Catalyzing Computing Episode 10 - Interview with Beth Mynatt Part 2

[Intro - 00:00:10]

Khari Douglas: Hello, I'm your host, Khari Douglas, and welcome to Catalyzing Computing, the official podcast of the Computing Community Consortium. The Computing Community Consortium, or CCC for short, is a programmatic committee of the Computing Research Association. The mission of the CCC is to catalyze the computing research community and enable the pursuit of innovative, high-impact research.

The following episode of Catalyzing Computing features an interview with CCC Council member Dr. Beth Mynatt. Beth is the Executive Director of Georgia Tech's Institute for People and Technology, a College of Computing Distinguished Professor, and the Director of the Everyday Computing Lab. Dr. Mynatt is an internationally recognized expert in the areas of ubiquitous computing, personal health informatics, computer supported collaborative work and human-computer interface design. She is a former chair of the Computing Community Consortium and has been recognized as a ACM Fellow.

In this episode, we discuss digital self-harm, Shoshana Zuboff's latest book, *The Age of Surveillance Capitalism*, and the work of the CCC's Intelligent Infrastructure Task Force. This is part two of my interview with Dr. Mynatt. If you haven't heard part one and would like to, go ahead and catch that and come right back.

[Digital self-harm - 00:01:18]

Khari Douglas: So we're here in Atlanta, Georgia, with Beth Mynatt, former CCC Council Chair and currently the Executive Director of Georgia Tech's Institute for People and Technology. How are you doing today?

Beth Mynatt: I'm doing well, thank you.

Khari: Thanks for taking the time to sit down with me. You recently wrote a paper on defining digital self-harm with Jessica Pater. Could you talk a little bit about that paper? What is digital self-harm?

Beth: So digital self-harm — and this is Jessica Pater's research — looks at online expressions of traditional self-harm activities. In particular, we've looked at the relationship of body image and eating disorders, although we've expanded a little bit past that with some of our recent work. This work started when Jessica was working with cyber safety programs, looking at teenagers and did they understand sexting and the repercussions of it, and how was it they all knew how to crack the wifis in their high schools that supposedly blocked content.

We were asking them about their practices of using online content and noticed that some of them were, “teasing” each other about diet tips online. This is one of those, you know, invisible in plain sight, because once you start looking for terms like “thinspiration” and others there is a tremendous amount of content out there that is promulgating unhealthy behaviors, and providing tips and tricks for hiding your anorexic habits from your parents and from your friends, and providing motivational content to stick with those goals.

It's a little bit of a terrifying part of the Internet, and our interest was in, first off, what was going on. So our first work was really a meaty analysis of the things that we were seeing. And then our second, this paper, *Defining Digital Self-Harm*, was a call to action to say that this content is persistently there, it is worthy of attention from our research community. We need to acknowledge that the platforms that we're creating under social media are being used for these kinds of purposes, and we need to find that collaboration with clinical psychologists — those folks who understand these mental

health disorders — to work together. So it's a very hard kind of paper to write, because most papers are, you know, “I had an idea, I did a study, I did an evaluation, here are the results.” This was much more of a, “Hey, folks, look what's going on. We're going to try to define the space for you and then lay out a research agenda that we hope other people will take up.”

Khari: Ok. What kind of big takeaways were there from that?

Beth: So in the work that we're doing right now...and some of the takeaways were…

We're really interested in this slippery slope, which is, if you look at the work that's been done in online communities, for example, there's a lot of work on when someone shows up new to your community how do you welcome them and get them to participate. *Becoming Wikipedian* would be a classic paper in that example.

How do you get people to be involved in Wikipedia and go from being consumers to producers of content, for example? In our case, it's kind of the same question, but in this case the slippery slope is actually “in conversation with”, and our fear is really” amplifying a mental health crisis.” What we're starting to see in our work as we've gone further is, it is the case that sometimes someone is just feeling bad about how they look. There's some real jerk boyfriends out there that really seem to mess with some of these girls’ heads. And so they're online but then they get exposed to this content and then they keep going deeper and deeper and deeper down the rabbit hole.

A question for us is “the Internet question,” right? This is no longer limited to gym locker rooms and local communities, it's now anyone with an Internet connection can be falling down these rabbit holes. So we're starting to look in a number of ways: one is that we're now working in a clinical context where we're working with people who are undergoing treatment, and we're interviewing them and looking at their social media use historically — can we see patterns and understand.

