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INNOVATORS & IDEAS: RISING STAR

Deanna M. Kaplan: Listening to daily life: exploring speech data, shared meaning, and generative artificial intelligence (AI) in clinical science

In this Genomic Press Interview, Deanna M. Kaplan, PhD, emerges as a pioneering clinical psychologist reshaping how we understand human experience through innovative ambulatory assessment technologies at Emory University School of Medicine, where she serves as Assistant Professor, Director of Health Technologies for Emory's Spiritual Health Program, and Director of the Human Experiences and Ambulatory Technologies (HEAT) Lab. Dr. Kaplan has distinguished herself through groundbreaking methodological contributions, including the development of *Fabla*. This smartphone application revolutionizes clinical research by securely capturing voice narratives and speech biomarkers in participants' natural environments, currently utilized across multiple research domains from psychedelic-assisted therapies to physician burnout studies. Her interdisciplinary expertise spans ecological momentary assessment, the Electronically Activated Recorder (EAR), and various ambulatory monitoring techniques, with over 50 peer-reviewed publications examining the intersection of daily life experiences, clinical interventions, and digital health technologies. With significant funding from the National Institutes of Health and other organizations, Dr. Kaplan's forward-thinking research addresses critical questions at the nexus of behavioral science and artificial intelligence, emphasizing ethical approaches to voice data analysis that preserve the richness of human subjectivity while leveraging technological advances to enhance understanding of psychological change mechanisms in real-world contexts. A graduate of the University of Arizona (PhD, 2020) with postdoctoral training at Brown University, Dr. Kaplan's innovative research program explores both the transformative potential and ethical challenges of emerging technologies in clinical science, investigating how relationally-focused ambulatory assessment methods can advance personalized interventions while maintaining the essential human elements of care.

Figure 1. Deanna M. Kaplan, PhD, Emory University, USA.

Part 1: Deanna M. Kaplan – Life and Career

Could you give us a glimpse into your personal history, emphasizing the pivotal moments that first kindled your passion for science?
I have always been fascinated by people's stories. I have a vivid memory from around age 7, visiting a relative in a nursing home. We sat in the dining hall with a group of residents sharing and comparing their life experiences—stories of marriage, the birth of their first child, and where they were when they learned of the Challenger explosion. What struck me was how differently they each remembered and made sense of the same personal and historical events. It left a deep impression on my tiny self that two people could live through the exact moment with entirely different internal worlds.

I went to college to become a journalist, to have a career centered on helping people tell their stories. I was simultaneously taking health sciences and psychology classes "just for fun." I had also become interested in research on contemplative practices after having a personally impactful experience at a silent meditation retreat. By the time I was completing my Bachelor's degree, it was clear that journalism was not the right fit for my interest in the complexities of human experience. I had questions of my own that I wanted to test empirically. That sent me down a new path: my first job out of college was as a research assistant in a neuropsychology lab, and I have never looked back.

Please share with us what initially piqued your interest in your favorite research or professional focus area.
What initially drew me to my research focus was that while most health research takes place in labs or clinics, the experiences that shape people's wellbeing unfold in the small, ordinary moments of daily life. I saw this firsthand, watching my mom navigate chronic pain from a connective tissue disorder. Her doctors had access to lab tests and clinical observations, but those could not give them insights into the way her pain severity rose and fell with daily activities over the day. At the same time, I had by then participated in several silent meditation retreats, but had become

less interested in what I experienced "on the cushion" and more curious about whether or not those experiences translated into the things that mattered to me, such as being more present and less reactive in my daily life in the face of stressors.

I learned that an entire field of research—ambulatory assessment or methods for studying people outside of the lab and in their natural daily contexts—was built on observations such as these. I applied to a PhD program in clinical psychology at the University of Arizona with the hope of training with one of this field's pioneers, Dr. Matthias Mehl. Dr. Mehl offered me the opportunity to train with him as a doctoral student, and this training has shaped my entire approach to clinical science.

We would like to know more about your career trajectory leading up to your current role. What defining moments channeled you toward this opportunity?

The five years I spent training in Dr. Matthias Mehl's lab were deeply formative. Dr. Mehl had developed the Electronically Activated Recorder (EAR), a method that captures snippets of ambient sound as participants go about their day. These audio samples can be analyzed to reveal people's everyday activities, conversational patterns, and social behaviors. As Dr. Mehl's graduate student, I learned how to apply the EAR and other methods for assessing daily behavior and experience to a wide range of mental health research topics, ranging from the effects of meditation practice in healthy adults to the role of family environments in adolescent suicidality. I began to realize that, while meditation had first sparked my interests in psychological change, my curiosity was about more fundamental questions: when people feel stuck, what helps them get unstuck? Moreover, what role do personal or therapeutic relationships have in that process? I wanted to understand change mechanics—whether through contemplative practices, psychotherapy, or pharmacological treatments. So after I completed my PhD, I pursued postdoctoral training at Brown University to broaden my experience with a broader range of ambulatory assessment methods and patient populations.

