Dr. Sarah Dunsmore

Behind The Mask

June 25, 2021

Barr: Good afternoon. Today is June 25, 2021. My name is Gabrielle Barr. I'm the archivist with the Office of NIH History and Stetten Museum. Today I have the pleasure of speaking with Dr. Sarah Dunsmore. Dr. Dunsmore is the program director of the Trial Innovation Network (TIN) in the Division of Clinical Innovation at NCATS [National Center for Advancing Translational Sciences], and today she is going to speak about some of her COVID work experiences and research. Thank you for being with me.

Dunsmore: Thank you for asking me. I think this is a great idea and a great project.

Barr: When did you begin working at NCATS? It's my understanding that you transitioned there during the pandemic.

Dunsmore: I did. I "officially" started at NCATS in September of 2020, so several months into the pandemic, but I [actually] started at NCATS very early in the pandemic, in April of 2020, on what is called a "detail." At that time, I was still employed by my original NIH institute—NIGMS, the National Institute of General Medical Sciences—but it turned out NCATS had a need, and I had a skill set that fit with their needs. It has been [quite] the opportunity. Very much a tremendous and exciting, intellectually stimulating opportunity for me to be able to transition full-time to NCATS to the Division of Clinical Innovation and the Trial Innovation Network.

Barr: What is your skill set that you had to offer?

Dunsmore: It's a funny type of skill set, but I have a background in sepsis clinical trials from NIGMS, which you wouldn't think of. NIGMS is more known for its training and basic science research, but they have a long-standing portfolio of clinical areas that affect the entire body such as trauma, burn, sepsis, and anesthesiology. When I started there—which was over 15 years ago, as a very young program director—I was tasked with managing several large 20+ site multi-site sepsis clinical trials, so I had to learn a lot on the fly. I had to learn to make my own network within other ICs [NIH Institutes and Centers]. There wasn't a lot of clinical trial expertise within NIGMS, so I had to reach out for help. I learned to be very proactive—to listen to a lot of different people, find a lot of different viewpoints, and find the roadblock obstacles, which I think is the skill set that has fit well with NCATS and managing COVID-19 clinical trials. I can interact with the research coordinators and the PIs [Principal Investigator], find out where the real roadblocks are, and strategize—help brainstorm ways to get around them and keep the trial moving forward. A lot of listening, a lot of program experience, and a lot of expecting the unexpected to happen and not being flummoxed when it does.

Barr: Yes, definitely. You were saying at one point that you came in when NCATS was working on some convalescent plasma trials? Can you talk more about that?

Dunsmore: I can. Convalescent plasma is called survivor's plasma. It's what is obtained from people who've recovered from any sort of infectious disease. In this instance—in this pandemic—it's COVID-19. It's thought to contain antibodies that connect in an antiviral way and neutralize the virus. It's always

used—it's been used for over 100 years, and in most pandemics early on was often the only therapeutic available. You find a lot of use of convalescent plasma. It's difficult to standardize so it's hard to know what types of patients to give it to and when to give it. That was the purpose of the two trials I managed for NCATS. They were called "Contain Covid-19" and "PassItOn" [Passive Immunity Trial for Our Nation]. We were looking at hospitalized patients trying to find out when in that time course of hospitalization convalescent plasma was the most effective and if we could determine or find out some clinical characteristics of the patients who benefited the most from convalescent plasma. Both trials have now completed enrollment and they're analyzing their results and getting ready to publish.

Barr: You really hit the ground running.

Dunsmore: Hit the ground running! I hit the ground sending daily emails to Dr. Collins on enrollment reporting because he was very interested in enrollment in these two clinical trials. Neither one of these trials expected to become large national multi-site trials. One was in New York City, and they never anticipated leaving New York City. The other was in Vanderbilt in Nashville, and again they really didn't start it with the intention of becoming a 20+ site trial all over the U.S. One of them never even had a functional clinical trial website—that's how quickly they had been moving. They both started during the surge, so they both started when the hospitals were just overwhelmed with patients. They were trying to help.

Barr: You run the Trial Innovation Network. Can you briefly introduce what the Trial Innovation Network does, what its core mission is, and the different elements that comprise this larger group?

