

FEARLESS



A TEXAS TECH PRODUCTION

Season 2 | Episode 3 | **Breaking the Mold**

(Car starting)

Navigation: Starting route to Texas Tech University Center in Junction.

Navigation: In three quarters of a mile, turn right onto Spur 327 frontage road.

Taylor Peters, Host: WE STARTED THE 5 AND A HALF HOUR DRIVE TO JUNCTION AROUND 2:00 IN THE AFTERNOON. I RECRUITED MY HUSBAND DREW TO PARTICIPATE IN THIS PARTICULAR ADVENTURE FOR FEARLESS.

(Driving)

Taylor Peters, Host: BETWEEN LISTENING TO VARIOUS PODCASTS, SPOTIFY PLAYLISTS AND A HARRY POTTER AUDIO BOOK, WE WATCH THE SCENERY CHANGE FROM THE VAST OPEN-NESS OF WEST TEXAS TO THE LUSH, GREEN, WILDFLOWER AND TREE-FILLED HILL COUNTRY.

Taylor: We're going to turn left on Flatrock lane

Drew Peters, Taylor's Husband: This will open the gate and it closes behind you...

(Car dinging)

Peters: WE TOOK OUR TIME GETTING THERE, AND WHEN WE ARRIVE, THE SUN IS JUST STARTING TO DIP BELOW THE HIGH TREELINE AND THE SKY IS A WASHED-OUT BLUE, WITH EARLY TINGES OF PINK AND ORANGE.

(Driving)

Peters: THE ENTRANCE TO THE TEXAS TECH CENTER AT JUNCTION IS MEMORABLE. AN ENORMOUS GATE SWINGS OPEN INTO A LONG, PAVED ROAD GUIDING YOU INTO THE CAMPUS. WE PASS BY THE TECH HOUSE, THE HUMMINGBIRD HOUSE, AND THERE ARE THESE RED TIN ROOF BUNKHOUSES WITH GREEN CANVAS WINDOW COVERS PLACED ACROSS THE PROPERTY IN PAIRS... I'M STARTING TO GET MAJOR PARENT TRAP VIBES. THIS LOOKS AND FEELS LIKE A PLACE PRE-TEEN TAYLOR WOULD WANT TO SPEND FOR SUMMER CAMP.

(Drew unlocking door)

Peters: AT LAST, WE ARRIVE AT THE HUMS HOUSE. WE'LL SPEND THE NEXT THREE DAYS HERE.

Peters: WITH A WATER COLLECTION SYSTEM THAT FUNNELS RAINWATER INTO A LARGE SILVER TANK OUT BACK, SOLAR PANELS, AND A WIND TURBINE...THIS SMART HOUSE IS EXPERTLY ENGINEERED. IT CAN TELL YOU EVERYTHING YOU COULD POSSIBLY NEED TO KNOW ABOUT YOUR ENERGY AND WATER USEAGE. HOW? WE'RE GOING TO TELL YOU ON THIS EPISODE OF FEARLESS.

(Music)

Peters: FROM TEXAS TECH UNIVERSITY, WE BRING YOU FEARLESS, A PODCAST FEATURING THE UNTOLD STORIES OF THE SCHOOL WE LOVE SO DEARLY. IN THIS EPISODE, WE'RE PUSHING THE BOUNDARIES OF RESEARCH... INVESTIGATING MORE ABOUT PEOPLE- THE HUMAN MIND AND EXPERIENCE. AND WE'RE MEETING THE ONES DRIVEN BY THOSE DISCOVERIES.

(Upbeat Music)

Peters: DO YOU HAVE A FAVORITE SONG? ONE THAT ALWAYS SEEMS TO BRIGHTEN YOUR DAY.

(Music)

Peters: MAYBE IT'S SOMETHING SOFTER AND SOULFUL...

(Slow music)

Peters: OR HOW ABOUT A BIT MORE UPBEAT AND FUN.

