Molly Graham: This begins an oral history interview with Craig McLean on December 8, 2022. The interviewer is Molly Graham. It's a remote interview with Craig in Olney, Maryland, and I'm in Scarborough, Maine. I wanted to pick up with your time at OAR [Oceanic and Atmospheric Research], but first, make sure that we're not missing anything up to this point.

Craig McLean: I think what we spoke of last time is pretty much the highlights of the challenges that I had over at the Ocean Service. I think we talked about the rescue of the National Oceans Conference that was being held in Washington, DC. It seemed to be falling apart, and we put a team together to help rescue that. Chris Beaverson, who was also a NOAA Corps officer – he and I and a few others. Then the other challenge that was there was the Integrated Ocean Observing System [IOOS], which was designed in Rick's [Spinrad] leadership in an interagency ocean committee, basically, to bring all the federal agencies together. There seemed to be a competitive jealousy among agencies that whoever landed it would get more money, which didn't really happen. Once it landed in NOAA, it was somewhat frustrating that the other agencies didn't come along. NOAA was left to carry that burden. We had a series of talented people take up that role. But that was pretty much the progress during the course of my time there. Much of my time there was learning, and in every assignment I've had, but learning there, once again, from Rick and also Jack Hayes. Jack was the deputy. Rick was the assistant administrator. I was learning how to be a senior executive. Again, it started with Bill Stubblefield, giving me new direction. It started with Rollie Schmitten, showing me how, stylistically and with engagements, one can learn to be a senior executive. With Rick, it was very much an active job but an unwitting tutorial every day. He's fantastic. That's why I'm so happy and proud to see him as the administrator of NOAA today. So that was pretty much my story at the Ocean Service. Rick then left to move over and lead OAR as assistant administrator for research. He was then replaced at NOAA/NOS by Jack Dunnigan. Jack had been a colleague, somebody I'd worked with back in the Fisheries days for me. Jack was then the assistant administrator for the Ocean Service. So, I worked for Jack for probably the better part of a year. And then I came to the point of – I was actually asked to go back to sea and to be the commanding officer of the NOAA Ship *Ron Brown*. I looked at that, and I looked at the equities, and I thought, "Now, wait a minute, I've been running the Ocean Exploration Program. I've been working, at that point, as deputy assistant administrator [DAA], which I'm not the only NOAA officer, but you can count on one hand the number of NOAA officers who have had the opportunity to work at that level. Not to be arrogant in any way, but I looked around and thought, "We have quite a few people that could be an able commanding officer of the NOAA Ship *Ron Brown*, but I'm one of the few who has done this work. It's probably time for me to retire from the NOAA Corps." So I did. I had days, actually, when I was on the *Gordon Gunter*, when I would look out, and I realized my experience is a little different than it was when I was on the *Albatross*. The *Albatross*, up in New England mostly, was a mighty seafaring adventure – the weather we faced and the like. When I got to the *Gunter* several years later and several assignments later, I reflected back on that same value. There's a lot of guys and gals who could do this job and do it well. There are things that I seem to be able to find my way to do pretty well, but a little bit more unique inside of the personnel system that we grew up in, which was the NOAA Corps. So that idea was in the back of my mind. Then the time came. I think that threw the switch it was time to go. So I applied for two positions that were almost simultaneously advertised: the deputy assistant administrator for the Ocean Service, which was the job that I was in, because it was well-known that I was retiring from the NOAA Corps, so we

have to replace this person. Then, the other was deputy assistant administrator for Oceans and Atmospheric Research, where Rick had moved over to. Rick went from Ocean Service assistant administrator over to OAR. Vice Admiral [Conrad] Lautenbacher, who was the NOAA administrator at the time, wanted to change the direction of NOAA Research and to really do the things that Rick started and I got to complete when I followed him. But it was to make OAR more responsive to the NOAA mission rather than a collection of federal laboratories. So Rick moves to OAR. I'm there yet as the deputy at NOS [National Ocean Service]. It's time to retire. I'm applying for Rick's deputy, and I'm applying for Jack's deputy. I was very humbled and fortunate to realize that I was accepted for both. So now I have to pick. Am I going to go to the job that I've been doing, or am I going to go over to OAR? Frankly, I thought I was more qualified for the Ocean Service deputy job based on my legal background, based on many other things. I don't think we talked a whole lot about law, but it's mixed in there in my later career. So there's a reflection of that understanding. I talked to Rick, and I said, "I think I would like the challenge of working in OAR, and that works well. But also, I've got a lot to learn in this position, and I think that would be a fun challenge." So he picked me. I was grateful. I became the civilian Senior Executive Service deputy assistant administrator of OAR. Rick stayed there for a few more years and was then recruited from that position to become the vice president for research at Oregon State University. When Rick left, then I was the acting assistant administrator. That was a new role. I had been the understudy, and I had seen how the role plays, but nobody could replace Rick Spinrad, and I knew that. I also needed to make sure that the people I was responsible for knew that as well. But something I learned in management training from an absolutely skillful instructor, mentor, and guide, a chap named Walt Childress, and Walt had been brought on into OAR to provide organizational development, counseling, and guidance prior to my arrival. I think what Walt was trying to remedy were some of the things that Vice Admiral Lautenbacher had seen inside of OAR and wanted to help make a change. So Walt was already there. But one of the things that I delighted in Walt was I met him a decade earlier when he was an instructor at an OPM, Office of Personnel Management, training course on – I think it was called the Management Development Seminar. It's one of the best courses I've ever taken. Sometimes people might look askance at an OPM federally-taught course. I don't. I think it's one of the best courses I have ever taken. So one of Walt's pieces of advice to me when I made that transition from deputy to acting assistant administrator is, "You move into that office, you occupy that seat, and you let people know that you're in charge. You're not temporarily holding this responsibility. You are indefinitely holding this responsibility until relieved." My military mind, my service mind, very much subscribed to that. I was a little bit bashful about the presumption of, "Well, I'm going to move into Spinrad's office, his former office." With Walt's reinforcement, I felt a little bit more comfortable about that. That's a value that I have taken and shared with others who had followed me. Walt's idea was that as long as you're in charge, you need to be reflecting that you're in charge. But with being in charge comes the responsibility for the organization. I was very comfortable with that. During that course of time, there were some developments toward NOAA creating a climate service as a new line organization. It actually was a wise idea. In retrospect, one could go back and look at how we collectively undertook that. There were many, many meetings, many mixing of minds, and very keen people inside the agency were thinking about it. If I could look back at what we might have done differently, we focused internally, and that left the external community out of the discussion. If all parties are not in the discussion – and, of course, many agencies, many entities contribute to understanding climate – you then create the vulnerability where because people

weren't part of the making of that plan, they're not going to support that plan. But the other piece that happened during that course of time was – it's starting to build now towards a vision of what a climate service would be – what do you do with OAR if you create a climate service? Because so much of climate in NOAA comes from OAR. So there then became a reality that we're a bit vulnerable here in having a research enterprise. Several studies that NOAA had conducted over the previous decade had raised, evaluated, and concluded that NOAA has a strength in having a consolidated research enterprise. Keep this thing together. But what pieces do you take apart, fractionate, and then put over into the climate service? So that was a management and a leadership challenge. I had to try and encourage everyone to stay together and to look for the best logical outcome rather than fight the climate service internally, which I wouldn't, and we couldn't and didn't. But I also realized that we needed some allies to look for the solid component of a research enterprise because the alternative to that was, just like a deck of cards gets shuffled out, shuffle out the pieces of OAR to the operating lines. History has proven, whether it's General Motors or whether it's NOAA, if you break up your research enterprise and distribute to the operating entities, the budget shifts, starves research, and pays for operations. That was one of the many conclusions of the NOAA studies that had looked at that same question. So I took a much more aggressive position in recruiting the alliance of our Sea Grant enterprise and our Cooperative Institutes. Number one, I realized that we would make NOAA and OAR stronger by having greater involvement of these skillful players that are out in the community and also out in our laboratories. But I also realized that they can be advocates for the strength of what we have here inside of NOAA, inside of OAR. I'm proud of having raised the level of inclusiveness with those two communities for our science. So all that's going on in the background. The other thing that was a challenge during my tenure there was *Deepwater Horizon*. So shortly after Rick Spinrad left NOAA and went to Oregon State University, within months is my recollection, *Deepwater Horizon* happens. So now, not only am I looking at the climate service and how we keep this organization together, the people as well, so that there's no fratricide between laboratories or components of labs and programs. "Well, I'm going to climate service. I'm going to have a wheelbarrow full of cash. Good luck to you who's staying behind." I wanted to make sure that that didn't happen. And then *Deepwater Horizon*, which was – everyone's hair was on fire. How could we do even more? I think because I had known so many of the players, having grown up in NOAA, as did other people who grew up in NOAA who then rose to certain positions – and I'll mention Steve Murawski, who was the science lead for the National Marine Fisheries Service. Steve was one such person. Dave Kennedy, who I worked with at NOS, was Mr. Oil Spill. Dave had been the lead man and was put in charge of *Deepwater Horizon* for NOAA directly under Jane Lubchenco, who was the administrator at that time. So knowing all these people made it a lot easier. In particular, with Steve, the Fisheries Service and OAR laboratories did a lot of good work, both in the modeling of where the oil would go and even so far as – [Dr. A. R.] Ravishankara phoned me up one day and said, "Look, we're out on the West Coast with one of the NOAA P-3 aircraft outfitted for atmospheric chemistry. Let us fly over the spill site. We can help here." And the brilliant minds that are out there that were in Ravi's lab, the Chemical Sciences Laboratory, today led by David Fahey, but back then, that was Ravi – the people that were in that airplane and the scientists who analyze that data contributed a brilliant stroke based on what oil degraded into the atmosphere by evaporation. First of all, it had to rise through the centrifuge of the ocean and, by density, make it to the surface and then evaporate into the atmosphere. The parts per trillion analysis of those chemical instruments that NOAA has on that aircraft when we're not hunting hurricanes with the