Dunsmore: Sure, I'll be happy to talk about the Trial Innovation Network, and I appreciate the question and your interest in it. I'm going to make just a minor correction: I'm the program director for three Trial Innovation Centers, or what we call "TICs", but I alone don't run the Trial Innovation Network [TIN], so I don't want that on the record. It's a team. It's run by a leadership team—that does include me, but also includes a director, whose name is Jane C. Atkinson, D.D.S. at NCATS, and some very well-known, strong, and experienced principal investigators at the academic medical centers that make up the TIN. The TIN really focuses on the operational aspects of clinical trials, things like enrollment, site selection, informed consent processes, data informatics, and how to make these better. Not just more efficient—although that's a big part of clinical trials—but better in terms of participants and community engagement, so more inclusive and more accessible to all types of populations and all people. The TIN is really a relatively new program for NCATS. It started about four years ago, but they did have a pre-pandemic run-in period to develop some innovations and test them. The pandemic has turned out to really be the road test for a lot of the processes, tools, and innovations that the Trial Innovation Network has developed. The core mission, in addition to innovating methodology, processes, and data informatics, includes community and participant engagement, addressing unique needs of underserved populations, and a training mission—so training the next clinical trial scientific workforce. Did I answer all your questions because I think you threw a three-parter at me?

Barr: The different elements.

Dunsmore: Oh, the different elements. In addition to the TICs I manage, there is a Recruitment Innovation Center (RIC) that my colleague Dr. Joan Davis Nagel manages. It's at Vanderbilt University, and those are the funding components. That's where NCATS directs its funding. A very important part of the TIN are the liaison teams. These are the communication network between the CTSA program hubs. CTSA is the Clinical and Translational Science Awards, and they go to 60 of the largest academic medical

centers in the U.S. The TIN liaison teams are between the CTSA program hubs and the Trial Innovation Network, so we have strong communication and strong information exchange.

Barr: That's interesting. Can you describe how TIN adapted to the emergence of a COVID-19 pandemic?

Dunsmore: Yes, I can. The TIN had the advantage that it was an existing network, and it was also used to functioning as a virtual network. It was able to step right into the pandemic and be able to function and communicate. I think they looked at the pandemic as an opportunity. They really tried to step up to the challenge and rise to it. Many of these scientists are well known so they found themselves getting a lot of requests for consultation. They had to develop triage processes—a way to prioritize COVID-19 over their normal TIN work. There was kind of a lag there in the beginning, where a lot of human subject protocols got put on hiatus, but the normal TIN work did not necessarily go away. They adapted to respond to the workload and to the needs. Some of the initial needs were for trials that were not used to electronic consent processes. The TIN had developed this pre-pandemic but, of course, in the early days of the pandemic when there were limitations on personal protective equipment and very limited contact with the infected patients, electronic consent became very, very important. The TIN spent a lot of time in that space helping trials that needed to adapt from non-electronic.

Barr: How did you do so?

Dunsmore: Mainly they relied first on word of mouth to get the word out that they could help. Then it was mainly virtual consultation. They were willing to set up a Zoom call, talk the doctors of the people who needed to give the informed consent through the process, and provide tools. They do have electronic platforms they can provide to you as a download over the internet.

Barr: That’s good. I think that’s probably here to stay.

Dunsmore: Yes!

Barr: What were some of the initial challenges identified in the spring of 2020—you just mentioned a couple—that affected COVID-related clinical trials? How did TIN try to rectify some of these issues? Of course, specific examples are always appreciated.

Dunsmore: Sure. We talked a bit about the need to have a way to engage with potential trial participants electronically and not face-to-face and with paper, but another big challenge was organization and getting trials up and running quickly. Another specific example of the way the TIN contributed to the U.S. government COVID-19 response is through what we call an “Expression of Interest” process. This, again, was developed pre-pandemic. It helps match up interested sites with clinical trials that need sites, to start enrollment. It's a way of communicating out in a streamlined way through the CTSA program hubs. They then communicate with their collaborators—community hospital affiliates—so they can really get the word out to find both hospitals and PIs [primary investigators] who are interested in a particular clinical trial. Many COVID-19 clinical trials have used this TIN Expression of Interest process.

