Michael Beug

Interviewed by Eric Severn

The Evergreen State College oral history project

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FINAL

Severn: Mike, just start at the beginning.

Beug: The very beginning was May 18, 1944, in a hospital in Austin, Texas, when I shared a birth date and roomed next to Linda Byrd Johnson.

Severn: Really?

Beug: My folks couldn't get any medical attention because Lyndon Johnson was unknown in those days, but Lady Byrd Johnson was already very, very rich and very, very famous. That was the beginning. It was because my dad was in the Air Force—it was World War II—and he was stationed at Bergstrom Air Force Base.

By the time I was two, the war was over, and my dad moved back, accompanied by my mom, to Minnesota, where he'd been born, my mom had been born, and my younger brother was born. But with no work, they moved out to Seattle right after that. I was just over two years old when we moved to Seattle. We were in Seattle until about the end of the fifth grade.

Soon after he went to work for Boeing, but soon after they were on strike for a couple of years, he had started building a house. He had the one-car garage finished and Boeing went out on strike for a couple, three years, so we lived in that one-car garage.

He started college when I was in the first grade and finished in four years. When he got done, he was able to accept promotions at Boeing. He graduated magna cum laude in economics, but never actually used it. He stayed with Boeing, and we moved to Moses Lake. I went to two different kindergartens, two or three different grade schools. I hated all of my teachers until the sixth grade when we were in Moses Lake and my teacher was a man named Mr. Six.

The neat thing about it is as soon as he saw my name, he said, "Oh, I was taught by a Hilda Beug. Are you related?" That was my great aunt. That was my first really good experience in school, because I remember the earlier female teachers, they would hit my hand with a ruler, because I wrote lefthanded, and they'd move the pen to the right hand. That didn't work. They loved to sing these songs, like "Little girls are sugar and spice and everything nice, and little boys are rats and snails and puppy dog tails." I took great offense at that.

But they recognized me a bit because I was chosen to represent the school in, I think it was third or fourth grade, in a *Quizdown*, which was a program broadcast out of Seattle, where one grade school competed against another for prizes for the school. I managed to come in first for our school.

Severn: What kind of quiz was it, or quizzes? What kind of questions?

Beug: In junior high school, again, I didn't pay a lot of attention to school. I wasn't very interested in it. At some point in junior high, I'd entered this statewide essay contest on the challenge of a conservation in politics. When they had the award ceremony to announce that I'd taken first place in the state, one of my buddies got up and said, "He's fishing this week." Because that was always much more important to me than going to school. [laughter]

Severn: You win this essay contest in sixth grade.

Beug: It was eighth or ninth grade.

Severn: And you're still living in Moses Lake. Is that right?

Beug: Yeah, we're living in Moses Lake until—I started at Moses Lake High School, but just before the first term was over, my dad got transferred back to Seattle, and then I went to Mount Rainier High School, which was my second high school.

Severn: What was the essay on, if I can ask?

Beug: That essay was on conservation. I don't really remember the details from a long time ago. I went to Mount Rainier High School, and I was just there for half of a year. But right away, all the teachers really cottoned on to me. I was almost expelled from high school in Moses Lake, but I got along really well with the teachers at Mount Rainier.

In fact, my chemistry teacher, two things. Within a few weeks of being at the school, she gave me keys to the building and the chemistry lab's storerooms. I could come in on weekends and do chemistry experiments, because I was already really fascinated with chemistry. I won a chemistry set in a blueberry pie eating contest in the seventh or eighth grade. [laughing]

I loved playing with chemistry, and this teacher let me do that. Her name was Miss Berdan. Years later, I was with Paul Stamets, an Evergreen graduate of some fame, and we were on Orcas Island, and he wanted to go see his high school chemistry teacher, and it was Miss Berdan. We had the same teacher.

Severn: Really?

Beug: Then I transferred to Chief Sealth High School, so that was my third high school. I think I lettered in golf and tennis at the first high school, probably golf only at the second high school, and then golf only in the third high school. That was one of my priorities. I rarely stayed in school. I would leave at the

lunch hour and play golf the rest of the day. I typically skipped all my afternoon classes, but I would come in early and help the chemistry teacher set things up.

I had a total of two years of chemistry and a year of physics and a year of calculus, plus I took a special night class in Boolean algebra. I would do nuclear physics class at the University of Washington on the weekends. It was this special thing where one student from each high school got to go to it.

