was optics, so he gave me a reading
42 course in it so I was able to do that, I was very grateful to him...so grateful that I studied Chinese
43 when I was in graduate school and I wrote him a letter in Chinese.

44 KM: That's awesome!

45 RO: Which he appreciated...I guess it wasn't too bad, it was a short letter. It was kind of fun. But
46 then I had another professor...that guy was named Chumin Fu, was his name, but then I had
47 another professor, Thomas Erber, who was Austrian by birth, and gave meticulous lectures, I
48 mean, I wish I could do what he does, he would write on the board and just so nice and I just get
49 to excited when I write on the board, I just try to get hurry and get everything down, but he was
50 always very nice and very ordered and very good, and then I did undergraduate research with
51 him and published a paper with him and got a lot of stuff like that and...He actually, when I
52 came here, I invited him down here to give a seminar once, so he did that. And then he retired a
53 few years ago and the department was going to publish a book in his honor, because they have a
54 German thing called *festschriften* where they publish a book on somebody's honor when they
55 retire and so I was asked to write one of the chapters in the book. And there are usually papers
56 and so I had always wanted to do a paper on some other stuff that I had discovered working with
57 him, so I wrote up that paper finally after 30 some years and that was the chapter in the book.
58 And then I got to write a little about him. And I actually was just looking at that yesterday
59 because...[gets out book, which is titled *Doing Physics: a Festschrift for Thomas Erber*]...This
60 is the book...let me turn to my chapter...it's called "Two and Three Dimension History; Simple
61 Magnetic Cooperative Systems," but, the end, which was the little tribute to him that I wrote, and
62 I said, "This small paper presents unpublished findings of undergraduate research some 37 years
63 ago that's experience sold me on physics and Tom Erber's mentoring made me want to be as
64 good a teacher as he was and aspire to walk in his footsteps. Tom seems to have understood the
65 potential within an individual and prompted it to become real. An influential poet of the late 20th
66 century, William Stanley Merwin, expressed this notation in a poem titled The Unwritten:

67 'Inside this pencil crouch words that have never been written, never been spoken, never been
68 taught; they're hiding.' Tom prodded those ideas crouching within us to come from shadow to
69 reality as we began professional careers." So, I was quite influenced by him. And then in
70 graduate school, there were some professors that I thought were excellent, and also motivating as
71 well. And then I made a stupid mistake which was my major professor I chose...I'll just tell you,
72 the first day he walked into our first class as a graduate student, he was Japanese, he said that one
73 half to two thirds were going to get a C or worse in the course. And a C in graduate school is an
74 F. And he held to that and so out of thirty students, there were basically...the next semester there
75 were like 12...so he was quite mean. And why I ever went to him I do not know, but...I guess I
76 did because you can have two types of major professors. One is where you're working very close
77 with everything that they're doing and you get lots of publications that way and stuff, but the
78 other is you kinda go off and do your own thing, and they kinda supervise, and I kinda wanted to
79 do my own thing. So I was grateful for that. And it was...turned out well in the end. There were
80 some rocky times.

81 KM: I'm sure. And then, so you said that in grad school that professors did tend to be more
82 apathetic just because that was the nature of grad school.

83 RO: Yeah, because they're there for research. But there were some ...he actually the second
84 semester course was really good. I guess he got rid of a lot of people and then he was a little
85 nicer and very interesting, but there were a lot of ones who just threw math at you, but I would
86 say there were oh, three or four that I thought were really exceptional and cared about you and
87 cared about teaching.... I think that has changed a lot now. I think everywhere there's better
88 guidance counseling and mentorship in graduate school than back then.

89 KM: And then would you say that there's also been an increase in more involved professors also
90 at the undergraduate level?

91 RO: Oh yes, definitely. And then what's going on in science is different from in humanities and
92 having undergrads involved in research is a very big thing now, and that is a focus that always
93 was there but now it's like...if you're at a strictly undergrad department that you have to be doing
94 that.

95 KM: What were the administrators of the...well actually...I think I'm gonna move on to places
96 where you have worked post grad school. So could I get the names of those places and years?

97 RO: University of Dallas...University of Dallas... uh I did go off to Caltech. So I came here in
98 '79, right from graduate school, and then I was at Caltech from...it wasn't solid but '82- '84, I
99 was at Caltech. And then I was back here. And then I was also at Moscow State University in
100 1992, spring semester, on a Fulbright Grant.

101 KM: What would you say that the administrators have been like? How have administrators
102 maybe changed over that time that you've been here?

