Oral History Interview of Walter Johnson

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Interview Summary

Walter Johnson, a professor in Suffolk University’s Department of Physics, discusses his career at Suffolk, which began in 1971 as a part time faculty member and continues today as he serves as professor and chair of the department. The interview covers how Johnson became interested in physics, his educational background, what sparked his interest in teaching, his teaching methodology, and his work as a physicist. Johnson also describes the changes he has observed in Boston and at Suffolk, as well as his outlook for the university. He concludes by offering his advice for students who are currently entering Suffolk as freshman.
Subject Headings
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Interview Transcript

(side conversation)

TRAN: Please state your full name.

JOHNSON: Okay, Walter Johnson.

TRAN: And where do you currently live?

JOHNSON: I live in Carlisle, which is a suburb of Concord in Massachusetts.

TRAN: Do you like the neighborhood you live in?

JOHNSON: Very much. Lots of trees. (Tran laughs)

TRAN: Oh, so it’s a quiet—you’re not near the city at all? I don’t know where Carlisle is.

JOHNSON: Well, it’s about, Concord and Carlisle are about, I don’t know, twenty, twenty-five miles from here. So, it’s out a bit from the city, it takes me about an hour to get here. I usually drive from there to Alewife station and take the train in from there.

TRAN: Oh, so it’s one hour?

JOHNSON: About.

TRAN: So you live in the woods? (laughs)

JOHNSON: For sure, yes. (laughs)

TRAN: Did you grow up in Boston, or—?
JOHNSON: No.

TRAN: Where did you grow up?

JOHNSON: I grew up in the South. I was born in North Carolina. My father was in the army, and he worked for International Paper Company. And so we moved around some. And we lived in, at various times, in Louisiana and Alabama. And my mom still lives in Arkansas. And I was really in the southern part of the U.S. until graduate school. I went to Rice University in Houston, Texas as an undergrad. And then I came to Harvard for graduate school and have been here ever since.

TRAN: So what was your childhood like?

JOHNSON: Well, it was a happy one. The—my family was relatively small. I have one sister, and she still lives in the South. She lives in Memphis, Tennessee. And as we grew up, the family would do simple vacations. We would go fishing to lakes and ponds nearby. And so it’s not the kind of thing people do now. I mean, it was not like everybody going to Disney World or something like that.

TRAN: Now it’s so different.

JOHNSON: Yeah. It’s—and, of course, there were no video games or computers or—

TRAN: No more nature. No more nature vacations. (laughter) So were you interested in science at a young age? I know you teach physics.

JOHNSON: Yes. I think it was pretty clear by, I don’t know, the sixth grade that I was going into math and science. I liked it. And I really didn’t like history very much. I didn’t like literature very much, but I did like math and science. And the reason I liked it was
because I didn’t have a very good memory. So, if you learned just a few things in math and science, you could figure the rest out. And so that made it easy for me. (laughter)

So I didn’t know for sure what I wanted to major in, but after high school, or during high school, it became pretty clear that something with a lot of math in it. And in the sciences, physics has the most. So that was easy.

TRAN: Who were your role models during high school? Did you have any professors—?

JOHNSON: I did. I went to a very small high school. And it was, looking back on it, not a very good one. But I had several teachers who were very good. And the best was my science teacher. His name was Mr. Congry(??). And he didn’t just teach physics. He taught chemistry, mathematics, all of the sciences except biology. There was a separate person for biology.

And so I got to know him before I took physics. And then once I did take it, he was just extremely helpful. My high school didn’t have calculus available and he knew I planned to go on to school. So he brought in his calculus book and he taught me some things out of that.

TRAN: Oh, so calculus wasn’t offered at all?

JOHNSON: Not at all, nope.

TRAN: He would just teach that to you?

JOHNSON: Yep. He—he knew I was interested in it, so we did that. And then I had read an article about x-ray machines. And I showed him that if I just had a certain type of radio tube and a device, an induction coil, it would let me produce about a hundred thousand volts, that I thought I could make an x-ray machine. So he was a little skeptical,
but in his attic he had the right kind of old radio tube and we found the necessary electronics. So we put it all together and it looked like something out of a science fiction movie. It glowed and sparked and gave off ultraviolet light.

And I took it out to the local hospital and they didn’t believe it would work either. But I used a screwdriver, and they gave me the x-ray film, and so forth, and ran it. And you could see the metal part sticking down inside the wooden screwdriver. So the thing worked really well. (laughs)

TRAN: Oh my God.