same aircraft – those instruments detected a chemical profile that allowed them to extrapolate how much oil must be leaking into the ocean, degrading and making it to the surface in part, and then becoming a vapor. At the same time, Woods Hole Oceanographic [Institute] brought their hydrothermal vent scientists down with Woods Hole's submersible tools – unmanned submersibles, unoccupied submersibles – and did a volumetric calculation. The Woods Hole volume and the chemical dispersion volume matched. So two independent views of how much oil is coming out of that wellhead were very complementary. The hardest one, I think – I have full respect for the hydrothermal vent scientists. We have some in NOAA, and Woods Hole has some excellent ones as well. That's what they do. They look at a volume of stuff coming out of a fissure in the sea. In this case, it was a pipe. But the atmospheric chemists, the elegance of their design and analysis just blew me out of the water and made me realize what a precious intellectual resource we have in this collection of people that's housed inside of this agency. So with that, we were able to basically go and hand that over to the authorities that were managing the oil spill at the federal level. I think there was quite a bit of embarrassment to the *Deepwater Horizon* owners and lessees who were doing the work – British Petroleum, Halliburton, and the rest of them – because their de minimis characterization of the oil that was coming out was just totally blown away by two very independent sources of value. That also taught me a lesson. When Ravi called me up, he said, "Hey, I have an idea." I'm a risk taker. When I was running Ocean Exploration, I sent a bunch of guys with a box full of ROV parts – not an ROV, but a box full of parts – up to the Arctic to go and do some work. They promised and committed that, "We'll build that ROV on the way up. We'll get it done." And they did. I'm a risk taker. So bringing Ravi around, people were looking askance. "What is that going to do for what's happening thousands of feet underneath the sea?" But having faith in our people, knowing who to listen to, who to trust – that was another home run for Team NOAA, and we were able to solve at least a question, a problem, which the natural resource defense attorneys later had yet another piece of armament to go into battle in order to get the best settlement on that spill. So, it was *Deepwater Horizon*, and it was defending OAR to emerge from the climate services proposal with something valid. Then, 2012 came the time – so I'd been the DAA and the acting AA between my retirement from the NOAA Corps in 2006 to 2012. NOAA was able to advertise and recruit to find a permanent assistant administrator for Research. So then I devolved back into my permanent deputy role. I remember a couple of people asking me, including the chap who took the position, and he was a good fellow, Bob Dietrich – Bob had come from Woods Hole Oceanographic, then was at NSF, National Science Foundation, for a considerable number of years directing programs and directing collections or groups of programs. Bob did very well over at NSF. So he came over to NOAA, and he asked me, "Are you going to have any problem going from the acting AA back to DAA?" Other colleagues [and] peers were asking me, "How are you going to do this?" Actually, it's pretty easy because, in my NOAA Corps time, you're bouncing around between levels of responsibility and you know the definition of the position that you're in. You also know the definition of the position you might get to next, and you just fulfill that. It was not hard for me at all. I enjoyed working with Bob. We had, at the time – a funny story I'll share with you. Maybe it's not so funny. I mentioned Walt Childress and the benefit [of] his organizational psychology; that's his profession. He's worked for many agencies inside of Washington, DC, including all the three-letter agencies, the intelligence community, and the Washington Redskins at the time, now the Commanders. But he's worked for everyone. He is that good. We had set up a series of training courses. It was called LEAP [Leadership Effectiveness and Advancement Program], a

leadership advancement course. We had everyone in that course, from me as the then acting assistant administrator for OAR to the people who were at the opposite end of the pay scale and complexity of job scale, perhaps is a good way to put it. Everyone was welcome. We brought that course forward. I was very involved in putting it forward with Walt, and I was very engaged with each of the teams and groups we put forward. One of the things we decided to do because we were short on people to administer contracts was we had the class, the trainees, design the next round of lectures. One of the lectures we were hoping to land but would do so through full, fair, and open competition was another – actually, he was a neuroscientist who taught thought processes to people and how it affects leadership. But he also was a magician, and he used magic to show you misdirection and how you conclude something that you believe to be legitimate but, in fact, is not, and to probe and to make inquiry and a series of skills that are necessary for a leader. So our team writes that solicitation. An innocent person puts a title on the solicitation that basically said, "NOAA's looking for a magician." That goes out in the Commerce Business Daily, all innocent, all unintended. Now, unfortunately for us, around about the same time, some people at the General Services Administration had gone out to Las Vegas, Nevada, and had just an absolutely flamboyant and wonderful time out there at the taxpayers' expense, and that made front page of everything. Instead of just saying, "Hey, they're fired. Don't ever do that again," everyone's blood pressure went up, monitoring everything, and along comes this: "NOAA wants to hire a magician." So at the time, this would have been the Obama administration. There was a political appointee who was the person that every staff has, which is: go fix this. So the go-fix-this person, I come to find, is – this all happened very quickly, where the solicitation went out. I never saw the solicitation. People looked at it, [and] said, "Yep, looks good." Innocently, somebody attaches a title to it, "NOAA wants to find a magician." It's in the Commerce Business Daily. The stuff hits the fan. It's going crazy hour by hour. So I get the word that this just politically-appointed person, who's tough, is in the cubicle of the person who launched the Commerce Business Daily ad and is just getting chewed out. So, I went running down there. I physically put myself between person A and person B. I turned to the appointee and said, "I get it. I get it. This is a mistake. This should not have happened. I take full responsibility for this. Do not blame this person." I think that dear person was a GS-12. I'm responsible for everything that happens. I'm the commanding officer of the ship, and the ship happens to be OAR. "Now, the level of excitement that you're showing makes clear to me" – this is what I explained to the person – "that you're really trying hard to get your president reelected. Every president is mine. I work for whoever it is. But I'm not as concerned about this as you are, and the amount of volume you're putting into this and the emotion, you might want to calm down." Because the other individual is just about in tears. "I only get this excited when we lose a person, crash an airplane, or smash up a ship. Those are the three things. None of those three have happened here. I think you need to leave, go get your composure, and we're going to work this problem and solve it." That, unfortunately, was not enough for my then-boss, who was pretty new at the time, Bob Dietrich. Bob saw this as, "Oh my gosh, this is a liability. We got to get rid of this." We wound up having to close down the LEAP program, which really still pains me because for, I think, five years, we'd been running it. The legacy of the LEAP program is not trying to hire a magician. The legacy of the LEAP program is that OAR still continues as of my retirement, and I would hope it's still the same today, almost a decade later. In fact, a decade later, OAR has the highest scores of employee satisfaction [and] employee engagement. We blow the Department of Commerce out of the water. We lead NOAA by a pretty good stroke. The value of making that investment notwithstanding that flap, I still commit to the value and the

utility of such a program. Walt, God bless him, did wonderful things for this agency. It just pains me to, on the instruction of then my boss, we had to shut this thing down. All for that one little flap. But I get it. Bob was new. He's new in that environment, and here's a vulnerability. What you do is – to use my own experience with the NOAA Corps elimination – you try and snuff out the embers before they become flames. I guess Bob did the same thing. So, no harm, no foul. I just realized the strength of what we had, but that pretty much – trying to hire a magician, keeping OAR together in spirit and then also preserving the organization; recruiting the allyship and the participation, the partnership of cooperative institutes, Sea Grant, and *Deepwater Horizon*, which was everyday constant, eighteen, twenty-hour days just following the next detail and what else we could be doing. So that pretty much was my run through OAR until there came an opportunity for me to compete. Bob left in – he was there for about two years. Bob left, and then I became the acting AA again. It's always awkward in the personnel system to be the acting person and apply for that job, although many talented people would do so, and I've seen many talented people do that. But the personnel system looks at that with some questions, saying, "We have to be careful that this doesn't look [like] it was baked, and we didn't go through a full and fair competition." So, by this time now, Kathy Sullivan, who was also a friend – I had known Kathy through diving, and I met her when she was the chief scientist of NOAA. We had a chance to work together there on some boards. I was the attorney assigned to those boards. So I knew Kathy and later then, I was invited to join an outstanding group of people in an organization called the Sea Space Symposium. Kathy had been the president of that previously. Eventually, I became the president of that. It's just a wonderful group of astronauts and aquanauts, basically, undersea people and outer space people. So anyway, Kathy says to me during the course of our interviews – and she can be tough, and she was tough – she promised me she'd be tough on me. Kathy doesn't break promises. She kept that one. She was tough on me. But she said, "I'm going to give you this job because you've earned it, but here's what you need to do." She gave me several things to do. One of them was to continue that direction that Rick had described, where we needed to take OAR from an aggregate body of world-class scientists and refocus them on the NOAA mission exclusively for the purpose of producing valuable products to that mission. She said, "People know that I know you. So I'm going to be extra tough on you." I chuckle about it now, but sometimes it was frustrating. There were times when I realized, "Yeah, Kathy's being extra tough on me." But she gave me that opportunity, she and Rick Spinrad. Rick was the Chief Scientist. Rick was, as I later understood, advocating for my being put in that position. That was a bold move by Kathy – and with Rick's support, guidance, and recommendation. I don't have a Ph.D. I have a bachelor's degree in science. I took some graduate courses in zoology during my shore assignments, but I never got a master's. I have a law degree. I got a D. I've got the wrong D. I don't have a PH; I have a J. They put me in that position. But Kathy's explanation explaining why she was content to pick me was – I've got to guess, also, that the field might have been pretty narrow. I don't know. Never did know. But I had shown that I could run a science organization. I think the smartest person who runs a science organization gives just rudder correction orders, not bold course changes. You listen to the people who are inside, each of whom is far more brilliant than I'll ever be. You assimilate their thoughts. You understand their thoughts, keep asking questions until you understand their thoughts, and then make a wise decision based on all of the values and the equities, and that's what's carried me, is just listening to smart people. So many people have told me in their own success that's what they did. So it was an easy model to follow. Then I went up as the AA.

MG: When was it that you became chief scientist? Then I'm going to go back and ask you a number of follow-up questions.

CM: During the course of the Obama administration, where Rick Spinrad was the chief scientist, Rick stayed – the whole Obama team pretty much stayed until the last day when they had to turn the keys over to the Trump administration. Their departure was elegant. The arrival of the Trump circus was the disgrace that the media has played it out to be. It was abysmal. Nonetheless, we had, at that time – the week before the conclusion of the Obama administration, Kathy Sullivan signed a memo that I believe Rick had put together, which was in lieu of a politically appointed chief scientist – because, interestingly, the chief scientist is a political position inside of NOAA. Sylvia Earle, I believe, was the first person to occupy it back in the administration of Bill Clinton. I'll start again. In our own NOAA regulations, the lack of a politically-appointed chief scientist then devolves the responsibility to the assistant administrator for Research, a career position, which is where I was. So I'm in it full-time, no longer acting. The Obama administration appointed me as chief scientist for NOAA. Then, every administration goes through a lag of appointments, and there's a lack of clarity as to who's going to have what job. Rumors fly left and right. But the Trump arrival – they didn't have people who were willing to accept that responsibility, and it's certainly not the first position you fill. We didn't even have A NOAA administrator at that point. So day one of the Trump administration, I'm the chief scientist, acting. I had a tenure at that point in time of about a week because immediately upon Rick's departure, I took that position. So I had that all the way through until I was fired from that position by the acting chief of staff of NOAA on the instruction of the political apparatus. That was about six months before the end of the Trump administration, and then I was reappointed after the election. The Biden team reappointed me immediately when the Trump people left. Then I stayed there until my retirement and was wonderfully relieved in sequence by Dr. Sarah Kapnick, who was a scientist with us at the Geophysical Fluid Dynamics Laboratory, GFDL, up in Princeton. She had left to go up to Morgan Stanley, and she was running a billion-plus dollar portfolio on climate risk up there. So, I started when Rick left.