103 RO: Change? At UD?

104 KM: You make an excellent point. Have their responsibilities changed, or how visible they are in
105 the community?

106 RO: You know they always had to be involved in fundraising. I would say that they're more
107 involved in fundraising and less in giving leadership and guidance in academics. I think that's
108 been the big shift. Because, we didn't have a provost before, we had only the Constantine dean
109 and the dean of the graduate school of management and then we suddenly got a provost and now

110 we have all these deans and the administration has proliferated since I first came here...in
111 numbers, therefore duties get spread out much more than they used to be

112 KM: So, the amount of administration has grown over the years, and been more...

113 RO: Yes, grown significantly. Especially in contrast to the size of the faculty.

114 KM: And then...have you...would you say that there's been any change in maybe the
115 instructional strategies or demeanor of the professors over the years while you've been here?
116 Have there been any shifts there?

117 RO: Well, yes. I think in science, I can definitely see some, where we try to get students more
118 involved. Of course, lots of people use technology now, so you know we have PowerPoints,
119 although I know some professors don't like PowerPoints. But in things like astronomy where
120 you have to show lots of images, it's indispensable to have that. Before we used to use slides,
121 you know, so that's...I would say that's changed and also I don't know about others but I try
122 flipping some courses and trying to flip upper level courses. In different ways I experiment. I am
123 not yet recording lectures but I am trying to get them to read more and then we do a lot of
124 conceptual questions at the beginning of class that if they haven't read they're not gonna know
125 anything.

126 KM: So when you say you're trying to flip the course, you mean...

127 RO: Trying to go away from lecture, to having them...so...in the upper level courses we still
128 need to lecture, but it's to get them to read more. In fact, that's all I'm trying to get them to do.
129 Even in the non-upper level, to have them read and to discuss things.

130 KM: What historical, social, political, economic influences have you seen on educational
131 experiences?

132 RO: Hm...social, political...economic, did you say?

133 KM: Mhm, and historical.

134 RO: ...in education...I can tell you something I've been frustrated with.

135 KM: Okay.

136 RO: When I was in grade school I had to learn the 'new math,' which I hated. It was learning
137 how to do numbers in different bases, which I never saw why, and didn't really understand it,
138 and then they found out that that was an experiment that didn't work. But we keep trying to
139 improve math education and it's not gotten better. I think students are not any better now when
140 they got into college than they were 30, 40 years ago. And I was involved a lot with working
141 with physics teachers in high schools, to develop curricula, and materials, and I think they're
142 good teachers, and we try all these different things...I don't know that we've necessarily
143 succeeded. Now physics is a hard topic because most students have an aversion to it, so you have
144 to bring them in, and really...try to get them to understand these concepts. I think we succeeded
145 at bringing them in more, but having them combine math with things is still somewhat lagging.
146 So I've been frustrated, I keep saying why...why can't we just bottle something and put it in the
147 water supply or something, so...but that's life. You have to struggle with things. So it still is an
148 ongoing struggle, and I see people come up with different ideas and some things...you know I
149 try a lot, but I think you have to tailor the education you're giving to your audience. I don't know
150 if they still have the banner in the media lab, in education, 'know your dogs.' You have to know
151 your students and then you work with them. So I think that's fundamentally, that's what we have

152 to do. And something that would work at UD wouldn't work at a state university, I know for
153 sure. And things at state universities won't work at UD.

154 KM: Do you have any recollection of important educational experiences?

155 RO: Oh yes. Well, the first would be in 6th grade Sister Joseph Marie would answer all my
156 questions about science. And then she was very patient and very appreciative. Another one I had
157 was that I really recommend, it's a little harder for kids to do now, when I was in 5th grade, a
158 salesman came around selling the world book encyclopedia, and I begged my parents to get it,
159 and I did and I spent the entire summer on the summer steps going a through z and I learned so
160 much that I still remember. I learned like, all these different types of birds and animals, dogs,
161 places, all that stuff. And I thought that was such a great experience. And now you can just do it
162 on your phone or on a computer, but the encyclopedia is a little bit more guided, but I thought
163 that was significant because it really just opened up the world for me.

164 KM: Would you say that even though there is technically more access to information, would you
165 say that has translated to people accessing it more, or what cause/effect...