Severn: Mike, in those high school years, what was it that initially attracted your attention to chemistry? You were interested in it in eleventh grade or tenth grade or so?

Beug: I started chemistry in the tenth grade, so I took chemistry in the tenth and eleventh grade. By the twelfth grade, I'd had two years of chemistry under my belt. I was going to be a chemist. One thing I knew for sure, I was not going to be a teacher. It was all about being a chemist.

I didn't have a lot of patience with school in general. I did enter another essay contest my junior year. It was on the challenge of career and politics. I took second in the state on that essay contest, so I attended the world fair for that award.

Severn: This is interesting, though, because you're obviously, at an early age, showing this real talent as a writer. You're winning essay contests. Yet, you're thinking as science. You want to be a chemist. What is the thing that has your attention about chemistry?

Beug: My English teachers thought I was the worst student around. They hated me with a passion because I didn't have a lot of tolerance for all the grammatical rules. I had a pretty free-flowing way of writing, and I enjoyed writing my way. They detested having to give me an A, but they had no other option. [laughing] I got through high school. Actually, there were four of us. I was in a four-way tie for first in my class of 650 students.

Severn: That's interesting, too, because I am not a chemist, I am not super familiar with the sciences. I am very much a student of the humanities. But you're not interested in grammatical rules, yet you are drawn to a discipline that is very much informed by a set of rules. We're talking about the sciences. Do you have any sense about what was going on there, what the attraction was? Was there a kind of creativity that you saw in chemistry that you didn't see elsewhere, or anything like that?

Beug: A, I loved to read. I read passionately. I was very interested in writing. I actually examined out of the first year of chemistry and the first year of calculus at Harvey Mudd College, where I went to college, so I was able to take extra courses in literature and history, so I always loaded up with as much literature, history and economics as I could fit in my schedule. I minimized the sciences. I was just determined to do chemistry. I was undeterred.

But I remember writing an entire 20-page paper all in iambic pentameter. [laughter] I was partly influenced maybe by my dad starting college when I was in the first grade. He would read Conrad and other interesting literature aloud to us kids. He was working fulltime at Boeing doing graveyard shift, and school in the days. But in the evening before he'd go to sleep to prepare for work, he would read to us whatever literature he was doing. I developed this great love of literature, and appreciation for writing, and writing styles, but left it at that.

Severn: Was the historical context of the moment when you were in high school, did that shape your thinking about the sciences at all? This is the Cold War era, and there's definitely a premium on the sciences around this time.

Beug: Yeah, this is the Sputnik era, and so this race to catch up in the sciences, so there was a lot of emphasis and support for people going into the sciences. But I also belonged to this group called the Junior Agitators, a political discussion group where I remember for one of our meetings, we brought in the chairman of the US Communist Party. We also brought in the founder of the John Birch Society.

Severn: Wow!

Beug: We caught hell for talking to the Communists and praise for talking to that frigging conservation s.o.b. [laughter] So, I was politically active. The real surprise to me in high school, I was voted the most inspirational athlete in the school. And I'm a golfer! [laughing] How did the jocks come together and vote for me? [laughing] That was a total shock.

Severn: That's really interesting. At this point in time, you were an essayist, you were an aspirational golfer, and you were an aspiring chemist.

Beug: Yes.

Severn: And you were politically openminded. You were open to discussions with Communists at a time when those kinds of discussions were not smiled upon.

Beug: To put it mildly.

Severn: Right. What was that discussion like?

Beug: The Communist was a frigging idiot. So was the John Bircher. One was so far left, the other was so far right, that they were identical in their philosophy.

Severn: Totally.

Beug: I couldn't really distinguish the difference between them. They didn't impress a single one of us, either one of them. Just total disgust for both.

Severn: But that in its own right—I don't know where your thinking was before that conversation exactly but recognizing at a fairly young age that political polarization tends to lead to simplification is

formative in its own right, and in high school. A lot of people don't arrive at that conclusion. It takes a while.

Beug: Yeah. We had a thing in Washington called Boys State, so I was the school representative to Boys State, about government. I never wanted to go into it myself, but I certainly studied it carefully and informally.

Severn: The world of politics was on your mind then, too, very much so.

Beug: Very much so.