(Hip-Hop Music)

Peters: EITHER WAY, IT HAS BEEN PROVEN THAT MUSIC HOLDS A LOT OF POWER ASIDE FROM JUST LIGHTENING YOUR MOOD. IT CAN DO REMARKABLE THINGS LIKE PROVIDE CLINICAL AND COGNITIVE HEALING...THERE'S EVIDENCE TO SUPPORT THAT MUSIC THERAPY CAN HELP WITH CARDIAC CONDITIONS, DEPRESSION, SUBSTANCE ABUSE AND EVEN ALZHEIMER'S. BUT IT CAN ALSO HELP LOWER BLOOD PRESSURE, ENHANCE COMMUNICATION SKILLS AND IMPROVE MEMORY.

(Classical Music)

Peters: IN 2019, A GROUP OF PROFESSORS ON CAMPUS CAME TOGETHER TO PUSH MUSIC A BIT FURTHER... TO FIGURE OUT IF MEMORIZING MUSIC COULD ALSO HAVE AN IMPACT.

Gregory Brookes, Professor, School of Music: My name is Gregory Brookes. I am an associate professor of music at the School of Music at Texas Tech University. My instrument is the voice.

Peters: TO GET TO GREGORY BROOKES OFFICE INSIDE THE SCHOOL OF MUSIC, YOU WALK THROUGH A CORRIDOR LINED WITH PROFESSORS OFFICES AND PAST A POD OF PRACTICE ROOMS. *NATS* WE ARE EARLY, AND WHILE WE'RE WAITING FOR HIM TO ARRIVE, I'M ENJOYING THE SOUND OF STUDENTS REHEARSING.

(Students Rehearsing)

Peters: WHEN HE MEETS US, WE TAKE A SEAT IN HIS OFFICE, LAIDEN WITH MUSIC BOOKS AND STANDS, ALONG WITH A PRESTINE BLACK POLISHED PIANO IN THE CORNER. WHEN HE'S NOT TEACHING, HE LOVES TO PERFORM. IT AWAKENS HIM IN A WAY THAT ONLY OTHER PERFORMERS CAN APPRECIATE. BUT HE IS ALSO CURIOUS... AND HE ASKS A LOT OF REALLY GOOD QUESTIONS.

Brookes: A creative activity doesn't just have to be performance. We can ask questions about performance and try and figure those out intellectually. That's what led to the research that we did with the fMRI.

Peters: THE FMRI IS WHY WE'RE HERE TODAY.

Brookes: I had been interested in memory, especially as it pertains to singing because singers are expected to memorize a lot of music. If you perform a recital, the music is expected to be memorized.

Peters: SO, WHAT THEY DID WAS GOT A GROUP OF VOLUNTEERS, SOME KNEW MUSIC AND OTHERS DIDN'T. AND THEY ATTEMPTED TO HAVE THEM MEMORIZE SONGS IN ENGLISH AND OTHERS IN A LANGUAGE THAT WAS MADE UP.

Brookes: Memorization is a process that a lot of singers really dislike but it's incredibly necessary to do for the art form. You really can't embody the character properly if it's not memorized. I reached out to Tyler...

Peters: THAT'S TYLER DAVIS, HE'S AN ASSOCIATE PROFESSOR OF PSYCHOLOGICAL SCIENCE... HE WAS PART OF THIS PROJECT TOO.

Brookes: ...and he said, 'Well, Carla Cash has already reached out to me and we're already in the process of putting together this proposal. Why don't you put something together in terms of voice and we'll put it into the larger study?' We were lucky enough that it caught people's interest. We were funded because it's very expensive to do fMRI work, very expensive.

Peters: Tyler and Carla, and you, what was the question that you were asking? What were you looking for the answer to?

Brookes: For me, the way we designed the singing study was we had three different songs that we gave the participants to learn. I wanted to get at... learning a piece of music with a language that you know the meaning to that language versus learning a piece of music with a language that you don't know the meaning to.