MG: I wondered if Kathy Sullivan thought it would be important to have someone with a law degree serving during the Trump administration.

CM: I think at the time of my selection, there was probably some frustration for Kathy. In fact, we had that conversation that she would much rather have had a person with a Ph.D., but I'm surmising those applicants who did have the Ph.D. didn't have the management or the leadership that she was looking for. I don't know if at that time there was any thought – I don't think anyone saw Trump coming. Right? This was an unforecast storm that overtook the nation. But I think the strategic part of Kathy's view was, "We've got to hold on to something. McLean's a fighter. Let's make sure we appoint him before we leave. Don't leave it to the next group because who knows who or what they might put into place." So at the tail end of Kathy's administration, knowing that the Trump group was arriving, I think it was very strategic to say, "Let's get a foothold in here, and let's make sure that this next group knows they have to appoint the assistant administrator for Research as acting Chief Scientist. So I'll do it. I'll do it now. When they arrive, they've already got one." Now I've got to say a little bit about the – what shall I say? – massive confusion that the Trump team brought to the federal sector writ large. There were some allies of rational behavior who were part of the politically-appointed team at NOAA.

Stu Levenbach was one; he was the chief of staff. Tim Gallaudet was one. I think Neil Jacobs was one. If I had to guess, I'd put my money on the fact that probably neither Neil nor Tim were inclined to check the box for Trump on Election Day. That's personal conjecture. I've never discussed it with them. But it just shows you that there was a diversity of views in there. And Stu Levenbach came over to NOAA from OMB [Office of Management and Budget]. I'd worked with Stu for years when he was at OMB. He was an ally of the Ocean Exploration Program. He was an ally of many NOAA programs. Stu, I think, was a leader to tell the White House people, "You don't have a problem over here with the chief scientist. Let that one go. We've got a guy. Let that go." We also had a career person, Wendy Lewis, who was a NOAA Corps officer, who had worked on the Hill in some of her assignments, and Wendy was put into the legislative director's role, which is a political role. She was allowed to take that. Same thing. Go back to the White House personnel office – "Don't worry about sending us a legislative person. We've got someone. We're in good shape over here." I think that left a lot of protection for NOAA so as not to get a whacked-out legislative director and not to get a whacked-out chief scientist. Now eventually, when I got fired from that position because I told the political appointees who had already violated NOAA's scientific integrity policy, that they needed to read, sign, and affirm that they had knowledge of and understood this policy and go do it, and you have thirty days to do it. "Oh, okay," says Erik Noble, the then-acting chief of staff, "You're fired." But he asked me first – this is all in the newspaper. You could read all this stuff – "What authority do you have to be telling us to do this?" So I actually gave him three. The *New York Times* only reported one, but I gave him three. The first is that I was the acting chief scientist. It's my responsibility in that role, also [as] chair of the Research Council, which oversees the policies of science. Number two, I'm the assistant administrator for Research. I am responsible for the people who administer this policy. Number three, I'm a NOAA employee, and every NOAA employee is fully empowered to raise a report of, concern of, or an objection to people's conduct in violating this policy. So everyone could do this. "So, by the way, are you going to sign it or not?" The young chap just retreated. The next day, I get his email back, "You're fired." That was the White House personnel office as well. I think Erik would have done that without the White House personnel office. He was very, in my opinion, loyally aligned to the Trump circus, and people follow whatever leaders they choose.

MG: I'll ask you more about that time, but I wanted to ask a few more questions about your time at OAR. I was curious if this experience with *Deepwater Horizon* helped inform you in your later position in terms of gaps, needs, partnerships, coordination, and that kind of thing.

CM: Very much so. It was a compression of activities and, as I mentioned, these long days that everyone was working. These long days generated a compression of experience in an amount of time that normally would not have generated that number of interactions, that compression of experiences. So I learned even more about the organization through *Deepwater Horizon*. Who can we call to get a read on this particular problem? I met and dealt with scientists who I had only casually known from visits to laboratories to shake a hand and say, "Well, I understand the work you do. I see how important it is. Can you tell me a little more about it?" Here now, I'm saying, "You've got the expertise. You've got to help us drive through this problem. How would you do it?" I would like to think that I offered a lot of empowerment to the folks in order to find those solutions because I'm sure not the guy that's going to figure our way through this. I'm not a modeler. I'm not an ocean or atmospheric chemist – all those areas of expertise that we have. So

yeah, that experience, actually, as stressful as that was, it helped me. It helped us all. I remember taking a break from the church band that I played music in to go outside and take a *Deepwater Horizon* call, and I'm timing it to make sure it's just between – I was hopeful that Dr. Lubchenco would call at a time that allowed me to do it, so I didn't have to run away from the band and go out and take this call – in between the two services. So, the timing was tight on many things. But yeah, that experience was very helpful for me – unintended but very helpful.

MG: You mentioned the momentum and discussions around creating a climate service. I couldn't quite remember why it didn't happen. Maybe it was congressional, but wasn't a climate program created during your time? Was that an alternative, perhaps?

CM: We had a Climate Program Office. The Climate Program Office was started, I think – I'll get the dates wrong. I would have to look up the law. But there was an authorization that came through in Congress to create a climate program in NOAA. That had been around for some time. It started at the level of the NOAA administrator during, I believe, Jim Baker's tenure, so that's going back into the early '80s. It was called the Office of Global Programs at the time. It was the beginning of the focused attention on climate. It dealt with much of the series of systems, many of the systems that we have today – ocean monitoring, atmospheric monitoring. All of that was being put together at that point in time. The program was then redistributed to an operational line once it got started. That was wise. You started at the top, let people know that it's really important, and then you find a home for it in the operational components of the agency. So it landed in OAR. It was a science and research program. It was very logical to be put in OAR. But that is today what our climate program office is. At the time of the proposal for this climate service, the Climate Program Office was in existence and functioning well. The question then was, what do you take from the climate program office that would be service-oriented as opposed to research-sponsoring? What do you take from the Chemical Sciences Laboratory, the Global Monitoring Laboratory, the long list of laboratories that we have, including those of other line organizations? Many of the functions in NESDIS, the National Earth Satellite Data and Information Service – what do we take from NESDIS, where the climate record is held and memorialized in the data systems and the data services that we have? So putting those puzzle pieces together was a challenge. What was missing was all the other federal agencies. How do we work with them? So, here's what we would put in this collection of pieces, and we had not sufficiently defined how those pieces would work with USGS [United States Geological Survey], Navy, NASA [National Aeronautics and Space Administration], Department of Energy [DOE], etc. So, in my opinion, the reason that we failed was that we had many peripheral voices of objection. Once again, getting down to the greed of running federal programs in the federal government system, jealousy of appropriations can shoot down some good ideas. I think, on the federal side, there were plenty of voices that said, "We don't know what NOAA is up to, but it sure doesn't look good from here." When Congress hears that, they're not ready to support something. In my opinion, at least based on what I saw of that experience, that's where we did not do well. We didn't do it the right way. We had our own little solution, but it was not embraced by the wider community. And therefore, without the wider communities embracing it, there came then the Congress defeating – and if I remember correctly, the way that we put it together was we prepared a federal budget for the future budget year that had a new line organization in it, and it was the climate service. It retained OAR, but it took chunks of OAR out. That's what it was. This was handled at the highest levels of the agency. This was not my

design. Because as you perhaps recall, I was trying to preserve a research enterprise in the design of this thing, and I had to struggle to do that because there were plenty of folks who thought, "Just dish out the pieces of OAR [and] give them to the operating lines." Some of the people who were running those operating lines thought, "Hey, what a great idea. I get more money in my budget." So I'm coming to see, particularly now as a retired guy, where you could look with the freshness of eyes and the relaxation of time to realize how many bad decisions are made, or how many negative influences are made on decisions that are for less than fully legitimate reasons.

MG: What would be an example?

CM: I think an example is how we dealt with some of the budget planning for increases in NOAA's budget. I'll not speak to the two most recent that had been passed. I was not there for the full completion of it. Those bills were passed after I left. In the making and preparing of some of those budgets, there are always budget games that go on. "If you support this for me, I'll support that for you." I never played that. I didn't like that. That's not the way to do business. That's how laws are made, and I understand that. But that should not be how the agency priorities are dealt with. There are always power struggles. I recall the developments of my friend and colleague, Alan Leonardi, who was at the time the Ocean Exploration director. He put together a plan for the budget that would basically financially empower the Ocean Exploration program to go map the US exclusive economic zone. I asked Alan how he was going to accommodate another mapping program inside of NOAA. He said, "Well, we can ask them what they would like to contribute to this." I'll spare you the gory details because they're probably not worth completely revealing but let me say that with the rather genteel notion of offering to share, the response from the other party was, "Well, you don't belong in that business anyway. We'll do it all. We'll take the money." So those games happen. That's why you close the door, have a conversation, and you work it out. But the fact that there can be places inside of government, across agencies, and at times within the same agency, where people are looking out for their bottom-line budget number rather than asking themselves, what's the right thing to do here across the suite of tools that we have available to us? That's where I see in – for example, I was sitting as one of the co-chairs on the Subcommittee for Ocean Science and Technology, S-O-S-T. We call it the SOST. I had some wonderful colleagues there to work with. I think one of them is certainly Tom Drake, who's the ocean lead for the US Navy Office of Naval Research. Tom's a wonderful partner. He wants to be a wonderful partner. He strives to build a partnership and identify opportunities to leverage and share both the expenses [and] the successes. There are other players and other agencies who just [say], "How much more money can I get?" That's the metric. I don't think we do a good enough job, fine enough job, in ongoing training of federal program managers to make sure that that doesn't happen.

MG: Can you say what else you were doing during your tenure at OAR? What were some other activities, accomplishments, and committees and boards? I want to also talk to you about your IOC [Intergovernmental Oceanographic Commission] involvement.

