Oral history interview with Karyn Sawyer
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Interview transcribed by Cyns Nelson

Notes: Interviewer's and narrator's remarks are distinguished by their initials. Conversational expressions/sounds that are not words are placed within parentheses; peripheral or editorial information is placed within brackets.

A buzzing noise disrupts the audio during points of this interview. Likely this stems from "radio" interference, and the noise is imperceptible to the participants.

[00:00]

KL: Good morning. This is Kate Legg, I'm the NCAR archivist, and today is November 4, 2015. We are in Boulder, Colorado; I'm with Richard Anthes and Karyn Sawyer, and Rick will be interviewing Karyn today about her long career at NCAR. So, I will let you take it away.

RA: Okay. Thank you, Kate. And Karyn, it's a privilege for me to interview you on your career here. You were one of our outstanding employees for the entire time I was UCAR president, and before that as NCAR director and NCAR employee. You go back a long ways before I do, really, in UCAR.

Let me just start out with asking you to tell us, in your own words, about your background. Where were you born? Grew up? Why did you come to Boulder? Those kinds of things.

KS: Okay.

RA: Your early history.

KS: Allright. I was born in Iowa, in a place called Lake Okoboji. My parents were both in the army in World War II. They met right after the war and were married; and my father was from Iowa, so that's how we ended up in Iowa for a short time. Very soon after that, the family moved to Montana. My dad sold steel for Republic Steel. So we went to Bozeman, Montana, and that's where I grew up. So I grew up with cowboys. I did the horse thing; and I actually broke horses to earn my college tuition, because my family was not wealthy. And so, to come to college I needed to earn money, and that's what I did.

I graduated high school in 1965, from Bozeman, and came to Boulder to college, to the University of Colorado. I graduated from Colorado in '69, with a degree in English Literature and a minor in Geology, and I never left. I've been here for 50 years now, and I'll be here for probably another 30 or 40, or however long I live.

[00:02:01]

RA: How did Boulder compare to Bozeman, in terms of culture. You were raised with cowboys; did Boulder seem to be much more urban?

KS: Not much. And that's why I came to Boulder. I wanted to ski, because I grew up skiing in Montana. And of course Colorado was like that. I wanted to stay out West, because the West then and now, I think, are more friendly to independent, stubborn, accomplished women. So I wanted to stay out West. And I needed to get away from home; and for people like me, there wasn't going to be much in the way of career options in Montana. So I came to Boulder. And in the '60s, Boulder was small—little bit provincial, not quite "The Peoples' Republic of Boulder" [as] it is now. But reasonably liberal for Colorado, certainly, and the West. And it just worked well for me and my psyche about things.

I love the mountains, and so I got to stay in the mountains. And that was a requirement. I couldn't go out to Nebraska or Kansas or somewhere.

RA: But you didn't leave Bozeman completely behind, you go back there even in recent years.

KS: Oh, yeah. My high school class was 240, in 1965. And we've lost 30, so there are 210 of us. Every five years we gather in Bozeman for a reunion, and more than 100 of us still show up. We've all known each other since we were six years old. And we're very close and enjoy hanging out together for a week or so.

[00:03:30]

RA: So, as an English major at CU, how did you get involved in an atmospheric science institution?

KS: Oh, I was always a nerd. I did the science fairs when I was in high school. I made a Wilson cloud chamber. I loved science. And I had actually started out thinking I would be a scientist, but when I got to imaginary numbers in mathematics my brain just declined the whole thing. So I had to do something else.

RA: So, when you were a student at CU, did you have a plan for what you would do after graduation?

KS: No. I've never had a plan. I learned in my 30s that I'm a really good opportunist, but I never had a plan. I was the first person in my family to go to college, and I wanted to go to college. I took a lot of different courses: I took paleontology, and glaciology, and English literature, and just kind of sampled the world in history and things that interested me personally. But I never had a plan about what I was going to do.

RA: So how did you get introduced to NCAR.

KS: I didn't even know about the organization, really. My dad came down here to visit—he was going to a lumberman's convention, and I took him up to the Mesa parking lot, to show him the view. Because in those days you could see the grain elevator in Greeley; I mean it was wonderful. We were sitting up there and he said: "Well, now that you're out of college, I guess you better get a job and start figuring out how to support yourself." I said, "Fine." And I walked

around, and I walked into NCAR and applied, and they hired me the next day. That was June the 20th, 1972.

[00:05:06]

RA: So, I was hoping to hear some apocryphal story about a blizzard in Montana that converted you to being a meteorologist. And you wanted to come and understand how these things occurred. But that wasn't the case.

KS: Not then. But the day I was born in Iowa, there was the worst blizzard they'd had in 50 years, and my father was marooned at the hospital for three days. So that might have had some nascent influence on my point of view about the weather! (Laughs.)

RA: So your father, you said, was interested in you getting a job. That might have been unusual at that time, where parents often wanted their daughters, especially, to marry a wealthy professional man and *not* work. That's different then with your parents?

KS: No. My father wanted me to either be a schoolteacher or a policeman, because he thought those were safe and steady jobs. I tried marriage a few times, and it didn't suit. I tried it once right out of college, and I didn't like it at all. So, I knew that wasn't going to be a lifetime occupation for me. My mother, though, is a World War II vet, and she was an army nurse and has battle stars from the European theater. She wanted me to be accomplished and successful in my own right. She didn't quite sign up for the kid I turned out to be, because I was pretty scary; I've always been fearless and doing things that girls normally didn't do. But I credit my mother a lot for supporting my sort of off-the-wall way of living my life.

[00:06:45]

RA: When you applied to NCAR, you filled out the application form, what did you check off? What were you applying for?

KS: I had no idea—I just filled out the form.

RA: Just a general job.

KS: Yeah.

RA: Any job that they had.

KS: I said I could type. That was the only job skill I had. I mean, with a degree in English Literature, you graduate with no job skills at all. So, that was the only one I had.

RA: Did you have an interview?

KS: Yes, with Gerry Miller. She may have been gone by the time you came to NCAR.

RA: Don't know the name.

KS: She was the head of personnel, in those days.

RA: Hmm. There was a Personnel Department in—

KS: There was. Yeah.

RA: So, how long did it take after your interview before you got an offer?

KS: They hired me the next day.

RA: Oh, wow.

KS: They called me in the next day and hired me.

RA: And who was the head of NCAR at the time?

KS: John Firor was the director of NCAR. And my first job was secretary to the original chemistry division. Jim Lodge was the director, and there were people there—Jim Lodge, John Pate, Ed Martel. Ben Fogel did noctilucent clouds. He was from Alaska. Al Lazarus was a really eccentric chemist. Actually, I don't think I've ever met a chemist who wasn't kind of a lunatic. They must spend too much time under the hoods or something. (Interviewer is chuckling.) No, they were all crazy.

RA: (Chuckling.) Okay. And then how long did you stay in the chemistry—

KS: One year. One year, and at that point, a job became available working for John Firor; I think Harriet Barker—Harriet Crowe, then—had the job as secretary to John Firor, and she moved over to the corporation to work for Walt Roberts, so there was an opening. I applied, and John selected me to be his secretary.

[00:08:28]

RA: I see. So you worked for John, then, for a—

KS: Nine years.

RA: —like a personal assistant? Or, might call it now a chief of staff.

KS: Sort of, yeah. Those roles—

RA: More than just typing.

KS: It was. Those roles were evolving over time. I was hired as a secretary and I did sort of end up being the chief of staff.

RA: How did you like working for John Firor?

KS: I learned a lot from John because he was so wise, and so kind. And he took a lot of trouble teaching me things, which I liked. I was a terrible hothead when I was young, like a lot of young people are. And John really helped me learn to be more measured, and calm, and really solve the problem—not just what was in front of me. He taught me a lot of things, and I loved working for him. John was an amazing man. And in those days, Walt was still really active, too. So I had a real opportunity to get to know Walt and learn about the ethic that started UCAR and NCAR, and how we kind of saw ourselves in the world. Because we were really the top of the pile in those days.

[00:09:31]

RA: Does any particular incident stand out, during those—in your interactions with John, or some significant event that impressed you?

KS: Well, there were a couple things. One was: I only heard him lose his temper at somebody once.

RA: This is John?

KS: John Firor. I only heard him yell at somebody once, in the nine years I worked for him. He never once said "thank you" for anything, so I learned a lot about management. And I have always tried to pay attention to my staff and thank them and support them. I didn't need that kind of reinforcement to work, but a lot of people do. And I, after a few years, began to notice that John never said "thanks" for anything.

John really—at the urging of Stan Ruttenberg—took a chance on me when it came time to work on the MONEX experiment in India. Stan urged him to let me go. Because the MONEX project office—Kuettner was the director, and Sushel Unninayar was his deputy—he called himself Joach's butler, because Joach always left this debris behind him wherever he went. They were all visitors to NCAR. And when they went to Kuala Lumpur for winter MONEX, and to India for summer MONEX, John worried that there was no real regular staff person there who could make sure all the rules were getting followed: the money was spent the right way, and documented; and the policies and stuff were followed. Stan urged John—Stan was in the director's office in those days—urged John to let me go, for me to do that.

So they asked me if I would go, and I said, "Yeah, I think I can do that." And John let me go. That was the start of my real career.

RA: What was the first experiment? Which one of these—

KS: Winter Monsoon was—

RA: Winter MONEX.

KS: —in Kuala Lampur. And then the summer MONEX started in May of 1979. We started in Saudi Arabia, overflying the Arabian Peninsula and then moved with the Somali jet across to Bombay, in India.

[00:11:36]

RA: So, did you ever experience any discrimination or treatment that you thought was unfair because you were a woman?

KS: Oh yeah. Because, in those days, all the guys that worked on the field campaign: A) they were all guys, and B) they were all these crusty, old, navy guys and air force guys, who had done logistics in the Korean War and Word War II. And the scientists were just as bad. I had scientists stand up in international meetings and say to me: "You can't do that. Girls don't do that."

RA: Well, what about John and Walt? Were they all—I would guess they might have been different.

KS: They were. They were. They never challenged me or wondered if I could do it. I just started doing it, and nobody complained; and it turned out what I was born to do. So that was the original investment in what, for me, got to be an amazing career here.

RA: Did you ever ask permission to do these things? Or did you just—

KS: No.

RA: —do them.

KS: (Laughing) I just did them! (Both laugh.) And after MONEX, then the various agencies—NOAA and NSF, mostly—began to ask John in he could let me work on these campaigns and do the logistical work.

RA: Did you ever have to beg forgiveness?

KS: Sometimes. Because, one of my operating mantras was that sometimes it's easier to get forgiveness than permission. And if I was doing something really edgy—I believe that I always exercised good judgment, and I took calculated risks, but sometimes there was no time to ask for permission; or I was worried the permission wouldn't be forthcoming and I knew it would be successful, so I just did it and then Bill Rawsonyelled at me later [?].

[00:13:27]

RA: So this is jumping way ahead into the present, but could you have done those kinds of things in today's climate?