Peters: SEE, FOR GREGORY, HIS STUDENTS OFTEN LEARN OPERA IN GERMAN OR FRENCH OR RUSSIAN EVEN. SO, HE WANTED TO BE ABLE TO CALCULATE HOW MUCH HARDER IT WAS FOR THEM TO LEARN THE MATERIAL IN A LANGUAGE THEY DON'T KNOW THE MEANING TO. AND BEYOND THAT, DOES LEARNING CONTENT IN A DIFFERENT LANGUAGE THAT SOMEONE DOESN'T UNDERSTAND MAKE A PERSON LESS CONNECTED TO THE PIECE. ULTIMATELY, WHAT THIS RESEARCH ATTEMPTS TO DO IS GAIN INFORMATION TO BETTER DESIGN MUSIC THERAPY. TO MAKE IT EVEN MORE EFFECTIVE FOR EVEN MORE PEOPLE.

Brookes: It's not just something that is a hobby or entertainment, but music is a fundamental part of being a human. It is part of how we communicate with each other. It is how we understand our world emotionally.

Peters: THIS PROJECT HAD AN IMPACT ON GREGORY. IT CHANGED THE WAY HE TEACHES AND CONNECTS WITH HIS STUDENTS. IT HAS MADE HIM MORE AWARE OF HOW OUR BRAIN PROCESSES INFORMATION AND HOW HE CAN BETTER POSITION HIS STUDENTS FOR SUCCESS.

Peters: THIS PROJECT HAD AN IMPACT ON GREGORY. IT CHANGED THE WAY HE TEACHES HIS STUDENTS – BETTER POSITIONING THEM FOR SUCCESS.

Brookes: Our brains are hardwired for music from birth. The more that we can all experience music, whether it's just by listening to it or by participating in it. I think the healthier we are.

(Upbeat Music)

(Walking)

Peters: FRANCISCO ORTEGA AND JORGELINA ORFILA ARE WAITING TO GREET US INSIDE THE LOBBY OF THE SCHOOL OF ART. THEY'RE BOTH FRIENDLY AND EXCITED ABOUT GETTING TO SHARE WHAT THEY'RE WORKING ON. WE ARE ESCORTED DOWN A BRICK STAIRWELL TO THE BASEMENT LEVEL OF THE BUILDING, FRANCISCO PULLS OUT A SMALL GOLD KEY, A CLICK AND A HEAVY WOODEN DOOR SWINGS OPEN TO REVEAL THE STOP ANIMATION LAB.

Peters: INSIDE, NEARLY A DOZEN STATIONS ARE SET UP AND EAGERLY WAITING TO BE USED.

Peters: YOU SEE, WHAT'S AMAZING ABOUT THEIR WORK... IS THEY SAY THERE IS ONLY ONE PLACE IN THE WORLD THAT'S CONDUCTING RESEARCH ABOUT THE EFFECTIVENESS OF STOP MOTION ANIMATION AS A THERAPEUTIC TOOL... AND IT'S THE ROOM WE'RE STANDING IN RIGHT NOW.

Jorgelina Orfila, Associate Professor, Art History: Yes. My name is Jorgelina Orfila. I have a PhD in Art History.

Francisco Ortega, Assistant Professor, Graphic Design: I'm Francisco Ortega Gramando. I'm a graphic [designer] and I worked at UTEP for many years before coming over here to get a PhD.

(FADE OUT)

Peters: WHEN I ASKED THE FIRST QUESTION TO JORGELINA, SHE AND FRANCISCO SPOKE PASSIONATELY FOR MORE THAN AN HOUR, STORIES AND EXPERIENCES, THEIR HOPES FOR THIS PROGRAM... IT ALL JUST CAME SPILLING OUT. AND IT WAS AMAZING TO WATCH THEM IGNITE A FIRE IN ONE ANOTHER. THEY'VE PARTNERED WITH SCHOLARS AND SPECIALISTS TO WORK WITH UNDERREPRESENTED OR DISADVANTAGED GROUPS USING STOP-MOTION ANIMATION.