166 RO: Well I think people can access it but there's no understanding that necessarily comes with it;
167 it's facts. And you know there was this poet in the early 20th century, I'm trying to think of
168 her...just keep thinking of Milnie...ugh I'll think of her, in a second. She basically said
169 that...and she was very ahead of her time...she says we have all these facts and we're
170 bombarded by facts, but we have no loom to weave and understand it. And that's what teachers
171 are for. You weave together the understanding of the facts, how do things fit together, what do
172 they tell us about the world or ourselves or whatever we're studying, so they're your guides but
173 they're helping you weave, be your own weaver of that understanding. So yeah I think there's a

174 lot more facts to be accessed, but that doesn't mean...another famous quote by...I think it
175 was...*inaudible*, "a house is built of stones but a collection of stones doesn't make a house,"
176 and a collection of facts doesn't make a science. So...how do you get to that connection is the
177 hard part.

178 KM: Have there been evolutions of educational issues and concerns during your career that
179 you've noticed?

180 RO: Hm...well one of my concerns, not necessarily national, but I think it's several people's
181 here. I think most universities are extremely liberal. I mean I think there's like, if you are not
182 very, very liberal you're very looked down upon, and that bothers me. And I've witnessed it
183 firsthand by going to other universities and I've seen it. So I'm very grateful for our university
184 because it's much more balanced here than at other places. Another trend has been the cost of
185 education. I'm very upset with publishers because I think they charge ridiculous amounts for
186 books, and they're not doing all that much anymore, and they're just charging because they feel
187 they can charge it, it's like a monopoly and I wish the government would actually look into it,
188 because I think it is a monopoly, or there's racketeering going on, with setting prices. Well, I
189 know not here, but in state schools there's a proliferations of majors to where every little thing
190 becomes a major and I'm just like...why...don't we have more cohesiveness, a more general
191 understanding of things fundamental for life, and also getting jobs, I mean I think there's a big
192 importance of getting jobs now, and through our accreditation we have to track, there's an
193 emphasis on people getting jobs or going to graduate school right after, so I mean, that's good,
194 but there's some majors, not necessarily here, but at other places, where I don't see how they
195 ever get a job.

196 KM: Just because their major is too specific? It's not broad enough to apply to enough things?

197 RO: Right, right. And that's a good point because I think the undergraduate education should be
198 very broad, you know, still within a major, but it should have a broad basis. When I was at
199 Caltech I got to know some students as undergraduates and I was appalled. They had no
200 philosophy...well they offered it, but they didn't have to take it. They knew no philosophy, yeah
201 they had some...it wasn't really literature but they had some course in English, but they got into
202 their major and they would take tons of courses in their major and I just...because all my friends
203 out there, they say, "Don't you want to teach at Caltech?" And I say never, never. I mean,
204 they're trying to do a graduate education at the undergraduate level. Not just in level of what
205 they're talking about but in that you're just focused on one thing now. And I don't believe that's
206 what an undergraduate education should be.

207 KM: Was there anything else on that? I mean there doesn't have to be, I'm just...

208 RO: Um...no, I guess nothing.

209 KM: How has student academic performance and behavior evolved during your career?

210 RO: Hm...students were very rowdy at first.

211 KM: So students are well behaved now?

212 RO: Sort of...it varies from class to class, year to year. I can't say they're more well behaved
213 now because they still text and do things in class and so...I would put that under not being not
214 well behaved. Whereas before they would just be kinda rowdy, which I would...I like the
215 rowdiness, because I can channel that. If they're texting it's hard to channel that, except by
216 saying don't text. The other thing...um...we really change from year to year. I mean every class
217 has its own character. I would say that over all though, I have not seen the student body change. I
218 think they are very, very good men and women that we get here. And I think they're serious

219 about education. So I would say that has always remained the same, so we're very
220 fortunate...and of course that's why all the faculty stay here, it's because of the students. It's not
221 because of the administration or the pay or anything like that, it's because we like the type of
222 students we work with. Because it's invigorating.

223 KM: So would you say that's typically pretty unique to UD?

224 RO: I think it is...I've never taught somewhere else long term. I have asked the provost and said
225 that there are some programs...I would love to go teach at Carleton college for a year, and see
226 what they do different, and come back and report on it, or integrate, or tell them things that
227 maybe we do that's maybe a little better than what they do. Carleton is a small liberal arts
228 college that does very well with their students. I wish we had more of those kinds of exchanges
229 with universities. He said there are some, I think I'm gonna push him on it.

230 KM: Would you have had any way of noticing maybe how student academic performance and
231 behavior has changed in other institutions just in how you perceive it? I know you wouldn't have
232 first-hand experience, but maybe through colleagues or...