KS: No. UCAR has sadly become a zero-risk institution. And, even when risks are calculated and there's good information and a high possibility of success, the corporation is so averse to risk that you couldn't do a real field campaign the way we used to do them, anymore, from here.

RA: Is that UCAR, or is it just the culture in general, the litigious—

KS: It's UCAR. But I'm sure UCAR's responding to cultural influences from the federal government. You know, the federal government in recent years—with the clowns and bicycles issues at GAO, and the scandals at some of the national labs—have gotten very restrictive with the rules about how you can spend money, and how accountable you have to be. But field campaigns are inherently risky enterprises. And frequently you work in a country where there's no working government; frequently you get stuck negotiating things that the corporation wouldn't even recognize. And to be a good field manager, and director, you have to have freedom to act.

A good example of that is the first day of TOGA COARE, which was the biggest field campaign I ever did.

RA: And what year was that?

KS: '92. Started in the fall of '92. The first day of the field campaign, I was burning 50 [thousand] or $60,000 dollars a day in per diem, because everybody was in the South Pacific. We were strung all over the South Pacific. I had so much airfreight in the system, going to the South Pacific, that the airfreight system stopped moving. It got totally clogged and they couldn't prioritize; they couldn't move stuff.

RA: Because of you?

KS: Yeah. Because of the project, yeah. So I called people I knew in Sydney, Australia, and I chartered a jet freighter and I went around and picked up all of our freight and delivered it to the Solomon Islands, into northern Australia, so we could start the project. That was $70,000 dollars that wasn't in anybody's budget; I didn't ask permission, I just did it, because I needed to get the project going. If I did that today, UCAR would probably send me to jail, you know.

RA: I hope not, but—

KS: Well, but you know, you can't—

RA: You might just have to go to a training course or something.

KS: I got in trouble three weeks ago for spending $525 dollars that contracts hadn't approved.

RA: Okay.

KS: So, you know. Forget it!

[00:16:04]

RA: Back to the '70s, or your first field program experiences. How did you learn how to do these things?

KS: I didn't. I just knew how to do it. That's what I meant when I said I was born to do it: Somehow, I'm a really good analytical problem solver; I can figure out what a problem is, not the symptoms I'm looking at. And I am really creative at making things work. That's what you do on field campaigns. I didn't plan that one; the ones that I planned were a little bit easier to manage. But you just—all I did, every day, was solve problems. Because that's what happens on field campaigns.

The scientists want to do their science, but the qualities that make a good scientist don't necessarily make them good at logistics or doing anything practical. So I was the "practical glue" that held it together.

RA: So you must be very well organized.

KS: I am—neurotically well organized.

RA: Not dropping the ball—

KS: Never.

RA: Able to keep many balls in the air.

KS: In those days, I didn't ever forget anything. In fact, until TOGA COARE, I kept all the details for all the field campaigns in my head. Which, in retrospect, was stupid; because, if I'd gotten run over by a truck, the whole thing would have cratered. But I could do that. I could parallel process, and I knew where all the freight was; I knew everything.

RA: So, back to the issue of being a rare woman in a predominantly men’s environment: Did you have any female mentors?

KS: No. I don't think so.

RA: Okay. What about Harriet Crowe?

KS: I'll say this, because we're in private: Harriet was jealous. So she worked against me; she didn't work *for* me. And she kept trying to interfere, or move into the things I was doing, because she wanted to do them. But she wasn't well suited to do that kind of work. She and I were friends, but she didn't help me at all.

RA: So there's competition there.

KS: Yeah.

RA: What about, then, maybe that—just projecting—maybe that made it easier to work with men, because there wasn't any competition.

KS: You know, I think that's right. And, additionally, when I was young and thin, I would ask some guy in some port for help, and they'd kill themselves trying to help me. Because they wanted to help "the girl." And they did. I didn't ever use that inappropriately, but I certainly used the tools at my disposal to get the job done.

[00:18:51]

RA: Were you ever told that—it sounds like you were not, except maybe from some of the people in the field—that girls or women can't do the job. You know, "You're not strong enough," or "you're not emotionally mature enough," or something.

KS: It came up in the field. And some of the American scientists—I think I just said this—in meetings would stand up and say: "You can't do this; girls don't do that. You can't do a site survey down the middle of Java by yourself. It's not what you do."

RA: How did you respond?

KS: I just said: "You know, if I'm not performing well, you can talk to my supervisor."

RA: Did you get performance evaluations in those days?

KS: No. John Firor would, once a year, put a small, little slip of paper—that he'd torn off something—upside down on my desk with my new salary.

RA: And that was it.

KS: That was it.

RA: That was feedback.

KS: No. I didn't really get performance evaluations, gosh, until well into the '80s. You know, there would be comments about whether you did a good job or not. But nothing like the process that we have today.

RA: Do you feel that performance evaluations are a good thing?

KS: They can be. They *should* be. Sometimes they're not, because part of the culture around here is that everybody's perfect. Nobody makes mistakes. And so, the performance evaluations are largely pro forma. And once I got to be a manager, I didn't do it that way. I was honest with people about what I thought they needed to improve, or where they hadn't done well, as well as acknowledging things they were good at.

[00:20:22]

RA: So when did you first have somebody reporting to you?

KS: When I worked for John Firor, there were two secretaries in the office, and those two ladies reported to me.

RA: Who were they?

KS: LauraLee McCaulley , who was Bill Bolten's daughter. Bill Bolten was our original contracts person at the National Science Foundation, in the early days. And I don't remember the—oh! Oh, I *do* remember! It was Delores, Delores Kaiser. She was probably 70 when I went to work for John, and she worked for Ed Wolfe, who was in that office. She was absolutely of the old school of secretary. So she was there.

RA: Okay. But they reported to you.

KS: At the end of my—you know, when I got to be more than a secretary, they ended up reporting to me.

RA: So then, these early MONEX field programs: This was before there was any kind of formal project officer, or international project office. But at some point, you became involved in a—what was it called? The International Project Office?

KS: That was the name of the office that I started at UCAR.

RA: You started it.

KS: I did. After John Firor—well, right around the end of John Firor's tenure as NCAR director, there was a—in 19—well, in '73 was the famous JEC report that shook Walt and John out of the tree for poor management; and Will Kellogg, and a few other people. And at that point, then, John got to be the executive director of NCAR. And then he left, and when Bob White came to be the UCAR president, he brought Bill Hess with him. And Bill Hess was the director of NCAR. And John got to be the ASP director. So I then started working for Bill Hess.

It was still in an administrative capacity, but the agencies were increasingly asking NCAR if I couldn't work on these field campaigns. So finally, in about 1980, Hess said: "You know, this is great, but my work's not getting done, because you're off trucking around the world doing all this stuff all the time. So you need to do this somewhere else." So I went to talk to Bill Rawson (pause) and it must have been Cliff Murino, because he came right after Bob White, right?

RA: Yes.

KS: Yes. Cliff was here when I went to see him and Bill Rawson. I had written a white paper, saying: Agencies are coming to us to ask for this, we should have a project office where we have staff who do it all the time, instead of these one-off kind of things. And they said, "No, that'll never fly. Nobody ever will really need those kinds of services on an ongoing basis. We'll just keep doing it catch as catch can."

So when Hess invited me to leave NCAR, because I wasn't getting enough of his work done, I went and saw Cliff and Bill Rawson. And I said, "I have some of this work to do, and I want to do it from UCAR"—for the reasons I just described to you. And they said, "Fine." There was something called the Cooperative University Programs. CUPS, they were called. Stan Ruttenberg was the director—no, Leonard Romney was the director. That was before Leonard got fired. So, they said: "Yeah. And there's this other program that doesn't want to be at NCAR either, called Unidata." Unidata and I were the founding offices in this—what now is UCAR Community Programs. It was me, and I hired a secretary. And I had $150,000 dollars a year—I think from NSF—to work on eclipse expeditions.

That group of two people, and that amount of money now turned into what is JOSS today.

[00:24:07]

RA: Okay. I remember an acronym that I think Dave Shimmel may have—"jicky-poo" [phonetic pronunciation.]

KS: Yes.

RA: What does that stand for? Was that complementary? Or was it—

KS: It was meant affectionately, but it was hard. (Interviewer chuckles.) I started the International Projects Office at UCAR in like 1981 or '82. In 1982, Stan Ruttenberg introduced me to Mike Hall. Mike Hall was an amazing leader in NOAA. He worked with Ari Patrinos, and Bob Currel, and Shelby Tilford, and then there was Mike. They started the US Global Change Research Program. Mike had a very large program at NOAA that had a big field component. It was actually out of his office that TOGA COARE was planned and executed, but there were a lot of other things in the meanwhile.

Mike suggested that my office be funded by a cooperative agreement with NOAA. We set it up to look like the NOAA Cooperative Institutes. So when we got the first cooperative agreement, we were called the Joint Climate Projects Planning Office. And then, in the second cooperative agreement, it got to be the Joint International Climate Projects Planning Office, which is where "jicky-poo" [JICP/PO] came from. It was just awful.

RA: (Laughing) I liked it. (Finishes chuckling.) Okay. I wanted to get back to your interactions with Bill Rawson (narrator chuckles) who was quite a different—we all loved Bill Rawson—

KS: Oh, he was amazing.

RA: But he was a very different kind of person from what you are. Did you have good interactions with him? Or did he ever question what you were doing?

KS: Always. In a very nice way. Rawson was the Vice President for Finance and Administration, and he was not comfortable taking big risks, but he and I had a good relationship. And so, mostly I would talk to him about what I was doing. He worried about it. He wrung his hands, and he was

afraid I was going to send us all to jail. But at the end of the day, Rawson supported me totally. I remember one time, in India, we had this very large pot of money in rupees from the US government. Where, the US government had paid India—or, India had paid the US government for foreign aid. But they paid in rupees, and rupees in those days were not a universally traded currency. So the rupees had to stay in India. NSF shipped off to UCAR, for me—god, I don't know—$20 M worth of rupees or something, to run these programs. And we had a checking account in India, in Indian rupees. It took an act of the Indian parliament to get us this checking account.

Well all this made Bill Rawson really mad, and nervous, because he didn't see Indian rupees as being a worthwhile or real currency; and we had this checking account, and my name was on it. And one time—the administrative center for the state department was in Bangkok in those days—I had a big project going in India, and the rupees hadn't been transferred from Bangkok to the bank account in India, and I had to pay for stuff. I called Bill on Saturday morning, one morning, and Sunday night he was on Pan Am, and he went to Bangkok and got the money released and then met me in Delhi, like a week later.

RA: That's remarkable.

KS: He was incredible! He was so supportive. And on that trip—Bill was a very conservative Mormon. Ravi Shankar was a famous Indian, um—

RA: Musician.