JOHNSON: So it was a great project, you know. And this was in—when I was a senior in high school.

TRAN: Oh, senior in high school?

JOHNSON: Yeah, taking physics. And so he helped enormously. Everything I wanted to try he was really good about. He had a big effect on me.

TRAN: You were closest to him?

JOHNSON: Yes.

TRAN: You interacted with him most?

JOHNSON: Yeah. And he got sick during my senior year. And he was out for maybe a month. And it was a small town and they didn’t have, you know—not near colleges, or anything—so they didn’t have people to come in. And nobody else could teach physics, so what he asked me to do was take over the class. So when I was a senior in high school, I became the physics teacher in the class.
TRAN: Really?

JOHNSON: It was easy for me. And so I would go out to the hospital and he would tell me, you know, which chapters to cover and which homework problems to assign, and so forth. And they had another person, some substitute come in just to keep order in the class while I was running it. (laughter)

TRAN: Oh my God, that would have been—that’s amazing.

JOHNSON: It was strange. (laughs)

TRAN: That’s amazing, though. Did you do all the grading?

JOHNSON: No. He took care of the grading. I would bring the stuff out to him and all I did was explain things and the work problems for them, and explain what this meant and so on. So I started teaching early on.

TRAN: Oh my God. Did the students stay after class with you to ask for help? Because obviously they’re your friends and stuff, so they feel comfortable.

JOHNSON: Yeah, exactly. They would, they would ask. And it was—not—it’s, looking back on it, I would think it would be kind of an awkward arrangement, but it wasn’t. You know, they seemed to like it. And it was kind of weird having another student, you know, teach these students about the material. But no one seemed to resent it or anything like that. Because most of them had a lot of trouble with physics, so they were happy to learn it.

TRAN: It’s good to have like, your own, like friend teaching you it.

JOHNSON: Yeah, exactly.
TRAN: Do your own college experiences affect the way you teach now?

JOHNSON: Very much. When I was an undergraduate, I had some really good teachers, and some really terrible ones. And one, that had an enormous effect on me, was a thermodynamics professor who was rather plump. And, when he lectured, he had the chalk in his right hand and the eraser in his left hand. And as he wrote, he just kind of wrote and erased, and all you could see was this smudge move across the front of the room, you know? And he never—he talked while he was facing the blackboard so you couldn’t really hear him very well, and you couldn’t see anything that he wrote. And I thought, If I ever teach, I’m not going to do it that way. (laughs)

So I got in the habit of writing down almost everything I say and working my way from one end of the board to the other, you know. And not erasing it until the last possible time and so forth, and making sure people understand.

TRAN: Yes, I did have your class, you wrote on this plastic paper and you projected it and you left it up there.

JOHNSON: Exactly. In the old days they didn’t have document cameras like that. So now, what I do is, you know from class, is just write the equations on a piece of paper. It projects it on the screen so everybody can see it. And then the nice thing is afterwards, I can scan these pieces of paper in and post them on Blackboard so they’re always there.

TRAN: That’s really helpful. Because even when you’re in class, you kind of want to just listen to the professor.

JOHNSON: Yeah, it’s hard to either—it’s hard to take notes and listen. You can only do one or the other.

TRAN: Most students are like that, so that’s really helpful that you do that. How is the college environment in Houston different from Harvard?
JOHNSON: Well, it was different in some ways, but not a lot. The Rice environment was very competitive. I went there mainly because our family was sort of poor. And if you got in, it was free. So, I don’t know how big it is now, but at the time I went, they only had, like, two thousand students total. That was it. And everybody there, who got in got a scholarship, a full four-year scholarship. So as long as you did okay, you were fine. And it’s a well-endowed school. It’s a pretty rich school. And it’s grown over the years, and it’s really a great place. And so when I got there, I was scared to death because I came from a little high school. And most of the other kids there were not from little high schools. They were from Los Angeles, and New York, and Houston.

TRAN: Yeah, big cities.