During my postdoc, I received an unexpected email from Dr. George Grant, the Director of Emory Spiritual Health, and Dr. Charles Raison, the program's Director of Research. A tenure-track position had opened at Emory, with an explicit focus on applying ambulatory assessment methods to psychospiritual topics, including emerging psychedelic-assisted therapies. It was a dream alignment of my background in these methods and my longstanding interests in investigating the relational, intersubjective aspects of clinical change.

Shortly after joining the faculty at Emory, I began collaborating on clinical trials of psychedelic-assisted therapy. For this research, I sought an ambulatory assessment method that would allow participants in these trials to tell us about their day-to-day experiences in their own words. I was inspired by the kind of voice memos we leave for friends or family–candid and spontaneous. To my surprise, no existing research tool enabled participants to share voice narratives in real time. Existing platforms relied heavily on structured survey responses or passive audio sensing. So, in partnership with Santiago Arconada Alvarez, an outstanding engineer at the Emory AppHatchery, I built Fabla: a voice-based ambulatory assessment app that research participants can download onto their smartphones to securely record and transmit open-ended, in-the-moment spoken responses to researchers' questions. Although Fabla was initially created for the unique challenges of psychedelic research, our app is now used by more than one dozen investigator groups querying a wide range of topics in the health sciences.

What is a decision or choice that seemed like a mistake at the time but ended up being valuable or transformative for your career or life?

The very first grant I was awarded as PI felt, at the time, like a huge mistake to have ever written in the first place. The project involved outfitting participants who had recently experienced a cardiovascular event with multiple wearable devices to capture hundreds of thousands of physiological, psychological, and behavioral data points as they went about their daily lives, to use these data to improve cardiac rehabilitation outcomes. To make a long story short, most of my hypotheses were not even testable. The data were far messier than I had expected, problematic for integrating into predictive models, and, most concerning, did not reflect the outcomes that participants told me mattered to them in their care. At the time, the study felt like a failure. I worried I had let down the participants, my mentors, and the study funders, and because I was a postdoc at the time and had sunk years of work into the study, I did not know how to use this to move forward in my career.

In retrospect, that study became foundational. Much of my current work, including the Fabla app, is in response to the study's problems. Perhaps most importantly, I learned a critical lesson: research methods should usually not dictate research questions, no matter how new or exciting. I learned a valuable lesson about starting with the questions that matter to people and choosing the assessment technologies that best serve them, rather than doing things the other way around.

What habits and values did you develop during your academic studies or subsequent postdoctoral experiences that you uphold within your research environment?

The Director of Clinical Training for my doctoral program gave the same advice to every nervous cohort of students the day we saw patients for the first time: "When in doubt, be a human." It is simple, obvious, and some of the best professional advice I have ever received. Science incentivizes speed and productivity, and there are continuous opportunities to let this come at the expense of human beings doing the work or doing the best possible science. Rigor, kindness, and speed can sometimes be at odds with one another. I tell my lab that if we are not going about our work in a way that allows us to care for ourselves, be caring with each other, and execute our research in the best way we know how, then there is no point. I have also been inspired by Barbara Seeber and Maggie Berg's book, *The Slow Professor*, which makes a compelling case for resisting the culture of academic acceleration. This mindset is critical as researchers begin integrating generative AI into our workflows. Just because something *can* be automated for efficiency does not mean it *should* be, especially when human judgment, reflection, or care is what the task truly requires.

Please tell us more about your current scholarly focal points within your chosen field of science.

The Fabla app is now in use on a wide range of topics in the clinical sciences beyond studies of psychedelics, including research on substance use treatment for veterans, daily experiences of people with epilepsy, and burnout among frontline healthcare providers, among others. The interest in Fabla has increasingly situated my work at the intersection of behavioral science and artificial intelligence. As large language models and voice analytics tools advance, we are not just developing new ways to analyze speech; we are beginning to rethink what voice and language data represent fundamentally. Where qualitative data like spoken narratives once required human interpretation, we now see a shift toward automated systems that can extract meaning, emotion, and even inferred mental states at scale. This transformation brings both exciting potential and serious concerns. My research is increasingly focused on examining what these technologies illuminate, and what they risk obscuring.

What impact do you hope to achieve in your field by focusing on specific research topics?

