

Molly Graham: This begins an oral history interview with Craig McLean for the NOAA 50th Oral History Project. Today's date is September 28, 2022. The interviewer is Molly Graham. It's a remote interview with Mr. McLean in Olney, Maryland, and I'm in Scarborough, Maine. There were a few things we talked about last time that I wanted to revisit at the beginning of today's conversation. I'm wondering about the institutional context for the threat of eliminating the NOAA Corps. Could you just set the political scene for me again? This was 1995 when the 104th Congress came in, and Republicans had gained a majority in the House for the first time in maybe forty or fifty years. You had said something last time about there being an attack on environmental and administrative law. Was that connected to the Rose Garden speech, or was this in the milieu?

Craig McLean: It was in the milieu. When the Newt Gingrich-led Republican majority took the Congress, complete with elephants physically on Capitol Hill, the contract – I can't remember whether it was “On America” in Mafia terms or whether it was “For America.” I think it was “For America.” We termed it the “Contract on America.” So going back to my New Jersey roots, you put a contract out on someone – there you go. There was quite a robust attack on environmental law, principally targeting the Endangered Species Act and all the regulations that had developed in and around the survival and protection of endangered species. Those attacks failed because they tried to attack the law and change the law, and the construct was just not sufficient to overcome prevailing law. But if I could go back a little bit earlier than that, that's part of this storm that gathered over the NOAA Corps and the NOAA fleet. But prior to 1990 – I'm going to go back to '90. Prior to 1990, there had been a growing competitive animus, I would describe it, between the inspector general, a man named Frank DeGeorge – Mr. DeGeorge was summarily dismissed as the inspector general of the Department of Commerce, ultimately, but DeGeorge began to exact a more scrutinous, if not prejudicial, view of the NOAA fleet and the NOAA Corps. His employees offered the opinion to *The Washington Post* that the conclusion of his reviews were determined prior to writing the content of the reviews and studies. Whether that was true or not, there seemed to be a sufficient number of his employees who felt that way. That notwithstanding, Mr. DeGeorge probably stayed longer in that position than the objectivity that's warranted in an inspector general should have occurred. So his prejudices prevailed, and among his prejudices was the NOAA Corps [and] the NOAA fleet. So in 1990, the inspector general issued a report on the excessive cost of NOAA commissioned officers in “certain” shoreside positions. That study – alleged study – was around about the same time that Admiral [William] Stubblefield and others were developing a fleet replacement and fleet modernization plan. So the inspector general was picking and probing at the thoroughness of these plans and, at the same time, decided to go and look at what are we doing with commissioned officers shoreside. His failed math led to the mistaken and inaccurate belief that there was an excessive cost to putting NOAA Corps officers in “certain” shoreside billets. To summarize, he cherry-picked to find the most expensive positions where people might have been quartered, etc. But he also missed the point in law that exists upon the creation of the NOAA Corps, the authorization of the NOAA Corps, which goes back to the Coast and Geodetic Survey, that the idea is to have operational experience, and then shoreside management and leadership experience. DeGeorge's interpretation, which – he had many challenges in law, and I'll get to that in a minute, but his interpretation was just if you're in a uniform, you should be driving a ship or flying an airplane, and that's it. You don't do anything shoreside. You don't do half of what the NOAA Corps was created for. The best evidence of that is in plain language of

the law and the authorization for Coast and Geodetic Survey and the NOAA Corps. But to go even further, to recognize that the law continues to authorize, and has for a long time, three-star admirals – now, you don't put a three-star admiral in charge of a four-hundred-person service; you put a three-star admiral in the mix of a twenty-thousand person agency of NOAA, its contractors, the entire enterprise. That was always the vision to have a parallel personnel system that is flexible, fungible, immediately deployable, to go ahead and do the agency's mission, but also through that experience, come on back in and manage and lead that. Now, all too few times have we had a three-star admiral as part of the NOAA leadership. Most recently, we had Vice Admiral Mike Devany, who was also the deputy undersecretary. That was the appropriate position for someone like that. So it has worked; it does work. I think we have to go all the way back previously to [Vice] Admiral [Henry Arnold] Karo, who was back in the, I guess, early '60s [and] for whom an award in NOAA has been named and a medal is given, etc. Anyway, DeGeorge comes along, takes his own prejudicial challenges, and starts sowing the seeds of unsettlement to the NOAA Corps. 1990. "NOAA Corps is too expensive in certain positions. So why do we have these positions?" Of course, that goes to the Hill. That goes to Congress in his semiannual reports. He had a series of semiannual reports. I dug out the list of those in order to just give a general sense, but suffice to say, it [inaudible] from pre-'90 through '90, all the way through '94, '95 when the Clinton administration came in, and as you point out, the 104th Congress appeared. There was great sensitivity to aligning with what the political challenge to the Clinton administration had been, one of which was government is too big. So along comes '94, the National Performance Review that Clinton and Gore had led to look at what are the elements of government that we don't need. How can we shrink government? Where should we shrink government? That National Performance Review was done very quickly. When the executive branch was asked, "The President wants to know, Vice President wants to know what can we get rid of," the phone call comes into the Department of Commerce. Commerce, having historically and legendarily been disconnected from NOAA and unknowing as to what NOAA really does, looks at the inspector general's reports, and here's this list of reports that DeGeorge had done challenging the NOAA Corps. In some cases, partially legitimate bases. In other cases, completely wrong in many aspects. The National Performance Review then listened to DeGeorge, who said, "Get rid of the NOAA Corps. Get rid of the NOAA fleet. Privatize them. Stop the modernization of the National Weather Service," which are those large golf ball large weather radars that are helping to protect us from Hurricane Ian right now, "and get rid of Fisheries inspection, seafood inspection." Great errors in law. Eventually, I was a lawyer for the Fisheries Service, and we absolutely humiliated the review by DeGeorge on why seafood inspection was not legal, to the point where the guy who was the lead of the inspector general's study gets up out of the room, slams the door, and actually breaks the door in a Silver Spring office. So I turned to the then inspector general, who was DeGeorge's replacement – he'd been fired by then. I said, "I think that's not fraud or abuse. That's certainly waste. So are you going to bill that guy for the repair of the door?" I was always a thorn in the side of – annoying people. That's something I think I've always done. Anyway, we wind up with the National Performance Review. In a summary matter of months, this is concluded. There's no study. There's no evaluation. There's nothing in this that's done except the pronouncement that we're going to get rid of the NOAA Corps because the inspector general thinks this is too expensive. So then comes the Rose Garden speech, where Clinton says, "We've got the Army, the Navy, the Air Force. I don't think we need this NOAA to have a fleet and old ships. We don't need this." Among Clinton's statements – this is a quote – "Believe it or not, the National Oceanic and

Atmospheric Administration has a core” – C-O-R-E, spelled incorrectly and really not noting what the root of it was – “a core of four hundred officers who command a fleet of less than ten old ships,” another error in fact. “I think that we can be adequately protected by the Army, the Navy, the Air Force, and the Marines and Coast Guard. So we're going to stop paying for those ten old ships and use the money for better purposes.” That was the beginning of the administration's position that we should retire the service, which would have been the first time in history that a US service was terminated. So I sent you last night my letter to Clinton. I sent you my two writings, one to *Sea Technology* and then one to the US Naval Institute's *Proceedings*. Here's the issue of *Proceedings*. It has a jet on the front of it, which is not too bad. But they were really flattering because they also used a photograph that I had shot. They didn't know it was mine. They just credited it to NOAA. Here's the photograph that I had shot from the *Albatross* of the NOAA ship *Delaware* in rough seas. Basically, that article laid out the complaint that the executive branch has looked with pretty shallow analysis at the NOAA Corps, come to a conclusion without the basis of fact, and ironic that the President is standing in the Rose Garden with Al Gore, saying all these things, when six months before, Gore had written such a flattering letter to us, to the NOAA Corps, upon the occasion of our annual service anniversary dinner. Now, the service anniversary dinner is usually hosted by the members themselves but coordinated by the president of the Association of Commissioned Officers, who happened to be me. So as the president of the Association of Commissioned Officers, I was asked to draft a letter for Vice President Al Gore, whom we invited, so that he could send us his regrets because not since [Dwight D.] Eisenhower has a president visited the NOAA Corps and recognized the NOAA Corps in its service anniversary. So I drafted what is Al Gore's letter to the NOAA Commissioned Corps, signed by Al – there he is. Basically, understanding the storm clouds rising, I put the exceptional level of flamboyance that I possibly could in a letter that I had hoped would be signed by Gore. With very few, but indeed few, edits, Al Gore said, “I'm pleased to say that members of NOAA Corps, you've made many important contributions to the study of our marine and atmospheric environment over the years. The Corps' research ships and aircraft and leadership of its commissioned officers have made possible a wide range of scientific research, operational – blah, blah, blah – the nation needs you. You're lovely. You're wonderful people.” In each of these articles that I wrote, I pointed out the hypocrisy of the position. I couldn't necessarily say, “My president's a bum,” but I could say he's wrong. In doing so, I drew a little bit of censure from the administrator. What right did I have to write that article? Well, the Constitution protects my right to write that article. I did it as a private citizen. I published it under those conditions, etc. That then began the competitive battle of wills inside NOAA and beyond. There were hearings. This lasted from '95 through '97. In '97, there were hearings on the Senate side, which were, I think, very demonstrative of the wisdom of the maturity of the Senate. So, Senator [Ted] Stevens, Senator [John] Kerry, Senator [John] Breaux, and [Olympia] Snowe were the members of the committee that heard the review of this. Most of them were aghast that for two and a half years, this debate had been going on. So what we were doing for those two and a half years – Admiral Stubblefield, myself, and a few others – we were trying to get the facts on the table. It took two and a half years to have the facts on the table, which was ridiculous. So the pronouncement to eliminate the service had been made. We were trying to survive and keep the machine afloat while the administration was scurrying around trying to find facts. It was almost like Rudy Giuliani talking about the election. “Well, we got theories but no facts.” Well, that's exactly where the Clinton administration was with this proposal because they moved too fast. I think in their hearts – well, Gore was willing to sign that letter, was