KS: Musician. And he was playing a concert in New Delhi, so I came into town, I said, "Bill you gotta come with me to this Ravi Shankar concert." Well he'd never heard of Ravi Shankar. He said, "Fine, we'll go." In India, at performances, you sit on the floor, on big mattresses covered with white sheets. It started about 10 o'clock at night. So Bill and I went, and we sat, and I thought Ravi Shankar was still tuning, and Bill was going crazy. We left about two o'clock in the morning, and the concert went on until 4 am. I don't think he ever forgave me for that.

RA: Wow.

KS: But he was game. And he supported me a lot, in spite of his nervousness.

[00:28:35]

RA: Yeah, I've heard about the "rupee funds," as it was fondly called. I imagine you could have abused that, if you had been so inclined.

KS: I could. Sure.

RA: Because there was probably very little oversight—

KS: No oversight, virtually.

RA: So if it was really $20M, a lot of lesser people would have somehow misused those funds.

KS: Yeah. I did not.

RA: But in fact, you actually—they did support something useful, and they were not worthless currency. You bought real things: airplane tickets, and—

KS: Airplane tickets; I got scientists all over the world. The only caveat was that they had to go through Delhi, which caused some more stories and funny events with these scientists going to Malaysia and Indonesia, going through Delhi. We supported the whole Monsoon Experiment, which was very large. It was the NCAR Electra, two NOAA airplanes, the 2P3s, and the NASA DC-9—the one that eventually crashed and died a few years after the experiment. We had probably 300 or 400 people in the field, for four months, and we moved the operations center from Bombay to Calcutta. And then a whole generation of monsoon research in India, and visits and collaborations, were supported with those rupee funds.

[00:30:01]

RA: Does that fund still exist?

KS: Yes. No! I'm sorry. The fund does not exist; it finally went away. We got a second ingestion of rupee funds in the '80s because it had earned so much interest while it was sitting there waiting to be spent, that then they had another whole bunch of rupees. And we got a lot of those. And we had workshops, and meetings in India, and did a lot of support for the Indian scientific community, using that money.

But there were times—Pan Am was the only airline, US airline, that would take rupees in payment. So I would buy airplane tickets in India, in rupees, and then American and other scientists could fly around the world, wherever Pan Am went, on these tickets.

RA: Is that because Pan Am had offices and employees in India?

KS: They did.

RA: They could use the rupees to—

KS: Yeah. They had a big operation in India in those days. [Interviewer also speaking; not discernible.] I got to be really friendly with Ken Hemrajani who was the New Delhi station chief for Pan Am.

RA: You're legendary about your affinity and love of India. So how did that come about?

KS: I have no idea. I mean, I grew up with cowboys; I didn't study India, nothing. And, three o'clock in the morning, I get into Bombay's airport—during MONEX—and it was the *old* Santa Cruz airport, which was just awful, it had probably been built in the '30s. It was about 120 degrees, because it was right before the monsoon broke, and there were about a million people in

the airport and they were all clutching at my elbow and wanting to take me suitcase. I really, sort of knew where I was in the world, but that was it.

I got off that airplane, and I was home. I felt that way ever since. It's an amazing culture. I have wonderful Indian friends, and—unlike a lot of people—I'm able to work very successfully in India, and have done for 40 years. I still go. If somebody gave me an airplane ticket tomorrow, I'd go to India.

RA: That's probably—many people, Americans, have a quite different opinion when they visit India. It's a very different culture, and so on.

KS: And it's dirty. Americans don't like dirt.

[00:32:09]

RA: Back to TOGA COARE—that's perhaps one of the greatest international experiments ever carried out. What was your role in TOGA COARE, and what were some of your highlights of your experiences?

KS: Oh man. I was the logistics director for TOGA COARE. So I planned *all* the operations—not the science part of it, but the logistical parts of it. We had 14 research vessels; 8 airplanes; and 1500 people operating 24-7 for four months. The research area covered the sovereign territory of 19 countries. So I did the research permits; I did all the contracts to re-provision the ships; all the contracts for jet fuel; negotiated with the headhunters in New Guinea, to put a radar up in New Guinea. It took me five years to put that together, and I was virtually commuting to the South Pacific the whole time.

RA: So the frequent-flyer miles added up.

KS: They did. They did. There were a couple of years when I flew 250,000 miles, something like that. It was crazy.

RA: Who was the scientist in charge of TOGA COARE?

KS: The two chairmen of the scientific steering committee were Peter Webster and Roger Lucas. Two of arguably the most difficult scientists on the planet, to get along with. The first year that we were planning, they stopped talking to each other, and they would call me. Peter would say, "You tell Roger for me ..." and Roger would say, "And you tell Peter for me ..." and I finally said: Forget it. This is not my job, I can't do this. So they started talking to each other. They were so bad that: We had a planning meeting in Hawaii at the East-West Center, and Kuettner was the first interim director of TOGA COARE before we hired a project director. Joach got up at a dinner meeting one night, and he said—he gave a speech about Homo sapiens atomosphericus, and Homo sapiens Oceanicus, and how different they were. This was the first meeting where the oceanographers and the atmospheric scientists had gotten together to plan the project. And I'm a non-scientist, right? I'm sitting in the back of the room, and halfway through the morning I figured out they were talking about different boundary layers. But they duked it out for the whole

rest of the day, thinking the other guys were stupid because they didn't understand about the boundary layer. And they were talking about different boundary layers.

[00:34:40]

RA: So what was Kuettner's role with respect to Webster and Lucas?

KS: Um, he was trying to teach them how to behave and how to work together. Peter Webster had been in MONEX as a very prominent scientist. He was young and out of grad school then. He was a real hothead; he still is a hothead. He's a statesman now, compared to how he used to be.

Joach was trying to get the project going, in spite of these two guys who were supposed to be the scientific directors. Because Joach had—his first big field campaign, he put together the GATE experiment, the first big GARP experiment. And he was the science director—along with a Soviet scientist—in Dakar, for GATE, in '76. He was the grand old man of field campaigns. The whole lexicon of modern field campaigns started with Kuettner.

RA: Well he was a diplomat.

KS: Yes.

RA: Kuettner was.

KS: He was. But he always got his own way, at the end of the day. Everybody loved him, and he diplomatted everybody around, and at the end of the day, Kuettner always won the conversation. And everybody loved him.

RA: So he could somehow manage Roger Lucas and Peter Webster.

KS: He did.

RA: And you were helping him? I guess you were also a diplomat.

KS: I tried to be. I learned a lot from Joach. Sushel and I spent 40 years following Joach around the world—planning programs, and learning from him, and running programs with him. Kuettner was probably the most amazing, interesting, accomplished friend I've ever had. He and I were very good friends. And he was awesome in every regard. He was incredible. He had an incredible life; he was a wonderful mentor; he was a good scientist; and he was an incredible science diplomat. He could get things done that no one else could do—and get scientists to agree to do things. He was really amazing. Probably more than any other person I worked with, Kuettner was responsible for a lot of the success I had later, because I learned from him.

RA: So in many ways, TOGA COARE was perhaps—that period was the pinnacle of your career.

KS: It was.

RA: And it went umpteen years, probably, with the planning and then the execution.

KS: It did. At the end of TOGA COARE, I owned almost every cylinder of helium in the South Pacific. It took me three years to get them all back to where they belonged, because we had radiosondes on stations all over the southern hemisphere, in that part of the Pacific. They'd been shipped everywhere, and they were scattered around, and I had to get them home. It was very amazing. It was incredibly taxing. It was the hardest thing I ever did, and it was arguably the biggest success I ever had, because of its complexity.

RA: Rewarding?

KS: Yeah, it was incredibly rewarding. Amazingly rewarding. I mean, to keep all that going on a day-to-day basis—the Chinese crew, on one of their research vessels, went on strike in the middle of the Coral Sea. Some scientist had a stroke on one of the research vessels and had to get medevaced out to New Guinea, and then medevaced to Australia. I had to have jet fuel barged across from New Guinea to the Solomon islands, because they didn't have enough storage capacity to fuel the airplanes. I resurfaced the air strip at Guadalcanal, that the Marines had used in World War II, because it didn't have enough weight-bearing capacity for all the research airplanes.

RA: Wow.

KS: It was pretty amazing.

[00:38:18]

RA: Were there any catastrophes? Like ships lost, or aircrafts going down, or somebody dying?

KS: We never lost a facility on that experiment. UCAR—NCAR lost an airplane in the 60s, but it was in the US, and it was not on a program that I was working on.

I told you the Chinese crew went on strike; one of the Chinese research ships took out the dock at Pohnpei one time. So I had to go—I can tell you that story: The Chinese ship came into Honiara to get reprovisioned, and the ship chandler was using a garden hose to replace the water. And the ship was using water faster than it was going on board—I mean, this kind of stuff happened all the time.

The Chinese ship went into Pohnpei—the Chinese ships were a trip, because they had never sailed in the deep ocean; they'd always done coastal work. And they didn't want to go in the deep ocean, but they're government made them go. They were a nightmare. There was an oil spill in Sydney Harbor, that they accomplished. They ran aground in the straits up by Darwin, Australia. When you go into a harbor with a ship, you have to take a pilot on board, because the pilot knows where the reefs are, and the rocks, and knows how to get a ship in. So the Chinese were going into Pohnpei, to refuel and reprovision, and they took the pilot on board. The pilot stands

on the bridge with the captain and gives directions. And then the captain talks to the engine room. So the pilot's talking away, and the Chinese captain's yelling down to the engine room, and the Shanyanhong Number 14 ran full tilt into the bamboo dock at Pohnpei, and just took it out completely.

So I had to go. The captain was too embarrassed to say he didn't know how to speak English, so when the pilot was telling him stuff, he was just yelling random stuff down to the engine room. So, it took me about two weeks to renegotiate with Pohnpei. The dock they took out was bamboo, and they wanted a stainless steel dock to replace it. So that took a while to work out. We compromised some on that one. But things like that happened all the time. Drove me mad.

[00:40:36]

RA: What about the TOGA watches?

KS: Oh, god. That's when Bill Rawson almost fired me.

RA: (Chuckling.) What happened?

KS: I got really in a lot of trouble about that. Somebody at the UN decided that—Swatch watches had just been developed, invented, whatever. And they were manufactured in Switzerland. So somebody at the UN decided that we should have a TOGA watch. So Swatch made us TOGA watches; I still have two or three of them that had the emblem of TOGA in the face. But then, they did this, and then I had to pay for them. And so I paid for them. Well, that was totally against the rules. So then I sold the TOGA watches to pay Rawson back the money—because I think he took it out of the general fund, because it was an unallowable cost against the contract. He was so mad at me. But he did wear his TOGA watch for years.

RA: (Laughs.) You gave him! I have a TOGA watch.

KS: Yeah!

RA: So how much was that?

KS: Oh, it was $1,800 dollars. I mean, it was nothing.

RA: A tiny amount.

KS: It was a small amount, but it was strictly against the rules.

RA: So, the general fund ended up buying the TOGA watches; it wasn't government funds.

KS: Oh, no.

RA: The rupees, or anything.

KS: No, no, no. And then I paid the general fund back when I sold the watches.