One of my lab's current central goals is to explore how voice data can be used ethically, meaningfully, and in ways that capture the richness of human subjectivity (including its intersubjective dimensions). This focus is vital across all studies using the Fabla app, but it takes on special significance in our research on psychedelic-assisted interventions. Psychedelic experiences frequently involve shifts in aspects of human experience that do not lend themselves easily to automated methods of interpretation: identity, perception, and relational awareness. I hope that by directly engaging the tensions created by new advances in automation, we can help shape a future where technology supports, rather than overrides, individual human voices.

What do you most enjoy in your capacity as an academic or research rising star?

Part of a researcher's job is to be curious about what you observe in research and the world, and turn those curiosities into empirically testable

Innovators & Ideas: Rising Star
Deanna M. Kaplan

PSYCHEDELICS
Genomic Press

https://doi.org/10.61373/pp025k.0023
2 of 5

questions. It is an incredible privilege, and for me, a lot of the joy is in not knowing exactly what questions will emerge next. I am a very problem-focused researcher—most of what I do is heavily inspired by the world's emerging events that impact mental wellbeing. I have some general ideas about what I want to pursue and how over the next decades, but it is not a rigid plan. For example, Generative AI has completely transformed how people think about the methods I use, and five years ago, I never would have forecasted that my work today would be dominated by technical and existential questions about large language models in the way it is.

At Genomic Press, we prioritize fostering research endeavors based solely on their inherent merit, uninfluenced by geography or the researchers' personal or demographic traits. Are there particular cultural facets within the scientific community that warrant transformative scrutiny, or is there a cause within science that you feel strongly devoted to?
One cultural facet of science that urgently requires scrutiny is the uncritical adoption of generative AI without adequate attention to the biases and limitations inherent to these systems. These tools are trained on vast datasets that reflect dominant linguistic, cultural, and social norms. As a result, they can systematically underrepresent or misinterpret the voices and worldviews of historically marginalized populations, reinforcing structural inequities under the guise of machine objectivity and efficiency. In speech research, these risks are especially pronounced. Suppose we rely on AI to interpret people's speech without examining whose speech these models were trained to understand, or whose perspectives and language patterns they are likely to misunderstand. In that case, we risk designing tools optimized for speed but fundamentally unfit for use at scale.

Outside professional confines, how do you prefer to allocate your leisure moments, or conversely, in what manner would you envision spending these moments given a choice?
My partner also has an academic research career, and about a year ago, we became concerned that we were not making enough time for rest, leisure, and the sacred stuff in life. We decided to start observing an adapted version of Shabbat, even though we are not observant Jews. On Friday nights, we put away our phones and computers and keep them off for 24 hours. Saturday is a day of rest and recreation. In addition to unplugging from technology, our house rule is that no work of any kind is allowed. Now and then, we have had to make exceptions, such as when one of us is at a conference, but outside of travel, we have come to protect that time fiercely. It has created consistent undistracted time with each other, friends, and family, and time for things like creative cooking, gardening, playing games, and taking walks.

Part 2: Deanna M. Kaplan – Selected questions from the Proust Questionnaire.[1]

What is your most marked characteristic?
My home and office are usually easy to spot as "the one with all the plants".

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[1]In the late nineteenth century, various questionnaires were a popular diversion designed to discover new things about old friends. What is now known as the 35-question Proust Questionnaire became famous after Marcel Proust's answers to these questions were found and published posthumously. Proust answered the questions twice, at ages 14 and 20. In 2003 Proust's handwritten answers were auctioned off for $130,000. Multiple other historical and contemporary figures have answered the Proust Questionnaire, including among others Karl Marx, Oscar Wilde, Arthur Conan Doyle, Fernando Pessoa, Stéphane Mallarmé, Paul Cézanne, Vladimir Nabokov, Kazuo Ishiguro, Catherine Deneuve, Sophia Loren, Gina Lollobrigida, Gloria Steinem, Pelé, Valentino, Yoko Ono, Elton John, Martin Scorsese, Pedro Almodóvar, Richard Branson, Jimmy Carter, David Chang, Spike Lee, Hugh Jackman, and Zendaya. The Proust Questionnaire is often used to interview celebrities: the idea is that by answering these questions, an individual will reveal his or her true nature. We have condensed the Proust Questionnaire by reducing the number of questions and slightly rewording some. These curated questions provide insights into the individual's inner world, ranging from notions of happiness and fear to aspirations and inspirations.

Among your talents, which one(s) give(s) you a competitive edge?
Genuine enjoyment for research methods—which are topics that many, even scientists, find dry and boring to discuss.

If you could change one thing about yourself, what would it be?
That art was still a more integrated part of my life. Playing music and writing fiction and poetry used to be a big part of my life, and I mostly left those parts of myself behind when I began directing my time and energy into pursuing a research career.

What is your current state of mind?
I am writing this answer during a lunch break at a public scholarship training. I am grateful for the opportunity to improve my skills in science communication, humbled at how much I don't know about doing this well, and a bit sad about how complicated public scholarship is in the US in 2025.