sympathetic to the nature of a NOAA Corps, a NOAA fleet, and the work that we did, but they moved so fast, a – I'll say – crooked inspector general – because he was intellectually crooked – put the word out. The word was adopted by OMB [Office of Management and Budget]. The plan was set. It was a hurry-up drill, and *boom*, out it goes. So very dangerous to the institution, to the service, to the nation, and also to the individual service members. We suffered a pretty high exodus of officers, both at the retirement-eligible level and the pre-retirement-eligible level. Some left, among them Sam DeBow. Sam was one who realized “I could market my skills outside. I don't need this. I'm out.” Later, Sam came back in and ultimately became the director of the NOAA Corps. But we lost good people because of this. We also shrunk because of this. There was a recruitment hiatus that was ordered by Jim Baker, the NOAA Administrator, in order to say, “Look, we're planning in the fiscal year '98 to shut this thing down. Stop recruiting now.” That was back in '95, I believe it was. So the damage of that recruiting hiatus – you can talk to any NOAA Corps director who had inherited the aftermath of that. The damage because of this four-year gap of personnel was pretty hard on the Corps. It lasted far beyond the dream of the Clintonites to shut this thing down. The whole issue came down to whether or not there's any savings or not. Molly, I told you about my inappropriate entry into the Secretary of Commerce's office. This is the Arthur Andersen study. It is not shallow. It's significant in its analysis and depth. Arthur Andersen concluded that the Corps was roughly half a million dollars cheaper than a civilian force; therefore, it's cost awash. There was another study that was done prior to that, and it was the Hay/Huggins study. It concluded that the NOAA Commissioned Corps was six hundred thousand dollars more expensive than a comparative civilian force. Hay/Huggins didn't use certain numbers. Arthur Andersen chose to use them. The distinction was probably not even worth the argument when, at the time, the Corps' budget was in the high thirty millions of dollars. So you're talking roughly two percent or less of the cost. To that effect, Stevens and Kerry were basically saying, “Number one, this is a foul because the administration has already tried to move, and the Appropriations Committee has already tried to move to undo this. We, the authorizers, have had no voice in this at all. So that's a foul. We don't support it.” But further, Kerry, who is a veteran, Stevens, who understood service and was very much engaged with what NOAA was doing up in Alaska, basically said, “You're doing this over an unsettled amount of money, and you're already causing this harm to this organization, this service? This is unbelievable.” John Breaux, a good man of the Gulf, wanted to make sure that his Gulf shipbuilding industry was supported. He took the view [of], “Leave the Corps, but go figure out the most effective and economical way of building ships, whether you build them and operate them yourselves, or whether we build them for you, and then your people operate them.” So Breaux was looking out for his constituents but was certainly sympathetic to having a fleet and having the NOAA Corps run the fleet. Senator Snowe was just aghast that we are wasting the public's time and effort on two and a half years of this, damaging an institution over those two and a half years by recruitment hiatus, and still, we can't even figure out whether this is important or not. Surely, there must be – I'm trying to remember who said this. I think it was Kerry. “Surely there must be more important things for the government to be focusing on than this. We're having a hearing over this?” So there was a lot of sympathy, but it didn't just wake up that way. Two of the assets that were absolutely indispensable for the survival of the NOAA Corps was the Reserve Officers Association and, at the time, the Military Officers Association, which became TROA, The Retired Officers Association. Bill sat as a director, and he was the first one. Thereafter, a NOAA Corps officer has always sat on the board of directors of TROA. So those two organizations were remarkably influential in working on the Hill. Their concern

was if you could so flippantly disestablish a service, what can happen to our other services? What other branches will be shut down? One of the assignments that I had at the time, along with Captain Gerry Stanley, Captain Bud Christman, and Commander Herb Kirch But the four of us were tasked to look at the comparison of – well, we were tasked to look at a disestablishment act. We had to write a NOAA Corps disestablishment act. That was our duty assignment. So it was kind of a Kevorkian sort of thing. I did an analysis of what we had looked at in creating a NOAA Corps Disestablishment Act with some precepts that had been given to us by the NOAA political administration. “You can't pay for this. You can't pay for that. This has to be the dollar cap.” And then, I looked back in history, and I found that during the creation of the Environmental Protection Agency [EPA], Public Health Service commissioned officers were offered the choice of staying in uniform or transitioning to civilian. So that was the closest matter of law that we could find in the history of the United States that came down to this, and the tote board that – I put together this little tote board, and I was able to recover this. You can see the reds on there. The reds basically mean that the Public Health Service/EPA transition was more advantageous than what they were giving to us. So I did an analysis on this. I submitted that to the NOAA Administrator; that was part of our study. That was the time – I think I told you – where we were due to submit the legislation and an analysis of the legislation on a Friday [by] close of business. We beat the deadline, came in Monday morning, and had the opportunity to brief. Since I was a principal architect of this project, I was asked to brief it. I asked our administrator – “I know he's a busy man, but this is very important to NOAA. It's very important. Surely, it must be important to him. I could only imagine that he had thorough time over the weekend to review, but just in case, would you like me to start at the beginning or jump to the questions?” Well, of course, [he] hadn't had time to read it. “So why don't you start at the beginning?” That was part of my general tactical direction in all of this, is just to show how silly this was, and to continue to, frankly, debase at any level that I could, while Bill – Admiral Stubblefield – was at the high honorable level of just trying to keep the machine running and to keep the smoke down. I began to get a little bit too loud, and it annoyed this distinguished gentleman from Tennessee while I was doing my New Jersey – I'm a new lawyer, and I'm going to hit you with everything I've got. That's when Admiral Stubblefield told me, “Okay, you're too far out front.” What got me out front was when I went into the secretary's office and handed him Arthur Andersen. Those were the things that were going on. I then generated what I called a NOAA Corps win-win for the administration. How do we get them out of this mess? That's also our job. And generally, what that was – it was a one-pager. We circulated it to the administration. Basically, the simple thing was just declare victory. The National Performance Review caused us to put scrutiny on the NOAA Corps and the NOAA fleet. We did. The costs are lower now. We're done. Let's move on to the next one. Declare it a win. They weren't smart enough to take that. It actually took Congress telling them, “This isn't going to happen. Get over it and move on.” That was when Senator [Fritz] Hollings was in his committees, the appropriations committee – he was in the middle of it. I'll never forget his phrase, “Don't you worry, son. We're not going to let anything happen to that little old NOAA Corps.” That actually gave me great confidence. It was a lot of law. It was a lot of internal arguing. I remember calling the deputy undersecretary back from a taxicab on her way to the Hill to read testimony, which I demanded to be able to review on behalf of the NOAA Corps. The administration was not going to share the testimony with us. The deputy undersecretary was just about to step into a cab. She was called back because of the concerns I had raised that she was about to perjure herself in front of Congress. There were untruths in the testimony. It was a

mistake for them to do it. They were trying to cover the mistake. They had no facts. It so much reminds me of the silliness that goes on today. It probably went on in the time of [Thomas] Jefferson. It probably went on in the time of Roosevelt. But it certainly continues today. The larger context was – in law, what's going on here? In law, how do we protect the officers? How would we disestablish? In so doing – a parallel track – where's the proof that there actually is financial savings? There was none, and one could not fabricate it, even though the inspector general tried. So that was really the background of it. I was pretty new, right out of law school, at this point in time because I graduated law school in '93, came back to full-time service and was in a series of NOAA law offices before Admiral Stubblefield pulled me out to basically be his attorney in defense of the Corps. We couldn't go public. We never violated the trust that was in us to contain our discussion exclusively within the executive branch. We didn't represent ourselves as whistleblowers or anything else like that. I think some would have liked to, but the writings that I made were completely objective public facts. We never disclosed any pre-decisional internal information, etc. But eventually, all this stuff had to become public, and the Congress took care of that. So that's the surrounding. I've got to say it wasn't just that the inspector general had an animus towards the NOAA Corps however derived. I'll at least say honestly that some of the causes for the scrutiny of the inspector general on NOAA and the fleet were not illegitimate, but the conclusions were. I think that's a problem. So let me fast forward to just another DeGeorge episode because once you get me on the hunt, I don't give up. So, at one point in time, fast-forward to a story – I'm trying to remember the year this was. It was in the middle of all of this. A crew member claims that there's wild action going on on the NOAA Ship *Malcolm Baldrige* and complains to the State Department at his nearest port. The Coast Guard and the Navy investigative service, NCIS – Naval Criminal Investigative Service – send a boarding team. They put the entire command and crew of the ship on the fantail. They take over the ship with arms, displaced the crew, and a drug-sniffing dog goes through the ship. They found marijuana in the possessions of the guy who was complaining about wild stuff on the ship. So the act was beyond the legal authority of the inspector general. I thoroughly researched it. I had a rather robust three-ring binder. I interviewed the boarding team. I interviewed the captain, interviewed the NCIS people, etc., and asked them, “On what legal basis did you board a ship of another service?” To make a long story short, what DeGeorge had done was affirmed that he had no authority to conduct such an investigation. Now, normally, if you have a problem like this, you would inform the director of the NOAA Corps. The director of the NOAA Corps would consult with the inspector general and together make inquiry into the matter, and, if necessary, board and inspect the vessel. But DeGeorge chose not to share that information with the NOAA Corps. It was a complete surprise to everyone, including the captain of the ship, when this boarding team showed up. The admiral had never been notified of this problem. I don't believe that the NOAA administrator had been notified of this problem. Just all of a sudden, this happens. So there's a rather well-established point of law in international maritime law that if you unlawfully displace the command of a vessel, it's an act of piracy, but it has to happen on the high seas. Where this happened was in Diego Garcia, and the ship was tied to the pier, so clearly wasn't on the high seas. But I wasn't going to let that get in the way of a good argument. So the inspectors general are overseen by a committee of peers and one FBI agent who's assigned to it as an ancillary task. So I presented that FBI agent with my three-ring binder and my complaint for an act of piracy committed by the inspector general of the US Department of Commerce and warranting his dismissal from the position. So the agent looks at me, and he says, “You know, the lines on the pier are a problem.” I said, “Of course, they're a problem. Do

I really think that you're going to go ahead and charge this guy with piracy? It'll be a long day when that happens. But, the point is, this is an example of how unlawful this man has been in conducting this enterprise, and he deserves to be unseated, and I think this needs to be raised.” Now lucky for me, around about the same time, there was a gender-based harassment claim brought against DeGeorge by a senior executive at NOAA who was female. There was also an inquiry into DeGeorge for malfeasance because he apparently had increased the frequency of satellite-based audits of one company, as I was told, after he was considering the desire to be employed by that company, looking for another job. So basically, the guy was booted out of the Herbert C. Hoover Building in disgrace, and he deserved every element of that disgrace. But the damage he had done was significant. I felt [that], as a lawyer guy, I have tools I can use. While many other of my very well-respected peers were frustrated – “What do we do? What do we do?” – I felt that I had a few tools I could use because a previous Admiral had said, “I need a ship driver who's a lawyer,” and I think it paid off there. Now, a very kind man who was in the Clinton administration – and I must say, the assistant administrators, including the politically-appointed assistant administrator for Fisheries and the career assistant administrators, were all on the Corps’ side. They didn't want to see it happen. The general counsel at the time was a man named Terry Garcia. Terry called me into his office, and he said, “You got to be careful here, man. I can tell you this only once. There's a lot of people that don't want to see you get a seat when the music stops.” I think those were his exact words. I'm still in touch with Terry today. He's a wonderful guy. I thanked him for that. But I explained to him that I'm not here to sustain a career in law after NOAA. I was brought in in order to be doing just this, and I've got to keep doing just this. One could easily argue with my tactics, but nonetheless, I think it was important that we had the volume and the voice at the time. So that's the background of it, and that's the summation of it. I should put all this together one day for a whole other analysis. My concern is that we're getting close to that today, where there are challenges in the way that the NOAA fleet is running, and it causes me great unsettlement because I lived through all of this. My wife thought I was going to get fired I don't know how many times, and most everyone else did, too. People would come and say, “I can't believe you're still here. I can't believe they haven't sacked you by now.” But that's how you fight.