JOHNSON: Big cities. And their backgrounds were much better than mine. They’d already had calculus, and I didn’t know too much about it except what Mr. Congry taught me. And so the first month was scary. I looked at all this material. We took physics just like the course we did, except that we were also taking calculus at the same time. So it was calculus plus physics, and we would hit things in the calculus—in the physics course much sooner than we did in the calculus course. So, like integrals popped up very quickly. And I didn’t know exactly how to do them or what they were. And I remember drawing some of the integral signs backwards because I didn’t know what was going on. (laughter)

And I remember the first test I took, when he passed the exam out, it was a pretty big class. I think there were maybe seventy people in the class, something like that. And I thought he had given us the wrong test, because as I looked at it, the problems didn’t look anything like the homework problems. These were much harder. And—and the reason—and I almost pointed it out, except I noticed everybody seemed to be working. And so I looked at it again and realized, oh my God, it is the same material. It was the right test and it was just much harder than I ever thought it would be. I just studied the homework problems and my notes and figured that’d be fine.
But if he had given the test like that, everybody would have made 100. So they gave really hard exams. And then they would scale them so that they didn’t expect people to finish, or they didn’t expect anybody to make a perfect score on the test. And it was paralyzing. I remember (laughter) getting out of there. I think I made a C on the first test, and was happy to get it. And so it completely changed how I studied after that, and had a big effect.

So after, you know, I think it was kind of an advantage, because since I came from a small school, [I] had no confidence whatsoever in my abilities. And a lot of other kids had terrific backgrounds coming in. And for them, it was kind of routine. And so I studied really hard in the beginning, and just kept on doing it. And some of the others didn’t study so much because they already had this material, and didn’t get in the habit of killing themselves, you know, [from] day one.

So I just kept on studying like a maniac, and the others, pretty soon all of our high school backgrounds were swallowed up and we were well on to other stuff. And for me, then, it got easier, and for them it got harder. (laughter) So I started doing better and better compared to everybody else. And so—

TRAN: And they were struggling.

JOHNSON: That’s right. (laughs) So it worked out fine. So I would say probably after about Thanksgiving of the first year, everything was fine. But it was hard in the beginning. And so after I finished Rice, you know, coming out of that environment, I mean it was very intense, and it’s not the sort of thing I would recommend to everybody. And if you’re interested in the social life, then forget it. I don’t think I went on a date until my senior year.

TRAN: Rice University is that intense?
JOHNSON: Very. Yes.

TRAN: Wow.

TRAN: I would think Harvard would be intense too.

JOHNSON: Harvard can be intense too. But, you know, basically if you look at the very competitive schools, whether it’s Harvard or Cal Tech [California Institute of Technology] or Princeton or Rice or any of these places, it’s going to be very intense because it’s extremely selective. So the students are very good and they run the classes at a very high level.

But it means when I went from Rice to Harvard, I didn’t notice much difference. (laughter) So, when I went from Camden High School to Rice, it nearly killed me. (laughs) But switching from Rice to Harvard was no big deal.

TRAN: What was your first professional job? Maybe during high school did you have a job?

JOHNSON: Well, yeah, I did. I wouldn’t call it professional. It sort of depends on what you want to count. I had a paper route, and so this was while I was, you know, in grade school really. And I had a motor scooter, so I used to drive around and deliver the papers. My mother worried a lot about that. There were all kinds of accidents. But [I] survived it.

And then while I was in high school, my father worked at International Paper Company, and that was really the only industry in town. So he got me a job, summer job, at the paper mills. And it was interesting. The paper mills—I don’t know if you’ve been inside one—but they’re really large structures, mini-buildings. And they have these twenty foot long rolls of paper that are taller than you, weighing tons. And they have to wind them up on a big spool and then there’s a machine that cuts it and so forth. It’s called a winder.
And the big wheels with the paper on them are only about that far off the ground, spinning at very high speeds. And somebody—the so-called “seventh hand” on the winder—has to crawl underneath the machine and feed the sheet of paper up between these two wheels rolling around like that. Well, I was seventh hand on the winder, so that was my job.

And it was hot beyond belief. It’s like, it’s over a hundred degrees in there. So you’re just completely covered in sweat. And there’s paper dust everywhere. So you crawl under the winder. It’s oily and—and dusty, and you know, you look like, I don’t know, something out of a horror movie by the time you get out of there. (laughs) And, you know there have been some terrible accidents because if you stick a hand up in between there, and it gets snagged, well you get pulled through the wheels and you come out about eight feet wide and two inches thick. (laughs)

**TRAN:** That happened before?

**JOHNSON:** Yeah, it’s happened. There were some horrible accidents. If my mother had known the kind of stuff I was doing there, she would have removed me immediately. (laughter)

**TRAN:** You hid that from her? Didn’t tell her where you were?

**JOHNSON:** I didn’t tell her what I was doing, no.

**TRAN:** So, at what age did you plan your career in teaching, and how’d you go about executing your goals?

**JOHNSON:** Well, I don’t know that I really planned a career in teaching. It just kind of happened. When I was in high school, like I said, my teacher got sick so I taught there. And I liked it. It was fun explaining things to people. And then I went to Rice and I
worked—I didn’t really teach there. I worked in the nuclear lab and I, you know, helped other students with problems on occasion.