CM: The IOC took a lot of time. I could jump back to that. You're probably used to me jumping around a lot by now, but I'll jump back to that. But most of my time in the AA job – I won't split these by percentages because I think the world tumbles, turns, and changes, so

different times are challenged with different opportunities, but during the course of the Obama administration, working with Rick when Rick was the chief scientist, I was the vice chair of the Research Council. I've sat next to Rick literally – the chair sits at the head of the table; the vice chair sits at the right of the chair. I've sat at Rick's right many, many times. I'm always amazed at his skill in running a meeting. Once again, keep learning, constantly learn, watch what good people do and learn from them. Watch what not-so-good people do and learn not to do that stuff. But Rick is always a lesson in how to do things well. So I was involved in the Research Council. We called it the Research Council at the time. During the course of the Obama administration, we had financial challenges where we knew that we couldn't break the bubble of NOAA's budget. We couldn't expand NOAA's budget. We just had to do the best we possibly could there. There were some gains. There were some budgetary increases in there. We worked on those, the budget preparation and the like. I spent a lot of time with our people. I tried to travel as much as I could, finally understanding that when a leader visits the people the leader is responsible for, the people actually enjoy that. It's not the cynicism of, "Oh, what's this knucklehead from headquarters doing here, and I've got to upset my day in order to go and listen to this guy." That's how I looked at it because maybe that's how I was raised up through the early part of my NOAA career. But I realized how much our people really enjoyed being able to directly communicate with leadership. So we had, for a period of that time, the budgetary ideas that we were trying to develop, which included expanding the ocean observing network, the global ocean observing network, that's ably run by David Legler today, but he had a number of proud predecessors who did equally fine work, expanding the atmospheric greenhouse gas observing network [Global Greenhouse Gas Reference Network], which is run by our the NOAA Global Monitoring Laboratory, looking at how we could get, among other things, Mauna Loa, which today is cut off because of the volcanic eruption – the road and the power line have been crossed and cut by the volcanic eruption – but how to rebuild that site. When the eruption subsides, it'll all be figured out, but for now, they're dealing with that problem. How do we get the money for that? So I think some of the things that I did work on that I'm proud to see that we achieved was the funds to rebuild and modernize the Mauna Loa Observatory, which is the benchmark for CO2 [carbon dioxide] in the world. It was started in 1958 by Dr. [Charles David] Keeling, a Scripps scientist. Dr. Keeling's son, at Scripps today, maintains a station as well as NOAA's up there and both continue. But NOAA has built this facility. DOE is up there. NASA is up there. Navy is up there. I look at everyone's facility up there, and I look at ours. I realized that some of the other agencies that I've named, they've got brand-new furniture. They've got nice little water coolers. They've got things that are for the people's comfort and sustainment. It's nice. It's good. It's great. I look at our guys: duct tape, baling wire, gunmetal gray desks from the World War II era. You want a history? Sit in a World War II desk; there you go. I realized the distinction between the availability of funds for something as important as the world's monitoring of CO2 and we are the least funded agency to be dealing with that. We are the best agency to deal with that because we have the scientists, and we've recruited them over the years. But that dichotomy was something. So I went back to the Congress. You might remember the story about going back to see the congressional folks with a bag full of coffee and giving them a pound of coffee each. I went back with pictures of the water cistern that provides the drinking water for the people who go up to that station and serve there. There's a cork float in the cistern; it goes up to a pulley, goes out of the cistern, and it's tied to a Prestone Antifreeze can or a small little used oil can – empty now – with an arrow on it that points to the level of the water in the cistern. I'm looking at this, and I'm thinking, "This is brilliant. This is the

illustration that I need." *Click, click, click*. Then I also showed some images of what other agencies had versus us. So it was the same argument I went back with going back years when I asked why NOAA's ocean exploration budget was equal to NASA's lettuce budget, that whole explanation. I got people's attention. They said, "Yeah, I think we could do better than this." We went to the Hawaii delegation, and we dealt with – I believe it was Congressman [Ed] Case, but also the senator from Hawaii. We got support, and we got the budget for that. The other one I worked on was up in Barrow, in Alaska, the northernmost part of the United States. The research site on Point Barrow – the town has changed its name, and I'll mispronounce it. Forgive me; I think it's Utqiaġvik. The point is still Point Barrow. That facility did not have any bathrooms for our amazing people who occupy that station and run that station in all weather. When the Arctic was the traditional Arctic, as opposed to the melted Arctic, and that's happened very recently, of course, in order to go out and relieve oneself, it was a two-man job, one to hold a rifle to protect the person who had to take relief from roving polar bears and then swap the rifle, and the other person could take relief, and then go back inside. Fortunately, I don't believe the rifle was ever used but the proximity of the bears was not unusual. Because of the permafrost, because of the design of the building, because of a lack of resources, nothing was ever built in there for these folks. Yet, the sophistication of the equipment there was, once again, telling the world how significant the changes in the Earth's atmosphere were taking place. So I managed to get on up there, and I asked the team, "When can you get me up there?" So the answer I got back was, "Oh, we'll have you come on up June, July. You don't want to be here in August because the mosquitoes are big." "No, no. I want to go up in the middle of winter," and that's two months from the time when I asked to make the trip. In fact, it was probably around this kind of timing when I said I wanted to go out there. So I went up in February. When people heard that I was going up, Rick Spinrad said, "Hey, I'll go with you," and Dave Kennedy, who not only is he Mr. Oil Spill but Dave is also Mr. Arctic. I hope you've interviewed Dave. He's got a lot to offer.

MG: I have. His interview is not live, but it's in progress.

CM: So, Dave, Rick, and I went up with an absolutely wonderful person, a magnificent photographer. She was my Chief of Staff at the time. With great sadness, I have to say we lost her during COVID. But this was Jennifer Pizza, just a special spark of life and an amazing, funny, quirky, infinitely loyal person. Some of my greatest treasures are the photographs that Jen took during the course of that trip. So, up we go to the Arctic, and that first-person experience, being able to come on back and talk to the Congress and explain things about how you have to carry a rifle in order to relieve yourself and all this sort of thing, we were able to get the funding for that station to be rehabilitated. A talented team set to work on it. It's now LEED-certified (Leadership in Energy and Environmental Design), gold stars – it was just wonderful. It was built in the most remote part of the United States of America, under budget and under schedule, by an amazingly talented team that oversaw that project. Some of the other things we worked on – because we wanted to improve the conditions. We wanted to raise the budgets. We did raise budgets. We were in a deficit of high-performance computing. I was able to work on that. The day I walked out the door, everything that everyone had to say was already said; it was just a question of do you sign the Congressional bill. I was delighted to see that the computing resources jumped up much higher [and] that we have hundreds of millions of dollars additional in our high-performance computing budget. I was able to sell that by listening to our

people up in Princeton. The simple word is today NOAA has the best climate model in the world. That's positive. But the model we have is not the best model that we can build. The same for our weather model. We build a model to fit in the size of a computer that we have available to run. If you give us a bigger computer, we can have a better computer. Next logical question was, "Well, what about DOE? They've got tons of compute at all their national laboratories." My answer to the Hill was, "Yes, they do, and they don't share it." And some of the most amazing proposals that later, when awarded at a fraction of what we could be doing, showed the skill and expertise of the NOAA people were not accepted by other federal agencies who have a whole lot of compute because their models at the time, and I believe this is still consistent, are at least five years behind the NOAA model. So we're not the loudest. But we were the best; we always have been the best. Sometimes you get out-volumed, if there's such a word, by a better PR [public relations] outfit in another agency – two other agencies, at least – but the skill is inside of NOAA and the academics NOAA works with. The Congress finally heard that. You have to work with the staff. Something I've always believed is that the most junior congressional staff person may go elsewhere in the course of their career, but they may also become the most senior staff person later in their career. By treating everyone with positive engagement, respect – I've seen many people go up and just totally diss a young staffer because they're a young staffer. I've been very successful in building good relationships with the people on Capitol Hill, some of them Members, but many, many staff, and I savor those relationships, and I still communicate with folks now, even as a retired person. I spent a lot of time with congressional engagement. I learned that lesson in Sanctuaries when I was the deputy at the National Marine Sanctuaries program. I had in one year seventy-five visits to the Hill. I set that as the benchmark; that's the low board as the OAR assistant administrator. That is not what OAR had been doing. If they need us, they'll call us. No, no. We need to go up there and tell them what they need from us and how much we need or what we need in order to deliver it. And that worked. That worked. I also worked to – in the visits to the laboratories and with the programs, programs largely headquartered in Silver Spring, labs everywhere – to really change the direction of the organization as Kathy had asked me to do or told me I needed to do, and I saw it myself. We can't just be pursuing the excellence of science. There are a lot of people who do that. But who produces the science that enables NOAA's mission to advance? That's us. And we have to do that. I opened doors and built the bridges so that, I believe, the Cooperative Institute scientists, who basically are fifty percent of our science talent inside of NOAA OAR – other lines are different, but in OAR, fifty percent of our science talent are cooperative institute employees. They're employees of the universities. They're in our laboratories. You walk down the laboratory space or the corridors or the suite of offices where the modelers might work; you can't tell who's a university person and who's a NOAA person. It's absolutely integrated and completely an exchange of intellect and ideas. I wanted to reinforce that, and I wanted to underscore the point that it's not the science paper that's your achievement. The science paper is the establishment of the validity of your scientific thought, but it's the application of that science that wins the day for the agency mission. That's why you're here. In a visit to one of our laboratories, as I say, which I tried to do frequently, I asked an individual, "This is really impressive work. Where will it go?" The answer I got was, "Well, I'll write a paper. I'll get some papers published from this." "Okay, then where will it go?" Blank stare. Two years later, I went back to the same laboratory. I never said anything to that individual. I only offered just subtle inferences to that laboratory director. But I went back, and that person was part of a group that I was listening to. They were telling me the next level of advancement in their work. I said,

"So where are we going with this?" That same person steps forward and says, "Well, I'm dealing with the National Weather Service because they have interest in that for their forecast system and also over on the Fisheries side." I'm ready to go home now. I've got it. Mission accomplished. We connected the dots. We brought the people around. I restructured the design of programs. I clustered programs – when I say programs, these would exist out at laboratories as well. I clustered the activities to get more integration across laboratories. I promised people that if you have an idea and you want funding for it, if you're asking for it alone, you will not receive funding. I can't see anything that doesn't involve multiple labs and more than one program. Build team. And oh, by the way, if you don't have a line organization outside of OAR represented in this as well, no funding. So I used money as leverage for the team to go out and do the opposite of what the reality had trained them to do. The reality was, "Who can I steal money for? Can I get to the bank before the next guy gets to the bank? Can I wave my own flag and get at the head of the line?" That's not going to do it anymore. And it works. Once again, another proof of that was one of our people – pretty senior – went over to my good friend Lou Uccellini, who was running the Weather Service, and said, "Louis, I've got this great idea. I need some funds. Can you give my laboratory these monies?" And Louis looked up at the guy, and he said, "Have you been listening to your boss? That's not the way we do business anymore. Go back." So basically, Louis rebuffed him and said you work it the way that – of course, I worked with Louis to build this level of understanding. Also, I had a wonderful asset in the person of John Cortinas, who was running the Weather Program Office at the time. He's now the director down in Miami at the Atlantic Oceanographic and Meteorological Laboratory. John is an excellent, excellent partnership builder. But we built this with portfolio leads. I had to be careful in the choice of words. I didn't want to make the directors of the laboratories feel that they were diminished or that their authority was being diminished. I could have called them portfolio managers – climate, oceans, coasts, weather. But instead, I called them portfolio stewards just to be light on the language. I think they've been around long enough that there could be a readjustment of that and make it so. But the portfolio management rather than the individual lab or the individual program, and the need for those portfolios to be constantly engaged with other line organizations, that built the architecture, I think, to really see OAR transition from a group of remarkably talented scientists doing science to people who understood that there's a mission out there, and we need to serve that mission and portfolio management was a key to achieving that.