233 RO: Yeah, through colleagues. I would say the number one complaint from colleges and other
234 institutions is that students can't do any mathematics. That they really can't, that's the number
235 one complaint. And that has always been there, I mean, but, you know, here, yes we have some,
236 but it's not everybody. There I think it's just a bigger problem than it is for us. So, I know that.
237 Okay, I will tell you another thing that I'm concerned...which would mean UD needs to step up,
238 is that two years in a row I've reviewed graduate research fellowship applications for the
239 National Science Foundation, it's a very prestigious award that one can get, and they get like,
240 three years of being paid about \$40-50,000 a year. So they can just do research, they don't have

241 to teach or do anything as a graduate student. I've been surprised because this is the third time
242 I've done it. The first time I did it, there were several undergraduates who were authors on
243 papers, so that's good. I did that as an undergraduate. We try to do that here too, it's a little hard.
244 We try to...now there were ones who were first authors, which meant they came up with
245 everything and they wrote the whole paper. And their professor is second author. Now that's
246 very impressive; we don't have that. And I haven't seen many students that I thought would take
247 the initiative to do that. So that's...I'm still kinda...thinking, reflecting on that. On how...well
248 A), do we really need that, or B), can we ever do that. What would it take in a student...and I'm
249 kinda getting to the point where I know what it would take...I don't think we can do it because
250 of the large core, our science majors are taking other things. So I think the sacrifice is they have
251 a broader education. So I'm okay with it. And luckily, at least in discussions, being first author
252 didn't seem to impress a lot of people. I do not know all overall, for everybody on the panel...it
253 seems it was noted but it wasn't like "wow, everybody has to have this now" or something. So
254 that's one thing that I think has changed. And I'll tell you one of the things is students that can
255 do this, they need to do research programs, like after their freshman year, after their sophomore,
256 after their junior year. We usually have them do it between junior/senior year, for their thesis.
257 And there's programs all over the United States that support them, and that's good, but now we
258 have to push people after their freshman year, after their sophomore year, which is really hard to
259 get into that so...it's kind of a struggle there. But that's what we need to probably do more.

260 KM: In terms of the math problem, would you say that the amount of complaints has been about
261 the same, or that it's become a more prevalent problem?

262 RO: I would say it's about the same, but that it's always there. Yeah, about the same. And so I
263 think they were expecting it to be less as time would go on but it hasn't changed.

264 KM: How has parent involvement changed?

265 RO: At the undergraduate level?

266 KM: Yeah.

267 RO: Um...Well...they're a little bit more involved. You know they're not supposed to contact
268 us. Because they're adults, so we don't necessarily get contacted all that much. But that's not to
269 say we don't know the parents, I mean we do know the parents, so...I'd say it's a little bit more.
270 I get to know more parents before students graduate than just at graduation. So I would say it
271 would be greater. And I think that it's...I'm happy and I think they should be because it's pretty
272 expensive to go here. I would wanna make sure I know what's going on with my child. So yes, I
273 think it's good.

274 KM: Do you think that parental involvement has changed at lower levels of education?

275 RO: Yes...

276 KM: In terms of being more or less involved?

277 RO: Um...I think there's sort of...there's a dichotomy if you look at it. I have a friend that
278 retired recently and she taught special ed, as many years as I was here, and she had a lot of
279 parental involvement with special ed, which needs to be, but on the other hand, I've given like
280 *inaudible* school I went to last year, and I arranged for a parent family night, and then we
281 brought telescopes. They were just ecstatic because they'd never had the turnout at those like
282 they had that night. So there's this other end of like, a lot of times, if its voluntary, there's not
283 such a concern, unless it's something that just gets their curiosity, which I guess is what I did, so
284 I was...I felt bad for them because I would hope every time that they...and they have like 300

285 parents and kids there, you know just so happy, and I would kinda hope other times would be
286 that large and so...I have a feeling that there's...and I think the dichotomy has to go along
287 wealth lines, too. I think that the other people are working and it's really hard to get them to
288 come in and talk to the teachers, and I think also first generation students, like their parents are a
289 little afraid to talk to teachers, you know, which is kinda good, because I hope they're kinda
290 putting teachers on a pedestal; I wish we all were still on a pedestal. That by the way I think has
291 really changed, and I really, really, really, wish that had not changed. Not because I'm in
292 education, but because I think teachers, as a profession, is not as respected as it should be, and in
293 particular, grade school and high school teachers. And, while I'm on the topic, I will say
294 that...you asked me about the administration earlier, I think most universities treat professors as
295 employees now, that's all they are. We're employees, we're not special. And I became a
296 professor because I thought I was special, in the sense that I'm gonna be inspiring students, I'm
297 gonna be working with them. They're not just...a client. It's a different relationship now.