Severn: What started that? You've got chemistry, you've got your love of books. Where did your interest in politics, policy, conservation—all that stuff—come from?

Beug: Who knows? [laughter] My parents were liberal. My grandmother had been a one-room-school teacher, and then became the town librarian at the Carnegie Library in Detroit Lakes, Minnesota, so there's that education background. But my dad had left home at 14, graduated from high school at 16, married at 18 to a woman six years older, who was a high school dropout.

I had wonderful parents. At the same time that my dad was going to college, my mom got her GED degree. Education was just part of our family life and what we talked about. My folks regularly consulted with me about things and asked my opinion and honored my opinion.

Severn: That's so important.

Beug: I was lucky with parents.

Severn: Okay. You're in high school. Have you moved to Seattle yet? Are you back in Seattle?

Beug: Yes. We moved to Seattle halfway through my first year in high school, halfway through the sophomore year. We first lived out by SeaTac Airport, and that's why I was at Mount Rainier High School. Then we moved into the West Seattle area, and I went to Chief Sealth High School for the last two years of high school. So, three different high schools and three different chemistry teachers. [laughter]

Severn: High school is done. You're in West Seattle. What happens now? Where do we go?

Beug: It was time to apply to college. I had only planned to apply to one college—that was Caltech—and my high school chemistry teacher thought that Harvey Mudd College would be a far superior choice. He also said I really should apply to a third, just in case, so I applied to the University of Washington as a backup.

I got the Sloan Scholarship at Caltech, and I got a nice scholarship at Harvey Mudd College, not quite as good a scholarship as Caltech. The difference is Harvey Mudd is part of the Claremont College system. There was Scripps College for women across the street to the south, and there was Claremont

men's college, there was Pomona College, so there's this huge interesting and diverse environment, so I'm really glad I chose Harvey Mudd.

I went there and I had a scholarship in addition to my Harvey Mudd Scholarship. I had a music scholarship at Pomona College. They had me playing string bass, which I didn't really like. I'm really a cellist at heart. I played in the symphony, but I was able to take a minimum number of science courses at Harvey Mudd. I took classes at Pomona College, classes in economics and other subjects; and social sciences at Pitzer College for women; German literature auf Deutsch at Scripps College for women. I took classes at all of the other colleges and took advantage of them. I was captain of the golf team, which was a joint team between Harvey Mudd and Claremont men's college, so I still kept up my golf.

At the end of my years at Harvey Mudd, the Dean of Faculty told me I had set one very interesting record. I had made both deans' lists every single semester as a student. The deans' lists were the mid-quarter failure warning, which I got every single semester, and the honors at the end of the semester. [laughter] Because it usually took me a while to get around to buying my books.

Severn: Really? You would really walk that line? You'd be in a precarious situation mid-semester and then you'd pull it together?

Beug: Yeah, and I managed to get myself an aeronautical scholarship and joined the Bates Program and got to get my pilot's license and the training toward a commercial pilot's license. They were a little reticent to take on a chemist because of all the time we have to spend in the lab. They chose 10 students a year to be in the Bates Aeronautical Program.

One of my two instructors, Iris Critchell, I just talked to her a couple months ago by the phone. She's just passed 100 years old. She doesn't fly very much anymore, but she still flies. Still sharp as a tack. She's so famous that when Boeing passed away, she was given the Boeing Archives. When Lockheed passed away, she was given the Lockheed Archives. Her picture hangs in the Pentagon for her flight in World War II.

Severn: Wow.

Beug: She won a Bronze Medal in the 1936 Berlin Olympics in breaststroke for swimming. This incredible woman. They became an extra family, Howard and Iris Critchell. Howard, the husband, passed away about seven, eight years ago. My first book came out in 2014, so he would have passed away in 2016, so it's been five years ago. We would stay at their place.

The flying program was called the Bates Program, and the place where they had people stay, they called the Bates Motel, which is in a wing of the house and is part of their house. My wife and I spent a lot of time in the Bates Motel. It's just another little typical in joke.

That experience was amazing and formative. Then it was on to choosing a graduate school. I was only going to apply to one school, and it was Yale. They told me, "You really need to apply to two graduate schools," so I applied to the University of Washington as a backup. I got the fellowship at Yale, and Yale said, "Your fellowship is guaranteed for the first year." But the University of Washington said, "We were so desperate to get you after high school, we're so glad you've applied again." They guaranteed me a full ride for my whole time, all the way through the PhD, where Yale only guaranteed the first year, and after that, who knows?