RA: (Laughing) Oh, you sold them??

KS: Instead of giving them to people in the project, I sold them. So whatever money I got, I gave back to the general fund.

RA: Very irregular. (Narrator laughs.) I must say.

[00:41:59]

RA: So, TOGA COARE. What other major international field programs were you involved with?

KS: There were 30. I've worked on more than 30 field campaigns. I worked on virtually all the field campaigns through the history of GARP, the Global Atmospheric Research Program of the UN. And then after GARP came TOGA. So: INDOEX in the Maldives; the monsoon experiments; MAP in Europe; FASTEX, where we studied the storms coming across the North Atlantic in the wintertime; a whole series of monsoon experiments down through South America; studying the America monsoon. I've worked everywhere except Antarctica. We were everywhere: We were in China; we were in Africa; we were everywhere.

RA: So, your favorite country—I'm guessing—was India.

KS: Absolutely.

RA: Out of all those countries you visited.

KS: Yeah. I actually enjoyed—except with one exception—all the countries I visited. A lot of them I wouldn't care to go back to, but I was never sorry to see anything. I've always been really—I love the wild parts of the world, and a lot of this science gets done in the wild parts of the world. It was incredible. Really incredible.

[00:43:23]

RA: Did you ever have any personal discomfort or fear, such as with the—you mentioned the "head hunters." I don't know if that's a true story, or—

KS: Oh, it *is* a true story.

RA: You actually met headhunters.

KS: Yeah, in the highlands of New Guinea. When I was negotiating with them, I had the feeling they were sitting across the table looking at me like I was lunch. It was unnerving, a little bit.

RA: I thought they only ate the heads of their enemies.

KS: No. No, no. They poach everybody and eat them.

RA: I see.

KS: There's a whole series of words in the languages of the South Pacific natives that speak to different flavors of human meat. They call it sweet pork, mostly.

RA: (Chuckling.) Okay. So, you felt uncomfortable but not afraid at that point.

KS: Yeah. I don't know. I'm afraid of some things—but fear for me is like being happy or sad, it's just another emotion and so you just work through it. Some people get paralyzed when they're afraid; and if you get paralyzed when you're afraid, forget it. When I was a kid I was kind of chicken heart. And I decided there was no future in that. So I learned to do things being afraid. Because there are all kinds of things that are scary in the field.

RA: I know you're not fond of water or snakes.

KS: Right.

RA: So a lot of these experiments involved—(narrator lets out deep sigh)—you were in snake areas, and a lot of water.

KS: Yeah! It was awful.

RA: Were you ever on a ship?

KS: I managed to avoid going to sea on the ships. I visited them when they were in the harbor, but I never had to go to sea on one of them. Because I really don't like water. I'm a mountain person, not a water person. And there were snakes everywhere; I *hate* snakes. And they terrify me. And in these places, they were all two-step snakes: You get bitten and you get two steps and you die. (Interviewer laughs.) So they're worth paying attention to, and they're horrible!

RA: Any other—I'll call them phobias, or fears of—

KS: No. I don't like—

RA: You never got into any civil unrest or riots, or that kind of thing?

KS: Yeah. We almost were killed in the Central African Republic—I was there on a site survey. The crazy chemists, again, the crazy chemists wanted to do a canopy study over the canopies in the Central African Republic. So I went there to do a site survey. That whole trip was a mess.

The first thing that happened: We went to Paris and then down from Paris, because there were no direct flights from the US. We got on the airplane in Paris, and there was a bomb on the airplane. They were having a big civil thing with the Pied-Noirs, the Algerians. The Algerians, two weeks before, had done a bomb that was sensitive to altitude. So when the Air France plane came down

to the Paris altitude, the bomb went off. We were listening—I was with some of the guys from the aviation facility—and we were listening to the tower on the frequency in the airplane. And there was a bomb on *our* airplane, but they didn't want to take it back to Paris because of the worry of the altitude issue. So they flew us across the Sahara Desert to D'Jamena, Chad, and we got there about two o'clock in the morning. We had, at that point, drunk all the Scotch on the airplane. We decided: If we were going down, we'd be drunk.

Went to D'Jamena, Chad, got out on the ramp—pitch dark—they took the whole airplane apart, they found the bomb and took it away and put us back on the airplane, and we went on to Bangui in the Central African Republic. So we did the site survey, and it turns out that the governments—in at least that part of Africa—when they're taking action against poachers, fly C130s. And our airplane they wanted to take was the NCAR C130. The poachers shoot them down—because in those markets in Africa you can buy ground-to-air missiles, and shoulder-launch this's and that's. They would shoot the C130s down, because they thought they were the government's, interfering with their poaching of rhinoceros and elephants and stuff. The chemists' solution to this was: to paint NCAR on the bottom of the wings of the C130s, so the poachers would know that wasn't an airplane to shoot down. Well—

RA: Poachers probably _____ NCAR.

KS: They're illiterate—illiterate. I mean, you know, this is no solution.

RA: Not a household word.

KS: And then we were visiting the French—on that trip our bodyguards were French Foreign Legion, and they were scary. I mean, they were taking care of us, that was nice, but you wouldn't want to get on the wrong side of them. We were at the French air force base in Bangui, looking for a hangar for the C130, and Henry Boynton was the NCAR chief pilot in those days. He was a contract pilot in MONEX, in India, so he and I knew each other really well. He and I are standing in the hangar, and we're talking to the commander of this French army base about the C130 and would it fit in the hangar, and yada yada. Henry and I looked off, and here comes a snake across the hangar floor; it's about as big around as my arm, and it's about two feet long, and it's got a triangular head. Well all poisonous snakes have triangular heads. Henry hated snakes as much as I did. He and I look at this snake, and he looked at me, and he took me by the hand and he said: "No f-ing way." And we just walked out.

Well while we're doing this, there was a coup—a coup d'etat—in the Central African Republic. And the State Department had told us not to accept any invitations to dine at the palace, because the president was the last cannibal king in Africa, and he ate his political enemies. So if you got soup or a pork loin, or something, it was likely to be somebody that walked the earth the night before. There was a coup, and the head of the bodyguards for the guy that won the coup was absolutely a psychotic. He came to see us—he thought we were CIA spies, and there were all the automatic weapons. He was so mad, his eyes were bulging out of his face, and he was spitting—he was so mad—when he was talking. So we decided it was time to go. And we just barely got out of there.

RA: Well that sounds fairly terrifying.

KS: It was. I was unhappy with that. I don't go to sub-Saharan Africa anymore. That was *so* not worth taking the risk.

RA: What year was that?

KS: Gosh, I don't remember. It was—

RA: Must have been a calm period, compared to today.

KS: Yeah. It was after FASTEX—maybe late '90s some time. I can't remember, exactly.

RA: Not that long ago.

KS: No. So that was an unhappy trip. I was really glad to get out of there.

RA: What happened to the snake?

KS: I don't know. Henry and I just left.

[00:50:15]

RA: I seem to remember you telling a story, once, where a snake dropped out of the tree onto your jeep. Was that connected with work?

KS: Yes. That was the site survey in Java, for the 1983 total solar eclipse. You need to find a place to site the telescopes. And, a really nice friend of mine at NSF, who's dead now—Ron LaCount—was the US solar eclipse coordinator. He wanted to go on the site survey, which was fine. That was great. So he and I went to Java, and we went to a place called Surabaya, which is at the bottom end of the island of Java. We were going to drive up the spine, and around the coast, because it was a good idea to site the telescopes across the water, because you got a good view. Ron was an old Marine, and he had a big Fu Manchu moustache, and he smoked a pipe. He was one of these guys that was like (using deep, grumbling voice): "Girls shouldn't have this kind of a job." (More deep grumbling.)

So were going on this site survey, and we were getting a jeep early in the morning—because it gets so hot there, that you try to do stuff early in the morning. We went to get the jeep, and the jeep was there but it didn't have a top on it. I wouldn't go in the jungle without a top on the jeep; and he was just furious. He was chewing on his pipe and [grumbling voice] "You're just—wimpy women." So we finally got a top on the jeep. And we weren't 30 minutes out of Surabaya, in the jungle, there was this big plop—and the roof, the canvas roof kind of came down, and this green tree snake stuck his head down the side of the roof of the jeep, looking at me. I just blew out of my seat belt and jumped between Ron and the steering wheel, into the dirt on the other side of the jeep.

I was laying in the dirt, and then I started to laugh. Because he was really agitated, and the jeep shuttered to a stop. And he got stuck in his seat belt. He finally got loose, and landed in the dirt next to me; he bit his pipe in half, because he was so agitated. He just turned around in the dirt, and he looked at me, and he said, "Don't say a god damn word." And then we took a stick and got the snake out of the way and went on. But that was the last I ever heard about "wimpy women" on field campaigns.

RA: (Chuckling) Sounds like you both were pretty much terrified, equally.

KS: Oh, awful! I mean, this bright green snake—he was like a foot away from my face. I was just (makes choking noise).

RA: He was probably as surprised as you.

KS: Well, I hope he was—he didn't bite me, which was the good news. But I wasn't sticking around. I'm just terrified of snakes.

[00:52:49]

RA: So. (Pausing.) It's hard to beat that story. (Big laugh from narrator.) Are there any other memorable, odd things, or strange things, entertaining things that happened to you, or you saw on some of these exotic trips?

KS: Well, there was a dead Chinese sailor in a vegetable basket, one morning.

RA: And how did you get involved and see this?

KS: This was when we were managing the research cruises for the Peoples Republic of China. They did some test cruises through the Pacific for some years before TOGA COARE. And in negotiating the port clearances—because you can't just sail into a port with a big ship; you've got to have permission from the port to come in. They issue a port clearance, which is usually Tuesday, Wednesday, Thursday—the 6th, 7th, 8th—or something like that. Well, people in the Pacific do not like the mainland Chinese, the Communist Chinese. It took me *years* to negotiate these port clearances, and they were very precise. It was like: Midnight on the 12th of November to two o'clock in the afternoon on the 13th. And if you missed the port clearances, the whole series of cruises was done for.

So, to start this series of cruises—you actually were with me in Guangzhou when we started from China, with the Shanyanhong. You went with me to the sendoff for that. And it went from there to Honolulu, and we had a big ceremony there with senators, and the NOAA administrator. Because this was the first time since 1949 that the Chinese ships had been out of China. It was a very big deal. So we had all the ceremonies, and the brass bands, and all this stuff. It was pouring rain in the night, and our ship agent, Billy—you have ship agents at the ports like you have fixed-base operators for airplanes. They handle all the stuff for the ships, the provisioning and the fuel and the everything. And the trash collection.

So my phone rang again, about two o'clock in the morning, and it was Billy on the phone. He said, "You gotta come down to the dock." I said, "That's crazy! It's the middle of the night, it's raining." He said, "I can't tell you over the phone, but you've got to get down here." So I got up and I got dressed and I went down to the port. The ship had put their trash out, on the dock—which is the normal thing to do. In those days, the Chinese ships used woven baskets for—they went on the ship full of vegetables, and then they came off with trash, and they were throwaways.