MG: Something else that's come up in this series of interviews, and maybe this was when you were DAA, was what is known as "Climategate."

CM: "Climategate" was at the University of East Anglia by its root, but with climate, the remarkable community of scientists is global, and they all work with each other. We had many scientists contributing but two scientists in NOAA who had a significant role in the IPCC [Intergovernmental Panel on Climate Change] were challenged. The climate challengers – could call them climate deniers, whatever you want to call them, but the people who were challenging climate jumped on "Climategate," thinking that their own misinterpretation of the messages that the climate scientists had been exchanging was the great revelation of the falsehood of climate science. So one of the parties – I can't remember whether it's an individual or an organization, but one of the parties sought from NOAA a distribution of the messages that these two scientists had been communicating, their emails basically, and demanded them under the Freedom of

Information Act. So the deputy undersecretary of NOAA, who was Mary Glackin, now retired but a fine person and a strong leader over at – well, many places that she has been associated with, but the American Meteorological Society presently. Mary had the conn on this. She was handling it at the highest career level. Our General Counsel had offered an opinion that if the party requesting these documents wanted them, they were not ours to give. Though they were our employees, they were working for the IPCC in their roles. It was IPCC literature that the individuals were looking for. So our two scientists, honestly and with all fortitude, met with – I'm getting ahead of myself, but that was our answer to this request. "They're not ours to give. If you want them, go talk to the IPCC, and the IPCC can give them to you. Oh, by the way, the IPCC doesn't have a Freedom of Information Act. They should be free to give you whatever you're looking for." The party appeals that decision and says, "No, no, NOAA. You have them; we need them." The Inspector General [IG] gets involved, and the Inspector General's agents investigate the propriety of our two scientists and what their action was. Our two scientists explained verbally on a tape recording which they were never given a copy of the transcript of that recording, that, "We, on the advice of our NOAA attorneys, were told that this is the answer. We didn't make this answer up." The attorneys told us, "Go to the IPCC. They're not NOAA's to give." The inspector general then writes a report and sends it to Mary Glackin the night before it's due to come out, basically, "What is your response to this report?" Because every IG report, the subjects of the report get an opportunity to address any exceptions or otherwise. This is a six o'clock at night thing. I told Mary, "I have a copy of that memo that the attorneys wrote, and it makes plain. I'll read it to you." So she said, "Fax it to me." *Boom*. I fax it down to Mary. Mary goes running down the hall to the inspector general. That was another moment where the stuff hit the fan because the inspector general realizes now that they're going to publish a report that is less than honest and accurate. I've had problems with the IG's throughout my whole career. So the IG then looks and says, "Well, who the hell –? What's this McLean guy doing coming up with this magic key, this memo that is exculpatory for the conduct we're whacking the NOAA scientists for exhibiting? Where'd this memo come from?" So the next thing, I've got two IG reps sitting in my waiting room with a surprise visit. "We want to talk to you." "Okay, I'm happy to talk to you. What's the subject? Oh, it's this. Okay, fine." So, I make them wait outside. I do some emails. I go through my desk. I find my own tape recorder. I don't tape my meetings. I would carry it [to make] voice memos, and I long ago stopped using it. But I put that in my pocket. So I invite them in. They sit down. These two agents show me their credentials, all this, and then they pull out a tape recorder, turn it on, and put it on the desk. They say, "Surely you won't mind if we record this meeting?" I said, "Oh, my goodness, I don't mind at all. And surely you won't mind if I also record this meeting," and I put my tape recorder out on the table. And I said, "Because our scientists didn't get a copy of the transcript, your dishonesty in the report that you wrote, alleging that they never raised the general counsel's opinion, I'm going to make sure that that's memorialized, that everything we say here is memorialized. So I got my recorder, you've got your recorder. What questions do you have?" They get red-faced. They shut their recorder off. "Oh, we have to go and call our office." They go back outside. I make them wait for another half hour outside. They talked to their people. "Okay. If we commit to give you a transcript, will you not record this meeting?" "Well, I don't know what you have to hide. But yeah, if you're going to give me a transcript, I'll accept your transcript." So they give me a document to sign. I'm a lawyer. I've got to amend it. I can't take what they give me on face value. I've got to put something on there. So *boom*, I start crossing stuff out and writing things in, including their commitment to give me a recording. I sign it. We

have a conversation. Basically, it was a short conversation. "Where'd the memo come from?" "It came from the general counsel." When did you get it?" "Three days after the date. The date is on the document. I've had it in my files. Nobody ever asked me for it. You guys wrote a report I didn't even know you were writing. Here it is." Okay, meeting's over. They go back. I then get an urgent FedEx the next day from the inspector general office that says, "Mr. McLean, we find no force and effect in the release that you signed yesterday, and therefore, we consider it null and void." So I looked at the guy's name – I didn't know this guy – get him in the directory, I call him up, and he was a legal adviser to the inspector general. I said, "What kind of food do you like? Italian? You like pizza? Hoagies? What do you like to eat? Because when I come and visit you in jail, I'd like to be nice to you and maybe bring you something. By you negating my agreement to be recorded, there's now no agreement by me to be recorded. You have violated the State of Maryland's law, which requires both parties of a conversation to assent to be taped. So you just broke the law. That's a unique position for somebody from the inspector general's office." It reminded me of the guy who broke the door a decade and a half earlier. He's – [imitates muttering and stuttering]. "Homina, homina, homina," I guess, is the best Jackie Gleason impression to use. So, then I get a call from Cam Kerry, who is Senator [John] Kerry's brother. He was the general counsel of the Commerce Department. I thought, "Well, this is rather flattering." Mr. Kerry then says, "We're trying not to pick fights with these guys," in effect is what he was saying, "but I respect what you're saying, and I appreciate what you're saying. Is there a way that we could find some middle ground here where we could just move on with this report?" I said, "Well, professionally, yes, as long as the report is amended to reflect that our scientists told these inspector general people that they had a legal opinion that barred them from releasing the information, because it made it look like they were trying to hide something. That's the way the IG had written the report." Then Kerry says, "Well, okay, thank you." I said, "But please, Mr. Kerry, you've got to understand, I'm giving you this word in my professional capacity. But in my personal capacity, as soon as our call is done, I'm taking leave, and I'm going up to the Hill to talk to the chairwoman of appropriations and to the oversight committees, and to just let them know, I've got a real problem with what the IG does around here and how sloppy their work is." As a gentleman, my best recollection was he's like, "That's what you have to do; you go ahead and do it." Our two scientists – and unfortunately for NOAA – are no longer at NOAA. They've gone on to even higher standing in their careers, one of whom I saw very recently. But I think the fact that I went to bat for them and really gave them the clearance that they needed to not be maligned in any way by unqualified, incompetent people had a lot of noise inside the organization, and I felt very proud of that. I think as you might reflect, I enjoy sticking my finger in the eye of a real goose head. That's what I do. Did I tell you about my bell?

MG: I don't know. You showed me the bobblehead.

CM: Okay, I have another one. I'm comfortable with this being on the tape, Molly. I apparently used a phrase with sufficient routine that when I left Ocean Exploration, my team bought me a beautiful brass bell. I don't know if it's visible, but it's behind me. It's one of my prized possessions. It's about an eleven-inch diameter bell. It's not a bell you buy in a boating store. It's a real ship's bell. It has my name [and] the dates of the program on the front of it. But in, literally, ten-point type on the back of the bell is engraved a phrase that I apparently used enough that they wanted me to remember that they remembered, and it says, "Never miss an opportunity

to piss off an asshole." Sorry for the language. I'm a sailor. But that seems to be – if there's an engraving on a tombstone for me, maybe I'd like to be remembered as a nice grandfather, good husband, but I'll put that on there. So anyway, it's that kind of stuff, being an advocate for our people, not just in their personal character, but in the quality of the work and the skill and the achievements that they make. With really positive reflection, I remember asking, very recently, our leaders at OAR, our laboratory and program directors and deputy directors – I wrote down, just in my own notes for my own reminder, three attributes that I thought we should be looking for, for the next OAR Assistant administrator: a leader, a manager, and an advocate. Now, you could wrap many other educational preparations around that, that you would want to see – a Ph.D. in the sciences or the like. But just in my notes, I had that. It wasn't a game that I wrote these three down to see what everybody else would say. I asked, and the most common answers were those three attributes. I realized, prior to my arrival in the AA position, I don't think those would be the attributes that my respected colleagues and lab directors would have recognized, but that's what I tried to do. But what I also realized in my departure – I was asking them, "What are the attributes? Go find the people that have these attributes and encourage them to apply for the job." Because you don't want to replace me. I was a person for the time that we had, which was when OAR was not as aligned with the NOAA line organization's missions. We've achieved that. We've done that together. I was a different – I was in a different footing. We, of course, went through the Trump administration. We needed a different level of tactics than classical science. But that's not where we are now. So you need to go find a person for where we are now. You're not replacing anyone. I felt very comfortable with that, and they felt very comfortable with that.

MG: In so much of what we've talked about, the theme has been speaking truth to power and taking on bullies. So I'm curious what your attitude was going into the Trump administration and in your role as chief scientist.