I wanted to do a certain kind of highly theoretical work and I chose a thesis advisor. He immediately switched projects to a biochemical project. I wasn't too happy about that, but he had me apply for a National Institute of Health fellowship. I had no idea how rare and difficult those were to get, but I got it. That paid the rest of my graduate work, through to the PhD.

I did research on this enzyme called carbonic anhydrase. That leads up to what brought me to becoming a teacher, which is a story. You want me to move to that now?

Severn: Sure, but I don't want to press this too much. I just think it's interesting. You have this really wide, eclectic interests—golfing, flying, you also are a musician, you're interested in literature, and you are a chemist. This is all undergrad, grad school. If this isn't the kind of way that you think about this stuff, that's fine, but do you find any through line for this stuff? Is there anything that brings this stuff together for you, anything particular? Or is it this is just stuff you're into?

Beug: It's the broader perspective. It's an integrated whole. I didn't have a lot of patience with people who are just focused on chemistry and that was their whole life, but I thought that was a good way to make a living, and the living that I would want. I decided on that route and pursued it.

Severn: There really was for you, at a fairly young age, this sense of a broader constellation of how things hang together in a certain sense. You didn't want to just focus on one thing.

Beug: That's fair, yeah.

Severn: Tell me how your dissertation led to teaching.

Beug: I was about a month short of finishing up my research, and then starting to write my thesis, and my thesis advisor asked me to look at whether or not DDT and dieldrin inhibited the enzyme I was working on, which is called carbonic anhydrase. In about a week, I went through the work, and said, "It doesn't inhibit it."

But I was not yet an environmentalist. I had not been aware of the thought that the inhibition of carbonic anhydrase by DDT and dieldrin was what was causing eggshell thinning in birds. When I published the paper in *Biochemistry*, the editor said, "This is so important, it also needs to go into

Science." I submitted a short version of the paper to *Science*, and it was rejected, saying, "This isn't interesting. It's well-known stuff." A couple months later, there's my exact paper in print in *Science* with a different author, the author who happened to be the reviewer of my original submission.

Severn: Wait, the exact paper?

Beug: Exact. Word for word.

Severn: They just straight lifted your paper and stuck another name on it?

Beug: They put their name. They rejected it as of no interest, submitted it under their own name, and got it published.

Severn: Oh, my gawd! That is sinister.

Beug: Science wasn't going to do anything about it. I had a couple of Nobel laureates intervene for me, and *Science*'s solution was to agree to publish the paper again, this time under my name, but no explanation whatsoever. Just under my name.

This paper appears under my name, and Jeff Kelly, who got hired by Evergreen a couple months before I did, contacted me and said, "Why are you publishing something that somebody else has just published?" So, I was in this very weird situation, but I became the hero of industry. I was in *Chemical & Engineering News*, I was in *Newsweek* magazine, as proving that DDT could not be causing eggshell thinning.

As part of this, I had written to this prominent ornithologist at Cornell University and said, "I'm confident what's going on is not the carbonate transport that's being inhibited by the enzyme, it's the calcium transport." I suggested that he look into that, and I knew our lab wasn't doing that sort of work. This guy wrote back to my thesis advisor thanking him for the advice. My thesis advisor really reamed me out. He said I should not have given any advice to this guy. We might have wanted to do this kind of work ourselves down the line and I should keep my mouth shut.

I said, "The combination of those two experiences, I didn't want to deal with teaching at the university level." I considered it too cutthroat and dishonest. I didn't like my thesis advisor's response, nor did I like having a paper stolen. I also didn't like how industry had twisted my work to use it to their own advantage.

I canceled my industrial interviews, and I was the only white male in the whole 60-student department who had even gotten an interview. I called up my undergraduate thesis advisor, and on the spot, he says he's going on sabbatical leave, and offered me a position running his lab for the year he was gone at Harvey Mudd College. That was it.

I also applied to Evergreen that year. It would have been the first year at Evergreen. I didn't even get an answer back from Evergreen, so I went down to Harvey Mudd, started teaching there on a visiting appointment. I was there two months, and I was offered a tenure-track position at Harvey Mudd, not just the visitor I had come on. I told them I would stay unless Evergreen offered me a position. Again, no letters from Evergreen, no answers.