298 KM: So it's become more impersonal?

299 RO: Yeah, I think in a...definitely the way we're treated by the administration, definitely. We're
300 out of the loop. And I guess the other big change in administration is that administration is a
301 separate organization at the university. And the co-leadership is not so much there anymore. It
302 used to be faculty were kinda co-leaders with the administration, co-governance. And that, I feel,
303 has really, really changed. We...It may look like it because there's lots of committees, but they
304 make the final decisions always. And I can give you an example if you want.

305 KM: Sure, yeah.

306 RO: The example from about three years ago was we had been using blackboard for our online
307 portal, and the college of business and school of ministry were using ecollege. They wanted to
308 save money so they wanted to move Constantine to ecollege. And there were a lot of
309 protestations at the senate. I was one of the voices. Not the loudest, but one of them. I would try
310 to look up data and hardly anybody was using ecollege, but they decided, no matter what, they
311 made the decision. And guess what? We got a letter last week, Pearson is ending ecollege, so
312 now we have to go find another one. I mean...and it's like...and you could have told...if you
313 woulda looked at what colleges were using it...you could see ecollege wasn't leading to things
314 that they needed...blackboard was evolving; ecollege wasn't. And it was just simply because
315 they didn't want to pay the extra money. And so the faculty has to suffer, you have to go and
316 learn another...you gotta learn ecollege, and now we gotta learn another one. And in the mean
317 time they hired like three people, to help you learn ecollege, which is *inaudible* rather
318 uneffective. So those are the things the kinda things that we don't have any input to. Or
319 we...they'd like to think we do, but they make the decision. Contrary, even to our own.

320 KM: So they may let you give input, but they don't really consider it?

321 RO: Right.

322 KM: How have the expectations for a professor changed?

323 RO: Well, at UD there's been a move to more publish or perish, so that's been a change. So...I
324 think it's the motion is there so that we're more recognized. And so last year...or two years ago,
325 we had to redo the criteria for tenure for every department. I was on rank and tenure for the last
326 two years. I was kinda amazed...and because they're really pretty stiff, and we're not a research
327 institution. We're kinda in transition, so I don't think they're exactly following the guidelines to

328 the letter as a result, but...I think there's a transition there. Which, I mean, maybe we need to, to
329 be competitive, I don't know. But I still hope students remain the number one focus.

330 KM: Would you say there's been a difference in what's expected of you from the
331 administration?

332 RO: Yes.

333 KM: What would that be?

334 RO: Well...well for example we used to have, a long time ago, in science you taught two courses
335 and the labs they're associated with. Then one year it got to be...well in humanities it's three
336 courses, 9 hours, so science you better do 9 hours, but there's always this problem with labs. So
337 for a while you just teach the labs as extras, extra loads, then we complained about that, so they
338 would pay you a little extra, and now it's like no, you're not gonna do any overload, we have to
339 hire adjuncts, and stuff like this. I wish we'd go back to the original way because I thought it was
340 better for us to teach our own labs. It's less institutional; we're not a big school. So I think that
341 was one change. Also, as I mentioned for rank and tenure, you know you really have to get
342 grants, or write books or papers, do the advanced, to get tenure. Just being a good teacher is not
343 enough. And the danger is you could get people who are publishing all this stuff and they're not
344 good teachers, and they'll probably get tenure too, so there's that tension. Which you know, the
345 committee tries to go through and sort out. So I think we're doing that, although there's too
346 many committees. I can't complain now; I was gone last semester so I'm not on any committees.
347 That's wonderful, I love it. So I think a lot more...it's called service. You're supposed to have
348 three areas, it's called teaching, scholarship, and service. I think the service amount has gone up.

349 KM: Has there been any change in the availability and or quality of instructional resources?

350 RO: Oh I think we have many more now. Actually, I think, I kinda like having an IT department.

351 You know, a week ago, well two weeks ago tomorrow, my laptop got smashed on the floor...

352 KM: I heard about that...

353 RO: I know, and it was killed... and I lost everything on it, but it was nice to go down the hall

354 between classes, I mean that was really hard to continue teaching after that happened.

355 KM: I'm sure.

356 RO: Because I had no slides! I thought, "oh, what am I gonna do??" Because I don't bring any

357 notes to class, because I knew what I was gonna do, but I use the slides to prompt myself

358 so...and it took me, it seemed like forever, to regain my composure. But it was nice to just go to

359 IT between classes and they were trying right away and then when I was done with the second

360 class they had this laptop for me, which doesn't have anything on it, but that was life. So, I think

361 that's been good. To have that was just wonderful. I think projectors we have, everything in

362 rooms is wonderful. I know they've upgraded a lot of rooms. I love Gorman B because we have

363 the boards that slide and a lot of board space. So I think things have gotten much better that way.