MG: Well, I'm so glad you lived to see another day. What do you mean that you're worried these problems are cropping up again?

CM: The fleet management – it's not the caliber of the officers running the ship, but I'm very concerned based on what I saw up to the day that I left NOAA in retirement with what I would call a lack of – I'm sorry to say it, but a lack of competency in the administration of the fleet. I know it has the attention of the current administrator, Rick Spinrad. I know it has the attention of all the assistant administrators that use and work with ships. There's a parade of distressing events that are coming about. For example, a cost overrun was cited. I think this information is public and is on the Hill. I'd have to be careful if it's not. But there was originally, about six months ago, when I left – in the beginning of the week, we were informed that there was a four-million-dollar deficit in the funds available to run the fleet. Therefore, we're going to have to suffer a four-million-dollar reduction in sea time. So the programs then have to move money from other needs into those budget areas. Within a period of a week, that number had grown to seventeen, then twenty-four million. Those kinds of midnight surprises – you got to see that train coming. You can't just wake up and say, “Ah, we're short this much money.” So

somebody or a collection of somebodies is not doing a very good job here. I think what's needed is a management review. I'm hopeful that there will be an outside management review and a further analysis of why things are not running well there. If you lose the support of the line organizations, you lose the support for the NOAA Corps. The NOAA Corps mission is often misunderstood by NOAA Corps directors. Bill Stubblefield was not one of these. He got it fully. But the mission of the NOAA Corps is to support the NOAA mission. The mission of the NOAA Corps is not to run the ships; it's to support the NOAA mission. That's the totality, the entire enterprise. It's not self-sustainment, self-perpetuation, and that's often a mindset that is very troubling in the way that the Corps can function. The best advice I was ever given was given to me by a lieutenant or lieutenant commander at the time, a fellow named Ted Lillestolen, who retired as a captain, did serve as a deputy assistant administrator [DAA] of the National Ocean Service, and was the acting assistant administrator upon the unfortunate demise of a wonderful lady, Nancy Foster. Ted told me when I was a brand-new guy ashore – he said, “The smartest thing you could do is know that you work for the lines. You report to the NOAA Corps, but you work for the lines.” That stayed with me forever. If that could be taught in basic training, I think the NOAA Corps will never have a problem. But those are my concerns. I do see some of that unsettlement arising.

MG: During this time period, it sounds like you were finding some great grassroots support in these organizations. But where were you finding personal support with other colleagues? Who else was on your side in this fight? You mentioned Admiral Bill Stubblefield, of course.

CM: Certainly, Admiral Stubblefield. I will always be eternally grateful for his loyalty to me as a person, but also his maturity and his responsibility in telling me, “Hey, dude, calm down. You're breaking too much furniture here, and that's going to hurt us.” I learned from that. I really learned from that distinguished gentleman from Tennessee. I learned. I learned, and I'm grateful to him for that. I also learned from Rollie Schmitt. Rollie Schmitt was the director of the National Marine Fisheries Service. He was very supportive. He also gave me counsel, “Watch out. Slow down.” Nancy Foster was supportive. The director of the National Weather Service was supportive. In fact, he was doing battle with the administration over the modernization of the Weather Service because that was also trapped up in this, but he was personally very, very supportive as well. The OAR [Oceanic and Atmospheric Research] folks at the time, similarly. At the personal level, I actually had – and this will stay with me. I actually had a captain come up to me – and I was a lieutenant commander – and he said, “I think I would like to work for you one day.” And I'm two grades lower than he was. That one stays with me. Another one was one of our pilots saw me on the sidewalk, and he said, “You know, I'm from the Jewish community. What we say is, ‘Man, you've got some chutzpah.’” That's stuck with me – right in the middle of the sidewalk, two uniformed guys giving each other a hug. That really stayed with me. But I got such appreciation from the NOAA Corps members and their families. Because I was out front, I was sticking my neck out, and I liked doing that because unless somebody does that, bad things happen to good organizations. I get that from my father. It's what I grew up with. But I was very well supported by the NOAA Corps folks. It was disheartening to see that people felt they had to leave at that point in time rather than run the risk to stay and fight. But there was a risk to everyone who stayed because we could have walked away with nothing. My wife was very concerned and tried her best to be supportive, but she would have much more rathered I just sat down and be quiet because that's more her general



tendency of how to deal with these things and hope that it works out. Well, it doesn't work out unless you have activists who get in the middle of it and push. I have a set of books sitting right here from a husband and wife, who were both NOAA Corps officers, and they wrote a dedication in sending me these books for a Christmas gift. We normally didn't exchange Christmas gifts, but they felt compelled to give me one then and just wrote out thanks for all this stuff. It was gratifying, but that was the aftermath. I didn't take time to savor any of that while it was happening because the fight was still on, and we still had something very important to protect. I still think to this day that if a NOAA Corps didn't exist, one should. And certainly, NOAA needs a dedicated, well-run, and well-managed fleet. We have to continue to be vigilant to make sure that it is well-run and well-managed.

MG: Were you in touch with the folks from other line offices that were under scrutiny at the same time, such as the Weather Service and the Seafood Inspection program?

CM: We were not quite (glaucomic?), but were bore-focused on the fleet and the Corps because that was our job. I made consultation with the Navy, talked to their Judge Advocate General's Corps, the Coast Guard, the Public Health Service. I made the rounds of reasonably similarly situated services to get some of the legal background and their understanding, whether it was on the cost matters – we had a guy – and I need to go back to this one – and that was Captain Bud Christman. Bud is retired now, lives in Florida, loving life. Bud is a remarkable forensic accountant. He can find the holes in anyone's math, and Bud was absolutely essential. So I would make the contact, pull these guys in, get their information. Bud would analyze it, and Bud would come up with the absolute provable math numbers. And then I would take what he found and put them into an acerbically-worded response back to the Administration on things. At that point, in terms of the support, we supported each other quite well – Gerry Stanley, Bud Christman, myself, Herb Kirsch – that was the other fellow, Herb Kirsch. The four of us were principally the – we called ourselves the squirrel cage because it's where the nuts lived. Right? We worked in the squirrel cage, which was this little conference room that had a cipher lock on it because we didn't trust the IG. We were pretty sure the IG was going to come in and look at our work while we were preparing this NOAA Corps Disestablishment Act. We sufficiently convinced the admiral that we need to put a cipher lock on this door, and we did. Bud wrote to me – at one point in time, after some smoker that I had written and sent, he wrote back. He said, “Go home. Pour yourself a drink, relax, and stay away from any sharp implements this weekend.” We gave ourselves levity in such a way. As you know, I'm a shipwreck diver. I have some artifacts I pulled off the shipwrecks. One of them was a brass gauge. I'll not bother you by getting it, but it's right behind me. A brass gauge that was totally rusted out and almost beyond recognition. I brought that in. We put a little paper arrow on it; we called it the fun meter. We could determine how much fun we were having at the time. But in terms of supporting each other, we couldn't have done it without each other. It just was an amazing team led by Admiral Stubblefield. In terms of the support with the other agencies, in terms of the support inside of NOAA, and the consultation with Seafood Inspection and then with the Weather Service, we had very little contact with the Weather Service. That was mostly Admiral Stubblefield's level with the director of the Weather Service, but the Weather Service director saw clearly what I was doing, and he offered me some very, very kind words as well. In terms of Seafood Inspection, that lingered. The NOAA Corps? Clear the decks. Okay, let that one go. Weather Service modernization? Congress concluded, “We need it. Stop the debate. Just go

make the investment. Go do it. We need it.” Seafood Inspection lingered. After my service to Admiral Stubblefield, Rollie Schmitten, Director of the National Marine Fisheries Service, said to me, “If you could stand up as strong for me as you did over there, you're my guy. Oh, by the way, we're going to rehabilitate your reputation.” These are my words, not Rollie's. But basically, I was coming from being a crotch kicker to now we need to return you to the gentleman officer that we had known you to be. I will always be grateful to Rollie for having done so. On Rollie's watch, I'm now a counsel advising him, and that's when the inspector general came in with a report furthering the need to disband and transfer Seafood Inspection over to the Department of Agriculture. Well, if they left it at that, that would have been okay. But then they get into this wholly unsupported and unlawful analysis that said that NOAA never had the authorization to inspect seafood in the beginning; it should have never been done. Well, there was law dating back to 1928 in the Bureau of Commercial Fisheries to do this and other places. So, in other words, a pretty simple analysis of law just blew them out. I offered that analysis of law in that conference room, blew them out the door. DeGeorge had been fired by now. His replacement was in there. I humiliated the guy who had written the analysis; he got up, stormed out, slammed the door, and broke it. Not only my comment about whether or not he was going to pay to fix the door, I offered, “If this is the best that you can do as an inspector general” – and I'm still a lieutenant commander now, right? I'm not a senior executive, but I'm a lawyer. “If this is the best you can do in your work, and you're the acting inspector general, you should probably forget about looking to change your address and move into the permanent inspector general's place. Because if this is the quality of your work, you don't have a shot at this job, pal.” Basically, that's what I said to him. A few people sitting in the room at that time were aghast that I had said it, but you fire for effect, and *boom*, so we did. That pretty much ended the desire to transfer the Seafood Inspection, but it pops up every once in a while. There are many components in government organizations, including NOAA being in the Department of Commerce – it may make sense; it may not make sense. Sometimes you have to do the best you can based on where you are. Other times you can stand up and try and argue for a transfer, and there's a growing move to transfer NOAA to an independent agency and get it out of Commerce, which I think would be very helpful.

MG: Last time, you had said that Rollie wanted to smooth you out. I was curious about what this process looked like. I'm picturing a *My Fair Lady* situation. How explicit was Rollie about this?

CM: I love your likening it to *My Fair Lady*. That's great. Well, Rollie knew who I was because we had worked together on previous assignments prior to this. He also saw me – he saw two sides of me. He saw the very aggressive side, but he also saw who I really, really am. I'm like anyone else; I don't want to upset the apple cart. I want to be comfortably enjoined with everyone. The way it went was, as Rollie's close advisor, I was with him in many places. I observed his style. Initially, unbeknownst to me was Rollie's analysis, that which I try to do with all of my fellows, all the twenty-five fellows that I've hosted over the years. I explain to them how and why I make the decision that I make. Or if I'm making a decision, I throw all the elements up in the air. Rollie did. He taught me how to do this just by watching him. Throw the elements up in the air, and if we do A, therefore, B is the consequence. If we go C, then D, E, and F are the consequences. What is the right position? Not the best position. What is the right position? I've always been guided by what is right. I think you get that. The Rollie Schmitten-

isms, if you will, of how to be a gentleman in navigating very complex issues, fisheries regulations being what he was responsible for, I observed the proper, gentlemanly way of being a senior executive. Up to this point, I was looking from afar at senior executives. I was getting into their hair. I was annoying them because they were going in a bad direction that was not supported by fact or law. But I wasn't really studying how to be a competent and respected senior executive. I got that from Rollie, just by being with him and by those iterations of discussions that we would have. Never did he have to correct my diction or tell me how to approach something differently, but just the kindness of his heart. One example was in a public meeting; we were beaten up by the constituency, which was not uncommon. As we were leaving, Rollie held the door for a man who was in a wheelchair and had lost his legs at some point in his life. We had not shared a word with each other at the conclusion of the meeting. We just get up, and we're leaving. Hold the door on the way out of the building. And there's this gentleman making entry. Rollie, once the gentleman had passed, looked over at me and said, "No matter how bad a day you think you've had, you're going to see people who probably are less advantaged than we are or in a worse position than we are." That kindness of philosophy really enriched me, and he's a friend to this day. I'll always be indebted to him for how he shared himself with me.