And then when I got to Harvard, I did more teaching sort of inadvertently because they gave us so many homework problems in each class, it was impossible to get them all done. And so what we did—they didn’t really care if you studied together or whatever, as long as you learned how to do the problems. And so we took—all of us were studying in the library together—and we took about, I don’t know, ten people. And I would say each person took a problem or two problems and figured out how to do it. And then we would get back together and give each other lectures on how to solve this particular problem. These were not simple problems. These were things that would take pages of algebra to get done. You’d have to spend time in the library trying to figure out how on earth to do this thing.

So we got in the habit of teaching each other on how to do these problems. And then we’d all write up our own solutions and turn them in. And that was the only way to get that done. So that was early on. And, and I liked that. That was kind of fun, you know. And, like you might expect, some people were pretty good at explaining them, some were terrible. And so I began to value somebody who can explain things clearly, you know. That made all the difference in the world.

And so I looked upon teaching as something very important. And then after—well, even before I graduated, I was probably—let me think. It was probably about the time I finished, I had a friend who was working for Julian Schwinger. Schwinger was a Nobel Prize winning physicist. There were a lot of them there. And Schwinger had a falling out with the Physics Department, so he left. He was going to the West Coast.

And my friend wasn’t finished. He was either going to have to pick a new thesis advisor, or go with Schwinger to the West Coast. So he said he’s—he’s leaving, he’s going to the West Coast. Well, he was teaching at Suffolk University, part time. And he told me one day, he said, “You know, there’s about to be a job opening in Suffolk University, part
time in the Physics Department. Are you interested?” And I said, “Sure, where is it? I never heard of it.” (laughs) He said, “Well, it’s the other end of the red line.”

You know, and I mean, we were pretty isolated. I—(inaudible) when I was at Harvard, I was pretty busy, and we really didn’t have much of a social life. I suppose some did, but mostly not. I mean, they did have functions for the grad students, which were nice. They would have sherry parties. Sherry and cheese. And so they would bring in the girls from Wellesley or Radcliffe, or something like that. And I and my friends would go over to meet them and have sherry and cheese, and then we’d leave and go back to the lab. (laughter) So you met a few people that way.

But that whole environment, the process, was pretty insulated. So I was aware that there were a lot of universities and schools in the Boston area, but I really didn’t have a clue about any of them. I knew MIT [Massachusetts Institute of Technology] was here and Brandeis, and Tufts, and BU [Boston University], and that was about it. Somebody came over to Harvard for one of the mixers, and I remember meeting this girl from Northeastern [University]. I said, “Where’s that?” (laughter) I had never heard of it. And she was appalled. (laughter) Much bigger enrollment than Harvard had.

But anyway, when my friend said he was leaving, I came over and he introduced me and—

TRAN: To Suffolk?

JOHNSON: To Suffolk, and I—I applied for the job and got it. So I started teaching part time here at the university.

TRAN: And you’ve been there for a long—

JOHNSON: And I never left. You know, I’m still here. That’s the only job I’ve ever had. So, I started part time as a graduate student. And then there was a period of my life
where I really kind of had two jobs because after I graduated, I was walking down the hall in the physics building, at Harvard, and one of the professors there said, We’re about to start this project up at Fermilab. Would you like to go? And I said, “Sure.”

Fermilab is a gigantic, major accelerator laboratory, my field was high energy particle physics. So it’s a huge laboratory in Illinois, Batavia. And it’s about thirty-five miles south of Chicago. And so I said, “Yep, we’ll do it.” So I became a post-doc at Harvard. I’d finished my degree, and for five years—and I was full time at Suffolk at this point—so for five years I flew back and forth between Boston and Chicago every week.

They—they had open tickets. I would go to the cyclotron lab [at Harvard], pick up my ticket on Friday, head out to the airport. It was just an open ticket. And pretty soon, you know, since I went every week, I got to know all the stewardesses and the people at the airports and everything. They would see me coming and just went right through. I didn’t really have a particular plane. I just went out [and] caught whichever one I could get, and normally left pretty late on a Friday.