364 And the library also, I've had, when I've taught seminar, I've had them come and teach a class

365 on library resources and science. And I think that's really nice. I mean I never go to the library, I

366 do everything online, which is nice. Only if there's something which occasionally happens which

367 is in a book that I can't get any other way, I'll see if we can use inter library loan to get it.

368 Otherwise, everything's online.

369 KM: Have you noticed the hand of state or federal government in education?

370 RO: Mhm!

371 KM: And how has that changed?

372 RO: I think the federal government has been more imposing. You know I know we have No
373 Child Left Behind, you know...I don't know what the new one's called now, but I feel they've
374 really come in and are pushing districts, pushing teachers. And I had thought the reason was to
375 make more equality amongst school districts, to give every student the same opportunities. And I
376 think that's a noble goal. I don't know if it's being achieved by the programs that are there. So I
377 just that there's...I would call it almost an intrusion. And then I'm concerned about all the exams
378 that are given. Cause I hated them when I was in grade school and none of them...not course
379 exams, but standard exams. I just hated those. I just feel they're butting in almost, rather
380 than...and I guess what I'm getting down to is teachers are put under such restrictions, and I'm
381 talking about grade school, high school...and this goes to the degradation of looking at it as an
382 honorable profession in that they're not trusted to teach...you can't just let them teach...and you
383 know when I said I worked with lots, with thousands of high school teachers, and I would say
384 there was rarely one that was not a good teacher. What I could say is there were a lot that didn't
385 understand physics. And that is what I was trying to help them with. But I thought they could
386 motivate kids, they understood kids, they knew where they were coming from, and I would trust
387 them to go out and teach our materials. I just feel that we're not trusting them and I think that's
388 starting to come up to the undergraduate level. I think the accreditation bureaus have gotten too
389 powerful, and you can mark my words, but I bet sometime in the future we're gonna have to be
390 submitting daily lesson plans, like in grade school or high school. And then I think it's an insult
391 to what it is to be a professor. Anyway, that's just my thought.

392 KM: So there would be, like, below the undergraduate level, there's much more of the teaching
393 to the test mentality than teaching the student.

394 RO: That's what I think, I mean I don't know for sure, but, from what I read and a few teachers,
395 that's what I think. And you know the other thing I'm amazed at the number of intrusions in the
396 day in grade school or high school...announcements, rallies, and this and that. I mean, I would
397 love to see like there's none, let's just teach during the day. But I mean I've been in schools
398 when this has gone on and it's just...

399 KM: Has UD changed at all in terms of education?

400 RO: No, I think it was very solid and it still remains very solid. Yeah, you know, we have some
401 new majors, we have new courses, but I think the quality of the education has not changed.

402 KM: Have the demographics at the university changed?

403 RO: A little. We...I think we have a greater percentage of Hispanic students now than we did in
404 the past. Which is good. What's bad is I felt there was a period in the mid-90s, 2000, we had
405 more Muslim students, and that kinda went down. I don't know about their socioeconomic
406 background; I think that's pretty much the same. No, I'd say there's wealthier students,
407 personally. But there's a wide range, so...it's hard to say.

408 KM: Would you say that the wealthier students is a result of the increase in the cost of
409 education?

410 RO: Yes, I think so. The other thing that I see, you know I see a lot of students of students now
411 that I had. And I see that they valued their education so well they want their son or daughter to
412 come here, and I think that that's really quite good. And I think it just shows that we've got a
413 really solid education. Which is all due to the faculty [said jokingly]. I guess I would tie in one
414 other thing, I feel that good faculty are good pushers, that you push students. You push them not
415 only to get things done but you push them and challenge them. You challenge their thoughts; you

416 challenge the way they look at things. You challenge what they can do. I think that's a good
417 point.

418 KM: Do you think teachers, professors, like, have the reign to challenge their students that they
419 used to?

420 RO: Well this is...I think the professors have changed. I think, and again I'm generalizing,
421 because I can't...there's gonna be a full range...I feel...well let me put it this way. When I first
422 came here I used to go into the chair with every exam and talk about what I'd be asking, talk
423 about what I'm doing in the class, and stuff like this, and faculty don't really do that to chairs
424 anymore. You know if you're chair you're just a pig pusher. Because what sometimes happened,
425 and it started in the 90s I think, is that you're...they think that they come into a job and you
426 should know everything. And you have nothing to gain from anybody else, and you know it all.
427 And...there's probably a little fear too to ask somebody else who's more experienced. I think
428 that has happened, and so...that's happened everywhere. The other thing is...and I can't say this
429 for certainty...but I just have a feeling...there's a large number of faculty who view it as a job;
430 as a stepping stone to another job. And not a career at this university. They're not engaged with
431 this university. So, that's again just a feeling. And I've talked to some other people who have
432 that same feeling and I think there's something there. The other thing is at the university we
433 don't get to know each other as faculty. The only way you do it is if we're on a committee
434 together. You don't have really the social opportunities. And likewise, new faculty just see older
435 faculty as names, and never realize what they have done, and their contributions; the institution
436 has no memory of people. When you're gone, you're gone. There's no memory, by the
437 institution.