Ortega: One of the things that we have discovered talking to the specialist is when someone is in therapy, one of the hardest points is they stop talking or they don't know what to talk about. They don't know how to follow up their personal stories and when you get stuck, it's just months or years and years of nothing because there's no progression.

Peters: THE STOP MOTION ANIMATION WORKSHOPS ARE DESIGNED TO CREATE A SPACE FOR PEOPLE TO CONTINUE THEIR STORIES. TO TAKE OWNERSHIP OF THEM AND SHARE THEM IN A WAY THAT'S UNIQUE AND DIFFERENT. IN A WAY THAT'S ACTIVE.

Ortega: Finally, they tell the story again when they're animating. It's so many levels that they're more invested in the creation of the object, but at the same time they're opening up and telling a personal story...

Peters: When you talk about these workshops, is this more of an individualized experience, or is this when we talk about putting them in groups.

Orfila: This is groups. It's all groups. Groups that have a certain thing in common. Could be age, could be addiction, could be the situation...

Peters: THEY TOOK THE WORKSHOPS INTO SCHOOLS, LUBBOCK'S JUVENILE JUSTICE CENTER... AND ON CAMPUS AT THE BURKHART CENTER FOR AUTISM RESEARCH AND EDUCATION AND THE COLLEGIATE RECOVERY CENTER. IT'S STILL BEING USED TODAY AT THE CRC, LED BY LAUREN LEWIS.

Lauren Lewis, Graduate Student, Center for Collegiate Recovery Communities: I'm Lauren Lewis. I am a PhD student here at Texas Tech University and I'm studying addiction and recovery. I just want to know how to get people into recovery from addiction and keep them there as long as possible.

Orfila: They have to create the thing, draw, agree the sculptures, and filmmaking, but also storytelling. All of them. They have fun, they bring music, but it's very personal.

Lewis: She basically just introduced the project as this really creative way for people to explore their recovery stories in animation. The fact that we can do it on-campus with people who already know what they're doing just blew my mind.

Ortega: We keep telling them, remember, it's going to get to a point that you need to tell your own story. It doesn't matter what the story is, as long as they're part of the narrative.

Lewis: I automatically was like, yes, I don't even care. I'll do it. I'm in. In the Fall of 2022, I started with our second group, and I specifically helped with CRC students, students who are in recovery from addiction at Texas Tech...

Peters: SOME OF THE STORIES ARE HEAVY- LIKE THE ONES FROM LAUREN'S GROUP.

Peters: THERE'S ONE WHERE THE CREATOR DREW ALL OF HIS SCENES- IT TELLS A STORY OF SEARCHING, OF DARKNESS AND WANDERING, THEN A LOW POINT, AND FINALLY THE LIGHT. THE ENDING SHOWS HIM SITTING IN A ROOM OF PEOPLE AND FINALLY FEELING FOUND. IT'S A FULL PROGRESSION OF LIFE THAT I'M SURE TOOK MORE THAN A HUNDRED HOURS OF WORK, SHOWCASED IN THIS MINUTE AND A HALF LONG VIDEO.

Animation Video: This is my story. My problems are not greater nor lesser than anyone else's...

Peters: BUT OTHER PROJECTS ARE A BIT LIGHTER. LIKE THIS ONE.

Animation Video: The spaghetti experience!

Orfila: There's another kid that he explains how he makes spaghetti. Then in the process, he realizes that he doesn't know how to make spaghetti, so he needs to call his mom.

Animation Video: Because I have no idea how to cook spaghetti...