And then you’d get to Fermilab, and they had farm houses for us to stay in that—Fermilab’s a gigantic ring about four miles in diameter. And we would be on the inside staying in these farm houses. The accelerator is about twenty feet underground. And it would get really cold there. And the sleep schedule was kind of bizarre because if the system was running, then you tended to just stay up all night. So we, you know, somebody was always there working.

And so I would get there Friday night, stay up all night, Friday night. I’d sleep a few hours Saturday morning, go back, and stay up all night Saturday night, sleep a few hours, and then go to O’Hare [Airport] and catch the last plane back to Boston just in time for my eight o’clock class Monday morning. (laughs)

**TRAN:** And this was only once a week, right?
JOHNSON: I would—I would leave every Friday and come back every Sunday night. And so I had my regular class schedule.

TRAN: So just the weekends?

JOHNSON: Just the weekends, yeah. Except occasionally, holidays and, you know, periods like that. So, it was, I was living two lives. And everybody was doing that. We had people coming in from Yale, a group from Harvard, and another group from Berkeley. And so we’d all, you know meet at Fermilab, work on the stuff, and then everybody would scatter and go back to their universities.

So it was really strange because the people here at Suffolk had no clue I was doing any of this stuff, you know? (laughs) And the people at Fermilab knew I was teaching at Suffolk, but they never heard of Suffolk. You know, no one really cared or knew what everybody else was doing. The main work was at Fermilab. So you had sort of two lives. You know, there was the Suffolk life where you were teaching and doing stuff, and then there was the Fermilab life where you were doing research. That’s a hard way to do physics.

TRAN: How do you think Boston has evolved over the past years?

JOHNSON: Well, it’s interesting. Boston has changed, but not so drastically it seems to me. When I think of Boston, I don’t—I don’t think of the [Boston] Common or the Prudential area. For me, Boston is Cambridge, because that’s where I lived a chunk of my life.

So the changes I remember are probably associated with the evolution of the drug culture, because as a student, I would stay up all night running long computer jobs. And so at three o’clock in the morning, to take a break, I would walk through Harvard Yard and go over into the Harvard Square. And the Paperback Booksmith, it was open all night. It was kind of nice. You could get coffee. You could go into the bookstore. And at three o’clock
in the morning, it was crowded. I mean, there would be a lot of other students there looking at the books, and you’d buy a book and you’d go back, go back to the lab and work.

And then after a few years—this was probably after I graduated and while I was at Fermilab—[it] changed. It was no longer safe to go into the Square at two and three o’clock in the morning. And because of it, the Paperback Booksmith didn’t stay open all night. You know?

TRAN: Where was this again? The Square?

JOHNSON: At Harvard Square. You know?

TRAN: Oh, Harvard Square.

JOHNSON: Yeah, you just take the red line. And it’s right—right—you haven’t been to Harvard Square?

TRAN: I think I have. I have.

JOHNSON: Oh, you should go. It’s interesting.

TRAN: It’s really busy, right?

JOHNSON: Yeah, it is. (laughs) Just take the subway, you know from Park Street and get off at Harvard Square. And Harvard University is right there. And then, well, the Harvard Coop is there, which is the main bookstore for buying books and sweatshirts and—

TRAN: And these closed down because [of] the drugs dealing?
JOHNSON: No. It’s—everything is still open. It’s just not open all night long. And there’s a couple of bookstores there, but the main one, which is not there anymore, used to be called the Paperback Booksmith. And it was open twenty-four hours a day.

And so the change that I noticed is that they were no longer open twenty-four hours a day because it wasn’t safe. And because it wasn’t safe, nobody was there, you know at three o’clock in the morning. So that environment switched. You know, it’s kind of sad.

TRAN: So it changed to a drug dealing environment?

JOHNSON: Well. No. I mean, the whole world became—think about it. When people, my generation, were in high school, there weren’t any drugs. Or if there were, you never heard about it. There wasn’t a drug culture. I mean, you know, it was, if somebody got, I don’t know, drunk, it was talked about in the school. (laughs) But with the passage of time, the drugs invaded, you know, high schools. I mean, Christ, they’re in grade schools. Now you hear about it everywhere. It’s grim. It’s just something that you read about and, no one, you’re not surprised about.

And so if you’re in a large city, whether it’s Boston, or New York, or New Orleans, or anywhere, if it’s three o’clock in the morning and you’re wandering around the streets, you’re liable to get mugged, you know?

TRAN: Yes.

JOHNSON: It’s not safe. They closed the Common. It’s not a good idea to walk through the Common at two o’clock in the morning. So because—there are areas that are safe, but a lot aren’t.