CM: Let me just pause for an aside here to say that I could be a wonderful team player as well as the worst nightmare for a bunch of knuckleheads. I think Kathy Sullivan's tenure, where she asked me to do these certain things, I delivered on that. I'm a team player as long as the team opens the playbook and we all know what the plays are, as long as the team is not trying to break the law, and as long as the team has honest, intellectual legitimacy. I found none of that in the Trump squad. So the arrival of the Trump team started with an acting – everything's acting because no one's really – I wouldn't say fully confirmed. I'm not talking about the formal Senate process of advice and consent under the Constitution, but that the White House personnel office usually sends in an initial group of people. I'll give you a comparison. Karen Hyun is the chief of staff of NOAA. She had been with NOAA. She had been with Commerce. She was part of the Obama team. Karen is amazing. Karen showed up day one, hour one. Maybe day two. But nonetheless, you got to in-process, but Karen was there right from the very beginning as chief of staff. In the Trump team, we had two people show up. One was the guy who eventually came back as the acting chief of staff, Erik, and the other was a chap named George, who was part of the political apparatus. He was not destined to be part of NOAA; he was a space keeper, to just be the eyes and ears and such. Not a bad guy. But certainly, he had views very different than my views, and we iterated for quite some time. The word in the gatherings of the staff that we had was really just two political appointees, an acting chief of staff and an acting deputy chief of staff, I guess, were the titles, but they weren't formal titles. But there were two Trump reps. Ben

Friedman, our deputy undersecretary – once again, Ben was acting as the NOAA Administrator, once again, did a remarkable job holding the morale and the team together and trying to deal with the trials, tribulations, and the wacky stuff that was coming over the transom from the new team. But George kept asking me, "How are we going to change things in this climate setting? It's the same old people over and over again. We got to get some new blood in here. We got to get some new thinking in here, and for some of the grant proposals, we need to refresh the pot here." I said, "Well, George, we don't have the same people reviewing our grant proposals. We mix those parties up. What are you really getting at?" "Well, I'll think about it." So we're iterating back and forth periodically. Over and over again, I keep getting hit with, "Hey, there's a new sheriff in town." Both George and Erik were saying that. "There's a new sheriff in town, and we've got to approach these things differently. We can't have the same old people doing the same old thing. There's got to be a diversity of thinking here." I said, "Well, there's a great diversity of thinking. Just start talking to the climate scientists. You realize that there are many ideas, many theories, many models. You put them in aggregate. It tells a story that you don't want to believe. But there's a lot of diversity in this thinking." This keeps going on. So finally, I said, "George, here, we're dancing with this. Because I know what you want us to do. You want us to not go in the direction we're going. You want us to bring new directions into this discussion. Have the agency affirm those new directions, basically challenge the prevailing science, but the prevailing science is proven. But I hear you. There's a new sheriff in town. In order to respond to that sheriff, you can control what I do. Why don't you write down what you want me to do because we seem to be talking around this? You can attach that to my annual performance review, and Ben Friedman will have to hold an account as to whether I do what the administration wants me to do. George is looking rather optimistic at this point that maybe we have a way through this. I said, "Though, once you do that, I'll have in your hand and in your writing your instruction to me to violate the laws of the United States, which require me to run an organization with the best available science, not peripheral whack jobs who have these stray theories that are unenforceable and unproven. So, where are we going with this?" George's response to that was amicable. I understand he tried to fire me. He also tried to fire one other chap, Sam Rauch, over in Fisheries. Sam's another guy. He stands up for what's right. Sam stood up and told the Trump people, "You cannot do X, Y, and Z," which they wanted to do in Fisheries regulations. The Secretary of Commerce wanted to be as all secretaries do – I don't care what party or where they come from but be politically responsive. But during moments not within his torpor, Secretary Wilbur Ross decided that he wanted to do something nice for the Gulf fishermen and wanted to do something that Sam, in recognizing law, realized, "You can't do it." So old George – "Yeah, I think the best thing to do is get rid of these two guys." How serious he was, how successful he was – we know he wasn't successful. How serious he was, I don't know. But nonetheless, that's where he tried. So yeah, it was rough from the very beginning. But I realized this whole team – we had not seen Neil Jacobs. We had not seen Tim Gallaudet. We just had these two guys. I'm thinking, "These guys aren't that sharp. This is not their game. Okay. We're ready. We'll deal with this. It may not be fun, but we'll deal with it." So on and on it went. The summer policy colloquium or summer policy meeting of the American Meteorological Society had a meeting in Washington, DC, as they normally do. I'm at that meeting. George, Erik, a few others are at that meeting. Also, the chief of staff for the Department of Commerce was at that meeting – politically appointed. A guy in the audience asks – I'm up on the podium with a panel – "I want to ask the NOAA guy a question." I don't even remember who asked the question of me, and I don't think I even knew the person. But he

said, “Does NOAA really belong in the Department of Commerce?” I said, “Well, no, the Department of Commerce has historically been an absolutely deplorable steward of NOAA’s portfolio, but we are where we are, and there's a lot of energy that's expended to organize boxes.” Our former administrator, Kathy Sullivan, had a very good response to this notion, which is, ‘Don't worry about reorganizing the boxes. Figure out how the boxes work together. Now go get the job done.’ And I will always value that among many things about Kathy. So somehow or another, I must have gotten the label of being a little too broadly outspoken for the Commerce people. Next thing I know, I'm going up to New York to the UN [United Nations] to receive an award for NOAA for our ocean observing, and it was actually quite flattering. Instead of Ocean's Eleven, it was called the global Ocean’s 8. They had eight categories of awards. One of the co-awardees, in addition to NOAA for another subject under these eight, was the Prince of Monaco [Prince Albert II] for his ocean advocacy and work [inaudible]. So I go up there for that. I get interviewed by BBC and Sky News, in addition to others, and the guy from Sky, just before the camera goes on, says, “And of course, you know I have to ask you about the Trump administration.” “Yeah, okay.” Right. So, cameras roll. I had CNN, ABC, NBC, Sky, and BBC. But the hardest question was from either BBC or Sky News. He says, with the elegance of his British accent, “What challenges do you see in working for the Trump administration?” Bingo. Wide open door. Well, as wide as that door is, I could easily flip it and not answer the question but say positive things about NOAA science. “NOAA science has integrity. It doesn't matter what administration we work for; we do the stuff we need to do, and we're honest with the public. What is your next question?” After that, old George comes up to me. He pats me on the shoulder and says, “Yeah, you did all right up here. I guess I can get back on the train and go home.” They sent him up there to keep an eye on me. I thought, “Oh, man, this is really the amateur squad.” Because if I said, “Oh, boy, the Trump team or Trump administration is the worst thing since I don't know what – since the Trail of Tears in American history,” what’s he going to do about it? Anyway, it was humorously rough as a clown show from the beginning. Then, Barry Myers, who is over in AccuWeather, was nominated as the administrator for NOAA, the administrator nominee, Tim Gallaudet as the deputy administrator, and I'm not sure when Neil Jacobs was in the mix in the string of nominees, but then Neil was along there somewhere. I can't remember the sequences. It’s in the newspaper. So it’s not a hard thing to recover. But Barry got a lukewarm reception on the Hill because years ago, Barry and his brother, both of whom built from nothing – in a garage, they built what is today AccuWeather. So, in their own way, they're a story of American success and business building. AccuWeather – I don’t know whether it was Barry or his brother – proposed that AccuWeather do the work of the National Weather Service. “[We] don't need the National Weather Service. We could do that commercially.” That didn't fly well in a lot of circles, and people had a memory of that. So with Barry's nomination, all that came back, and it was a tall reach to think that Barry was going to get confirmed. So, at one point in time then, I think Barry dropped out, and along came Neil. So we had a mix of the two. Tim started out as clean hands, Navy admiral, great guy. Nobody in the world remembers people’s names as well as Tim Gallaudet. He's just a fantastic people person as well. So Tim comes in as the Acting Administrator, and that was a bit of calm and normalcy. But yet, you can see that there were frustrating things coming on top of Tim that were coming on down. Stu Levenbach was in as chief of staff. Stu, as I said earlier, very capable, very talented. I think Stu was a buffer and Tim was a buffer for some of the craziness that was coming from on high. Ben Friedman – I have to herald the achievements of Ben Friedman because he was an exceptional buffer, just trying to keep things calm and keep them in a box.

But as time then went on between Ben and – well, Neil and Ben flipped midterm. Then, Neil was the acting administrator, and Tim was the then deputy, which was the position he was confirmed in. Tim was the deputy. We had a hard time because the budgets were getting slayed. OAR's budget was cut forty-five percent by the Trump administration. Sea Grant was zeroed out. Many other things happened. In fact, I was with the Sea Grant people at a national meeting when the budget came out, and I had known what was in it, but as of 11 o'clock that day, it would be released, so I wasn't supposed to say anything until 11 o'clock when it was released. So we started talking about it. I explained to them, "You're going to see at the top of the hour when the budget is released, you're a zero. That is the best of all outcomes you could hope for. Because if you were proposed for a sixty percent reduction, that might actually happen. If you were proposed for a thirty percent reduction, that might actually happen. But to propose you for zero budget, there is no way in hell that thirty-four coastal states are going to sit idly by and watch that happen to their own budgets because you're such an important part of the state programs. This won't happen. So my recommendation would be, as soon as the bell rings, you guys take a break. I'd be surprised if you don't jump in taxi cabs and start heading on up to talk to the people who represent you because that's what's in the President's budget. You need to be heard on it." So some of the stuff the Trump people did was just so ridiculous that it wasn't going to possibly come to pass. But the President's budget requests were so low [that] I actually produced a graph of the slope of the reductions to show after the second Trump budget, if on that curve, OAR would be out of business in 4.25 years; we'd be at zero. The reductions were so steep. And, of course, I go to the Hill, and I include that in my briefings, which the Commerce people were not happy about when I pulled this stuff out that's not been reviewed and cleared. But saying, "Hey, these are just facts." I could put facts on the table. "Yeah, we'll be at zero. We'll stop existing at this rate of decline." So the battle was always there, and we kept fighting it. I think the one good thing that came out of the Trump experience was Tim Gallaudet as an advocate. You want to give the flag to somebody and have them go up the hill with Teddy Roosevelt, San Juan Hill, give the flag to Tim. Tim borrowed, and he gives Rick Spinrad full credit for this, Tim borrowed the blue economy goal. He wanted to come up with some ideas that could be included in NOAA's budget to enhance the blue economy. Looking around, there were a number of ideas on the table. I kept pushing for mapping the US EEZ [exclusive economic zone], which hasn't been done, unbelievably. We don't have good maps of the US EEZ. We have very crude maps of that part of the ocean. We have the largest EEZ in the world, 3.4 million square nautical miles, and it's not well-mapped. So, I'm pushing that, and I'm trying to make the argument that until you understand what's out there, you don't know how to most wisely use it. Should we be putting oil wells over here? Should we be putting renewable wind energy over there? What is down there? We don't know. So Skip Theberge, who just recently passed, most unfortunately, was a champion of EEZ mapping back when he was in the NOAA Corps and did marvelous work in it. I was channeling Skip, who was then still very much alive and working in the library at that point in time, doing NOAA's heritage stuff. I channeled Skip, and I just kept pushing this because I realized it was the right thing to do. I realized when I was running Ocean Exploration it was the right thing to do. Now we got another chance to do it. So initially, I think Tim was not convinced that that should be one of our major pushes, but I won him over. He then picked up that flag and went up San Juan Hill. We wound up with a presidential executive order that tells us to go and do that stuff. Now, because of the guy who signed it, I don't have that hanging on my wall. But nonetheless, I was proud to see that what, basically, we drafted on my desk – and a few others – what became the presidential statement

that became the instruction to the federal agencies to go map. I took that subject up at the IOC. I embarrassed the IOC at the collective inaction on the subject of global ocean mapping and rejuvenated the participation of the IOC with and the International Hydrographic Organization, IHO. From that, with Larry Mayer's intervention, Larry at the University of New Hampshire, and the support of the Prince Albert of Monaco, now we've got Seabed 2030, and we're going to map the world's ocean deep water by the year 2030.