MG: I hope to meet him and interview him as part of this process.

CM: That would be wonderful. That would be wonderful.

MG: How long did you work in this capacity for Rollie?

CM: I think it was with Rollie for two years. Then it was time to go back to sea. It was off to the *Gordon Gunter* – the *Relentless* originally, then renamed to the *Gordon Gunter*. Those were the ships that were transferred from Navy to NOAA.

MG: That was in Pascagoula.

CM: That was Pascagoula home port. I think I told you that I was originally destined for Hawaii and chose that, and I'm glad that I did.

MG: Yes. We talked quite a bit about that. I was wondering if there was anything to add before skipping to your next step.

CM: I'll throw one in, Molly, that did occur to me. There were various seafaring experiences that were absolutely exhilarating. Then there were others where I had to look back at myself and realize, "I've got no one to call here. I've got to do this." One of those instances, we actually did have someone to call. But one of those instances was a hurricane was building in the eastern Gulf of Mexico. We were operating in the western Gulf of Mexico. It was headed for us. Right about that time, one of our engines failed. Now, the way it fails – these are complex plants. They are diesel-electric; the electrical side of the generator failed. A computer card that costs probably several thousands of dollars – I'll say eight to ten thousand dollars. A computer card failed. Without that card, we're not getting anywhere. We're trying to outrun a storm, and we're not making enough speed to outrun the storm. This is starting to look bad. We're going to get

hit with only one engine on an underpowered ship to deal with keeping the bow into the seas, no matter how ferocious this hurricane might build. So that was a very worrisome moment. I'm thinking of what the negative consequences of such a situation could be. I was enabled with an outstanding chief engineer, a fellow named David Waller. And Chief Waller? had been trying to modernize the fleet's support structure so that sufficient spare parts were on every vessel. Well, we obviously didn't have in spare parts these computer cards; we were told they were too expensive. "If you need one, we'll send you one." Well, we need one. We're in the middle of the Gulf, got a hurricane bearing down on us, and we can't get out of the way of the hurricane. Definitely not good. What we had was the phone number of the guy who designed that electrical system. He had worked for GE [General Electric], and he retired. He had a small advisory practice in his retirement for those vessels that had his system on it. He interestingly had the same last name as the chief; this chap's name was Buddy Waller. No relation. We managed to reach him after several tries. Buddy Waller, the GE retired engineer, told us how to basically scavenge another computer card elsewhere on the ship, in the bow thruster system, and solder certain elements to other elements and basically jury-rig this thing. We had our electronics tech and one of the engineers down in the engine room soldering and making these connections. We took the one card, pilfered the parts from the bow thruster, and then we came in, put that together inside the card, and were able to get underway and get out and around. This comes to me as – gosh, it leads to so many things – NOAA being in the Department of Commerce, where we don't have the support that we should for the importance of the agency to the nation because it's lost in an environment where people don't deal in these subjects every day. Now, Secretary [Gina] Raimondo – I think she's one of the brightest stars that we've ever had [at] Commerce in terms of looking at and favoring NOAA, but still, the culture of the department – they're not picked for these reasons. They're money, trade, balance of trade, employment, statistics, etc. At the department level, you get into NIST [National Institute of Standards and Technology], you get into patents and trade, you get into export control – those are professionals who do really good work for the American people. But that umbrella of the department? Don't need it. The lack of advocacy hurts. The tired tolerance of poverty as a federal agency – you just get used to not having enough. I was talking to a friend of mine, who actually was a shuttle astronaut, who's a veteran of five shots into space. We were comparing space to oceans. The comment that I got from my friend was there's a totally different mindset in space. If we don't have enough to do it, we're not going to do it. Right? Many people have reminded me of this on the ocean side. Even though we don't have enough to do it, we do it anyway. Well, in space, if you fall out of the sky, there are grave and immediate consequences. In aviation, the same. But at sea? Maybe we could wait. Maybe we could scavenge a piece here and there and solder it together in the middle of a hurricane and be able to get out of harm's way. I think we do that to ourselves by having so much of the can-do/will-do spirit that we don't stop the machine and ask for enough in the way of resources. I think that is a cultural harm that NOAA has inherited in its being to just keep trying to do even though we don't have enough. I could look at other federal agencies' budgets and realize they are now today and have been receiving appropriations to do the work that NOAA was authorized to do. But we can't do it enough so that it's arising elsewhere, and you wind up inviting uncoordinated efforts that are not always in the public's best spending interests. Anyway, there's my soapbox.

MG: It's interesting because you would reprise these sentiments over the course of your career. It sounds like around this time was when you started to realize, "Oh, we're underfunded."

CM: I think NOAA could have made that realization for quite some time. But I think it's always been that way. When we started the Ocean Exploration Program – stop me if I told you this one already. When we started the Ocean Exploration Program, I was in Sanctuaries at the time as the deputy director working for an amazing guy who was the director. He'd be a great interview – Dan Basta. I don't know if you've met Dan. Dan was the director of Sanctuaries. I was the deputy director of Sanctuaries as a uniformed Commander. This is just before I went to Ocean Exploration. This is when I came ashore from the *Gordon Gunter*. So it's very timely in our time continuum. Dan and I knew of each other but had never met each other. We wound up at a common meeting, realizing that we're going to be working together very shortly. I managed to procure a bottle of Laphroaig. You might be familiar with that. It's a very peaty, heavy, flavored Scotch whisky, and Dan and I sat up for a whole night and went through that bottle of whiskey, getting to know each other. Dan's a diver. I'm a diver. We had a lot in common, and I knew we were going to work very well together, and we, of course, did. But while I was with Dan, along came the idea of an exploration program; it was met with favor by Scott Gudes. Scott was the acting administrator of NOAA. He had come from the Senator Hollings crew, working in the appropriations committee in the Senate. Scott liked it. Dan liked it. Dan had a lot of ideas towards this. So between the Sanctuary's effort to explore, which was also punctuated by the Sustainable Seas project with Sylvia Earle and small submersibles working in each of the sanctuaries, and the NURP program, the National Undersea Research Program, which is over in OAR, it was a bridge between OAR and the Ocean Service. So we pushed that forward. We kept trying to push exploration. I'll tell you the story about how I got selected to be the director but let me leave that for a moment. We wound up creating the Ocean Exploration program with a four million appropriation. That was the best we could do. My first comment was, “For four million dollars, what square nautical mile of ocean do you want us to survey?” And everybody laughed, and then we went on out. We devised a fair number of projects. When I briefed the Hill on that, they were surprised with the number of projects that we thought we were going to be able to obtain. So, I show up and explain how many projects we were going to get done. I think the number was eight. They said, “Oh, McLean, come on. We realize it's only four million dollars. What can you really do?” “Well, we think we can get this done.” As I'm leaving, the counsel to the Senate Commerce Committee, who later became a chief of staff of NOAA, a good friend, Margaret Spring, said to me, “McLean, switch to decaf. Just don't set yourself up for failure. Eight is a lot for four million dollars.” So we come back at the end of the field season, and all the projects are completed. But I think we did six more, so we were up there. We nearly doubled. We didn't double, but we nearly doubled the number of projects. So I came in with a sack full of coffee, but they didn't know what was in the sack. We sat down. I said, “Before we get started, Margaret, I want to remind you that you told me to switch to decaf, right? Okay, we didn't get eight done.” And a few of them are looking like, “Yes. See? We told you.” “We didn't get eight. We got fourteen done. You told me to switch to decaf, but here” – and I had a pound of coffee for each of them from Starbucks, and I passed them out around the table and said, “You guys need to get on high test. There's a lot we could do if we all put our minds together.” We did that. We built those programs with like-minded people willing to put a little bit of their own forward, and it worked. But early on in the Ocean Exploration Program history, we sponsored – myself and Eric Lindstrom from NASA – Eric's now retired, but he was a senior program manager for Oceans over at NASA. We co-sponsored what we call the Link Symposium for space and for the sea – a lot of overlaps in engineering problems, a lot of

overlaps in how to get the money you need, a lot of overlaps in personnel development and the like. So we're down at Kennedy Space Center. One of the many invitations I got when I was down there was to go and see various laboratories. One of them was a laboratory that was growing green leafy vegetables in space. The space shuttle was the place where these experiments were being carried out. Can you grow this kind of produce and space? It's good for the astronauts. It's good for their morale. It's also good for their digestion, where you've got crunchy stuff instead of toothpaste-textured food all the time. So we go through, and I'm looking at lettuce, and I'm looking at radishes, and I'm looking at all sorts of stuff. I said at one point, "This is all very interesting, and I understand the value when deep space probes with human occupation are going to be a reality. What's your budget?" "Four million dollars." I looked over at Jeremy Weirich, who's today's Ocean Exploration director. I looked over at him, he looks at me, and I said, "You've got for lettuce, the entire budget of what we have for the world's ocean." So now I've got some great ammunition. *Boom*, I go back up to the Hill. Oh, while I was down there, I also saw on the ships that NASA had contracted to recover the solid rocket boosters for the Shuttle. These required a one-hundred-foot dive maximum depth to cap these boosters, fill them full of air, and they went then from the vertical to the horizontal once air-filled and then they pulled them in. It was a great operation. Being responsible to the people they had on board, they had recompression chambers on board, stainless-steel recompression chambers. No NOAA ship in the fleet at that time had a recompression chamber at all, we were operating routinely at a farther distance from shore, relying only on the Coast Guard's ability to come with a helicopter and evacuate anyone, and we did have that happen. I had to manage a diving accident in my career in order to recover someone and ship them out safely. We didn't have recompression chambers on our ships. So I went up to the Hill, and I had two complaints. Number one is, "I don't know if you're drinking enough of that coffee I gave you." But the principal complaint is. "Why do you despise NOAA employees so richly that you fail to give us the resources that you're willing to give to other agencies? We do more diving. We do more of this work. We can't afford a recompression chamber. And my friends at NASA have not just a chamber but a stainless-steel chamber on each of two ships. Why do you despise us so much?" "Oh, no, we love you" – all this. The other one was, "I've got the lettuce budget of NASA to explore the world's oceans. What's going on here?" So we were able to get the money from four million to then eight million, eight to sixteen. It basically was a good stock to invest in; it just grew, and the need was there. But I guess the underfundedness of NOAA – and I would say NASA is underfunded, too, with some of the things that they need to be doing in understanding the complexity of their world. Money is not free, and it's not infinite. Our willingness to accept what we're given because we're under the Stockholm Syndrome – if you remember those days, right? We're under the Stockholm Syndrome capture of the Department of Commerce. Once I got to the acting level of the position that I formerly held – that was about fifteen years ago – I decided I'm done with this. I'm going to say what I need to say. I'm going to tell people what we need, not what I'm told I'm only allowed to say. Now, I can't argue against the President's budget. That's a Hatch Act violation. You don't argue against the President's budget. But you can tell with greater honesty to the Congress who has to generate the funds you're going to need in several years – give them a heads up. We were never allowed to do that. I just decided I'm going to start doing it. I'd get kicked under the table. I'd get spoken to in the hallways afterward, all these things, but I didn't stop doing it. I think the capstone of that was when the congresswoman from New Jersey, Mikie Sherrill, who is the subcommittee chair for the science committee on the House side [United States House Committee on Science, Space, and