Peters: THE PROGRAM HAS ONLY EXISTED IN IT'S CURRENT FORM SINCE 2019... THAT YEAR THEY HOSTED 33 INDIVIDUALS FROM 11 DIFFERENT COUNTRIES FOR A CONFERENCE ABOUT STOP ANIMATION AND PUBLIC ENGAGEMENT. THEY WERE PICKING UP MOMENTUM UNTIL, YOU GUESSED IT. THE GLOBAL PANDEMIC SIDELINED THEIR WORKSHOPS AND THEIR RESEARCH. BUT THINGS HAVE PICKED UP A LOT SINCE THEN. THERE IS A LONG LIST OF GROUPS THAT JORGELINA AND FRANCISCO PLAN TO REACH OUT TO- CHILDREN IN FOSTER CARE, VETERANS, STUDENTS IN MED SCHOOL. THEY WANT TO CONTINUE WORK WITH THE LUBBOCK JUVENILE JUSTICE CENTER, STUDENTS WITH AUTISM, AND RECOVERING ADDICTS.

Lewis: A lot of people in recovery tell their story quite frequently. But our participants all said telling your story is one thing but to actively see it is just an entirely different experience. So, it was a lot more powerful I think even than I anticipated, which was awesome.

Orfila: It's not what the story is about, it's what happens during the creation of the animation.

(Music)

Peters: IT'S A BRISK FEBRUARY MORNING, ALLISON AND I ARE SPEED-WALKING TO THE BURKHART CENTER. IN THE LAST STORY, WE TALKED ABOUT RESEARCH CONDUCTED ON CAMPUS *INVOLVING* STUDENTS AT THE BURKHART. BUT THIS CENTER CONDUCTS A LOT OF ITS OWN RESEARCH. THE BURKHART CENTER'S MISSION STATEMENT IS CLEAR- INCREASE THE QUALITY OF LIFE FOR INDIVIDUALS WITH AUTISM AND THEIR FAMILIES. AND THEY DO THAT BY PROVIDING SERVICES, PREPARING EDUCATORS AND CONDUCTING RESEARCH. JENNIFER HAMRICK IS THE CO-DIRECTOR FOR THE CENTER. HER HEART IS STIRRED FOR RESEARCH ABOUT AUTISM...NOT ONLY PUSHING THE DEPTHS OF UNDERSTANDING IT BUT FINDING BETTER WAYS TO SERVE THOSE STUDENTS AND THEIR PARENTS.

Jennifer Hamrick, Co-Director, Burkhart Center for Autism Research and Education: This whole page, haha!

Peters: SHE HOLDS UP A PRINTED EXCEL SPREADSHEET THAT SHE HAS BEEN USING AS A REFERENCE... THERE ARE PROBABLY DOZENS OF NAMES AND PROJECTS LISTED HERE.

Hamrick: Yeah, there's probably about 20 on here...

Peters: OKAY, SO TWENTY. ON EACH LINE IS THE NAME OF A GRADUATE STUDENT AND HIS OR HER SPECIFIC AUTISM-RELATED RESEARCH.

Hamrick: We've got one really awesome research study that's happening in Transition Academy right now. Again, that's our program that's for adults with autism and other developmental

disabilities who are focusing on being as independent as they possibly can be. This recent cohort of students that we have, we've had several students in the program that have indicated a desire to get married, have kids, have their own family.

Peters: THE STAFF HAS KEYED IN ON THIS, THEY'VE IDENTIFIED A POSSIBLE OPPORTUNITY FOR GROWTH AND THEY'RE INVESTING TIME AND ENERGY TO INVESTIGATE.

Hamrick: What we did was we started off with just giving the individuals who wanted to participate the babies. They have the babies just what's called baseline.

(Babies crying)

Peters: THESE ARE BASICALLY THE SAME BABIES THAT YOU MAY SEE STUDENTS USE AS TRAINING TOOLS IN HIGH SCHOOL.

Hamrick: We're not teaching them any skills. We just want to see what their parenting skills look like without any intervention and these babies are so high tech that they track basic handling skills. Thinking about an infant or a newborn, you have to hold their neck, that's something that it tracks, it tracks if the baby gets left in the car, if you have the baby dressed for the temperature correctly, there's so much data that's taken.

Peters: Do they come into your office and that's how you do it?