MG: Did you want to say more about that before I ask another question?

CM: I think that was a high point, and I got to thank Tim for his joint advocacy in promoting that because I never would have been able to reach inside the Trump White House to get the visibility and to get that approved. Tim and Stu achieved that.

MG: With these budget cuts and other frustrations, how were folks at NOAA pivoting, preparing, and managing their work?

CM: At the very beginning of the Trump administration, I had more than one person in my office, door closed, in tears, fearing that they would lose their jobs because they were part of climate negotiations for the Paris Agreement. The best I could tell them was that if anybody gets carried out of here, it's going to be me before you because I will stand up until I die for you. But the fact that these people had to endure such emotional hurt and concern and fear for their own jobs was, to me first, readily understandable. But number two, it just gave me more fire to fight because no one deserves that. The rest of it was just a series of circus exchanges and almost comedic because it was so poorly performed. But it is what it was. I do want to go back and once again reinforce – I think Stu Levenbach, I think Tim Gallaudet, and Ben Friedman, of course, were isolating factors to prevent even more harm from coming down on us.

MG: Speaking of, I keep thinking about what happened with the map of Hurricane Dorian and the following public debacle, but which highlighted your willingness to put yourself on the line for NOAA employees. I'm wondering if you can just talk me through your perspective of that event.

CM: The hurricane was remarkably well forecast by the National Weather Service forecasters and by the model performance. The model is built by the researchers; those are our guys. The model is now in the hands of the forecasters. They know how to use it. They know how to mix many different indicators of sign and signal. They were launching more weather balloons because of the uncertainty at one point in the model. Ken Graham, who is today's director of the National Weather Service, was the director of the National Hurricane Center. Ken and his team did the brilliant thing – Ken made a guts call. The governor was ready to evacuate half of Florida as the storm was heading toward the Florida peninsula. Ken, with his expertise and his team, recognized that there's still something afoot here, and we need to get a few more data points. So he told the governor to hold off on an evacuation. "Give us another six hours." The storm is still well out now. You've got to give Florida a few days' advance, and Florida does it marvelously well – always has. But Ken then saw, "Yeah, this is going to change." The models were helping him see that. Because of waiting that six hours, they avoided an unnecessary evacuation. The excellence of the model proved itself. The storm made a right-hand hook and

up the coast it went, not into Florida. None of that reached Trump, who was apparently focused on his red states. He makes a public statement about looking out for the good people of Alabama. At the time, we knew that Alabama was not going to get hit by the storm. So Trump tweets, "Look out, Alabama," or words to that effect, and our forecasters started getting calls from Alabama civil government and emergency responders of, "What's going on here? We see the forecast, but what's happening?" I don't believe – I honestly don't believe that our Alabama weather forecasters and the National Hurricane Center were mindful of the Trump tweet because they've got more important things to do than look at Trump's tweets. So they're now seeing these incoming messages and questions from the Alabama community – "What do we need to do?" The forecasters are coming back and reaffirming, "You're okay. You're out of the woods. It's not going to happen. It's going up the East Coast." There then comes the Weather Service pronouncement, pretty visible, that Alabama is not going to be impacted by this hurricane. Look at our forecast map. Now the President's embarrassed because he's got a tweet that's out there. The next thing that happens, to my recollection, a day or two later, was NOAA is then instructed to put the word out that the forecasters were not right, that Trump was right that, at that time, the storm could have risked Alabama. The only way to show that was for whoever put the Sharpie – but because Trump kept it at Mar-a-Lago, I got a pretty good suspicion as to who handled the Sharpie – and drew the circle in an extension to show Alabama. As this stuff got even more animated in the media of the Sharpie-modified map, NOAA gets the instruction from White House Chief of Staff to the secretary of Commerce through the deputy secretary of Commerce to the Commerce chief. It's all documented in the National Academy of Public Administration investigation. At that point in time, because the hurricane has passed and cleared from a land risk, I go up to Cape Cod, and I'm visiting my brother at his home with his wife. My wife and I, the four of us, are enjoying our time, and I just check my email. One of our senior staff people who's very attentive – I can't remember whether the first line or the topic line was, "You're not going to like this, but read this." It was the NOAA press release chastising the forecasters and saying that the President was really right. I was in a controlled blown gasket, boiling mood. I looked at what my colleagues were putting out, and they were very placating. "A nice job forecasting the hurricanes," and "We do important work, and the public is really on your side." But nobody was saying what was real. So that night – I think it was a Sunday – I wrote my memo to our employees. If you write to a couple thousand people, you know there's going to be at least a couple-thousand-and-one who get to see that. I realized whatever I write, I'm going to have to be responsible; it's going to have to be airtight. I borrowed language from the Whistleblower Act but didn't cite it. I borrowed language from the NOAA Scientific Integrity Policy but didn't cite it. But I made my arguments which people can read. I wrote it in about twenty minutes; it just came flowing out of my head. I gave it about three hours cooling off. Then I went back, I looked at it, I hit send, and out it went. Then I wind up coming back to DC. It's a Monday; I guess it was. I'm headed into work, and my wife calls me as I'm going into work, and she says, "I've got the producers from CNN. They want you on TV." It's Cuomo, Don Lemon, and it's all the shows, and MSNBC and ABC, and these guys, and this guy, and that guy. I said, "Well, okay, thanks. Just have them call my office, and just don't get in the middle of this. It's going to upset you." So at work, my statement to them, if anybody called, was, "You have my writing." *New York Times* did get a hold of me personally and said, "Let me ask you just one question. Is this your writing?" "Yes, it is." "Thank you very much." That was it. That's the only press question that I answered. The rest of the time, it was, "You have my writing. I stand by what I said, and, oh, by the way, for CNN and MSNBC and all you good

guys, I'm not the story. This guy is the story with the Sharpie. So it's not about me. Anything I have to say, you already have it." So, I never went there. But then came the investigations. I think the rest is well-documented history. NOAA does a wonderful job. Our scientific integrity officer Cynthia Decker does a wonderful job of memorializing and recording and making publicly available all the transactions. I think my disappointment was pretty easy to see in my agency and the politically appointed people. I would like to think that many more – other than Louis Uccellini, who spoke for his people and stood up for his people. My piece came out. Then a day later, Louis was able to be in front of all the weather people, and he got a standing ovation for saying that, as they did, they did exactly right what they were doing in their forecasts. But I wish that some of the other people would have stood up a little bit more strongly and said what they really felt rather than avoid the truth, pat you on the back without saying what the agency did was wrong. But you could read the defense that the two principal offenders offered, Neil Jacobs and Julie [Roberts]. But you could read those. I would encourage people to read my response, which I had an opportunity to give under our rules – my response to their defense of their actions. I think, in simply stating it, is that if we can't look to the highest people in the agency to stand up for the integrity of the agency science, who can we look to?

MG: This became an official scientific integrity case. Can you explain how that works?

CM: Because I was a complainant, I could not assume my role as, as would normally be given to me as chief scientist or as OAR AA. I had to be hands-off, and I was. Ben Friedman, who normally would be the adjudicating overseer, said, "You're my direct report. I can't do this." So we had to readjust the roles, including the point of investigation, and Cynthia Decker, again, wisely understanding the rules, realized she reports to me administratively. So Cynthia can't be in this. We saw that the only logical place to go was outside. In a previous event, which we've not talked about but it would take far more time, there was another transgression in climate that we wound up going to the National Academy to investigate where the National Academies could do this – the National Academy of Science. This time, we went to the National Academy of Public Administration, realizing this was a public administration question that needed to be addressed. So NAPA took it up. NAPA felt constrained in that the rules they were examining NOAA's conduct against only covered NOAA. What I was disappointed in – and this is all in the record and my formally filed views and writings. What I was disappointed in was that NOAA non-politicals did not give the NAPA team access to others beyond Commerce – and I don't think this was political intervention. I think this was the good guys actually saying, "Just focus on NOAA because that's who our rules cover." But there should have been an opportunity for NAPA to have at least tried to interview the Commerce people because they were the offenders, and the NOAA political folks were silently complicit in allowing this. The NOAA folks didn't write it; Commerce wrote it, but they were complicit by their silence. They should have had an opportunity to try and make inquiry with the Commerce people, but they were told not to do that. Now the inspector general made their own review, as well, and they found fault with the Commerce players. But they observed, as did the NAPA independent review, that there's no reach for NOAA against this type of manipulation from Commerce. We cannot punish our parents, and we have no regulatory authority to do so. And oh, by the way, Commerce doesn't even have a scientific integrity policy. Yet, they've got Census, which is scientifically based in its analysis and reporting under the Constitution to the people of the United States. NIST [National Institute of Standards and Technology], which is a fine center of science and

technical excellence, is not protected. And, of course, NOAA is not protected. So there are three science agencies in this department, and they don't even have a scientific integrity policy of their own. Had they one, they would have, I'm sure, violated it. But there were other Commerce policies that this communication did violate. So it painted them in a pretty bad corner. At a senior executive service [SES] retreat for Commerce employees, all the SES cadre of Commerce, are at a meeting over in Virginia. The deputy secretary who was involved in this whole Dorian thing offers us a chance to be heard. I think the simplest thing that I told the deputy secretary was, "Nice of you to meet with us. What you need to realize is a lesson I learned as a kid when I first broke my dad's trust." It was probably when I went out drinking as a teen. "But his words were something precious, that trust is like a bottle of scotch whiskey that's highly valued, and if it drops it can be broken. You will lose the liquid. You can never put the bottle back together, and you can't put the liquid back in the bottle. That is what trust is, and you have broken our bottle." Despite affirmations otherwise – "Oh, we'll fix this. We'll do good. We'll do this." – frankly, they didn't do a darn thing. The only thing that's going to prevent this from happening again is a law that would require penalties for people who manipulate the product of the federal budget in manipulating science. Now, people can go to jail if they take the federal budget money and do bad things with it. Among those bad things should include manipulating the voice, the product, the scientific product of what that federal money is intended to buy. Play with the money; you go to jail. Manipulate the science; you get a finger wag. We have to change that.

MG: Is there any action toward that?

CM: There is a bill in the House that Congressman [Paul] Tonko from New York State has sponsored, and there's a following for it. I think one of the challenges that the Hill is working with is that it's a competition of ideas and how ripe or how stale is this issue. Do we jump on it now? The other point is one has to be very careful when constructing the regulations to implement, but that shouldn't be a reason not to chase a bill. The bill should say, "Go figure out how you prevent this from happening, but it shall be illegal to manipulate science for political gain or political purpose." In fact, they could borrow the words that are in the NOAA Science Integrity Policy, which I remember scribbling in in the near-final draft when I was working for Rick Spinrad. Rick put that scientific integrity policy together. My best recollection is I put the words in that said that you cannot be aligned to anything other than science – not political identity, loyalty to an individual, or other, that it's got to be pure science. They can borrow those words and put it right in. Then the implementing regulations, one has to be very careful because you may have a legitimate scientific disagreement, and you can't let that fall to the wayside because that's part of the scientific process, having the rich exchange of ideas and to challenge theories and ideas that are put forward. But political manipulation should be readily discernible.