I got down there, and Billy and I went down to the dock, and he pulled the lid off one of these baskets, and there was a dead Chinese guy in the basket. I just thought: [Makes noise of exasperation.] If I'd called the police, they would have held the ship that was scheduled to sail at like 7:00 in the morning, for the investigation, and it would have blown all those clearances through the Pacific, for like the next six weeks.

So I got—Billy spoke Chinese. So we went on the ship; we got up the ship's captain, we got up the ship's doctor, and the political officer—because they always sail with a Communist political officer. We met and we drank a lot of cups of tea, and I said, "Alright, so tell me the story." The Chinese sailor—he was just one of the regular sailors—had been sick when they left China. And he died. I said: "Why did you put him out with the trash???" Well, they were afraid of the police, and afraid of the government, and afraid of the—and I said, "So, tell me what he was sick with; were there any drugs involved; did anybody kill him. What's the deal?" He had malaria, or something. So he just died. I said, "Okay."

We put him back in the vegetable basket, and we put him in the cooler in the kitchen, and I said, "When you get out past the international limit, you bury him at sea." And that's what the ship's log is going to show: He died and he was buried at sea, past the international limit. And I said, "If any of you ever tell anybody we did this, I'm going to send you to Siberia, or somewhere." They were worried, because they didn't want to get in trouble either. So that's what they did. And I didn't call the police. They buried him at sea, and that was kind of that. But I didn't tell anybody about that for 20 years. Because I would have gotten in *so* much trouble.

RA: So, is this still a sensitive story?

KS: Probably not now. I think the statute of limitations must be totally—who's going to arrest me now for a dead Chinese sailor, 25-30 years ago, now. I don't think it is. But it's not something I would broadcast widely either! (Laughing.)

RA: You're broadcasting it right now. Okay. Maybe we can—it's about time to take a break and switch out the tapes, here. Why don't we take a break now, and then you can transfer it to the—

KS: I'm going to go get my water bottle. [Recording is paused.]

[00:58:10] [Recording resumes.]

RA: Okay. I want to explore a different part of the international culture, and that's eating and drinking abroad, in strange cultures. [Buzzing noise in recording; loud at times; interferes with

dialogue.] You must have had some very interesting food and drinks, along the way. Do you remember any special occasions?

KS: (Laughing.) I do. China, of course, is where you have the strangest food—or food that's strangest to me. And some in Africa, too. China: We had a delegation that went to China—I think, actually, you and Susie were along on this trip—Tim Spangler, who was the COMET director, was there. And Tim was a *very* all-American boy and didn't like—he lost 20 pounds while we were there. We were on an excursion, and coming back, and went to a restaurant. One of the things the Chinese do, which from a public health standpoint is great, they bring a live thing to your table, so you can see that it's alive. And then they take it back in the kitchen and butcher it. And then you eat it.

Well, for some of us who—

RA: Fish, or snakes, or something. Whatever.

KS: Yeah. Or puppies, or kittens, or whatever. And in this case, we were at a place where there was a Mongolian hot pot. Where a bowl of boiling broth is in the middle of the table. And then you take pieces of whatever you're going to eat and cook it in the broth. They brought out a live eel. And I'm not crazy about things that wiggle, so I wasn't thrilled with this anyway. And I don't like the taste of eel. But they brought the eel out, and then they took it back in the kitchen. And I think they must have chopped it up while it was alive, because they put all the pieces in the form of the eel and brought the platter back to the table; and the eel's mouth was still going up and down. Tim Spangler left the table. He couldn't eat anything. He went and sat outside and waited for the rest of us. I just avoided the eel. But I thought he was going to pass out. (Interviewer is chuckling.)

You were at a banquet with me, once, when they served us birds brains.

RA: I was. Back to Spangler: I remember, he would drop some of these things off his chopsticks.

KS: Oh, that's right!

RA: He had trouble—what did they call it, they had a name for it.

KS: He couldn't eat with chopsticks, and a lot of us could, because we'd been to China a lot. He kept dropping stuff off of his chopsticks, down the front of his shirt. So we would begin to refer to things as having been Spangled. Because his shirts were Spangled.

RA: It became a verb.

KS: Yeah. It was very funny. I thought he was going to die of malnutrition before we got home. Because he literally couldn't eat anything—or wouldn't.

RA: Did you ever get food poisoning on some of these trips?

KS: Twice. I'm really pretty sturdy, but one time in India I got food poisoning and I was down for a week. And then in China, at a meeting at the Western Lake in Hangzhou, at a banquet. And I was down for another week. I finally made a nest on the bathroom floor with the blankets off my bed. And I had my medevac card in my hand. I figured: If I pass out, somebody will make the phone call. I was so sick. I got over it, but—and I have a great gut. I mean, my gut's the last one to go down. But boy, those two times were just awful.

[01:01:27]

RA: Some of your colleagues over the 30 years or more must have had similar problems.

KS: Terrible.

RA: I'm surprised that with the 30 field programs, maybe 100 people average in each one, and over so many years—and some of them older people, and some not used to these—that you didn't have more problems with safety or health issues.

KS: We had a lot of health issues. But until the world really got medevac sorted out—I mean, now you can be almost anywhere in the world and in two or three hours you can get a jet medevac out of anywhere. In the old days, we always took emergency trained physicians with us on the field campaigns. So when people got sick, or people got injured, there was somebody there who knew how to stabilize anything into the 12 or 15 or 24 hours that it would take us to get a medevac. [Cell phone in background.] [Interviewer asks for the recording to be paused.]

[Slight break in interview.]

KS: So, on the campaigns themselves, there was always a highly qualified physician there. And we had—people got malaria, people got in car wrecks, people broke their legs. You know. I never had anybody die on a field campaign, which was really lucky. I used to take body bags, and nobody wanted me to talk about that. But I'd always have body bags with me, and I never needed to use them—which was really good.

[01:02:46]

RA: Do you attribute that success—which I think is remarkable—to anything that you did, or the project directors did, in terms of training or safety instruction? Or were you just lucky?

KS: I'd like to think we helped it. There was some luck in it, but we went to great lengths to inform people about the climates where they were going; about biting bugs and malaria; and putting them in touch with tropical-medicine trained physicians so they could decide what immunizations they wanted to take or not, or whatever. So we went to a lot of trouble to keep people healthy. Talked to them about what kind of food to eat, what not to eat. And I think it helped. I really do.

RA: Yeah. That's what I'm talking about. And did you require immunizations?

KS: You can't require immunizations, but I recommended them. And I certainly took them all, which I think is part of the reason I walk the earth today. Because I certainly got exposed to every bug in the world.

RA: Did you always have a doctor on these field experiments? Or just the major ones.

KS: Well, I only did major ones. I only did the big ones. I didn't go into the field with one PI or something. So yeah, we did—we contracted with emergency physicians to come with us. You don't need that so much now, because medevac is really easier. You travel with a phone that you can call up medevac in a heartbeat. [Buzzing on recording.] You need to investigate it, you need to go visit the hospitals, you need to know how to do it in a heartbeat. You can't start figuring it out when somebody gets hurt or sick.

[01:04:23]

RA: What about foreign beverages? I'm thinking of things like the Chinese Maotai (narrator groans) and their other local beverages that some people like, and some people don't like. Do you—

KS: I like them all except for Maotai. And Maotai, to me, smells and tastes like Bunker C fuel that you put in a ship. It's horrible. And it's about 150 proof. And it's—

RA: Did you ever drink too much?

KS: Yes. I never got drunk, but there were nights when I [buzzing noise]—because the Chinese, in the early days [loud buzzing] would do what they called "ganbei," which is bottoms up. Part of the protocol was for the leaders to go around and personally ganbei with the heads of the delegations, and stuff. So there were nights when I drank more Maotai than I ever wanted to. But then I just began to plead being a weak woman. And they let me stop.

RA: (Laughing) Sometimes there's an advantage to being able to do that.

KS: You bet! That was one. Because it's terrible stuff. It's just disgusting.

RA: What about your colleagues? Did any of them ever drink too much?

KS: Yeah, yeah.

RA: No stories you want to share?

KS: No. (Interviewer laughs.) No names, no stories.

RA: Being discreet. Okay.

RA: What about foreign languages? Have you learned any words, phrases?

KS: Yep. I can find the ladies bathroom—or a bathroom—and order a beer in about 17 languages. And I can swear in Hindi. (Interviewer laughs.)

RA: (Still laughing.) Okay. I don't think we'll ask you to swear in Hindi for us.

KS: No, but I could. And the taxi drivers really pay attention to what you're saying when a foreign lady, white lady, swears in their language. They'll do what you want them to.

[01:06:06]

RA: After the field programs started to wind down—maybe we should come back to that again, why that's the case. Don't seem to be doing nearly as many as we used to. But then you became more of a manager, and I guess JICP/PO [pronounced like jicky-poo] evolved as something else. But you became head of this program called JOSS. What's your management style? How did all of that happen?

KS: Well, it happened because the field campaigns were few and far between. I mean, maybe not few—but they were cyclical. So I needed some way to pay peoples' salaries, to keep the expertise between the field campaigns. So we began to work with agencies to plan meetings, to hire visitors for them, and in general do science support services for our community. So that evolved into a different kind of management job than just managing the field campaigns or planning them.

JOSS, then, we got to be JOSS I think in 1995, when UCAR merged JICP/PO with an office from NCAR that was called the FODOM—no, it was Dick Dirks' office, Field Operations—

RA: Field—Yes, I know.

KS: Um. I can't remember exactly what they were called, but it was Dick Dirks, who came from NSF, and a bunch of guys that did data management and technical scientific program support. So they merged the two offices and made me the director. That's when JOSS got to be JOSS, which stands for Joint Office for Science Support. I did a contest, as you might remember, to name the office, because we couldn't figure out what to name it. I offered a six-pack of beer to whoever did the successful name, and it was you.

RA: Right. And I don't think I ever got my six-pack.

KS: Oh, I think you did. (Interviewer laughs.)

RA: (Chuckling) So I would like to have that with interest, at some point. But that's another story.

KS: Yeah!

RA: JOSS was a good name, because it's very descriptive, it's simple, it's easy to spell. And joss sticks, of course, China and Asia. Kind of has some relevance.

[01:08:20]

RA: Back to the foreign language aspect to all of this: Were there any—I think you mentioned one, where the Chinese captain didn't understand the harbor pilot. Where there other translation misunderstandings that were either embarrassing or dangerous?

KS: I can't remember any that were embarrassing or dangerous. But I do remember, in 1982 was the first time I went to China. We were negotiating an agreement to do these cruises that were pre TOGA COARE, and the phrase "Earth Systems Science" had just gotten currency with Francis Bretherton and then the committee at NASA, and stuff. When you do official government-to-government negotiations, documents are prepared that are equivalent in the two languages—or however many there are—of the negotiation. We spent a whole afternoon trying to figure out how to say Earth Systems Science in Mandarin Chinese, because Mandarin is centuries old, and so they have to put together words that then mean that. And it was very difficult. That was an interesting—it was very interesting.