What is your idea of perfect happiness?
A slow day with loved ones where no one is in a hurry—simple, but not always easy to make happen.

When and where were you happiest? And why were so happy then?
I have been fortunate to take a small handful of multi-week backpacking journeys—three on foot and one in a canoe. Taking a physical journey without the trappings of my usual life has been the best way to tap into a more openhearted way of moving through the world than otherwise comes to me naturally.

What is your greatest fear?
Not making enough time for the people and things that matter most in life, and not realizing it.

What is your greatest regret?
That I was so hard on myself as a young adult: I used to put much counterproductive pressure on myself.

What are you most proud of?
In my personal life, I'm most proud of the variety of amazing people that I get to call friends, family, and co-conspirators.

What do you consider your greatest achievement?
My greatest achievement in the conventional sense of the word is having the job that I do now. I actually had a very hard time with school when I was growing up. I was creative, curious, and loved learning, but I tested poorly.

What or who is your greatest passion?
The cheesy but honest answer is the family, friends„ and colleagues with whom I'm lucky to share life. I enjoy trying new things and experimenting with new hobbies, so for me, the "what" tends to change a lot, and that makes the constancy in "who" all the more precious to me.

What is your favorite occupation (or activity)?
Drinking coffee in the morning on the porch with my partner.

What is your greatest extravagance?
Definitely travel. I try to yoke a for-fun trip to work travel at least a couple of times a year, and that has ranged from relaxing city stays to backpacking.

What is your most treasured possession?
My signed copy of "The Shape of the Journey" by the writer Jim Harrison.

Innovators & Ideas: Rising Star
Deanna M. Kaplan

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3 of 5

Figure 2. Deanna Kaplan at the 3rd Annual Science on Spiritual Health Symposium, Emory University, April 2025.

Where would you most like to live?
I am from the Sonoran Desert, and there is no other landscape in which I feel more at home. I have also moved around a lot and have never lived anywhere I have not come to love. I am thrilled with where I am now, in Atlanta.

What is the quality you most admire in people?
One of my mentors, a professor who is also a well-respected Zen sensei, gave this career advice: "Remember that you are nobody special—meaning nobody especially good, but also nobody especially bad." I admire and respect this type of balanced, confident humility.

What is the trait you most dislike in people?
Narcissism. Treating others as though their experiences and ideas matter less.

What do you consider the most overrated virtue?
Saying yes without guardrails. Academia incentivizes taking on anything and everything, especially early on in one's career. The ability to set limits that protect your priorities (and to respect your colleagues' boundaries around their priorities) is essential for mental health and for leaving adequate room for creative thought.

What do you most value in your friends?
The ability to share the hard stuff and sit with it together, without needing to change or solve it.

Which living person do you most admire?
I have deep admiration for my PhD mentors, Drs. Matthias Mehl and Mary-Frances O'Connor at the University of Arizona. They are both leading figures in their respective fields and also two of the kindest, most grounded, and generously supportive mentors I have known. I continue to look to Dr. Mehl as a role model for building a research program that balances innovation and rigor, and Dr. O'Connor as an exemplar of thoughtful, accessible science communication.

Who are your heroes in real life?
I look up to people who have voiced important truths—and persisted in doing so—even when this was unpopular and hard. There are too many people in this category to name without feeling like I am leaving someone important out, so I will not even try!

If you could have dinner with any historical figure, who would it be and why?
I would love to have dinner with the mythological-historical figure Baba Yaga. She is a powerful witch from Slavic folklore who lives in a house on chicken legs, sometimes shows up as a wicked witch, and is often portrayed as a representation of the unknowable parts of the psyche. I assume that if we had dinner, I would learn something about my unknowable self (for better, or for worse!)

Who are your favorite writers?
My life has been enriched by writers you'd find in a bookstore's poetry and nature writing sections: David Abram, Terry Tempest Williams, Mary Oliver, Jim Harrison, Annie Dillard, Ross Gay, Gary Snyder, and Robin Wall Kimmerer, to name a few.

Who are your heroes of fiction?
It seems increasingly appropriate to look to 1990s and early aughts science fiction for heroic inspiration. Of all the Star Trek captains, Jean-Luc Picard has the moral compass that I most admire. And Data, an android character from the Next Generation series who is on a quest to become more human, offers some of the instructive thought experiments I know of about the promises and perils of generative AI.

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PSYCHEDELICS
Genomic Press

https://doi.org/10.61373/pp025k.0023
4 of 5

What aphorism or motto best encapsulates your life philosophy?
From the poet Mary Oliver: "I know many lives worth living."

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Innovators & Ideas: Rising Star
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PSYCHEDELICS
Genomic Press

https://doi.org/10.61373/pp025k.0023
5 of 5