Barr: Is it just a process or is it a platform or something like that where they can all communicate with you?

Dunsmore: It's a platform. I wouldn't say it's a high-tech platform because we still use spreadsheets, but it's a whole platform where the PIs of the clinical trial can give a presentation that's archived. People know where to find the material that's stored. There's a process and a particular way or order that we like to do certain things, but then there is a platform where materials are stored and available.

Barr: Can you speak a little bit about how TIN has supported some of the ACTIV [Accelerating COVID-19 Therapeutic Interventions and Vaccines] trials?

Dunsmore: Yes, I can and thanks for that question. I think one of the most prominent ways that TIN has supported the ACTIV trails is as coordinating centers. This is through our Trial Innovation Centers or TICs. Duke and Vanderbilt have served as coordinating centers for ACTIV-1 and ACTIV-6. Johns Hopkins has served as coordinating center for some convalescent plasma trials that are funded by the Department of Defense that are ACTIV associated. They've stepped up to the challenge and gotten some compliments and high marks for their function as coordinating centers. Of course, some of the processes that we've talked about—the tools and the platforms, electronic consent processes, single IRB [Institutional Review Board] platforms, ways to develop a clinical trial budget—this information is readily available in the public domain. Many ACTIV and other COVID-19 clinical trials have relied on this toolkit the TIN makes available in the public domain.

Barr: Did you all get together a particular COVID-19 toolkit with those sorts of things in it, or were they already readily available on your website?

Dunsmore: I think there were many useful tools readily available last March and April. It took us a while to develop COVID-19 specific tools, but they have been developed—they're available now. They've been available, I would say, since December of last year or January of this year. Particularly from the RIC—the Recruitment Innovation Center. They've developed a very nice recruitment and retention toolkit for COVID-19. It includes tips on how to design your flyers and your videos to really engage participants in the unique circumstances of many of us being quarantined at home and being virtual.

Barr: That's interesting. How has TIN been involved in reviewing trials?

Dunsmore: Typically, the TIN would review a trial or do what they call a "proposal assessment" at the idea stage to help a trial get ready to do what we call "peer review" at NIH or compete for funding. Typically, in non-pandemic times, the TIN would not really be formally involved in the standard peer review process, but during COVID-19—because the TIN had an existing infrastructure, it had many of the leading clinical trials in the U.S. involved in it. Other U.S. government federal agencies and even industry has reached out to the TIN for review of their COVID-19 protocols they were trying to go forward with.

Barr: Interesting. How has the TIN advised sites on how to handle and standardize their data? That's a very big question because there's a lot of data with all these protocols.

Dunsmore: It's a big question; it's an important question, and it's still the area that's a work in progress. Typically, the TIN would interact with trials at the overall trial levels through a coordinating center to the sites. It would be rare that TIN would directly interact with a clinical trial site without the trial coordinating center being in the loop. The TIN has developed and is piloting this during the COVID-19 pandemic, a way for different Data Safety and Monitoring Boards—what we call DSMBs—of clinical trials to communicate and share common data elements. Actually, this is a work in progress, but it has been used during COVID-19. Some of the Data Safety and Monitoring Boards of some COVID-19 clinical

trials—when they do their interim analysis—not only have do they data from the trial they're assigned to, but they can also see common data elements from other Data and Safety Monitoring Board reports for clinical trials that have signed on to what we call the DSMB-C project. We're hopeful with this project we can get some lessons learned during COVID-19 and continue to develop and scale this project to become more applicable to all types of clinical trials.

Barr: Do you get involved now earlier in the process or is your involvement at will of the site you're working with?

Dunsmore: Our goal always, even before COVID-19, was to become involved as early as possible. The TIN is most useful when it's engaged early, and I think most NIH program directors would tell you they're most useful when they're engaged early too. Certainly, during COVID-19 we've tried to be flexible. We've tried to answer every cry for help that came the way of the TIN. We engaged with trials at many different stages during COVID-19.

Barr: Can you speak a little bit about how the TIN engaged with different communities during the pandemic? I know that was an emphasis.