Technology], asked me near my retirement, “Does NOAA have enough funding for its mission?” I said, “No. NOAA is a twelve billion-dollar agency trapped in a five-and-a-half-billion-dollar budget. We don't have the funds to do what Congress has authorized and asked us to do.” Our problem is we never stop and say, “Hey, dammit, we need more. This is not sufficient.” We have many outside voices that help NOAA – the academic community, certain components of industry – but we just don't have that support inside. I've got to look and say, “What is the repeated failure in all of this?” And it's the lack of advocacy at the appropriate levels in the cabinet. So as long as NOAA sits in Commerce, where there are many competing interests, most of which have nothing to do with the oceans, atmosphere, and climate, except for this administration – but I would still say that the Biden administration and the appointment of Secretary Raimondo, while very beneficial, is not sufficient to allow NOAA to reach its full potential. NOAA needs to be an independent agency.

MG: Do we have limited time to figure this out before things could change with a new administration?

CM: The way to do this is to get both political parties aligned with the vision. You don't know who's going to win. But the only time to do this is when there's a transition of political parties because once there's a sitting secretary, no secretary is going to want to say, I would like sixty percent of my budget, sixty percent of my people to go away. Size is power in government. That is the disincentive to embrace such an idea. Now, the Obama administration, W. Bush, and a handful of both Republicans and Democrats have looked at this and said, “We need to do something different with NOAA,” but it hasn't gained traction. Usually, the fishing constituency voices up and says, “We don't want to go anywhere near Interior because they're too green.” The other question then is, in Commerce, do we want to gut that cabinet? Because if you take NOAA out of Commerce, it's very vulnerable to be just redistributed. I can't remember which administration had the idea – I think it was Bush – to just create a Department of Trade and put all those financial things together and then put the science elements in a more combined science agency. So, there's a lot of things to do. I remember Kathy Sullivan, who had, I think, the brilliance of leadership in one of her approaches, which was, “Don't worry about moving boxes around. Just figure out how you can work well with those boxes.” Well, for fifty years, we've not worked well in the Commerce box. So at a certain point in time, you got to make a change.

MG: How long did it take to fund that dedicated ship for the Ocean Exploration Program?

CM: About six years, I think it was. Something like that. We had a President's Panel study, which was published in 2001, that recommended a dedicated ship, among many other things. A marvelous panel. The Navy representative to that panel was Rick Spinrad, today's NOAA Administrator. I was a rep to that panel for NOAA and Barbara Moore, who was the NURP director, was also a NOAA rep. The ship was the *Okeanos Explorer*. We had to arm-wrestle other line organizations who wanted those ships. We were a new program with momentum, with energy, and with the following of congressional oversight – a smaller budget than most of these other programs, but we were new, and we needed the ship in order to really get on the ground. My friend and colleague, Bob Ballard, was very helpful and instrumental in us getting that ship. Bob could say things that we couldn't say because we had to stay in the President's budget. But Bob and I were working together. At one point in time, he definitely had the attention of the

leadership of the House and the Senate, which he so often does and so easily does because of his charisma and skill. Bob said, "Hey, look, I don't have the details. Go talk to McLean. He's got it all." So I'm getting these calls from the Hill, asking about, "What about dedicated ship need?" I could describe it in abstract. It wasn't part of the administration's plan to get a dedicated ship. The money wasn't allocated sufficiently to get it. So, once again, I was a little bit out on a limb there in describing what we felt we need, but it was also supported by the President's Panel report. Eventually, we were able to sustain the interest, and I think Senator [Jack] Reed from Rhode Island, Senator Stevens, Senator Hollings, the supporters of ocean exploration – Senator Kerry – that were found on the Hill all got together and said, "Yeah, this is the right thing to do." I think it was Jack Reed that really pushed the button and said, "This is the way it's going to go." So the Hill intervened and made it happen for us. Then, we had the budgeting for it. But it was not something that was going to come through the natural process. We had to go outside the process in order to get the resources we needed in order to do the job.

MG: Can you say more about the ship, its purpose, its missions, and the kinds of things it was doing?

CM: The ship that we received from the Navy was built to be a mobile SOSUS [Sound Surveillance System] core. Once the Navy changed their methods of underwater sound surveillance, they surplused these ships. The *Gunter* was one of them. The *Okeanos Explorer* was one of them. The ship was refit to be a dedicated ship for ocean exploration. That was one of the major recommendations that came out of the President's Panel [on] Ocean Exploration, that you need a dedicated ship instead of mobilizing and de-mobilizing with the next scheduled opportunity for a ship. That gets very expensive. It invites technical failures because you're connecting [and] reconnecting all the time. Just install the equipment, leave it there, and let the nation build an identity behind it, much the way [Jacques] Cousteau had the *Calyпсо*, to have a recognizable – that was a piece of what was recommended – have a recognizable signature ship and series of expeditions that constitute the ability for the public to tie into what's going on just the way the space program did. Now, it's hard to compare a four million program with what became the space program, but the space program had to start somewhere. That was the idea here: it's got to start somewhere, too. So having a dedicated ship was step one. We borrowed from Bob Ballard one of his ROVs, his remotely operated vehicles, while we were getting the budget rich enough to go ahead and procure one of our own. We now today have the Deep Discoverer, remotely operated vehicle. It's a six-thousand-meter system. It has a brilliant lighting system. We followed Ballard's design rather than the industry design. Bob's design is to have a chandelier and then the operative vehicle underneath it on a tether. The chandelier puts light over the top, it also has cameras, and you could see the big picture, and then you get the more detailed picture from the vehicle itself. Whereas the industry has a cage that the ROV is contained in, and then you land it on deck that way. Two variables for different reasons. We're not inspecting nuclear equipment; we're looking at the undersea environment, geology, biology, archaeology, etc. The ship has been very successful. I think the ship has mapped more than twenty percent of the US-exclusive economic zone itself and a lot of blue water, open ocean mapping, which under the objectives that we worked hard in the Intergovernmental Oceanographic Commission to define and eventually achieve is to map the world's ocean by the year 2030. I think we could do it. We just need multiple governments to make the same kind of



commitment that we have made in the Ocean Exploration Program and in the Coast Survey in order to do it.

MG: Yes, my next question was about opportunities for international engagement in cooperation. What does that look like?

CM: It's very rich. I think we go through the yin and the yang in a very volatile democracy, where in the previous administration, anything that was international or UN-based was not supported. Once again, I went a little bit rogue by pushing for this UN Decade of Ocean Science for Sustainable Development. There were five or six of us who were the original planners internationally. I basically populated the agenda with what we had decided were the US ocean science objectives. So there really was no reason that the previous administration, the Trump administration, could object to what I was offering as a priority because they were our priorities. But they're equally applicable around the globe. Exploration has really blossomed now in the international setting, so that multiple nations are interested in doing it or doing it themselves. I don't know of any other nation that has a dedicated ship of their own federal expenditure, although there are private, philanthropically funded ships that are dedicated to exploration. Paul G. Allen – prior to his demise, Mr. Allen had such a ship among the several ships that he has operating. I think since his passing, his family foundation is moderating their direction. They're not as exploration-oriented. Schmidt [Ocean Institute] – they're in exploration. Victor Vescovo procured the deep-diving submersible and went to the five deepest parts of the ocean. Victor has been exploring. Ray Dalio with Ocean X – the name of their ship is the *Xplorer*. There's a lot of interest in doing this. There's a Norwegian group, REV Ocean, [and] they're exploring. It's all over the world. Some governments are [exploring] as well. What I hope we can achieve, and we've not achieved this yet, is a global compact or a global gathering of nations to work at least three levels. The first and easiest level is, where do you want to go when? We may be there. We may have been there. We don't want to survey the same patch of ocean twice. Let's get coordinated with who wants to go where. The next is, can I map something for you before you get there? Make it easier for you. The third then is, why don't we do some ocean campaigns together, returning to – and you may remember – Project FAMOUS [French-American Mid-Ocean Undersea Study], which, if you remember, was from the history books because I was a little guy at the time and you're much younger than I. But it was an exploration of the Mid-Atlantic Ridge; the French and the Americans did it. The *Alvin* was involved, and the *Nautilus* for the French. It was a campaign. We could return and generate campaign exploration. I think that's the opportunity in front of us. So I'm hopeful to see that in the future, but we've had limited activities. The *Explorer* just went to Portugal, went over the Mid-Atlantic, was working with the Spanish and the Portuguese. We've been trying to put these together for a couple of years. I'm hoping that the UN Decade helps us do more of it, but there's not enough of it. We need more. The appetite is there. We just need the planning forum and to get people looking ahead a few years.

MG: Speaking of the *Alvin*, didn't you have the opportunity to dive in the *Alvin*?

CM: I dove in the *Alvin*. I dove in the *Mir*, the Russian submersible. And I was in the *Johnson Sea Link*. I've been in a number of submersibles. The *Alvin* was during the ocean exploration days, and that was on the Galapagos rift. It was a very exciting trip for me because I had always

dreamed of being in the *Alvin*, not just the deep-sea submersible, but the *Alvin*; that is the signature submersible. We dove on what we had hoped to see as the originally discovered hydrothermal vent field, Rose Garden, as it was called. The tubeworms and the giant clams and all of the great biology that just redefined biological systems. I found that astounding because there I was, graduating with a zoology degree in 1979 from Rutgers. The year before was the first inkling of what was in those hydrothermal vents, the original discovery, and then returning and really digesting, if you will, what was in those sites. It totally redefined what I have been taught in a good school – plants to the left, animals to the right, and small little stuff in the middle – and it was revolutionary. So being able to see that was remarkably exciting. But when we got there, the Rose Garden was missing. It had been paved over by a subsequent eruption, and we were watching, instead of six, eight-foot tall, small tube worms growing, and they were aptly named by Tim Shank, who was the co-chief scientist along with Steve Hammond, my good friend, and the chief scientist for Ocean Exploration. They co-named it Rosebud instead of Rose Garden. So, it was Rosebud. But very exciting and just a great experience. Every submersible dive I've made, I've got locked in my brain, and I find very motivating and very, very thrilling.

MG: Was this also the era of the USS *Monitor* mission?