We're working with clinicians to educate them about social media, because these are folks who have not gone through that type of training and their first reaction was, “Yeah,

I guess they're always on their phone when they're in the waiting room." It may be a little bit equivalent to the 1950s and trying to quit smoking. You know, if everybody is smoking how hard is it to quit?

Well, if you spend most of your life online how hard is it to pull away from some of these groups and some of these influences? And then one of the real questions is, how would that inform interventions? How would you help people in this space? But for me, as an ubiquitous computing researcher of old, who always thought that access was great and more and more of it would be better and better, this area of research has been a real wakeup call about some of the dangers of the pervasive accessibility and availability of these types of content.

Khari: So what kind of potential interventions do you think might be successful? You could convince people to not look at the content, which is difficult, perhaps. I guess you could moderate the content, which also poses its own challenges, especially because, if you're using a person to moderate the content, that could have an impact on their own behavior. I know I recently read, I think it was on The Verge…there was a big exposé about Facebook's...

Beth:….the difficulty of being a content moderator on Facebook.

Khari: Yeah, and basically seeing constant, you know, Holocaust denial kinds of posts and then the people themselves might become Holocaust deniers. So if someone is moderating this content...

Beth: It's a difficult and dangerous type of position. So it is difficult, I think part of it is — and, of course, I have two teenagers — we're having to teach people healthy habits around online content as a whole. So part of it just may be teaching the next generation to be a bit more savvy about their interactions with this type of content. That's a hard push, but it is part of what we need to do.

Moderation is challenging and any type of censorship is challenging because people are really good at hiding it underground, tagging it in different ways. So you're always

playing catch up, finding where the content has gone to. I do think it's important, for people who are in treatment, for that to be part of their treatment plan, because if your treatment plan is around behavior modification and you're not also talking about your behavior online you're missing a big piece of this.

What becomes a fascination is tracking exercise and tracking calories, right? And there may be some best principles that we need to learn in some of these consumer apps that make it too easy to overly focus on a particular number and maybe some type of healthy limits need to be set into those. So probably gyms, clubs and things like that, they have this notion of “that person is taking this a bit too far,” but we don't have that notion in the digital world, and that's something we probably need to start looking for.

Khari: It's a difficult problem, and I guess some of it is perhaps philosophical in the sense of like, whose authority is it to say what is the healthy amount? Because as you mentioned, tracking calories is good if you want to stay healthy, but....

Beth: ...it can become obsessive.

Khari: Right. So how do you decide where that point is?

Beth: So it's really...I think it’s, you know, driver safety, right? We have notions of freedom of movement with an automobile that are terrific, but there's ways that you can hurt yourself and hurt others. With all of these technologies there becomes at some point kind of an awareness of where the dangers are. Dragons are here too, so we have to figure out what that world looks like going forward.

[Intelligent Infrastructure & “The Age of Surveillance Capitalism” - 00:09:31]

Khari: So continuing on the theme of human-computer interaction, you're also a member and co-chair of the Intelligent Infrastructure Task Force for the CCC. Can you talk a little bit about the work the task force has done over the past year or two?

Beth: Yeah, so intelligent infrastructure. Imagine everything I've talked to you about: ubiquitous computing and computing getting out of the desktop box and into the world through laptops and tablets and devices; so now take those same types of capabilities and make that pervasive in the infrastructure that governs much of modern life. Roads and transportation, water systems...and you can kind of think of this as the sensor community going wild, because you're putting sensors everywhere, right? Can you see the behavior of pedestrians and recognize perhaps when something is amiss?

We have folks working in Savannah on the shoreline to understand sensing around flooding conditions associated with climate change. So it's sensors and actuators kind of writ large, and then the question is, what does that future world look like? There's lots of great possibilities and lots of non-trivial dangers out there. Part of the work of the task force has been, first off, to kind of lay out what that agenda could look like, that was part of a series of white papers that we produced about this time two years ago, really trying to intercept any legislation and investment around the future of infrastructure to say that you need to look at these opportunities as well. Then we've continued further to say, okay, then what are some of the real challenges?

So one example could be, what happens in the face of a natural or man-made disaster? There's a question of how reliant we are on that infrastructure and maybe some of it gets wiped out. So what do you do? And there's also questions of how you would actually turn perhaps a normal looking device into something that is now essentially tailored for emergencies. I think a fun question is: a hurricane has come through — we have those here — what should your cell phone do if it goes into hurricane mode?