Dunsmore: Yes. Community engagement is really a priority, not only at NCATS but also of NIH. That's really a core value of the NIH mission—to have strong community engagement in our programs. The flagship of the TIN is what we call the RIC—the Recruitment Innovation Center. The core resources at the RIC are called Community Engagement Studios. They've performed over 30 Community Engagement Studios for various trials. This is a process the RIC had developed pre-pandemic, so they had readily engaged procedures and platforms in place. They can get to different communities by ethnicity—African America, Latinx. Or by age—they've done some older American community engagement studies. Or even by geography—sometimes rural and urban can be very important factors in clinical trials. They know how to ask some very specific questions that are unique to a clinical trial protocol, to really get a potential participant's feelings and what types of messages they need to receive to be comfortable about participating in that clinical trial.

Barr: That's definitely helpful. You already spoke about some of the toolkits, but can you also talk about some of the webinars, open forums, and other resources that TIN has produced during the pandemic to help researchers with their studies? It was quite a lot.

Dunsmore: Yes, they did not miss a beat. As I mentioned earlier in this interview, the TIN already kind of had its virtual platforms up and going, so they were ready to walk into the new virtual work environment of the COVID-19 pandemic. The open forums are held at least monthly and sometimes more often if we have emergent needs. There are actually ways for the research community to suggest open forum topics on the TIN websites. If you have an open forum topic you'd like to see the TIN address, you can go to the website and enter your suggestion. During the COVID-19 pandemic, there have been some trial-specific open forum webinars where trials are advertising for sites or giving sites information about how to join the trial. There's been a lot of focus on recruitment and retention and community engagement—how to address the needs of specific populations during the COVID-19 pandemic. There's been a fair amount of focus on REDCap [Research Electronic Data Capture] and REDCap tools. REDCap is a research database developed by Vanderbilt University that's been used in a lot of NIH-sponsored clinical trials.

Barr: Interesting. What are the open forums like? How many have you all hosted?

Dunsmore: Oh, I think we've hosted probably 20+ during the period. You're guaranteed at least 12 a year because we want to do them monthly, but I would say most years we do in the 20-30 range because we have the interest or the emergent needs to do more than that.

Barr: During these forums, anybody can speak on a topic or ask questions? How do they work?

Dunsmore: I would say generally anybody with the right qualifications. Usually, these are faculty at academic medical centers. It's not the lay public, although we certainly would be open to patient advocacy groups coming in with appropriate messages. But anyone can join. You have to pre-register so of course we know who's on our Zoom webinar. They're generally open to the general public so that a layperson could attend the open forum webinars. They're generally members of the CTSA research community who've developed something they think is of impact and scalable to more than just their institution. They're really trying to share tools, platforms, best practices—the things they've been working on they think are at a point they're ready to be disseminated and used by other researchers.

Barr: What are some of the kinds of things that you've seen?

Dunsmore: I've seen apps for helping participants use their mobile phones to engage in the clinical trials. I've seen electronic health record tools. I've seen quite a bit on how to advertise your trial or message your trial to different populations and different communities, and on best practices for giving informed consent to clinical trial participants.

Barr: Those are all very important things. What are some of TIN's advantages that have allowed it to respond so well to the pandemic?

Dunsmore: I think the biggest advantage of the TIN was that it was used to functioning as a virtual network. It was just not at all flummoxed or hindered by having to move into the virtual work environment. Also, that it had liaisons, a communication structure, and even processes for protocol review and for proposal assessment in place. It kind of had all the gears and cranks ready to turn. It just had to adapt to the increased workload when COVID-19 came around.

Barr: That leads into my next question: What have been some continued obstacles that you and others at the TIM have had to contend with?