CM: Yes. My trip to the *Monitor* started when I was in law school. I was known as a diver because I had a diving history prior to joining NOAA. I'm jumping around now time-wise, but the theme being the shipwrecks. John Broadwater was the Monitor National Marine Sanctuary manager. John was one of the first people to ever dive on the *Monitor* back in the '70s, right after it was discovered. He dove through the *Johnson Sea Link* in a lockout mechanism that allowed a diver from the submersible to go out of a chamber, swim around, come back into the chamber, close the hatch, and then they would take the submersible, dock it on deck, and decompress the diver. Now, the front of that was this big bug-eye acrylic sphere that had two pilots in the submersible, and in the back were the divers. So John did that. By the time I got to the *Johnson Sea Link*, they had stopped using it as a lockout chamber. So we dove the *Monitor* with the *Johnson Sea Link*, got the site, figured it all out. Anyway, while I was in law school, John contacted me and asked for a little bit of my help in writing a proposal to use mixed gas diving, which NOAA had not done before, in open circuit scuba on the *Monitor*. So I gave John a little bit of help. Then, when I came back to NOAA after being in law school, John and I and a third fellow, Mike Hoshlyk, who was a NOAA Corps officer, went to get trained in open circuit mixed gas scuba. We dove quite a bit deeper than the *Monitor*. The *Monitor* is at two hundred and thirty feet. We made some dives that were quite a bit deeper just to get ready for that. Then we went up and did the *Monitor* project. But the *Monitor* project – we just celebrated the twentieth anniversary of the recovery of the turret, and it was just really heartening and gratifying to meet up with those Navy divers again and to enjoy their company and to reminisce on their skill. Captain Chris Murray of the Navy was the supervisor of diving. He had previously been the commanding officer of one of the diving detachments, the Mobile Diving and Salvage Unit Two, based in Little Creek. But Chris was absolutely instrumental in making sure that the Navy support was there [and] the Navy ability to do the work was there. That was a thrill and a half. The very first dive that I made with John on the *Monitor* – John Broadwater – we had a little oak tag if you call it that, a thick piece of paper with a long string. We got down to the bottom, and one side of the tag said, "NOAA welcomes the United States Navy back to the USS *Monitor*. Thank you." And on the other side, it said, "Please cut here," because what we

were supposed to do was identify, with John's expertise on the propeller shaft, where to cut the propeller shaft. It was very gratifying several weeks ago to be down at the Newport News Mariners' Museum with Chris Murray, who made the final cut to release the propeller and recover it. So the propeller came up, the steam engine came up, and the turret came up in each of several years. So I was in Sanctuaries as the deputy director supporting this project as the NOAA senior voice. John was the archaeologist and the real brains behind the outfit. And the Navy was the brains. But the interesting part for the Navy was Navy salvage divers are taught to go get the big pieces, wrap them up, and get them on top quickly. So you've got Navy of this mindset. And then, meanwhile, we come along as archaeologists with the toothbrush and the dental pick, wanting to go through things delicately. But I think it's a marvelous success story. It's down and visible at the Newport News Mariners' Museum. It's also a demonstration of interagency cooperation. From my Sanctuaries role, I continued to support that project because, to me, it was clearly exploration and maritime history, which was also part of the NOAA exploration program. So I was able to support it with both budgets. We got down to a pretty limited call, where weather was approaching, we were running out of money, and I was finally in a position where I could tell Chris Murray, "If we get our backs up against the wall, I could put another chunk of money on top of this. Don't worry. Don't put pressure on the guys. If it comes up, it comes up." That was the first time I really looked back on my career where I felt like I could actually influence something to get a particular result that otherwise you'd have to do a "Mother, may I" somewhere else. But it came up on the backs of those Navy salvage divers. Those guys were amazing. Those guys and gals because there was a lady, Commander Bobbie Scholley, who was the commanding officer of the mobile diving and salvage unit when the turret came up. So Bobbie's crew in the MDSU, as we call it, Mobile Diving Salvage Unit Two, and the Navy saturation divers – those guys were the heroes that really brought this up. So that was the *Monitor*. That was a great recovery. It started as a daydream, and it became a true reality. We also had huge support in Congress from the Virginia delegation. The North Carolina delegation was a little bit disappointed that we were not going to store the artifacts in North Carolina at Cape Hatteras, where there's a modest-sized but very proud maritime museum, but that we're going to put it in Newport News. If you see the Newport News facility, it is what one needs in order to conserve the *Monitor*. That museum is skillfully and carefully curating those artifacts in a marvelous way. So, as I was leaving Cape Hatteras, coming off the ship, I managed to get a speeding ticket coming through Hatteras Village, and I'm trying to soft-soap the cop, and Steve Hammond, our chief scientist, was in the car with me, but I'm driving; it was my responsibility. I said, "We just came off the *Monitor*. We raised the steam engine" – all this. And the cop says, "Yeah, why didn't you leave it in North Carolina," as he rips the ticket off and hands it to me, and he says, "Have a nice day." [laughter] I wasn't able to talk my way out of that one.

MG: For the record, can you just tell me a little bit about the history of the *Monitor*?

CM: Well, the *Monitor* was a fascinating invention of a Swedish immigrant named John Ericsson, and Ericsson had many revolutionary engineering designs in this vessel. Number one, it was so low in the water that it was a difficult target to hit. It was built really for riverine-type of engagements, a bay or a river, and didn't have much freeboard, obviously, eighteen inches of freeboard. It had a propeller rather than a paddle wheel and a propeller of a design that was so much more energy efficient. The engineering design of the engine itself one could go on, but it

was fascinating and revolutionary the way that he had designed the engine, including the reversing gear and the like. But the principal part of the *Monitor* that was astounding was the rotating turret. It was the beginning of what became modern seafaring warfare. Prior to the *Monitor*, as the Confederates found, if you wanted to shoot at the bad guy, you needed to turn the ship to aim all the guns out at the bad guy – sailing ships and even early steamships. But what Ericsson did with this rotating turret is the ship could take the most favorable course for its own aggression or protection and just rotate the turret three hundred and sixty degrees and shoot at the bad guy. That was what was so remarkable and revolutionary about the design. The ship itself [is] roughly a hundred and seventy feet long. There's a one-to-one mock-up of the ship on the back lawn of the Mariners' Museum. It was built by the welders at Newport News Shipbuilding. It gives you a scale and perspective that sometimes escapes you when you're sitting on the bottom looking at it. I think most of the time when you're on the bottom looking at it, just this sense of history all around is so overwhelming. To see what the ship looks like in reality with that model makes you realize how revolutionary this was because then an entire class of *Monitors* was built by the United States for the Civil War. Other nations took notice of Ericsson's design, and it really began the revolution of rotating gun turrets, which survived still today and really were a serious part of warfare up through World War Two. I think then the real tool of warfare became aircraft carriers. But still, very much alive and very much an important signal for warfare. So the *Monitor* was unique in many ways. It became a National Marine Sanctuary in 1972, I believe it was. But the *Monitor* once discovered, [it] was realized that we need to protect it or we'll lose pieces of history because of divers much like myself. Look over my shoulder at that ship's wheel. You don't want that wheel to come off the *Monitor*. That wheel came off of a World War I merchant vessel that was transporting munitions and the like for World War I. But in terms of protecting history, that's what the Sanctuaries Act was for. Initially, [the] Sanctuaries Act could only protect natural resources. So the factual protection of the *Monitor* was for the coral and such that were living on the *Monitor* rather than the shipwreck itself. Very soon then did the Act get amended to allow us to protect historic resources as well, which was a very positive change in the act. So that was the *Monitor*. Then, along came the *Titanic*. In law school, I was doing a law review paper on shipwreck law, which always interested me. I came in my research very quickly to find that there was a Titanic [Maritime] Memorial Act that required NOAA to work with the State Department to negotiate with other countries protection for the *Titanic*. After Bob Ballard's testimony to Congress that this should be preserved, protected, etc., Congress liked that and passed the Act. So I contacted my folks back at NOAA, who were supporting me in law from the General Counsel's Office. They were not immediately familiar with this responsibility for NOAA. Somehow or another, it had slipped through the cracks. I managed then to be directed toward a chap named Ole Varmer. Ole has since then really developed an expertise, including textbooks for law, on shipwreck law. He worked and invited me to join him in working on the development of an international agreement to protect the *Titanic*. One does exist today. We made several dives on the *Titanic* when I got to the Ocean Exploration Program in order to gather the expertise that we needed for the eventual congressional hearings so that we could talk about the importance of the site and why it should be protected. We dove with the *Mir* submersibles, the Russian submersibles, the same ones that Jim Cameron used in his movie *Titanic*. That's how I met Jim Cameron. In fact, I just had an email exchange with him last night, which is very flattering that the man takes my incoming, and he's quite a gentleman. Jim is quite a gentleman and very talented, obviously. But we dove the *Titanic* several times and then returned to 2004, not with human-occupied submersibles but with

the robotic devices, the robotic vehicles. When Ballard was the lead, Jeremy Weirich was the chief archaeologist, and I was the sponsor of the program. We all went out, and we did a TV broadcast to look at the *Titanic* twenty years after its discovery and how it was changing, and it is changing rapidly. You have to realize that there are components of these historic artifacts and these historic structures under the sea that are changing and degrading rapidly. The idea of bringing images back is as equally important as bringing back artifacts. Of course, in our NOAA expeditions, we didn't take any artifacts. We didn't touch anything that was part of the ship. Commercial salvors have made collections, and those collections make the rounds in museums, and people are thrilled to see them, and quite understandably, it's a thrilling sight. It's an amazing site. It's a hallowed site, as well, because I liken it to the World Trade Center location. Approximately the same number of people lost their lives there. It was a calamity unexpected. So many things were parallel to it, except there was no immediate force of evil that was behind the *Titanic*; it was more like a Greek tragedy.

MG: Were there any new discoveries made about the *Monitor* or the *Titanic* as a part of these expeditions?