And so Harvard Square, which, for me, used to be safe, you could be there anytime, you know, changed. And suddenly—and that was the only thing I really noticed. It wasn’t just
that Harvard Square changed; the whole environment changed, you know? It wasn’t safe to go out at three o’clock in the morning anywhere.

**TRAN:** Everywhere.

**JOHNSON:** Yeah. It’s just that that was my environment, so that was, you know, was what I noticed. And my aunt lived in New Orleans and I used to go visit her, and my friends and I would go to Bourbon Street in New Orleans. And there are a lot of jazz clubs and everything else. And that changed, too. It was—New Orleans doesn’t really get—well, of course, after [Hurricane] Katrina everything has changed, but before that, it doesn’t really get started until about midnight. And then, I would say three or four o’clock in the morning, people just start to dwindle and the crowds decrease. But it, too, is not a super-safe area to wander around in. There—of course, every big city has that. If you’re in Roxbury or Dorchester and its three o’clock in the morning—

**TRAN:** Dorchester is the worst.

**JOHNSON:** —you got to be careful. (laughs)

**TRAN:** Dorchester’s really bad.

**JOHNSON:** Yeah. Every city has sections like that.

**TRAN:** So how about Suffolk? Do you think it improved academically, or do you think it has changed?

**JOHNSON:** It’s changed drastically.

**TRAN:** Tell me how it’s changed.
JOHNSON: When I first came, a lot of the students—well, first of all, it was a lot smaller. There, you know, weren’t so many buildings. And the students were mostly from Massachusetts. They were typically, you know, inside [Interstate] 495, [Route] 128, that kind of thing. And with the passage of time, the university became larger and they brought in more students from out of state, and pretty soon out of the country. Because, now we have dormitories. And because of the dormitories, parents are no longer nervous about sending their kids to a big city. If you want to send your child to college in a major city and there’s no dorms and you don’t know where they’re going to live, well, either you got to go over there and get them set up or something. But if you have a protected environment and you’re guaranteed a place to stay, it changes this.

So now Suffolk is a very international place. I mean it’s, you know, as you know, we’re, we have a campus in Dakar. We have a campus in Madrid. We have international exchange programs with schools all over the planet. So it’s a very, very different environment. We went from being kind of a local institution to a world institution.

And, overall, the students are much better than originally, because the competition is higher. Okay, you have kids coming in with massive different backgrounds. The educational systems in different countries are not the same as here. And so it also makes things a little more difficult in the classroom, because the backgrounds are so varied among the students.

But overall, Suffolk is not just bigger. It’s a lot better.

TRAN: Better.

JOHNSON: And, you know, there are lots of features it has now. Our location’s always been a major thing. Being in the heart of Boston is crucial. And even though you do have to be careful at night, it’s a safe environment. Beacon Hill is pretty good. I mean, you know, if it’s eleven or twelve o’clock, you could walk down toward the Common and—
and the subway and really not worry about it very much. But, like you say, if you’re in Dorchester, well, you think twice about that. So we’re in a very safe place.

**TRAN:** Physics is a really hard subject for some students. Have you had any challenges trying to explain it to students? Have they stayed after with you and just kept struggling with the topic and—

**JOHNSON:** Yes. Most of the time, the students who pick a major in science are—are pretty clear on what they want to do. And, they, depending on the major, they all have to take physics of some kind. If, let’s say, you’re in science, then you either take the calculus-based version or the non-calculus-based version. And if you’re in certain types of science, then you take even more courses than just one course in physics.

And there was a time when I first started teaching that—I remember the first course I taught here was physical science, not physics. But physical science is a course for non-science majors. And I had just finished teaching a course, for graduate students, at Harvard. This was sort of an informal thing where we were going over particular parts of particle physics.

And so I’d come here at night. It was part time. And I remember it was about the second lecture at night, and I was talking, and it was very quiet. And there were about thirty students in the room. And I stopped and I said, “Does anybody understand what I’m saying?” And the entire class shook their heads no. (laughter) It was kind of horrible. So I said, “Okay, let’s start again.” So I stopped. I asked a few questions about how much math they’d had in high school. And I just had all these wrong assumptions. I thought everybody knew trigonometry. Nobody knew any trigonometry. These were all history majors and English majors, and they could care less about, you know, solving two equations and two unknowns, and what sines and cosines were, and all kinds of stuff. So I had to make sure I understood what the, the group was like and what their interests were and so on. So, that was instructive.
And then later I had some students who were in—they were science majors, and they were in the physics class. And I always had the feeling that if a student worked hard enough and was interested, they would understand the physics. And so I had, a long time ago—this was still while I was part time, I think—the, the student was working with me and having an awful time in the physics class. And it was the same one you took, actually. And he would come by for help afterwards, and I would explain the problems, and he would seem to understand it. And I would give him some stuff to do.