Dunsmore: The continued obstacles fall into two buckets. One is the pandemic bucket, or just the unpredictable nature of being in a pandemic. The example I'll give here is the supply chain disruption. It wasn't disrupted only for the general public and toilet paper. It was also disrupted for common lab supplies, such as pipette tips. I've had to interact with Operation Warp Speed about several of the clinical trials that I managed for NCATS, just to get the basic clinical and laboratory supplies they needed to assay the samples collected in the clinical trial. The other bucket are kind of existing inefficiencies or existing health disparities. Issues that have existed in the U.S. for a long time that we haven't been able to resolve. Another example would be the federal contracting process. It's never quite as streamlined or as quick as you would want it to be when you enter into a pandemic. Things like that make it very difficult to make progress. You just have to work through them during the pandemic. They don't get better; they only tend to get exacerbated or worse during the pandemic. Those of us who've been working on the U.S. government-funded COVID-19 clinical trials are trying to collate lessons learned about all areas—everything—so we can do the best we can as we continue to do clinical trials and try to

get COVID-19 therapeutics to the general public. But also, when we have the luxury of time, [we] are going back to write best practices, so we have that information readily available.

Barr: What are some of the lessons you have learned to date with the process and how do you think what you've learned can be applied to other endeavors or, possibly, pandemics?

Dunsmore: The biggest personal lesson was just reinforcement that the team is always stronger than the individual. It really helps, even when you're in a pandemic, to take the time to ask those questions: What do you think or how do you feel about this? You'll really get, I've found, some very helpful, useful actual nuggets of information when you take time to value every member of the team and ask for their input. The biggest overall lesson is, I think, that all the U.S. government federal agencies need to engage and communicate as soon as possible. We can't be operating in our silos. I've been able to be involved in a lot of interagency working groups that involve BARDA [Biomedical Advanced Research and Development Authority], CDC [Centers for Disease Control and Prevention], and FDA [U.S. Food and Drug Administration]—really trying to break down those silos and communicate as soon as possible and exchange information. In pandemic and non-pandemic times, we can be a much stronger federal government scientific response.

Barr: How did you all do in terms of leveraging some of the existing networks, like HEAL [NIH Helping to End Addiction Long-term Initiative] or others that are HHS-sponsored [US. Department of Health and Human Services]?

Dunsmore: HEAL, of course. The TIN is highly involved in HEAL ,and we were fortunate that we got to test drive or pilot some of our processes and innovation in the HEAL network. They've been hampered by COVID-19, some of their trials have had to pause enrollment, but they have continued throughout COVID-19. Other clinical trials—the ACTIV program tended to get one clinical trial network assigned to it, such as the NHLBI [National Heart, Lung, and Blood Institute] PETAL [Prevention and Early Treatment of Acute Lung Injury] Network is ACTIV-4. NCATS also has ACTIV-1 and ACTIV-6. NIAID [National Institute of Allergy and Infectious Diseases] has ACTIV-2 and ACTIV-3.

Barr: So different institutes were assigned different ACTIV trials?

Dunsmore: Yes.

Barr: I didn't realize that.

Dunsmore: There was a working group at the beginning of the pandemic that mapped out the capacity of the existing NIH clinical trial networks and tried to find the best fit ACTIV protocol for the networks.

Barr: That is interesting, I didn't know that. What has been your role in all of this with COVID?

Dunsmore: I've managed three COVID-19 clinical trials for NCATS: two convalescent plasma clinical trials and ACTIV-6. My role there is really being engaged on a daily basis with the coordinating center for those trials and the research coordinators—the operations people. Dr. Collins and NCATS leadership want real-time enrollment, so that's a big part of the job—being sure we get the enrollment numbers and being sure they have the information they need. There's also a lot of other troubleshooting that goes along with that. I have a program director role for the Trial Innovation Center, so that involves normal program director duties in terms of regulatory oversight and fiscal oversight.

Barr: That's quite a lot!

Dunsmore: It's a lot. [laughs] It's kept me busy! It certainly kept me busy during COVID-19.

Barr: As a person, what have been some personal opportunities and challenges for you?