CM: From the *Monitor* perspective, the surprise was once taking apart these recovered pieces, how remarkable the engineering was. I saw another dose of that recently down at Newport News as the curator was explaining some of these engineering marvels to us. Understanding how the *Monitor* was built and what it had in it, it was a revelation to realize that this stuff existed that early in ship design. Most of the plans for the *Monitor* are not thorough, and they're being reconstructed in the work that the conservationists are doing down at the Newport News Mariners' Museum. So their work is, I think, very important. We did discover the remains of two sailors on the *Monitor*, and they were recovered and given the highest military honors in their burial at Arlington. The notion of what their experience was like was made clear upon the exhuming or recovery of their remains. The technical sophistication of the *Monitor* was the magic, I think, and also preserving it so that America could be reminded of such an amazing piece of construction. On the *Titanic*, I think Bob Ballard said it really well. But Bob being Bob has the charisma to understate so many things. He said, "Hey, the ship hit an iceberg. It's sunk. We found its location. There are a lot of stories of a lot of people who had experiences on that ship at the time. But that's the story." There have been subsequent expeditions to go out to the *Titanic*, looking at whether the ship was too frail in its design, whether the bottom broke out of the ship, many other ideas that people are tossing about. But I think the real issue about the *Titanic* and what we could learn from it is, number one, to memorialize and sustain history, don't let it be lost. The idea that a brand-new ship could sail and be lost on its maiden voyage constitutes the arrogance of human confidence, right? I see it as a big picture rather than the localized adventure and excitement I had looking out the porthole at this amazing ship right in front of me. But it's kind of like where we are today, the political lessons of today. Learn from history. The *Titanic* – learn from history – one's overconfidence in what we can get away with rather than what we really need. The number of lifeboats that were on the *Titanic* insufficient to seat every passenger and crew member at sea [is] unthinkable today. But back then, that was okay. So those are the lessons I think that we take out of it. But in terms of looking at the *Titanic*, what we did realize was, number one, it's a very frail, relatively speaking, site. In order to maintain its integrity, which the Congress wanted, we have to be careful about how and who we recognize to visit. Reckless operators or inexperienced – people can buy anything with

money. You need to have a talented crew to go there. Don't touch the *Titanic*. Leave it alone. The other thing that we recognized, which was enlightening to the court that was overseeing the salvage component of the case, was that while the ship itself in two pieces was looked upon as the memorial, there are only roughly a hundred or so bodies that were confined inside of the ship. The engineers, who dutifully held their posts while the ship sunk to keep the lights on, knew they were going to lose their lives. They knew they couldn't get out of there. They just did their hallowed best in order to help people, and a couple of passengers that would more than likely have been inside rather than on the deck of the *Titanic*. Once those fifteen hundred people were either dragged under or at the surface, and their KAPOK life jackets eventually got waterlogged and sunk – because we didn't have the technology or the materials that we do today for flotation – the people came to rest in the debris field. The salvors were collecting from the debris field, including pairs of shoes. The awareness that those shoes were all that's left of a human form was not immediately apparent to the people who were looking at these exhibits, and possibly, but probably not, it didn't escape the salvors. Nonetheless, the debris field is part of the memorial. It's not just the stern and the bow of the ship. The judge, once presented with that information, came to realize that a different regime of protection was necessary in looking at supervising the collection of artifacts. There are a couple of things that just touched me absolutely when Ole and I went over to the UK and saw the initial exhibit that was hosted at the National Maritime Museum. That caused a lot of consternation because a commercially acquired salvage venture displaying in a Maritime Museum was the mix of two cultures that have not historically gotten along. The shoes were one impact for me. The other was a child's marbles, a couple of marbles that were found. I could only surmise that these came out of the pocket of a small child. And obviously, we know where the shoes came from. There was one disingenuous component of the salvors' activities when we were holding a public hearing. I was the hearing officer, and several of my colleagues from NOAA Sanctuaries were involved there as well. But the salvors offered a representation that the shoes on the bottom were probably just the shoes tied around the neck of the people trying to jump in the water and swim. My retort to that was, “While that was a scene from Jim Cameron's movie for one actor, I highly doubt that people had the time and composure to be taking their shoes off thinking they were going to swim better with large overcoats on in the icy water.” It was a challenge of wits back and forth. We eventually developed advisory guidelines for the *Titanic*. Ole was very involved in that. I was involved in that [and] a handful of others. We put those forward. The result was we got sued on the guidelines by the salvors. The suit was basically dismissed pretty quickly because they were only advisory; they were not binding. But eventually, a court did attach those guidelines to any future expeditions to the *Titanic*. It was quite an adventure. Once again, it was application of law to the maritime and trying to do the right thing based on what Congress told us to get done. I structured those expeditions to the *Titanic* in order to backstop the congressional instruction of go create an international agreement. I felt it was important to get the best witnesses we could. So I invited Dr. George Bass, now deceased, but George was the father of maritime archaeology. And we got Ballard back out there. We also had a very skilled archaeologist from the National Park Service, Larry Murphy, go out as well. I thought that Larry and Dr. Bass would be excellent witnesses if they ever needed to talk about the site based on their experience.

MG: Have there been subsequent shipwreck expeditions since the *Titanic*? Does that work continue?

CM: It does. I think maritime archaeology and maritime historic exploration is one of the least funded areas in the marine space because we don't feed people with it. We're not protecting major industries with it, etc., but it is very important. You probably can see this model behind [me]. I got several models. There's a German U-boat, *Titanic* – there are a number of expeditions that are remarkable in my mind. So we keep those going. Ocean exploration has proudly been one of the very few places in the US that people can find the opportunity and the funding. We have found and discovered shipwrecks of, I'll say, antiquity because we did sponsor some of Ballard's work and others in the Black Sea and in the Mediterranean. But in the US, we have found sailing vessels, we have found submarines, we have found ships that were part of both World Wars, and it's part of America's history. There's probably more sitting on the bottom than are afloat today in terms of ships. So there's certainly more on the bottom than there are in maritime museums. So, it's an important piece of America's history. The fact that it sits on the bottom is no reason to throw our hands up and surrender and say it's lost. It's not lost. We can find anything under the sea. Bringing that history back to America is part of the excitement of seafaring and exploration. It's also part of the knowledge of American maritime history.

MG: Was there anything else you wanted to say about these efforts before we talk about the National Ocean Service [NOS]?

CM: I think that pretty well covers exploration. We built the program. We doubled the budget in each of several years, and it was an if-you-build-it-they-will-come opportunity. Onto NOS. I then went to the executive officer position. I worked with Rick Spinrad, who was the assistant administrator. Rick had come over from Navy. I had worked with Rick when I was at Ocean Exploration, and he was the technical director for the oceanographer of the Navy. The way that the Navy structures their command is that a line officer is the oceanographer, and the technical director is the senior-most scientifically enriched person. That was Rick for a bunch of years. He came over to NOAA. Working for him was yet another opportunity and lesson. Rick had worked with Admiral Jim Watkins, who was previously Secretary of Energy, previously Chief of Naval Operations. And Rick worked with him at an ocean consortium, where they, too, designed the [National] Ocean Sciences Bowl, the National Oceanographic Partnership Program, a number of successes that still persist today. Working with Rick was yet another opportunity to learn and grow as to how to be a senior executive. I enjoyed it thoroughly. We also had Jack Hayes, who had come over from the Weather Service to be the deputy. Jack went on to become the director of the National Weather Service, but Jack came in, and he was the deputy. I had this great relationship with obviously Rick, who is a friend today. But Jack struck me with two very important lessons in how to work at an appropriate level. One of them was he came to see me one time. I was the executive officer, and he said, “You know what? I've got a lot of stuff in my inbox. I want to start shedding some of it to you.” What Jack was doing was training me to be capable of being his replacement. That was not immediately stated or apparent, but it became apparent after a while. So Jack started to give me the easy stuff. Then he gave me the medium hard stuff. Then he started giving me the hard stuff. It was a great growing experience because Jack, as a retired Air Force officer, understood how you grow the next cadre. So he was doing that with me, to me, and for me, and I'll always appreciate that about Jack. But the other thing that he gave me great advice on was when I was contemplating applying for the deputy assistant administrator position, one that he had just left to go become the director of the National Weather Service. He said, “Think twice, maybe three times, as to whether you really want to do

this. It's not just the next promotion, but it takes a lot out of your personal life. It takes a lot out of you. It's very demanding. Think about that. Where do you want to be in your government career?" Jack was the only person I ever met who gave me that wise caution. I went to talk to my friend Dan Basta. Dan, still then remaining the director of the National Marine Sanctuaries, where he and I worked so well together. I said, "Dan, you're here. You're at the Sanctuaries director position. You're not reaching for that deputy position or the assistant administrator position. Why?" I kind of knew the answer because I knew Dan very well. He said, "I got the best job in the world. I can do A, B, C, and D. And we have all this." He lived it and loved it, and that was the answer for Dan. But, for me, with Jack's counsel, it was advisable to go that way. Jack said, "No matter where you go in NOAA, it's invigorating." He said, "Working for NOAA puts a spring in my step every day that I've never had before." That stuck with me as well. So, working for Rick, we had a number of challenges. One of them was building the Ocean Exploration program because it was part NOS, part OAR, Oceanic and Atmospheric Research. I remember the meeting that we had with Rick and with Dave Evans, who was the assistant administrator for OAR at the time. We sat down with a discussion about how we were going to run this project. Dave, being the consummate academic, Rick being the practical government administrator and richly knowledgeable scientist under the Jim Watkins School of leadership and government – the two coming together – Dave offered the idea that we have co-directors, one from OAR, one from NOS. Rick looked at that with a rather sketchy face that I knew and understood as Rick's face. I said, "Well, time out here, guys." Because they were considering me to be the director, and they were considering another person to be director. I said, "I come from a world where there's a commanding officer on a ship who's wholly accountable and responsible – one person. If you're looking for a co, go find someone else because I'm not interested in doing that." Apparently, that's what threw them over the edge to say, "Okay, that's our guy. We're going to pick that guy." I think it was a wise decision to say there'll be a single director. Co-directors? Management disaster. I learned a lot from Rick, which Rick learned from the Watkins school of leadership, and he would often tell me how Watkins explained things. So, I feel I'm a distant relative, a progeny of Admiral Watkins and his leadership. Watkins went on to chair the Ocean Policy study. That was the first time that the nation took a serious look at ocean policy since the Stratton Commission, which created NOAA. So Jim Watkin's legacy is one to be very proud of. I had the occasion to meet the man several times – very gracious, a true gentleman, but very gifted in the way that he was able to run government and do good things.

MG: Watkins had a really interesting career. He had served, I think, as Reagan's adviser on HIV/AIDS.