438 KM: In the physics majors themselves, that you've seen over the years, has there been in change
439 in them, in their skill level or personality or demographic shifts, or anything?

440 RO: Goes up and down. It's...I don't see any trend. We have quiet classes, we have vocal
441 classes, we have classes that none go to graduate school, classes that everybody goes to graduate
442 school. It varies quite a bit, and I don't know why. Although I do have a suspicion at
443 something...I...I would like to try an experiment...you know we do advising, basically a
444 faculty...they dole out students. I think what would be good is instead of getting some extra
445 every year, you really stay with one set for four years, and you're like a form master that they
446 have at Cistercian. And you work with many aspects of...even if they're not in your major,
447 you're still working with them. I think there's a bit more responsibility to the advisor, and it's a
448 different model. So, I think...well I would just say that last year's graduating class I loved. And
449 the physics majors, it happened that I taught them their first...I had to be all their advisors, and I
450 taught them their entire freshman year because of sabbaticals, and then, you know, knew them so
451 well from that, so I had like three semesters in the room, which, was exceptional because
452 normally I don't even teach freshman...and I think that helped a lot in forming a cohesive group
453 and pushing them to think about graduate school, in which all went to graduate school but one is
454 working. But I think the groups vary at UD. And you can't say...you'd need to do research on
455 this and explore it.

456 KM: Do you have any predictions for the future of how higher education may change or remain
457 the same? Whether overall, or specifically in physics?

458 RO: Well I think...tenure's gonna be done with. I don't think there will be tenure in twenty more
459 years. You know, I think the statistics are, nationwide, most teaching is done by non-tenured
460 people, and even on a tenure track. Which is okay, that's okay. I'm neither pro or against tenure.

461 But I think that's gonna effect stability, I think it's another sense of you're just an employee.
462 Like all employees we can fire you or hire you. We can do what we want, and so...I think that's
463 gonna be something that'll happen. And I also think there's gonna be more intrusion into
464 classrooms by...you can't discuss that, you can't do this...we want a lesson plan to check up
465 what you're doing every day. So...I think it'll be overall...that's kinda nice...it's gonna be a
466 much more controlled by government. In physics, I would say they are probably having more
467 courses to...to go the Caltech route almost, where you can take more science...I hope it doesn't
468 come that way, sacrificing the core here, but I think there's...there's always a tension there, I
469 think that's gonna still be there and increase, because...science is so wide, it's gonna be...you
470 have to start focusing to go into something earlier, because it's so wide.

471 KM: So there'll be an earlier focus on what you're interested in instead of learning a broader...

472 RO: Yeah, I think so, I think so. You know, the Cowan's had the idea that the first two years are
473 supposed to be the broad experience and then, the discipline was supposed to come after that. I
474 think it's gonna have to come down to maybe the first year's the broad experience. But...and I'm
475 not in favor necessarily one way or another, I just have a feeling...

476 KM: That's just where you see it going.

477 RO: Yeah, I'd say that's where I see it going. I was worried about online courses, but I'm not so
478 worried about online courses. The administration has been pushing them. I don't think at good
479 colleges they're really...that important. There may be some, and they're helpful for kids to catch
480 up or something, but I don't think they're a norm. And I don't think they should be for an
481 undergraduate education. A graduate education, in some areas, I think it's fine. Like business,
482 and the school of ministry, I think that's fine. Can't do it in science, but I think their online