Dunsmore: The personal opportunity has just been the opportunity to be involved and be at the forefront. I have had access to all types of interesting and useful information. It's incredible when you think about it. We've had a tremendous scientific response of the U.S. Federal government to COVID-19. The amount of information we've been able to collect and disseminate to the various U.S. government working groups, it's of the highest, highest quality. It's been a privilege to be part of that. I've been involved in meta-analysis collaboration with the FDA on the convalescent plasma clinical trials. I'm involved in some U.S. interagency therapeutics working groups that involve CDC and BARDA, and so it's always just a privilege to be able to interact at that level. The biggest challenge to me has been, of course, workload and information overload. Not that my workload's ever been light, but with COVID-19 everything went virtual. Even a lot of your personal socialization interactions became virtual, so [I'm] being very disciplined about being sure to unplug for at least 24 hours—if not 48—over the weekend. Staying offline has been very important to keeping me steady, stable, and a good work colleague to be around.

Barr: Before COVID-19, did you work as much with different agencies?

Dunsmore: My sepsis portfolio at NIGMS did have some interagency collaboration, particularly at the end of pre-COVID. There was getting to be some departmental level Health and Human Services interest in sepsis, so I knew some colleagues at BARDA who, interestingly, got switched to COVID-19. Some of my former BARDA sepsis colleagues became my BARDA COVID-19 colleagues. I knew some people at CDC who have interest in sepsis.

Barr: You already do a lot but have you been involved in any other COVID-related initiatives at NIH or outside of NIH?

Dunsmore: Yes, so I mentioned being involved with the FDA. I'm also a member of—this is led by NCI [National Cancer Institute]—a Clinical and Translational Serology Task Force, so I'm part of that and several interagency projects related to the COVID-19 clinical trials that I manage.

Barr: What is the NCI task force? What is like to be a part of that?

Dunsmore: It's interesting. It involves people from academic PIs, so it's always interesting. It's not U.S. government only, so that's always interesting when we bring in scientists from the outside. It focuses a lot on issues of immunocompromised patients. Of course, people who undergo chemotherapy are immunocompromised, but there's some chronic conditions where chemotherapy is short term. There are also some more chronic lifetime conditions that you have to live with. These people may not react to the vaccine as well, but they have some more chronic long-term needs in terms of staying protected from COVID-19. It's very interesting—the populations brought into the spectrum and purview of that committee.

Barr: What is the FDA task force? What is the nature of being part of that?

Dunsmore: The FDA is actually kind of a scientific project. I've been interacting with FDA medical officer Carlos Villa, M.D., Ph.D., and statistician Rich Forshee, to design a meta-analysis of three U.S. government-funded convalescent plasma clinical trials. We've been working this for probably close to six months now. We've put things on the drawing board and taken things off the drawing board. We're really trying to do the best we can to get the most value out of these three convalescent plasma clinical trials in terms of lessons learned and what we would do in the next pandemic. We're referencing papers—you know, in some ways it's like trying to write your Ph.D. thesis again. You're going back to the primary literature to come up with the best statistical way to go about this.

Barr: Wow. That is very interesting. You have the hard science but then a lot of the logistical stuff that's part of your daily job.

Dunsmore: Yes.

Barr: In general, what is it like for people to develop a budget for these multi-site clinical trials that TIN helps with? It must be so hard to figure out.

Dunsmore: I would say if it's your first time, it's probably next to impossible. You have to learn how to put things in bins—things you need. You need staff; you need supplies; you may need equipment; you may need travel. A lot of things are dictated so a lot of what we call "per patient reimbursement" for procedures would be dictated. You can't do it by yourself, so you have to go through your business offices at institutions or medical centers. You really have to have the businesspeople engaged with you to develop your budget. It's not an easy thing at first but it can be standardized. I would say after you've probably done ten NIH-funded clinical trials, you feel like you're the budget expert, but if you've done one to three, you're pulling your hair out, going "What did I get myself into?"

Barr: What is one thing you enjoy that has helped you cope with the stresses of the pandemic better?

Dunsmore: I like being outside so I'm usually running, sometimes walking. For me to get through the stress, nature is what really has helped me. If I feel myself getting too worked up, I know it's time to go outside for a walk.

Barr: Is there anything else you would like to add or share?

Dunsmore: Thank you for doing this project. I think it's a great thing to hear from individual voices and individual people.

Barr: That's definitely true. Thank you, and I wish you and your team all the best with everything you have to do. Of course, continue to stay safe.

Dunsmore: Thank you. Thanks for your time.