MG: I agree. What was this time like for you personally following the events? How were you managing yourself mentally and emotionally?

CM: I think, looking back at myself as an individual, the product of so many experiences I shared and growing up in the house that I did, my father and the way that he was the Highlander who moved to America. I hate to say it, but I gained energy from these challenges. They were frustrating. I got a phone call from several dear friends when the *New York Times* put the story on the front page. I'm above the fold on A-1. That's the only time it's ever happened to me.

"This guy is fired from NOAA as chief scientist." My friends were calling up, expressing their concern for our welfare, our well-being, the family. "Don't worry about it. I still have my day job. That's an ancillary task on top of it." But I probably was more stressed than I am favoring in recall right now. But I do get energy from the fight. I felt that way during the NOAA Corps preservation. There, if things went bad, I don't know, I'd be working in Home Depot or holding a ladder for a house painter. I don't know what I'd be doing. But in this one – in fact, somebody said to me once, "Yeah, but you're retirement eligible." I said, "Okay, well, you don't really understand me. Go back and look at what I did when I wasn't." That was that. But it was probably more stressful for my wife, who doesn't like conflict, than it was for me. I enjoyed the chess game. I have a foe. I'm going to beat the foe. And I'm going to take every opportunity and advantage that I can. I even understood from some of our earlier career employees who were part of what we call the Program Coordination Office – they are representatives, one from each line organization, and they assist in staffing the NOAA administrator. I understood that there was an over-under at each staff meeting for how many times I would whack these guys with an appropriately targeted verbal assault. I got a kick out of that, just learning that, that the expectation was so routine and pronounced. But they came. They went. The Biden administration comes in. The first thing I remember doing after the Biden team arrived was opening up my computer, and there's an email with Joe Biden on it saying, "Hello, team." Whoa, what President has ever done that before? And I realized, "Yeah, we're good." Then Rick Spinrad [was] nominated, confirmed as NOAA administrator. We're even better than good. The difficulty for me in retiring was that Rick was on the job. I so enjoyed working with him again, but for a lot of reasons, personal reasons, and also how long I had been there, it was time for me to migrate. I didn't want to make it look like Louis Uccellini's leaving, McLean is leaving – there goes Weather Service. There goes OAR. I don't want to make it look like there's any inference of that being accountable to Rick's leadership. If anything, I would have stayed forever to work for him. But it was the right time for me to go [and] an opportunity to bring in fresh new ideas. Probably through my career, if I look at building Ocean Exploration, helping the Sanctuaries grow, many other things, I can play quarterback, but I think I'm a better middle linebacker. I was in the middle linebacker position when the team needed it. Now it's time for somebody to come in with a new spirit of quarterbacking, and I'm grateful to see that we have a very capable guy who's come in behind me, Steve Thur. I think the organization will thrive.

MG: Good. Was it tricky to retire during COVID? Did it feel anticlimactic? What was that like for you?

CM: I got used to being home. I hadn't been home, period. I'd lived in this house for twenty-five years and through COVID, walking through the neighborhood, I found out things about my own neighborhood that I never knew. That there was a beaver dam within ten minutes. That there were pileated woodpeckers in the woods behind the house, right behind me. Simple things. I knew Narita Airport. I knew de Gaulle Airport better than I knew my own neighborhood. Coming to see this side of life was also influential. And without COVID seclusion, never mind the fear of catching the disease – and once again, I have to remember with great remorse Jen Pizza, a dear friend who was lost to COVID. Without that side of COVID, retiring during COVID left me initially a bit disappointed with the realization that I, number one – well, I was certainly disappointed I couldn't do a round through our labs again to thank personally all the people who had been so instrumental in our collective success, but for being willing to follow me

in that direction. But the other part was I wanted to be able to say thank you also in person to the special people. So my retirement ceremony we decided would be virtual. I have to commend a US Coast Guard Captain retired, Jim Jenkins, who's our chief of staff. Jim put, with Danielle Farelli and a handful of other folks – Shellby Johnson, who was my Sea Grant Fellow at the time – they put together the most wonderful retirement ceremony for me virtually, including people who never could have been here in a first-person ceremony. Admiral Stubblefield spoke. Rollie Schmitten spoke. We had Rick Spinrad, of course. We had a handful of people from Europe, Asia, from all over the – South America. They never would have been able to participate otherwise, but they were able to join in. I just felt really buoyed by it. I would say I came away feeling no less whole in a retirement ceremony because of the virtual nature of it. I got some wonderful tokens and gifts. You mentioned the Sharpie map. Jim, Dani, and several others – my core team – gave me a throw blanket which I could reach – it's behind me. They gave me a throw blanket that is knitted together – it's not pressed with ink. It's knitted together in the colors of the Sharpie map. That was, I think, the most meaningful thing. I got a great little tumbler that had my Passaic River in the nautical chart wrapped around it from the executive secretariat of our NOAA Science Council. People gave me such meaningful things – the [bobble]-head doll and all that. Just really cool stuff. So, I go back to what's on the back of the bell. I would like to think that I left the place better than I found it and brought some good but defended against the evils.

MG: Yeah, I know that you really set a tone. I felt it in my small corner of NOAA. I just appreciate your impact so much. I'm also curious to hear about the home life that you returned to, a little bit about your family and your wife. It sounds like you found the right person to spend your life with who's been a great support to you.

CM: She tolerates me. I met Jo Ann through NOAA. She was working at the NOAA Fisheries Enforcement Program as the administrative officer, and I was there. That's how we met. But she has always been – what's the best word to describe this? – cautiously supportive. In other words, she imparts her caution, and she supports me in what I'm doing. I think I've had enough dances – to go back to another lost friend, Roger Parsons – to Roger's characterization that I'll go right up to the edge of the dangerous cliff but not take that falling step forward. I guess not as many people go to the cliff. Jo Ann has gotten comfortable over the years with the proximity to the cliff. It's nowhere near where she'd want to be, but nonetheless, there. How it has changed my life – I am absolutely enjoying the opportunity to be with my grandchildren. They're only two miles away from us. We have dinner many times a week together. We do things I could never do when I was working. I've gone to all their track meets. They're cross-country runners, and they're doing quite well at seven and twelve years old. They've been doing it for three years. But the many things that I missed I can now participate in. I also realized that all the adrenaline rush of the life that I had, I had it, and I'm content with having had it. So now I'm finding contentment in the family side. I'm still engaged about a day a week in ocean matters. A lot of people call me, and I'm more than happy to help them. I can't quite bring myself to say, "Well, here's my hourly rate." These are people who helped me succeed during the course of my career, and I owe them. So I'm just having a lot of fun with it. I deal with the Hill frequently. I've been at any number of embassies on policy panels and working with a lot of folks that are very active in the ocean community now. So I'm certainly not going to sit on the sidelines and say, "You know, you're doing it wrong." I'm comfortable giving advice where I can, but I'm grateful.

When I retired from seafaring, it was time for me to retire from going to sea. It was a good time for me to retire and now pursue maybe a quieter life. In fact, one of the comments I made – I think I wrote it in a farewell message to the team on my last day – having a departure during COVID, it's kind of a quiet departure. Right? It's not the big fanfare, marching bands, and a large dinner. I felt grateful that I was able to host a dinner for my staff – my immediate staff and colleagues. That was a wonderful experience. We did it down at the Army and Navy Club, and everyone was comfortable with the COVID precautions, and we did that with a small group just as I retired. But overall, I made a hell of a lot of noise while I was there. I'm pretty comfortable taking a more quiet exit.

MG: Is there anything else you want to say? Do you have any final reflections on NOAA, its history, and its impact before we close up?

CM: Two small asides. One is the IOC. I feel very grateful to have had the opportunity to represent the United States at the IOC. We did some really good things there. I mentioned Seabed 2030, the ability to expand the ocean observing network. I'm very proud of the role that I had in helping to create the UN Decade of Ocean Science for Sustainable Development. And those, I think, were the achievements. But I also had moments there where I realized that I was able to lead in an international body without having a position of leadership because I represented the United States. The pride in the United States in the global community is often challenged, but when it comes to science, it is not. There's no question as to who holds that leadership, and we were able to have, I think, some very, very positive impact because of the commitment that the United States has to free and open science and to be sharing that science. The conclusion I have for NOAA is I never knew there was a NOAA, and I am so lucky that I found it. It has given me an absolutely rewarding career [and] the ability to meet and mix with so many wonderful people, whether inside the agency or not. I feel confident that under the current leadership and the direction that's being set by Rick and others that NOAA's role as the federal agency – and I'll emphasize T-H-E – the federal agency to be providing the climate information that the nation needs is a paramount responsibility that the agency has been meeting, is prepared to continue to meet, and will meet. It is the nation's ocean agency and weather and coasts. There are so many things that NOAA does for the American public on a daily basis. We just need a 'department of marketing' so that people could know it better. There is a department of marketing that's well established in NASA; they do a marvelous job. They are resourced to do a marvelous job. Our people, our scientists, our attainment of mission in NOAA is equally as strong. We just don't have sufficient funding for telling the public that these are the products. This is the information. This is where you can come and get it. But I'm very proud of my time at NOAA. I'm very proud of my career. I don't think there's anything I would do differently. I would still piss off the same assholes and be proud of it walking home.

MG: Good. Well, I think that's a great place to end. I hope we can do this every few years. It's really been an honor to meet and interview you. I know that others who access this interview will feel similarly.

CM: Well, thank you, Molly. That's very kind.

MG: Thank you for all the time you spent with me and with the transcripts. You've earned a lifetime supply of my mom's cookies.

CM: Give her my thanks. They are delicious. That was so kind of her. I sent her a note. I hope she might have gotten the note. Very good.

MG: She was thrilled to see that yesterday. Yes. Thank you for that.

CM: Very good. Very good.

MG: Let's please stay in touch.

CM: It's been delightful to get to know and work with you. I have to thank you very much for all the time that you've put into this. Little old me.

MG: It's really thrilling. I love this work, and you've made it so exciting and interesting. With that, I'll turn off the recording, and we can follow up soon by email.

CM: Very good, Molly. Thanks so much.
----------END OF INTERVIEW----------
Reviewed by Molly Graham 12/26/2022
Reviewed by Craig McLean 1/6/2023
Reviewed by Molly Graham 1/9/2023