Katy Wheeler, Graduate Student, Burkhart Center for Autism Research and Education: What I do is play the demo and I model for them,

Peters: THIS IS KATY WHEELER, SHE'S A GRADUATE STUDENT FOR THE BURKHART.

Wheeler: ...then I play the demo again and they do the rehearsal and I give them feedback. We just practice until we get 100 percent correct. And we have a mock apartment downstairs. So, I can program from here and they can take the baby downstairs in the apartment and do it from there.

Hamrick: Our goal initially with generalization is for them to be able to take the baby home for two days and see if they can still do it without that coaching and feedback happening at the center. That's one of the ones that I know Janice has been super excited about it.

Peters: THAT'S CO-DIRECTOR JANICE MAGNESS SHE'S TALKING ABOUT, SHE LED THE TRANSITION ACADEMY. I WOULD BE REMISS TO MENTION THE TRANSITION ACADEMY AND NOT INTRODUCE JANICE. SHE IS TRULY THE HEART, SOUL AND SPIRIT OF THAT PROGRAM AND SHE HAS BEEN SINCE IT BEGAN IN 2005. SHE RETIRED THIS PAST JUNE AFTER A CAREER SPENT GIVING TO STUDENTS WITH DISABILITIES. OKAY, BACK TO THE BABIES...

Hamrick: Again, I think one of the things that happens with individuals with disabilities in the school setting is people don't want to talk about sexuality and parenting because, first of all, a lot of people are just uncomfortable talking about it in general with anyone. Then trying to teach someone with a disability that they are just as capable of being a parent as well and we want to make sure that we're addressing that topic and working with them to help them meet a desire and a goal that they have. If they truly want to have kids, let's talk about what that looks like and get you ready for that if that's truly a direction that you want to go in your life.

(Music)

JENNIFER AND HER TEAM ARE ADAMANT THAT STUDENTS WITH DISABILITIES DESERVE ALL THE LIFE EXPERIENCES THEIR PEERS HAVE, THEY DESERVE THE COLLEGE EXPERIENCE, TO HAVE A JOB THEY LOVE, OR TO LIVE ON THEIR OWN AND PURSUE RELATIONSHIPS. AND HER TEAM DOES WHATEVER IT TAKES TO CREATE THAT LIFE FOR THESE STUDENTS.

(Music)

Peters: WE PICK UP WHERE WE LEFT OFF AT THE BEGINNING OF THIS EPISODE...

Drew Peters Reading HUMS House paper: Check that the water treatment system is on...

Peters: THE HUMS HOUSE. IT SITS NEAR THE EDGE OF THE PROPERTY, THE BACK PORCH FACING TREES AND FIELDS WHERE DEER ARE GRAZING.

(Feet walking)

Peters: BUILDING THIS HOME TOOK YEARS OF PLANNING, LOTS OF CONVERSATIONS AND COORDINATING BY A TEAM SITTING IN ROOMS LIKE THE ONE I'M IN RIGHT NOW WITH BRIAN ANCELL AND CAROL LINDQUIST.

Brian Ancell, Associate Professor, Atmospheric Scientist: Sure, I'm Brian Ancell, Associate Professor of Atmospheric Science.

Carol Lindquist, Assistant Professor, Sociology: I'm an Assistant Professor of practice in sociology, and that's what I do.

Peters: BRIAN, CAROL AND THEIR TEAM ARE REALLY PROUD OF THIS PROJECT, AND RIGHTFULLY SO! BY THE WAY, WHEN BRIAN TALKS, YOU MAY HEAR HIS HANDS ON THE TABLE OR MIC...

Peters: THEIR PARTNERSHIP ON THIS PROJECT IS INTERESTING TO ME. HOW THEY CAME TO COLLABORATE ON THIS INTERDISCIPLINARY STUDY COMING FROM WHAT ARE VERY DIFFERENT AREAS OF RESEARCH. BUT AFTER MANY OF MY PROBING QUESTIONS IT STARTED TO MAKE A LOT OF SENSE...

