

Jonathan Augustine on Outcomes in Spinal Cord Injury Research

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JONATHAN AUGUSTINE: 00:05 [music] Research participants are very important to us in order to improve the methods of rehabilitation that we've already come up with through research, as well as create new forms of rehabilitation for those with spinal cord injury.

JOAN BANKS-SMITH: 00:20 Welcome to our podcast series, My Life as a Research Assistant. This series is brought to you by Kessler Foundation. We are changing the lives of people with disabilities. I'm your host, editor, and producer, Joan Banks-Smith, creative producer for Kessler Foundation. Research assistants are on the frontlines of our research studies, collecting data, conducting interviews, testing subjects, and are the face of Kessler Foundation to our research study participants. In 2020, Kessler Foundation was ranked among one of the best nonprofits to work for and best places to work in New Jersey. Throughout this series, we'll meet up with research assistants from our mobility, spinal cord injury, stroke, traumatic brain injury, and neuroscience and neuropsychology centers who have been with the foundation for over a year and some that are now senior research assistants, nurses, M.D., M.S. candidates, postdocs, and those that have entered into many more professions. In this episode, I met up with Jonathan Augustine, a former research assistant in our center for spinal stimulation research who was promoted to senior research technician in 2019. What brought you to Kessler Foundation?

AUGUSTINE: 01:37 While I was attending East Stroudsburg University, I went to a conference, and at that conference, they were presenting exoskeletons at the conference and discussing the kind of research they were doing with spinal cord injury with those exoskeletons. So I always had in the back of my mind that I wanted to do this particular population, and I always had Kessler Foundation in the back of my head, and then, upon graduation, I noticed a job was opening, and I immediately pursued it, and, luckily, I was able to get the job, and now I'm excited to be here.

BANKS-SMITH: 02:10 How long have you been at the foundation?

AUGUSTINE: 02:12 I've been at the foundation since January 2015.

BANKS-SMITH: 02:15 For our listeners who don't know anything about exoskeletons, what is an exoskeleton, and what population of people are you studying?

AUGUSTINE: 02:23 So an exoskeleton is a robotic device that a person with a spinal cord injury, or even able-bodied-- some of them, you could put on yourself, but for the most part, it's just a robotic device that one can wear, in order to be able to walk around with little effort. With the exoskeletons, we normally study quadriplegics and paraplegics, and then, depending on the level of injury, depends on which exoskeleton they can get into.

BANKS-SMITH: 02:52 Quadriplegic or paraplegic is somebody that has had a spinal cord injury.

AUGUSTINE: 02:56 We do spinal cord injury, and we also, in the foundation, study stroke as well.

BANKS-SMITH: 03:01 Can you tell us a little about the type of research you are particularly working on?

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- AUGUSTINE: 03:06 So I look at the outcome measures for the studies, pre and post, and we do a lot of different outcome measurements. We do CAT scans, so we look at bone density. We do MRIs to look at muscle growth throughout the study. We do biomechanics. So we look at specific blood markers in the blood, and then we do typical measurements, just looking at walking speed in the robot throughout the study.
- BANKS-SMITH: 03:33 Most of these studies, are they people coming for one day, one day a week? Do they come over for a period of time?
- AUGUSTINE: 03:40 Depending on the study, we have participants come in either for 36 sessions, so they'll come in three times a week for 36 sessions, or another study, they actually do 100 hours of uptime within the exoskeleton. So that study usually lasts for about six months. They come in three times a week, generally.
- BANKS-SMITH: 03:57 How do you get people to be participants in your studies?
- AUGUSTINE: 04:00 We recruit patients, or they'll contact us, and depending on their level of injury, we'll determine if they're suitable or not for the study.
- BANKS-SMITH: 04:10 Is there any participant that stands out?
- AUGUSTINE: 04:13 One of our participants was a newly-injured participant, and it was great seeing him be able to be upright again. He very much enjoyed being upright and greatly improved his mobility. He greatly improved his ASIA scores. He was able to-- he was able to recover a lot of muscle function post injury from this study, even though it was over a short period of time.
- BANKS-SMITH: 04:40 Why is having research participants so important?
- AUGUSTINE: 04:43 Research participants are very important to us in order to improve the methods of rehabilitation that we've already come up with through research, as well as create new forms of rehabilitation for those with spinal cord injury.
- BANKS-SMITH: 04:56 What makes you want to come to work each day?
- AUGUSTINE: 04:59 Honestly, it's a very rewarding experience, working here, at Kessler Foundation. Just to see our research participants be upright again and for them to walk again in our exoskeletons-- it brings joy to their life. It puts a smile on my face. Every single time we have a new participant, they get to stand up again in that exoskeleton. It's always that experience, and that absolutely keeps me coming back to work. I mean, it's such a rewarding experience to be able to see that on almost a monthly basis.
- BANKS-SMITH: 05:27 [music] Thank you so much for taking time out of the day and just chatting with us.
- AUGUSTINE: 05:31 Thank you so much for having me.
- BANKS-SMITH: 05:33 To learn more about career opportunities at Kessler Foundation, be sure and check out the program notes for links. Follow us on Facebook, Twitter, and Instagram. Listen to us on Apple Podcasts, Spotify, SoundCloud, or wherever you get your podcasts. This podcast was recorded during the summer of 2016 and was edited and produced by Joan Banks-Smith, creative producer for Kessler Foundation.