And then the next day, I would give him—he would come back. He was very persistent. And I would give him another problem, pretty much like the one we did, but just the numbers were a little bit different. Not a lot different. And he couldn’t do it. It was like he’d never heard it before. And I could not understand this. (laughs) He and I both struggled. And he passed, but it, it nearly killed both of us, you know? And I realized, you know, not every single soul can learn everything. Some people learn languages very easily and not mathematics. And some people learn mathematics very easily and can’t sing. (laughs) And no matter how hard you work, you know.

So, it’s important, I think, for people to do things that they like and are pretty good at. You know, so that usually works out. So I had some interesting early teaching experiences and learned from that.

**TRAN:** So you were named Professor of the Year. How do you feel about that?

**JOHNSON:** Well, I was shocked. (laughs) I remember when I went to—it was the dean and the provost, I think—I’m not sure of the path that—but the dean called me up and said they wanted to recommend me for this position. And I remember telling him, “Oh no, let’s not do this. This is going to be horrible because I’ll have to write, you know, an essay about how I teach and what I do.” And then they had to get past students, and current students, and alumni, and people who work in the industry who had worked with

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1 Professor Johnson was named Massachusetts Professor of the Year by the Carnegie Foundation for the Advancement of Teaching in 2005.
me, all to write these testimonials and things. And I thought, In the end, it’s going to be this gigantic waste of time, you know? Let’s not do this.

But they did. (laughs) So I was stunned when I was chosen. It was, it was just a great thing because, you know teaching is what I’ve been doing my whole life. And the—to be honest, I didn’t even realize they did this every year. They pick from each state, Teacher of the Year, every year, you know?

TRAN: States did this?

JOHNSON: Yep. There was one—I was the one from Massachusetts. There was one from New Hampshire. There was another one from every state in the country. And then they brought us to Washington, DC, and the Library of Congress, and had a huge ceremony for all this stuff where, a lot of speeches and awards were presented, and everything. And you got to bring your whole family. So it was just really neat. My whole family was there and it seemed very impressive. (laughs)

TRAN: Do you have any advice or message that you’d like to send to the students?

JOHNSON: To students. Yes. I think there—well, students at Suffolk, anyway. I think a lot of students, especially freshman, don’t realize what they have when they arrive. Suffolk is a very different place from Rice, or Harvard, or MIT, or any of these places. Most of the other schools, you might get to know a faculty member, but not too well. And most of the other schools are heavy-duty research institutions and they mainly work with the grad students, not the undergraduates. Okay, because that can help them in their research.

And at Suffolk, people have a chance and are usually sought after by the faculty, to make sure they’re doing okay in their courses and like what’s going on. And that level of interaction doesn’t happen very often. That’s, that’s—people talk about it here, but it’s truly different. And I think the students sometimes don’t take advantage of it. And those
students sometimes are reluctant to ask questions, you know? And yet, nobody minds. I’m always happy if somebody comes by. I don’t even care if they’re in my class, you know? If they’re willing to ask a question in physics, then I’m happy to talk about it and provide answers. So I think, for the students, the advice would be take advantage of your environment, okay. It’s an unusual one.

And the other part is, don’t be afraid to change your mind about what you’re studying. A lot of people start off in one thing, sometimes because their parents want them to or because their uncles are engineers or physicists or whatever, but they don’t really like it. You know, they’re mainly interested in business, or English, or poetry, or something.

In fact, a good friend of mine, Fred Marchant started off in physics. He’s a poet. You probably know Dr. Marchant here. So, you have to follow your heart and you have to do what’s really fun, you know? You should not worry about how much money you’re going to make when you get out, because you can’t tell. I mean, what looks really good when you’re a freshman and is making everybody rich, may not be there when you graduate. So, you know, you major in something because you think you’re going to be rich and you don’t really like it, and then by the time you get out you still don’t like it and there aren’t any jobs in it. (laughs) So you’re better off at least majoring in something you like and maybe you can get a job in it. You know, usually, something related. And so, take advantage of your environment and study what you like.