CM: Yeah, he was the everything man. He was all over. Just an amazing guy and an amazing career. With Spinrad, it's charming to see how many NOAA positions he's had and that somebody finally had the wisdom to pick somebody who really knew NOAA to come in and be the administrator. I saw Rick manage the challenge of creating IOOS, the Integrated Ocean Observing System, which was an idea academically generated, then supported by Congress, but to transform that into a program. Unfortunately, for all of us, the way Rick designed it was the gifted and rightful way where multiple federal agencies would cooperate in exercising this program. But because it didn't land an agency B, C, or D, they didn't want to play. It became a NOAA show and a NOAA-only show. It never was designed to be that, but that's the way that it



evolved, I guess, is the best way to put it. It's a successful program today, of course. But if we had all the federal agencies as it was originally designed to do, and that's what Rick worked so hard for – it's just disappointing that his colleagues and other agencies said, “Well, okay, you won. We wanted it; you got it. Good luck,” instead of really joining in. That's one of the problems I do see in the administration of ocean science, that no one's really in charge to tell other agencies, including NOAA, how to behave. It's just, “Do the best you can. Call us when you're done.” So that's a gap in government, but Rick handled it well, built a program, created the opportunity for others to participate where and how they wanted, and if they didn't want to, we're going to put the ball over the goal line ourselves. That worked very well. Rick came in at an interesting time then, too, to OAR because he was then taken from OAR. Admiral [Conrad] Lautenbacher asked him to go over and run OAR. Admiral Lautenbacher wanted a refresh in the way that OAR was headed, and Rick went over. So then I'm behind in NOS as the deputy assistant administrator. They put a title in front of me, “acting,” and my comment was, “If you're a NOAA Corps officer, you're acting all the time because you're not permanent, right?” We have a time clock running. Nonetheless, I was doing the DAA job that Jack Hayes had taught me so well how to do. We had a series of acting assistant administrators. We worked a number of issues. One of them was the Oceans conference, which takes place every year, [which] was coming to DC. Admiral Lautenbacher was one of the honorary chairs, and I'm watching this thing from the sidelines just totally crash, burn, and flop. Nothing was getting done in anticipation of this national meeting. So we put a little covert squad together in order to rescue the meeting. Rick agreed with us doing it, then he left to go over to OAR, and we basically, I think, a small handful of us – Chris Beaverson was one of them. It was a handful of guys. We pulled that piece together to rescue the Oceans conference. But Rick landed in OAR. He took one or two people with him, which also taught me a lesson: you've got good people that surround you; bring them with you when you go to a new place. You know you can trust them. You know you can get established with a known skill base. I was there acting. Then, it was time for me to retire. I was either going to head out to I don't know what or where or try to stay in NOAA. So I applied for the deputy job at NOS, and I applied for the deputy job at OAR. Very gratifyingly, I got selected for both, but I went to work with Rick because I knew Rick well. He felt that he needed me more than the NOS team did. I arrive there. I'm now his deputy, and we start moving out. As I got there, I saw what Rick was doing. Rick was establishing the beachhead to try and take a largely academic orientation of thoughtful scientists and turn them into a mission-oriented science enterprise. Some got it, and some were already there, but many didn't and weren't there. So Rick was the beachhead. Shortly thereafter, Rick left for the position of vice president for research at Oregon State University. He departed from NOAA and went to OSU. I became the acting assistant administrator. I just followed the path that Rick had cast because I realized it was the rightful path, it was a good one, and we needed to enhance the agency's ability to serve, kind of like the NOAA Corps analogy, right? The science alone is not our mission. It's science in service of what the agency needs. So then, *Deepwater Horizon* happened very soon after my arrival as the acting assistant administrator, and that was quite demanding. That built quite a team inside of NOAA: Dave Kennedy, Steve Murawski, myself for OAR. We were working with Jane Lubchenco, who herself was relatively new in this experience, having something like a national disaster to have to deal with. I think NOAA did very fine work in the course of that response in *Deepwater Horizon*. Sea Grant did wonderful work in helping the local communities understand what was going to happen to them because they brought Sea Grant Alaska in from the *Exxon Valdez* – just a lot of pieces of NOAA came

together: the modelers, the sampling, the observers, all sorts of things, and the expertise in NOS of the oil spill, the Office of Response and Restoration. They handle over a hundred and fifty spills a year, and they're good at what they do. What was different about this was the oil wasn't going to go either upstream or downstream in a riverine system; it was in a very large ocean basin, and it could go anywhere three-dimensionally. That was also a mix where our ocean modelers, working with the oil spill monitors, were able to help each other understand the projections of where the oil was going to go. But that was a very stressful and demanding time because everyone wanted to stop the oil. That was one of the other times that I had an interesting meeting. Jim Cameron came to town. He brought Anatoly Sagalevich, who was the master of the *Mir* submersibles. So I knew Anatoly from having died on the *Titanic*. I knew Jim from having visited with him out of his ranch out west and talking about the *Titanic* and some of the collaborative missions that we did. Jim felt that there wasn't enough going on by government to solve this problem. What can we do? So we met at the EPA building. EPA was there. NOAA was there – FEMA [Federal Emergency Management Agency], Coast Guard – and looked at possibilities, but really none emerged better than the ones that we were pursuing at the time. But what became very apparent is something that the legal community has recognized, and the marine policy community has recognized for a long time [which is] the shortfall in the Oil Pollution Act, in OPA – the hole in that is that the polluter is responsible for assessing and managing the cleanup. So we're going to trust these guys when they tell us, “We're just leaking a quart of oil a day?” Actually, it was a combined science enterprise between Woods Hole and our atmospheric scientists, who sniffed the atmosphere with a flying chemistry lab, parts per trillion, and the Woods Hole folks with a robotic vehicle, getting up close and visually measuring the velocity of escaping effluent, and came up with collaboratively, but initially, independently, the volume released, by Woods Hole and their direct observations and our atmospheric flying chemistry lab, coming up with the same number of what the volume of gas and oil escaping was, which totally dwarfed what the polluter was saying had been escaping. That was an exciting time. I was very proud of the contributions that came from the atmosphere community inside of OAR that wasn't immediately expected. Once again, being smart enough to be quiet and listen to smart people, [Dr. A. R.] Ravishankara called me up, and he was the director of the Chemical Sciences Laboratory. He said, “We can sniff that gas. We could tell you what's in there. Give us a chance.” So I did. They did. The plane went over and made a series of surveys and came up with some very good answers. Meanwhile, on the wet side, working with the Woods Hole people, they came in and did their work as well. Same number came out of it. So didn't eventually plug the well. But it made us realize what the scale of the harm was, and that gave the attorneys the right to go and recover from BP and others what the public was owed, given the damage that had been done. Then things got a little bit more quiet until there was a proposal from Admiral Lautenbacher's chief of staff to consider redistributing OAR – break up OAR. So my first challenge at OAR was *Deepwater Horizon*. My second challenge at OAR was, do we get broken up and distributed to the operating lines, which I thought was going to be a disaster. There had been a study that looked at the question and said, “Don't do it. It will be a disaster.” But there was still that pressure to distribute and break up OAR along with the creation of a Climate Service, a new Line Organization. We were able to withstand that, in part, by focusing the attention of our scientists on mission orientation but also by working far more closely with the cooperative institutes that we have in NOAA, most of which are aligned with OAR missions and laboratories, and also the Sea Grant community. Both of those programs have been operated in the historic past at a distance. “You're an extramural program. Here's the money. Call us

when you're done.” But I brought them inside. I brought them into planning meetings. I brought them into annual strategy meetings. I made them feel, as did those directors later impart to me, that I made them feel like they were a true partner in our enterprise. Their voices were very important in helping to substantiate the need to keep the OAR system the way it was. So nowhere near the scale of the threat for elimination of the NOAA Corps, but there certainly was a threat for the dissolution of OAR. That was on my watch. That was quite a challenge. With a really good team, we put it all together. We built the kinds of partnerships and strengths that we wouldn't have had if, strategically, we had not undertaken that direction.

MG: You've covered a lot, and there are a few things I want to make sure we didn't miss before we talk about the next steps. The only other thing in my notes to ask about was the Ocean Hall project. Was that before OAR?

CM: That was before OAR. I was in the Ocean Exploration program. I got a phone call from the same lady who I gave the coffee to way back in the day. Up on the Hill, I got a call from a Senate Commerce Committee, who was very close to the appropriators as well, and asked if a sum of money was put in my budget [for] ocean exploration, would I be loyal to the cause and use it to support the Smithsonian in building an ocean hall? Basically, the unasked question was, are you going to tap this and tax it, or are you going to just move the money? Because usually, when an earmark comes, the agency will tax the earmark. I said, “I can't control what NOAA does, but I will not tax it. We need to have an ocean hall. It'd be wonderful to have an ocean hall on the mall.” The Air and Space Museum has such a draw. The only other thing in Washington was the US Navy's historical center down in the Washington Navy Yard, and most people don't travel there in order to see it. It needs to be on the mall. So we wound up with nineteen million in our budget as a supplement. It was a line item under Ocean Exploration, but it wasn't part of our base budget. So I signed that over to the Smithsonian with an understanding of how we were going to do this. I had to educate our NOAA colleagues, who were very enthusiastic about this, but I had to educate them to realize we're not designing the exhibitry. That's not what we do, and we don't do it well because we've never done it. That's what the Smithsonian does. But the Smithsonian doesn't do the ocean science. They have modest-sized ocean science programs that are more coastal, but they don't do what we do. So I put together a series of workshops with the Smithsonian. We brought amazing people in from all over who had every range and aspect of vision as to what an ocean hall should look like. Probably the most charismatic representative was a retired Navy chief named Bob Barth. I had known Bob just a little, but his history and his reputation looms large. Bob was in SEALAB I, II, and III, and he was one of the several folks I've met who are the blood and guts of Navy diving. So Bob comes in with kind of deck plate level observations as to what should be in the museum. Some of them are in the museum today. Bob's no longer with us. But he was the charisma of the meeting for many people. But the ideas came generating forward. We quickly realized that we only have so many square feet, and not all of this is going to fit. So how do we downsize, down-select? It was a very collaborative, iterative exchange with the Smithsonian in terms of what's going to draw the people. It was an eye-opener how they sample people's views with surveys, etc. They know how to do it well. Originally, that hall was destined to be named for Senator Hollings. But then the Sant Family came forward with a rather substantial donation, and the hall was named for the Sant Family. I would hope that one day there might be a way to memorialize Senator Hollings for his contributions. We have the Hollings Scholarship inside of NOAA and other

attributes, but that would have been a very nice testimonial to him. But, of course, I respect and understand a family whose generosity provides so many resources to physically build out that hall. The Sant Family was very deserving of the recognition. But the hall still has places for NOAA to keep applying rotating exhibitory, and the Science on a Sphere is in there. My good friend Sandy MacDonald, who's the inventor of Science on a Sphere, was our lab director at Boulder. Sandy was the deputy for science while I was the deputy for programs at OAR. So I think the Ocean Hall has been a very, very raging success. It puts oceans in the minds of all those visitors to the nation's capital. It was a very exciting and enjoyable experience to be able to help put that together.

MG: Good. I know I have some follow-up questions about your time at OAR. This may be a good point to put a pin in it for today. I can gather my thoughts, listen back to this conversation, and then we can also pick up with the Trump administration and the rest of the story.

CM: I got to show you this.

MG: Should I turn off the recording?

CM: You don't have to. This was given to me at what you can imagine is the appropriate time after that whole episode.

MG: I should say for the audio, it's a bobblehead of Donald Trump and the map of Hurricane Dorian. I'm surprised that that brings you a smile and not PTSD.

CM: Well, we'll get into that. I hate to say it, but you've probably gathered this by now, I live for these types of challenges.

MG: It's a really great metaphor and a reminder of your tact and approach to solving problems and speaking truth to power.

CM: So, we can cover that, Molly, and we probably can cover a little bit of the IOC, the Intergovernmental Oceanographic Commission, the ocean mapping, which led to Seabed 2030, and several other activities at the IOC that are worth mentioning; that, plus the Trump years.

MG: Okay. I'll also ask you about your life outside of work because I'm sure there are some things there, too, to talk about.

CM: Some of the names mentioned keep popping up. I'll share that with you.

MG: Okay, great. Well, Craig, again, I'll send you an email with some dates and possibilities. We'll keep this going probably for another session if that works for you.

CM: Absolutely, Molly. Thanks so much. Thank you very much.

MG: All right. Enjoy the rest of the day.

CM: And you too. Thank you.

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Reviewed by Craig McLean 12/5/2022

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