[01:09:31]

RA: Back to the management: How would you characterize your style of management? And how does it relate to management versus leadership?

KS: Well, of course, like everybody else, I like to think I exercise leadership. But I try to hire really good people; I try to be clear about what my expectations are and ensure that they're clear about what agreements they're making. And then as far as I'm concerned, they have to keep their agreements. Especially with logistical things, and support for big meetings, and other things that are so visible in the community, you can't slough off. You can't make big mistakes; you can't just say, "I don't think I want to do that." My guys know that they are required and expected to do really good work no matter what it is. And I try to be fair and reward them appropriately. I try to be kind—if somebody's got a family issue, "Take time off, see about your kid, see about your parent," whatever.

I also don't suffer fools lightly. And people who don't want to work don't want to work with me. Because when you sign up, you've got to keep your agreements. I keep mine, and they have to keep theirs.

RA: Who were some of your best employees over the years? People who have reported to you—your best reports. Ones you really admire and made the thing successful.

KS: My gosh. There have been several. Steve Williams, who is a data manager, he's one of the finest data managers in the world. He now is at EOL, when I took the technical group over to NCAR. Jose Matin, who was another director of field campaigns. I had a deputy—who was the secretary that I hired when I started JOSS— who was really good in the field. His name was Gene Martin. He was very, very good at that. However, when I went back to NCAR for five years, and I took the photo group with me—the technical guys—Gene got to be the director of JOSS. And he was a terrible director. I really misjudged that. I thought because he'd been such a good deputy, he had what it took to be director, and he didn't. He was afraid; he abused the staff;

he stopped coming to work. He just couldn't do it, and he couldn't ask for help. He was aggressive and really did a lot of damage to some of the programs that we had set up.

While he had been terrific—and he and I did a lot of great work together—I ended up feeling like I had made a mistake, at least in the job that he ended up having. Because he was not—not only wasn't suited, he was really very bad at it. So it's funny, you sometimes can promote people into positions that they're not suited for. Just because they are good at one thing doesn't mean they're going to be good at the next thing. And that was a hard lesson for me to learn.

RA: I've heard it said that a successful manager, leader, person who hires people, is really successful if two out of three turn out to be really good.

KS: Oh, I agree with that.

RA: Which means, one out of three are *not* good. So, if that's the only one that you had, you can consider yourself successful.

KS: There were a couple others who didn't turn out like I had hoped, but they were lower-level staff. Gene was the only high-level staff that I hired that really ended badly. And I felt badly for the staff, because I owed them better than that. And that's—frankly speaking, when Gene died suddenly five years ago—why I agreed to come back and lead JOSS out of that. Because they were demoralized, a lot of our sponsors didn't want anything to do with us anymore. Gene had jeopardized our relationship with US Global Change Research Program. And so I felt like it was my responsibility to come back and make that right.

[01:13:26]

RA: So, maybe this is—your management years are far enough along, people have evolved, but did you ever have any men working for you that resented reporting to a woman?

KS: Certainly I did.

RA: Okay. Not as far along as I thought. (Chuckles.)

KS: No. When the field operations guys came across from NCAR, Dick Dirks—several of them had PhDs, and they all were very successful in the community. Dick, to his credit, didn't like the arrangement, because he clearly thought he should have been the director of the office. But he was a gentleman, and he worked really well with me. There were others in that group who resented the hell out of it. And for about six months after the merger, nothing was getting done. And I finally got mad. I kept talking to them about it, and I said: "Look, I see what's going on. But this is the deal from UCAR, and if you're going to work here, you need to do this."

It just wasn't happening. And I finally, one day, got mad and I called a staff meeting of just those guys. They wanted an agenda, and I said: "There's one topic, so I don't need to write it down." So I just walked in the room, and I said, "Okay. I don't have a penis and I don't have a PhD, but I'm sure as hell you're director. So figure it out." (Interviewer chuckles.) And I left.

RA: That was it?

KS: That was it.

RA: That was the discussion.

KS: That was it. (Interviewer continues chuckling.) And it started working. Now some of those guys are wonderful colleagues and friends. Mark Bradford's a good example. I mentored him, and he's moved up to have a really marvelous position in CISL. But I finally just thought: You know, all this being nice around the table, and "Gee, what's the problem," and "Can I help?" was getting me nowhere. So I decided to fix it. (Interviewer chuckles.)

[01:15:19]

RA: Well perhaps, given the hour, we should wrap it up for this first episode. I think it's been very interesting. Thank you very much for telling us your story, and we will be back in a week or so to finish this up.

KS: Great. Thanks. This is fun. It's not often you have the opportunity to tell the story of your career and really think about it as a body of work—but 44 years is a long time. Yeah, so thank you. And thanks, Kate.

RA: This will be archived forever we hope.

KS: Posterity!

RA: Thank you, Karyn.

KS: Thank you.

[01:15:55] [Recording stops.]

[01:15:56] [Recording resumes.]

KL: This is Kate Legg, NCAR archivist. We are about to start our second session of oral history with Karyn Sawyer, interviewed by Rick Anthes. It is November 9th, 2015, in Boulder, Colorado. And I will let Rick take it away.

RA: Okay. Well, it's great to be back, picking up close where we left off, I think. I'd like to start out with your thoughts on international science. I know that the founding president of UCAR, Walt Roberts, believed strongly in international science and relationships. I know you've had a lot of activities in the international scene. So, what are your thoughts on international science and working with different scientific organizations and different cultures and countries. [01:16:51]

KS: My own philosophy about that was guided by Walt, because I knew Walt. And I knew how he felt about it. And through his days of ballooning—or, NCAR's ballooning things—and the

Soviets, and all that. When I first started doing international work, we helped the government with a bilateral between the government of the US and the government of the Soviet Union. I absolutely believe, still, that science should and *can* transcend political differences, and boundaries, and time zones.

In those days it was harder. When the Soviets would come, they would have a minder with them—a political minder—who wanted to make sure they stayed on the straight and narrow, and we weren't recruiting them as spies, and things like that. But it was so messy in the early days, because we had the FBI and the CIA following us around. And they didn't talk to each other. The Soviets had their minder, and of course the minder could spot the CIA and the FBI in a heartbeat. We'd have a grueling day of meetings, and then the US agencies would call me at midnight and want to show me pictures of everybody, that they'd taken surreptitiously during the day, and have me identify people. I was just goofy, really goofy.

But I worked hard with the Soviets—now the Russians—all the Asian countries that I've worked in, South America, to make sure that the politics interferes with the science as little as possible. And because of UCAR's position as a private nonprofit and not a government agency, and our ability to work as an honest broker, I think I've been able to be effective in that way. We never really—any time I can think of—had politics interfere with anything we were doing.

We had some issues on field campaigns; we had the Russian ships in the Mediterranean during ALPEX in the early '80s. In those days, the Russian ships had the best "met" packages. So you always engaged them to take the meteorological measurements. They were supposed to be on station, and they kept moving around. So I went down and started talking to people to say, "Look, you gotta stay where you agreed to stay. Because that's where we need the measurements." Turned out that NATO was doing submarine exercises with French submarines in the Mediterranean. And so the Soviet ships were following the French submarines around the Mediterranean. But it was raising hell with our measurements. I don't know if I got them to stop or if the NATO maneuvers were over, but they stayed on station for the rest of the time.

One of the challenges of that is melding different cultures and different ways of looking at things, into a more-or-less seamless scientific program or scientific collaboration. I learned early on that, because people speak English doesn't mean they speak the *same* English. They mean different things when they say certain words than we mean; and you need to really traverse all that with some understanding and flexibility in order to make sure that everyone ends up on the same page. I still believe that. I believe science absolutely can transcend politics. And I'm now active working with India. And, I think it's the best way to approach it. And it's the way to carry science forward in the face of anything else.

[01:20:17]

RA: During the days of working with the Soviets—in many respects they were very poor and had poor access to things like medicine. You ever have any experiences, after hours—maybe even outside of scientific quarters—of helping the Soviets with some of their issues?

KS: Yeah.

RA: The Soviet scientists.

KS: That's really true. George Galitzin was a former Russian prince, and he was a good friend of Walt's. Every year, for years and years and years, we would organize for George to be invited to give talks around the country, and get per diem and travel, so he could take his per diem home to the Soviet Union. Because in the Hydromet, scientists in the Soviet Union hadn't been paid for two or three years. And they were selling off jewelry and silver and whatever they could, to survive.

On one occasion—I was married at the time to a physician and emergency room doc. And Crouch was at all the events. There was a Soviet scientist who had an extremely ill child. I don't remember what the illness was, but it was rare and terrible. There was a medicine that had been prescribed as being helpful—I don't remember if it was lifesaving, but it certainly would have been helpful—that he couldn't get. It wasn't available in the Soviet Union, and he couldn't have afforded it anyway. So he talked to Crouch, and we got him the prescription—for the child—that he then took back to the Soviet Union. We tried to do things like that: We got them insurance when they came here, health insurance, and it helped the ability to have dental work done, and eyeglasses and stuff. So when they came, they were able to take advantage of some of that, just as a way to help without being—without seeming to be overly helpful.

[01:22:12]

RA: Seemingly little things must have built up a certain level of trust among the scientists. Maybe that has something positive to do, over the long run, with the relations between the two countries.

KS: I hope so. I'm sure that it helped science. Because, the science really was able to go forward irrespective of the political system in place. And I know some of those relationships carry on today. You might remember, in the '80s, we brokered a meeting—the first meeting ever between Taiwan and the Chinese, the scientists from the Peoples Republic of China. They had not met since 1949. And with your help, and C.P. Chang, and some other people, we organized a meeting in Hong Kong that you co-sponsored—again, as a neutral broker. We were able to do that—Tiananmen Square happened a week before the meeting, and we were sure that none of the Chinese would show up. But they did. Some of them on their own nickle, rode trains to Hong Kong.

I'll never forget: At the end of that meeting, there were old scientists who had gone to the University of Chicago together in the '30s and had worked together with their Taiwan colleagues until 1949 when Communism came to China. At the end of the meeting, at the closing ceremony, they rushed up on the stage and were weeping and hugging each other. They were so happy to see each other and to see the beginnings again of friendship and collaboration and trust. We had four or five of those meetings, every other year, and then relationships between China and Taiwan thawed to the point where they could then pick that up themselves and UCAR was no longer needed. But I think that was a huge contribution to international science and the overcoming of political differences to keep the science going.