Peters: ...but tell me specifically how's the HUMS house for or I guess where did this idea come from? Was it something that was presented to you or was this something that you sort of?

Lindquist and Ancell: I guess I'm going to get this wrong, but it was years, was it five or six years ago, roughly? Close to six. That's six years ago. [LAUGHTER] It was right after you came. Yeah. I got here in fall 2015, so, close to seven.

Peters: SO, SIX, OR SEVEN, YEARS AGO CAROL WAS PERFECTLY HAPPY DOING WHAT SHE DOES- STUDYING THE SOCIOLOGY OF FOOD... I KNOW, I'M GIVING A LOT OF BACKGROUND HERE BUT IT'S REALLY IMPORTANT TO SEE ALL THE PIECES... TO GET THE FULLEST UNDERSTANDING OF HOW THIS ALL CAME TO BE.

Lindquist: One of the things about food, in particular, is that it takes place in a given spot, so in my dissertation work, I had to study place as well as process. In so doing, I got to be pretty familiar with domestic space arrangements and how they affect what people do.

Peters: AND BRIAN'S RESEARCH – IT HAS NOTHING TO DO WITH FOOD. HE'S FOCUSED ON WEATHER FORECASTS. I'LL EXPLAIN IN A MINUTE HOW THESE TWO ARE CONNECTED. SO MUCH ABOUT THIS HOUSE'S EFFECTIVENESS HAS TO DO WITH WEATHER- HOW MUCH RAIN THE WATER TANK HOLDS

(Rain)

Peters: OR WIND THE TURBINE CAN USE

(Wind)

Ancell: It really boils down to chaos in weather forecasting. I'm trying to understand that process and that's really my love. The HUMS project is a good idea of how forecasts can be used to plan for how much water or power you might get at a residence.

Peters: I THINK OF THE HUMS HOUSE AS BEING LIKE TWO PROJECTS IN ONE- FORMED BY DISCIPLINES IN ENGINEERING, ATMOSPHERIC SCIENCE AND SOCIAL SCIENCE. THERE'S THE ACTUAL ENGINEERING AND BUILDING OF THE HOME ELEMENTS. BUT WHAT COULD HAVE THE LARGEST IMPACT IS THE SECOND PART OF THE STUDY-THE HUMAN RESPONSE. HOW CAN THIS SMART HOUSE TRAIN US TO BECOME BETTER STEWARDS OF OUR ENERGY AND WATER CONSUMPTION? BRIAN, CAROL AND OTHER MEMBERS OF THEIR TEAM ARE NOT SOLEY FOCUED ON CREATING A PRODUCT. THEY'RE HOPING TO CHANGE OUR HABITS THROUGH UNDERSTANDING.

(Washing Dishes)

Drew Peters: Being here, I want to use less water.

Peters: THIS IS MY HUSBAND, DREW...

Drew Peters: Or I want to turn out the lights when I'm not using them.

(Light Switch Turning off)

Ancell: The whole place is monitored like crazy every faucet and has little flow meter on it. We're collecting data on the amount of water that goes through every faucet, the dishwasher, washing machine, the electrical stuff isn't quite there yet, but same idea... The system has to have that data.

Peters: THIS IS WHAT'S REALLY UNIQUE - THE HUMS INERFACE SYSTEM IS A COMPUTER, SO WHEN YOU LOG IN, YOU GET SUGGESTIONS FOR WATER AND ENERGY USE.

Ancell: That's why this depends on people so much because this whole system is interactive. It gives suggestions on how to conserve that [NOISE] resource.

Lindquist: We're not going to get rain for five days and you really only have three days of water at current consumption levels. The system will suggest maybe you could take a shower every other day. Maybe you could do the dishes by hand, which uses less water. Maybe you could not wash clothes every three days and stretch it to a week. I think you have enough underwear kind of thing.