483 courses are fine. But I...I don't think there's gonna be any increase at the undergraduate level.
484 The other thing, that I think in education in general, I...I personally wish will happen, I don't
485 know if it will, is I kind of wish high school would go back and have like the two tracks where
486 you had the people who go to college and the people who weren't gonna go to college. I
487 think...you know there's the feeling that well, if you're on the other track, you're not as smart,
488 you're not...whatever, but...and I've struggled with this for dozens of years. Because I never
489 would like to tell someone, "no, you're gonna go on that track." There has to be some way to be
490 able to change. But I think we need a lot of people who necessarily don't need to go to college.
491 I...you know my family never went to college, and I had uncles who were master machinists,
492 and tile setters, who made a lot of money, a lot more money than my father made. And I think
493 that's kind of fine...you know? I think you have to respect that. And I just think there's a real big
494 tension there, and I think that's part of the problem with the federal government coming in and
495 saying, "everybody...everybody's gonna be doing calculus in high school now." And I don't
496 think there needs to be calculus in high school. What would we do if we said, "everyone's gonna
497 come in and take woodshop"? I think that would be a good idea because quite honestly I wish I
498 had taken more technical courses because I wish I could...as you get older, it would be nice to
499 know how to fix things around the house, make some things...I have some friends who are like
500 that, so, I really admire people who can do that. Wow, that's fantastic.

501 KM: So you think that the technical aspect should be more exalted than it is now and not such an
502 extreme focus on solely the academic.

503 RO: Yeah, right. And I think there should be dual track. And I remember a long time ago when I
504 was at Caltech I went to Australia and I was giving a colloquium in Melbourne, and at lunch,
505 they brought up this struggle, that they were in the British system, they have the two tracks, and

506 Australia was trying to move more towards the American system and not have that two track in
507 high school and they just didn't know if it was gonna work. And I do not know if it worked. At
508 times I've wondered about it but I don't know how to really research to find out if they're
509 switching, and I don't think they've completely switched to our system but...there's a tension
510 there.

511 KM: And then, just in general, is there anything else you'd like to mention, or say, or point out?

512 RO: In education?

513 KM: In anything!

514 RO: Well I will state one thing, because I think it's tied to education. I decry the downfall of
515 rural America. I think everything is...the government needs to be wiser and...give incentives,
516 make companies build plants or stuff not all in the big cities. For example, I am just perplexed by
517 people that move to Dallas. I mean...I came here because there was a TV series, and it sounded
518 really cool. I hate to say that was one of the reasons...and it was this up and coming city and
519 there was that. But you know, beauty wise, climate wise...I don't think there's much to offer that
520 other places have. Yet it's, you know the population has more than doubled since I've been...and
521 they have all the congestion and they have to build more highways and all that that goes along
522 with it and I know it's because there's jobs and that's because companies locate here and build.
523 You know, TI has done a lot here. Why can't it be not here, but...well you don't want to go to
524 Austin, because Austin already has like Dell and enough places, but you go to places like to
525 um...oh...let's see...I'm trying to think of...west of here, about two hours, it's a city. Not a really
526 small one but why not just build there? And that helps towns in between to flourish. We're
527 becoming so centralized and I've seen this in the upper peninsula. Once the mines shut down, the

528 economy just collapsed. The only economy there is logging now. And that's cutting back too
529 because we're more digital. And so...I just...I was wracking my brain, thinking how could we
530 get more jobs to this area, just cause...kids grow up and they go away and they don't wanna
531 come back until they retire. 'Cause they love it, but there's no jobs. And so I don't like that
532 centralization. I just think we have to find ways... and I drive through all of these ghost towns,
533 especially in west Texas. It's like, wow, that's sad. I wish we had a program to sustain them.
534 Anyway. When I become president... Anything else?

535 KM: Is there anything else that comes to mind for you?

536 RO: No, I think I talked too much.

537 KM: You never talk too much. Well, I think that is it for me, so...

538 RO: Okay...now when is this due?

539 KM: The project as a whole is due April 25th, so I'm just kinda getting ahead in terms of the
540 actual interview, and I can and will provide you with a copy of the work I do. I can also send you
541 a copy of the recording of the interview if you'd like, and things like that.

542 RO: How many students are in this class?

543 KM: 12, about 12.

544 RO: Is everyone interviewing other professors, or...?

545 KM: No, some people are interviewing just other people. The requirements are that the person is
546 not a family member, and is 25 years older than yourself.

547 RO: Okay, okay. Because I was gonna suggest that it would be kinda neat if...are you doing a
548 presentation or anything of your work in class?

549 KM: I think so; we haven't gotten quite...

550 RO: It'd be nice if when they gave presentations if all the people who were interviewed to come
551 and get to meet each other, but also, listen and hear other aspects, too. And then they can have
552 refreshments, I know education has such a big budget...always throwing parties...So, that would
553 be good.

554 KM: Okay. Yeah, so I will keep you updated, I mean it might be a while before there is an
555 update, but I'll let you know when the presentation is done, or the paper, and all that, and I'll
556 make sure I send all of that to you.

557 RO: Okay

558 KM: Okay

559 RO: Thank you

560 KM: Thank you!

561 This was fun!

562 Yeah!