[01:24:13]

RA; Yes. I believe C.P. Chang wrote an article on that, the history of it. So he clearly thought it was an important time. Any other countries that you were involved in that were maybe developing countries, or third-world countries, or countries that were difficult to navigate within or—

KS: Well certainly India. I did an eclipse expedition to Indonesia in 1983—yeah, '83. It was a difficult country. The violence in that country—it was only 20 years past the huge killing off of Chinese citizens and massacres of people. It was a scary country to be in. Don't tell Bill Rawson this, but I had to bribe our telescopes in and out of the country, because there was no way to get them in. The whole country was corrupt. Our platform, where we were operating with the telescopes, was a place called Ujungpandung which is about 100 kilometers, 200 kilometers north and west of Surabaya, which is on the end of the island of Java.

I always had to have relations with the local governments in places. So I had met them on the surveys and everything. So when we got there, I went to see the governor of the province where we were. In those days, in Indonesia, the military governor was in the same body as the civilian governor. So we went and we had tea. And he was very proud of himself, because he had been charged by the president of Indonesia—whom we knew—with our protection. I thought: Well gee, that's great. However, the guards around our camp were 12-year-olds with submachine guns, which didn't exactly inspire confidence.

And then the governor told me, very proudly, that in the months running up to when we arrived—and there were several teams; Japan was there, and some other nationals were around the area where we were—he had rounded up all the habitual criminals in that part of Indonesia and killed them, so we'd be safe. I couldn't exactly say anything about that, because it was with our safety in mind. But it was just illustrative of how completely violent that culture was. And indeed, the English-language newspapers—the whole time we were there—kept saying: Oh, so-and-so, head of such-and-such a gang turned up dead under a bridge yesterday. It was a little bit unnerving.

[01:26:49]

RA: Haven't heard that story before. (Narrator laughs.) What about China? When was the first time you went to China and the interactions there?

KS: Oh. I went to China in 1982 for the first time, with Mike Hall from NOAA. We started the—TOGA was just getting started, and we wanted to use the Chinese research vessels. I talked about that a little bit in the earlier talk. It was incredible in those days. Everybody still wore Mao suits. We had minders with us at every turn—I mean, they were with us all the time. They'd go through our luggage and our briefcases when we were out of the hotels. We moved around with government escorts the whole time. We used to delight in trying to ditch the escorts and get away from them, until we figured out that they were getting punished when they lost track of us. So we then went along with the whole thing. But it was not a lot of fun.

Being an American, and growing up in the American environment—kind of being an independent sort of American—it just drove me crazy to have minders and to have people watching everything I did, and talking to everybody I talked to. We'd have events like: We'd be leaving China, and the US would have sold fighter jets to Taiwan, so they'd park our United airplane on the very far part of the tarmac, and we'd sit there for six or eight hours. No airplanes in sight, but there were air-traffic concerns that kept us from taking off. So they'd harass us with all kinds of stuff when they'd get mad at the US government.

It was amazing. The Chinese wanted a lot of technology, as the US part of this program—in exchange for the ships, because the ships are very expensive. It cost $30 or $40,000 dollars a day to run a research ship. So, in exchange for their donation of the ship time, they wanted the latest computers and the latest this and that. We were able to provide that to them—but years later you'd go to China, and those same high-tech things would still be in their boxes in the hallways. Because the culture grew up—for centuries—with the idea that if you screwed up, somebody would cut off your head and kill your whole family. So people were terrified to make a mistake. They did what they were supposed to, to get all this modern equipment; but nobody would touch it, because they were so afraid it would break or something would happen, and then they would be held responsible for it. Those were really difficult things to overcome.

The Chinese culture is so, sort of, oblique in the way they approach problems. We had a LORAN navigating system on one of the ships—big antennae—cost $60,000 dollars for this antenna. And the Chinese didn't want to use it. I don't know why, exactly. I think it had something to do with the fact that the ship we were using, the center bulkhead in the bottom of the ship were all locked up. It was because they were missile-tracking ships—used to track missiles—and they didn't want this fancy navigating system on this particular ship. So when we were transferring the LORAN system from one ship to the other, they threw the antenna in the Pearl River. They said: "Oh, we can't use it on the cruise, because we lost the antenna. I said, "No problem. We'll get another one." And we got another one.

But the very next year, the government auditors were at UCAR, and they pulled up the purchase requisition for the original antennae and came to see me about it. They said to me: "So, you bought this antennae." And I said, "Yes." And they said, "Did you affix the correct property stickers to it?" I said, "Yes." I said, "It's in the database for the property." They said: "Well do you know where it is now?" And I said, "Yes." And they went away. I never had to tell them that it was in the bottom of the Pearl River, and that I had lost it.

RA: You hadn't lost it!

KS: It's still in the bottom of the Pearl River, as far as I know.

[01:30:52]

RA: What were some of the big changes in China that—if you went there the first time in 1982, you went back other times I assume. And what were the big changes you noticed in one of the most rapidly developing countries of the world?

KS: Well, they've been profound. As I said: When we went there in the early days, everybody was still wearing Mao suits, with the bowl haircuts. And gradually men *and* women began to take on Western dress. Even though it's politically incorrect, they're fascinated with all things Western. So the women began to wear Western clothes; and the men began to wear Western clothes. One of the most striking things is that: In China they had roads, and then on each side of the road there were secondary kinds of roads for bicycles. Because everybody in China rode bicycles. When I first went to China those side roads were packed. There were just bicycles and bicycles and bicycles. And there were maybe one or two cars on the road, all the way across Beijing. You could get from the airport to the western suburbs—where the atmospheric administration was—in about 30 minutes. Now it takes an hour-and-a-half.

Gradually, over the years, the bicycles began to thin out and the cars began to fill up the boulevards. Now it's gridlock all the time. You can hardly drive around. You never go outside—you get to the western suburbs, you stay there, because it's a day's work to get in and out of central Beijing anymore. So that's huge.

People began to have disposable income. In the early days, they all lived in apartments that were attached to the ministries where they worked. And they got their housing free. But the directors of some of the big institutes made $40 a month. So they had no discretionary money at all. That began to change. They began to be able to afford things. When we first went there, you could buy anything Chinese—antique or otherwise—and bring it home with you. They began to appreciate that they shouldn't be selling off their historical treasures. So now it's very difficult to get old things out of China. But you could buy Neolithic stuff in China for nothing in the early days, in the markets.

So there are big, big changes.

[01:33:11]

RA: Who were some of your favorite scientists or people that you met in China, or India, or Russia. Some of your favorite people that you really enjoyed—became friends with.

KS: There was—in China, the head of the Chinese Atmospheric Administration was a man named Zhou Jingmeng. You knew him too. He was one of the children that Chou Enlai plucked out of the Cultural Revolution and protected. During the Cultural Revolution, the intelligentsia in China were run off to the countryside to pig farms, or killed. A lot of the children were orphaned and just got to be street children and disappeared into China.

But Chou Enlai was very wise, and he took some of the children of these intelligentsia, who'd been persecuted, and protected them. Sent them to private schools; paid for their education and protected them from the government. Zhou was one of those children. And he rose to be head of what's the Chinese National Weather Service. The guy was delightful. He was charming, and funny, and forward thinking, and absolutely reasonable. We'd get to these deadlocks in negotiations, and Zhou would always figure out how to break the deadlock. He and Dick Hallgren were amazing together. Hallgren was on the early delegations, and he also was a very canny negotiator.

After Zhou stepped down—because China, in those days at least, had mandatory retirement—Zhou went to the U.N. Because that's a favorite perk in a lot of countries—that once you retire, you get to go to the U.N. The worst driver—next to Kuettner—I've ever seen in my life. He would come pick me up in Geneva, for dinner, in this *big* Mercedes from the Chinese delegation. And he drove like a mad man; he went through red lights, and he didn't pay any attention to—he scared the liver out of me, but he loved to drive. So we'd go and have picnics in the mountains, Zhou and I, and I was amazed I ever got out of it alive, because he was a terrible driver. Such a funny man.

And then he went back to China, and he was murdered in a grocery store parking lot, in a random act of violence. Somebody went to rob him and his wife, and stabbed him to death. So he died tragically. But he was a real—he was a wonderful, amazing man. He had a childlike appreciation for everything in the world, because he'd never been out in the world. So everything he saw—we took him skiing one time, when he came here, and he just rolled down the hill, but he laughed and chortled and just had a wonderful time. He was lovely.

I don't remember anyone, particularly, from the Soviet delegations.

[01:35:50] Over the years I made a number of friends in India. When we did the first field campaign in India, these men were all graduate students, and I was young and stupid and so were the American scientists. It was Peter Webster and Bob Houze, people like that, who were just out of graduate school. We had no idea what we were doing, but we did a pretty good project. As a result of that, we sort of have cleaved together over our subsequent careers. Shukla was there too.

Now, those Indian gentlemen who were graduate students are now heads of the scientific laboratories, the National Center for Medium Range Weather Forecasting; they're in the ministry—they've risen to be secretaries in the ministries. So I've been able to stay well connected in India because of these friendships that I formed in the '70s, with these people. It's one of the perks of the job, that I've had, is that I have made warm and wonderful friends in a lot of the countries I've worked in. And in India, the man who worked with me as my admin assistant—Sirjit Singh Ahluwalia—he and I got to be very good friends. He was one of my best friends. I know his family; I still know his children and his grandchildren and his widow. It's been a lovely set of friendships.

[01:37:03]

RA: What have you seen in terms of a much broader perspective about the changing international scientific scene. My impression is that there's not as much as there was 10, 20, 30 years ago. Wondered if you agree with that, or if you have any thoughts about that.

KS: I think there might be as much, but it's quite different now, than it was then. You know, when we collaborated with the Soviets, and when we worked with India—and the Europeans, certainly—it was collaborations among, roughly speaking, equals. They were fine scientists in their own countries, and our best scientists we brought from here. Over the last probably two decades, it has taken—with South America and Asia and Africa—it has very much taken more

the flavor of infrastructure development in countries that are less well developed than ours. We still do big measurement campaigns with the Europeans and stuff, but in general, it's mostly: Let's see if we can't figure out how to upgrade the African weather services so they can forecast—provide agricultural forecasts—for their own countries. In South America, it was: Let's see if we can't leave them with a good radiosonde network and some modeling capability that will take into account the El Ninos. Things like that.

So I think there's as much as there used to be. A lot of it now is fueled by USA ideas and the U.N. But it has a very different character than it did 50, 30, 40 years ago.

[01:38:48]

RA: I think we talked a little bit about Joach Kuettner. But let's come back to him for a minute, just because he was such an interesting person. And you worked with him for how many years?

KS: Forty.

RA: Forty years, okay. So how did you see him change with time? What were some of the things you remember best about Joach?

KS: Joach was, hands down, the most extraordinary colleague I ever had. And the most extraordinary friend. He came from Germany as a legendary pilot. He basically invented the art of soaring, after World War I. And he was a test pilot for Junkers during World War II. He was not a Nazi and he would not fly combat missions. But he test flew for Junkers. He test-flew the original V2 rocket. It was originally designed as a manned thing. And he test flew that. He was extraordinary. He was extremely cultured, and well educated. He was a fine concert pianist. He escaped from Germany in the very last days of the war, just as the Russians were coming to Berlin. He came to the US with Werner von Braun, with the group of scientists who came after the war. Joach was the manager of systems for the original moon shots. So he knew the astronauts and had worked at Huntsville. And then he came to NCAR as the project director for the international MONEX project office.