(pause in recording; no audio between 00:38:50 and 00:47:38)

TRAN: What accomplishment are you most proud of?

JOHNSON: Well, that’s a tricky one. I guess, academically, it would be being named Professor of the Year. But I think, just overall, it would be my children. Okay, I have a son and a daughter and a super wife. And I think, I don’t know, marrying the right person, having kids who turn into really decent people and so forth, there’s a lot of luck
involved. Okay, you do the best you can, but sometimes it works and sometimes it
doesn’t. So, I think somehow or other, I did that part right. (laughs)

**TRAN:** Is there anything you’d like to see improve or change at Suffolk University?

**JOHNSON:** Yes. I think Suffolk has a problem, which is well known to the
administration, in that they are too dependent on tuition for their annual budget. I mean,
Suffolk’s a business like everything. And if you can’t pay the people who work here and
you can’t buy the things you need to buy, you can’t function. So it must succeed
financially, or it doesn’t exist. All right?

Now, MIT is too dependent on research grants and things like that. There are other
schools that are kind of in between. So, one problem Suffolk has is, they either have to
raise the tuition in order to have enough money to buy new things or raise the salaries or
whatever. And if they raise the tuition, where’s the money come from? Well, it comes out
of the students unless, let’s say you raise the tuition a little bit, keep the tuition more or
less the same, but let more students come in. And so by increasing the enrollment, you
increase the revenue without having to raise the tuition quite so much. So it’s kind of a
balance.

And over the years, the number of students coming in, we’ve gotten more and more, and
more as you probably know. The last few years, we’ve had huge incoming classes. And
this is, you know, a budgetary thing. And sooner or later, it has to stop. So you want to
build more dorms because we don’t have enough dorms. Not everybody can stay in the
dorms. Well, they cost a lot of money. So there is this challenge, you know? How do you
control enrollment? And the university has decided not to grow beyond X number of
students. I’ve forgotten exactly what the number is.

But, you know, Boston cares a lot, too. We’re not in this alone. They don’t want to see
Suffolk become a Northeastern and sprawl all over Beacon Hill. So, acquiring new
property, balancing the budget, all of these things are hard. And the university is well
aware of it and they’ve spent a lot of time in recent years in development. And there’s a very good team, and they do a lot.

So when you graduate and your friends graduate and you get these letters in the mail saying, Please contribute twenty dollars, you should do that. Because if you don’t do that, Suffolk is going to be more and more dependent on tuitions for their livelihood, as they have been. And somehow or other, by grants and donations and alumni development and so forth, they’ve got to shift away from it.

**TRAN:** So Suffolk’s tuition won’t keep on increasing? Because I know it does keep increasing every year.

**JOHNSON:** Yep, just like everything.

**TRAN:** So now it won’t, right?

**JOHNSON:** No, it will. Because it’s like food, okay. If you go to the supermarket and compare what you pay for a loaf of bread right now to what you did ten years ago, it’s more now. Now, there are some changes in the wind. As you probably know, Harvard and Yale have decreased their tuition.

**TRAN:** They decreased?

**JOHNSON:** They decreased it. They dropped it enormously so that people could afford to go there. Suffolk can’t do that. All right? We have—our tuition is not cheap. Okay. It costs a lot, especially come the dorms to come. But because we’re so dependent on the tuition, you can bet your life that’s not going to happen here. We are not going to follow the Harvard/Yale model because we can’t afford to do it. Harvard and Yale are very heavily endowed. Okay, yes, they use money from tuition, but that’s not mainly it. Okay, they’ve been around for a long time. They have very famous schools, alumni, et cetera, and huge donations.
So Suffolk is getting better and it’s leaning in that direction, but it’s slow. So, the heavy dependence on tuition is a problem. And not an easy one to fix.

**TRAN:** Is there anything else you would like to talk about?

**JOHNSON:** Can’t really think of anything. I think a project like this is good. I think having you and other students collect information from faculty who have been around a long time is a good idea. Because, you know, you write a lot of things down, but just recently—my mom is eighty-seven. And so tried to get her, it’s not easy, but tried to get her to talk and tell us about the relatives that she knows, and some who aren’t here anymore. And, you know, essentially, an oral history of the family. And if you don’t do that, pretty soon it’s just gone. People (inaudible) and it’s not there anymore. So I think capturing stuff like this is a good idea.

**TRAN:** Well, thank you so much for your time.

**JOHNSON:** (laughs) Sure.

END OF INTERVIEW