(LAUGHTER)

(Music)

Peters: THE CONCEPT IS THERE, THE TECHNOLOGY IS THERE. THE FINAL STEP IS TO HAVE FOUR FORMAL TESTING PERIODS OF SIX MONTHS. CAROL SAYS THAT SIX MONTHS ALLOWS THEM TO TEST WITHIN THE CHANGING SEASONS.

Lindquist: That'll give us answers and ways in which this can be more easily adapted to other parts of the country because we think it has quite a range of possibility there.

Lindquist: ... It has been approved to have pairs basically of people either in an affectionate relationship of some kind or else longtime roommates. People who've been established as housemates basically, not roommates necessarily, housemates.

Peters: BRIAN AND CAROL ARE DOING SOMETHING A LOT BIGGER THAN A QUICK FIX. IT'S GETTING TO THE ROOT OF IT ALL, EMPOWERING *PEOPLE TO MAKE THE CHANGES. FIRST IN THEIR OWN HOMES, THEN IN THEIR NEIGHBORHOODS AND BEYOND. THE WHOLE PURPOSE IS TO HELP PEOPLE UNDERSTAND MORE ABOUT THE IMPACT OF THEIR ENERGY USE AND GIVING THEM THE INFORMATION TO CREATE POSITIVE CHANGE. THAT IS BIG PICTURE.

Lindquist: Sheets on the bed?

Ancell: Right. Storage tank is full of water from all the rain that's happening there. Solar panels are all there [NOISE], everything works...

Peters: You're saying that we can move in?

Ancell: [LAUGHTER] Yes, actually.

Lindquist: Yeah, you could actually. You'll have to do the laundry as you leave. (LAUGHTER)

Peters: You know what? I think I could handle it. (LAUGHTER)

(Music)

Peters: WHAT I'VE LEARNED DURING THIS WHOLE EXPERIENCE IS APPLICATION. MY HOME MAY NOT HAVE THE ASSETS THAT THE HUMS HOUSE PROVIDES, BUT I TOOK SOMETHING FROM IT. IN JUST THE FEW SHORT DAYS STAYING THERE, WE CREATED OUR OWN INTERNAL MONITORING SYSTEM THAT WE'VE APPLIED IN OUR HOME. WHICH IS THE PURPOSE OF THE HUMS HOUSE TO BEGIN WITH. DREW ACTUALLY SUMMED IT UP PRETTY WELL.

Drew Peters: Obviously not everyone has a wind turbine in their backyard but this has encouraged me to think outside the box, or not really outside the box, but just more basic about what I can do. Taking a shorter shower or being mindful of not leaving lights on if we don't have to. Finding ways to save water or energy in the simplest form possible because even though we don't have the equipment, we could do things that save water and energy.

(Music)

Peters: NEXT TIME ON FEARLESS...

(Music)

Chris Weiss, Associate Professor, Atmospheric Science: In a warmed world the equator is warming some and the poles are warming a lot...

Asheley Landrum, Associate Professor, Media Communications: How do we stop getting these issues of science and policy so politically entangled?

Katharine Hayhoe, Horn Professor, Political Science: Does the thermometer give us a different answer depending on if we're liberal or conservative? Of course not.

Cristina Bradatan, Associate Professor, Sociology: [LAUGHTER] Fear... I guess what motivates me is fear.

(Music)

Peters: FEARLESS IS HOSTED AND WRITTEN BY ME, TAYLOR PETERS, AND CO-PRODUCED BY ALLISON HIRTH. THOMAS BOYD DOES SOUND DESIGN AND EDITS THE PODCAST. WE'VE HAD SPECIAL HELP FROM THE OFFICE OF RESEARCH AND INNOVATION FOR THIS SEASON. FEARLESS IS A TEXAS TECH PRODUCTION, FROM HERE IT'S POSSIBLE.

(Music)

HEY GUYS, IT'S TAYLOR. THANK YOU SO MUCH FOR LISTENING TO FEARLESS. DON'T FORGET TO LIKE, REVIEW AND SUBSCRIBE WHEREVER YOU GET YOUR PODCASTS.