Joach had been at WMO for GATE. He and a Russian—Soviet, then, person, whose name I've forgotten—were the two scientific leads for GATE in Dakar. The way measurement campaigns are designed and carried out today, are because of Kuettner and how they evolved under his leadership and his directorship. So, after GATE, I worked with Joach on every single big field campaign—through GARP, through FGGE, and through TOGA.

I was with him in the field, one night in Dakar. He also was a terrible driver. Terrible. He could fly an airplane like putting on an old coat, but he could not drive a car. We went to the port in Dakar one night, to get the tapes from the Russian ships that were doing the meteorological measurements. The Russians—US ships you can't drink on, but the Russians of course had cases of vodka in the hold. So they always had these big parties. It was a very long, vodka-laden night. Joach and I got the tapes, and we got in this little rental car he had—and the port was about 20 miles from where we were staying in Dakar, in the city. He couldn't get the car in gear, so we

drove at four o'clock in the morning in reverse, all the way from the port. Another night I thought I'd never see the light of day again, with these crazy drivers.

He was incredible. He was wise; he knew his science; he helped guide the scientists to design measurement campaigns that could really make some purchase on scientific problems. So I got to be his right-hand person, because I could get things done. And when stuff needed to happen in the field, somebody needed to do it, and it was always me. So Joach and I were joined at the hip for 40 years on field campaigns. It was one of the most amazing aspects of my whole career. He was a great friend, an amazing mentor, and you could learn from just listening to him. He was astonishing as a person. I feel so lucky that I had a really nice relationship with him. And he died a few years ago at 101. He was almost 102 when he died. My retirement party from EOL—five years ago—was the last time he was in public. He made a huge effort to come. It was very touching, and he made some lovely remarks. He was amazing.

[01:43:00]

RA: One might think that after being involved with von Braun and the space program, and the moon shot, and all of that, coming to UCAR would be sort of a—might be viewed by some as a step down. Do you have any insights into why he did that? Or way he didn't pursue the career in NASA?

KS: I think—from conversations—he didn't pursue a career in NASA because it was too bureaucratic and too difficult. While he was a good systems engineer: Because of his gliding and soaring, he basically defined, first, the concept of mountain waves, because of his soaring. So he was an atmospheric scientist at heart. Joach never saw anything as a step down. He always looked at the challenges and the good that could be done, and the scientific pay back, as a worthy and dignified thing to do. So he did it. After MONEX, he stayed on at UCAR until he died. He sat with JOSS, with my office, because he loved us. He could have sat anywhere in NCAR—because he was so revered by the community—but he sat with us because he liked us. He didn't see that as a step down, either. He was extraordinary.

[01:44:19]

RA: Didn't he keep alcohol in his desk?

KS: Oh the famous Goldwasser.

RA: Totally against the UCAR policy. (Chuckles.)

KS: He loved Goldwasser. Every afternoon when I was in town, around four o'clock, Joach would come in and say, "Let's talk." So I'd go in and he'd pour me a little thimble full of Goldwasser. His little Goldwasser talks were legendary. Usually he needed something, or wanted something. And he was always very gentle in how he asked for it. He figured Goldwasser made the request go down easier. But there were a lot of nights when you would just sit there and watch the snow fall, and he would tell stories about his life in Germany. Or we'd talk about old field campaigns, or old friends. It was a lovely, gentlemanly relationship.

[01:45:02]

RA: I knew Joach fairly well, latter few years of his life. I would characterize him as perhaps the ultimate gentleman scientist.

KS: Yes.

RA: On the opposite end of the spectrum, have you worked with people who were less than diplomatic, or less than gentlemanly?

KS: Oh, yeah. Not many, I have to say. I've been very lucky. There have only been a couple of PIs that I had to take to the wood shed during a field campaign—because they were just impossible to work with—and tell them to just cut it out. It wasn't working; nobody should be expected to work being excoriated and blamed publicly for things. And there are a few—I won't name them, in the interest of keeping the peace—but a few of them were absolutely dreadful. In one field campaign, I got so mad that I had t-shirts printed for the whole JOSS staff with bullseyes on the back. He didn't get the hint. So I had to take him for a walk on the beach and say: "Stop it. This is no way to work, and we're not going to work this way."

[01:46:01]

RA: Turning to: You're about to retire, *again*. You retired once—you mentioned that Joach came to the last, the big retirement party at EOL. And you're about to retire again. Are you going to come back?

KS: Not in this incarnation. I have agreed to stay on as a casual, to help with some international topics. I'm now—after 40-some years, I really only want to work on the things I want to work on. So I can say yes or no, and they'll pay me an hourly rate, and if I don't want to do it—I won't. It's nice. But I won't come back as a manager, or a senior kind of person. I don't want to manage people anymore; I don't want to write performance evaluations; I don't want to do strategic planning. I don't want to do any of it. I've done it, and I think I did it pretty well, and I'm done.

[01:46:57]

RA: So what—you've been here 40 years?

KS: Forty-four.

RA: Forty-four years. What are the big, large-scale changes that have gone on in UCAR or NCAR, during that period? Thinking back to the times when you arrived—and maybe decade by decade, or something like that.

KS: That's an interesting question. It's multifaceted. When I came to NCAR and UCAR, there were 600 staff. Walt was still alive; Walt was still in a management capacity. It was like a family. Walt knew everybody; he used to buy pizzas and have lunch with the machinists in the machine shop. Everyone knew everyone, and it was very collegial. And these were the days

when Phil Thompson was still alive, and Chester Newton. Some of real icons in our community were developing science that is now dispersed around our community, but it was seminal at NCAR in those days. So it was incredibly exciting, and very warm and comfortable—comforting. We worked hard, and you needed to do the right thing, but it was very warm and personal.

For reasons of size, certainly—now we've got 1,200 people—that's no longer the case. But it never has been an impersonal place to work. We all still—those of us who've been here a long time—I mean, I've worked with you for 25 years and known you well. I knew all the UCAR presidents well, all the NCAR directors. I never felt like I couldn't go sit and talk to somebody, and say: "Look, I don't think this is working. Talk to me about it, and let's see if we can't figure out how to do it better." It was very open and collegial, and independent.

When NCAR was first formed, NCAR was "it" in the world, pretty much, for a National Center for Atmospheric Research. All the best people were here. Over the years, now, university departments have come up. There are things like the European Centre for Medium Range Weather Forecasting. They're as good as UCAR, in certain ways. And so it's not too much, I think, that NCAR has slipped in stature; but the rest of the world in atmospheric sciences as a discipline have come up kind of, to the NCAR standard. So it's much more diffuse. NCAR's lost a little bit of its bragging rights.

The thing that I think has worked against us, more than anything, is how bureaucratic the federal government has gotten to be. We are completely hogtied in doing many things that we used to do, because the federal government is now full of rules and full of regulations. If something goes wrong in one part of the federal government, they make rules that keep everybody from doing things. I—frankly speaking—don't think I could do a field campaign like TOGA COARE anymore, because I wouldn't have the legal freedom or the institutional freedom. And that's been huge.

Over the years, NSF has interfered, shall we say, with the NCAR program. Used to be Walt sitting down with Gene Bierley [?] or somebody, and talking about it in a very friendly way. Now, it's NSF being bureaucratic, and "Oh, you can't do this; and you can do this; and you have to do that." So the whole construct has gotten much more limiting, much less intellectually free. I think that has been the big—several of the big things that have happened over the last 40 years. That's—frankly speaking—one reason why I'm retiring. I don't have the freedom of action I used to have. And it's not as much fun.

[01:50:47]

RA: So, what are your plans for retirement?

KS: Oh, I have a lot. My 93-year-old mother lives with me. And that's probably the equivalent of a full-time job. I was elected to membership in the Explorers Club, about 10 years ago, and I'm very active in the Explorers Club. I'm chairman of the Rocky Mountain chapter; and I think I'll run for their international board in a few years.

I am on the board of the Boulder Philharmonic. I have a jewelry business that I started the first time I thought I might retire. So I have that. I won't have any trouble finding things to do. I still like to travel, but I only go to places that I want to go to now, and not places I have to go to for some reason or another.

RA: Well, before we wrap up: Are there any—as they say in job interviews, these days—are there any questions I *should* have asked you, but didn't?

[01:51:45]

KS: Well there was one that was in here that we kind of skated over. The written question said, "Why did you keep coming back? What kept you going?" And, what kept me going—sleeping on the ground, fending off snakes, dealing with the trenches of PIs and governments and stuff—was the fact that so few people ever have the opportunity to work at something that makes a difference, in a humane sense. To humanity across the world. And the measurement campaigns that I supported have resulted in data sets that inform models at all levels of severe weather; of global climate models. We contributed in a material way to the understanding of El Nino, which is crucial in interannual and decadal forecasting.

So, when things got really tough—and in the good times, too—what kept me going was that I had the incredible luck and privilege to work at something that at least had the chance of making a material, good difference to humanity. And it sounds a little Pollyannaish—I'm not very Pollyanna, as you know—but I think it's important that there are places, still, where you can work at things that matter to people in the long run.

RA: Actually, the American Meteorological Society gave you a special award a few years ago, which I think recognized that. Can you say a little bit about what that award was for?

KS: Well, I was stunned. I mean, I never dreamed in a million years I'd get an AMS award. I was so naive, that when it was a "special" award, I didn't even know what that meant until you or somebody explained it to me. It's an award that they don't give every year, and they only give under *very* special circumstances. I received it for 30-plus years of my service to the community, by making it possible for scientists to do these incredible things in difficult, hostile environments.

I and my staff did everything else, leaving the scientists free to do their science. And they—AMS—recognized that and gave me the award. It was probably the most special award I ever got. It was really amazing. I was dumbfounded. I'm not a scientist, and they chose to make one of these awards to me. It was very touching, and it was huge because it was a group of my peers who made it happen. So it was huge.

RA: I think that was a fitting tribute and recognition by the outside scientific community; it was not a UCAR award, you were not nominated by UCAR people—it was outside people.

KS: University scientists that I'd worked with for years.

[01:54:28]

RA: So, with that, we should probably—this is a good place to end it.

KS: That's fine. Thank you very much.

RA: Thank you for your wonderful career. I think it's benefited many, many scientists. And certainly it's been one of the outstanding UCAR employees from the very early stages.

KS: It's been great for me.

RA: We appreciate it.

KS: I have a personality that would not have thrived in a lot of environments, and UCAR invested in me and supported me. It's nice to think I paid them back in kind. It's been fabulous, and I could not have scripted it or planned it, had I been a planner.

RA: Well, we hope you stay involved with us on a few special projects.

KS: If they suit me, I will. (Laughs.) Thanks.

RA: Thank you very much.

[01:55:14] [End of recording. End of interview.]