At Christmastime, I just flew up and presented myself, and talked to anyone who I could talk to, presented some seminars. I was told how to finish my application. They wanted two letters from students. I went back to Harvey Mudd, and I asked two of the freshmen to write for me, and the entire freshman class wrote for me.

Severn: Wow.

Beug: I still didn't hear anything from Evergreen. Months went by—in fact, almost four months went by—and I went in. My pay was so low, I couldn't even afford a house with air conditioning. We were living in southern California.

I went in to see the Dean of Faculty and I asked for a raise. I wanted to afford a place where I could at least have air conditioning. He said, "No," and I quit. I resigned my position at Harvey Mudd on the spot.

Severn: Without a job to go to.

Beug: And I walked out. My wife and I had talked. She said she would be able to get a research position again at the University of Washington Hospital, and that's what we would do. I was walking back to my office and the chairman came out and said that Evergreen was on the line on the phone.

Ten thousand faculty had applied for a position, and they had hired Jeff Kelly a couple months before me. Identical background, a Harvey Mudd graduate, but three years my senior. He was a senior when I was a freshman. We knew each other because I'd started research as a freshman, which is fairly unusual. I knew Evergreen would never hire me after hiring Jeff, so I'd given up. There it was.

Severn: You were pursuing Evergreen. You knew about Evergreen.

Beug: No, I knew about where Evergreen was, and that it was a small school, where it was close to skiing, which I loved; steelhead fishing, which I craved; and fabulous mushrooming.

Severn: Your pursuit of Evergreen wasn't necessarily about the project of Evergreen itself.

Beug: I didn't have a clue.

Severn: You had ulterior motives.

Beug: I did not have a clue.

Severn: Got it. But you get it. You've got to go now. You've got to go do the thing at Evergreen.

Beug: Right.

Severn: What was it like wanting to ski and fish and mushroom, and then showing up at this college that you had no idea what the institutional project was about, and suddenly being confronted with all that Evergreen is?

Beug: Pure fun. [laughter] It was fabulous. But they put me in the contract pool my first year. Quite isolated. And there's no Lab Building yet. I couldn't be a chemist. I didn't know anybody. I was probably the only person that had no connection to other faculty that had already been hired, or to the deans.

Severn: That's right.

Beug: But there was one other person from Harvey Mudd, but that's hardly a famous liberal arts school. It's probably the finest place in the country to get an engineering, chemistry or physics degree, but hardly what you would think of as fodder for going to Evergreen.

Steve Herman found me almost immediately, and he was looking for my head on a platter because he was the ornithologist. He knew of my work. We talked, and we designed this program called The Ecology and Chemistry of Pollution. It was going to start my second year, and Steve and I taught together.

We proposed it as a two-year-long program. There's never been another one like it. It was a total of eight quarters officially, and some students, nine quarters before we were done. We ran 12 months out of the year. We were immediately in the national news. We had students flying to Washington, D.C. to testify at the cabinet level because of the work we were doing. Russell Train—I think he was the second head of the then-new Environmental Protection Agency—came out twice to meet with students. NBC News came twice with their lead anchors to talk about the work we were doing.

We generated over a quarter of a million dollars in grants. But I was just completely consumed with that, so for the next eight, nine quarters, I had virtually nothing to do with the other Evergreen faculty or what was going on. It was just Steve and I doing our research, and our students.

Some of that is still going on because John Calambokidis founded a research collective in Olympia and continued. He was working on marine mammals and the effects of PCBs on marine mammals. It's still there.

Severn: This was '72?

Beug: Yeah, my first year was '72-'73, so the ECOP program started in the fall of '73. It ran for eight quarters officially. When I came out, I was back in the contract pool, still not on a coordinated studies

team. That's when Paul Stamets and these other students showed up all together wanting to learn more about mushrooms. I said, "Great."

Severn: Mike, I have a proposal here. We've gotten through your past up to Evergreen. How do you feel about pausing here, coming back, and doing basically Evergreen on?

Beug: Sure.

Severn: That's a nice little stop, and then we'll pick it up again. Does that sound good?

Beug: Okay. I filled in all this stuff you need from the pre-Evergreen?

Severn: You did, yes. I'm going to stop recording here.