Maybe, first off it's conserving its battery, it's broadcasting your location, maybe it's broadcasting any emergency needs or medical needs that you have, maybe it unpacks a bunch of videos that you didn't even know where on your cell phone, which has first aid information. Your everyday cell phone suddenly becomes your emergency, digital first aid kit.

Khari: Yeah, you can find that white paper series on our website under resources and then white papers. So, I know in sort of the overview white paper there's this table and the key areas listed are intelligent transportation, intelligent energy management, public safety and security, disaster response, city systems, agriculture, and then health. So the white papers sort of address those areas in addition to some other sub-areas like privacy.

Beth: It's really pervasive in every aspect of how we live our life and how we want that infrastructure to work. It has to be safe from attack. Computer security gets really exciting when you start looking at all of the gadgets that are out there. Then, you know, privacy and how data is used is a major area as well.

Khari: You mentioned earlier the... what is it...the About Home Project?

Beth: The Aware Home Project

Khari: Which I believe it's referenced at the beginning of *The Age of Surveillance Capitalism* by Shoshana Zuboff. A recent book basically about modern capitalism and how Internet companies are using our data to make money. So obviously the Aware Home Project was at Georgia Tech.

Beth: Still is.

[Laughter]

It was a bit of a surprise when we found ourselves in the introductory material of that book, but it was actually a compliment. You know, she is pointing to the vision that we had, twenty some odd years ago, of building homes that could be aware of what the occupants of the home were doing, hence the name Aware Home, and provide services and capabilities to support those families. So we've looked at a whole host of issues: between families separated, connecting children to cross generation connection, we've looked at technologies for aging in place and how to support older adults and their independence. We had a very positive — she doesn't say naive, sometimes you can

maybe guess she's thinking naive — but a very, very positive utopian view of how technologies that could sense information would keep the privacy of that information inside the bubble of the family for which it's relevant and then provide new capabilities to support those families activities.

Khari: It's actually interesting. I feel like it kind of maps on to the recent CCC AI Roadmap. A big piece of that is the idea of "what if you had an AI system in your home that could control all of your devices and monitor you and help out with cooking and elderly people and...."

Beth: Very much the same vision.

Khari: Very much a similar thing, but I assume it has similar problems. So we're both reading this book. Neither of us has finished yet, which makes us qualified to discuss it now on this podcast.

Beth: Of course.

Khari: So did you have any thoughts in particular?

Beth: I mean, I think…I love what she is doing in laying out the map of how Google started with this notion of "search exhaust." Search exhaust was essentially the information it had about what people were searching for and then how they could glean insights from that and then go further and monetize that. So first she's pointing to what started with that trend has become the overwhelming economic model for the Internet; hence, the age of surveillance capitalism.

It is a reminder that there is no free lunch, right? These capabilities that we think of as free — searches for example, Facebook, social media — are not actually free, but the economic model that's been built behind them is to take that data and monetize it in ways that are increasingly scary and freaky when you think about privacy and the invasion of that. What I like about her argument, and at least where the Aware Home comes off more positive than naive, is this notion that it didn't have to be that way.

When we looked at Aware Home technologies at the very beginning, we asked questions about potential business models around healthcare, how this fit within reimbursement systems, the other costs associated with health, the things that families would pay for and what that value would be and how you could build up those systems. You know it didn't work out that way, but it still has the potential to. We could be optimistic, because there is value that people can pay for explicitly, but then have much greater control over their privacy and how that information is used as opposed to the current model we have now, which is the illusion of free with deep, deep incursions into privacy.

The concern for both of these threads, but much deeper concern with the current economic model, is you go from behavior monitoring to behavior manipulation. And this actually even connects back toward digital self-harm questions, which is how you are shaping the experience to not just know what someone might be interested in but actually manipulate them to be interested in it, whether it's purchasing something or going in a particular direction. This notion of behavior manipulation has been fundamental to healthcare and media technologies for a long time. That's what commercials are all about, but we kind of knew that's what the commercial was doing as opposed to the ordering of the search results or what shows up in our Facebook feed.

So the contract is no longer explicit and it's, in fact, quite invisible. I think that's what she's calling attention to. But as we as we go further down this road of intelligent infrastructure and understanding how we're going to pay for those capabilities, we need to foreground this question of the illusion of free with what could look very much like quite controlled behavior vs. making things an explicit value proposition and understanding the economics of that, but then giving people greater control.

I think we all agree that we're not in the right point on that spectrum. We're not sure where the right point is and exactly how to get there, but it's of increasing urgency for our field to acknowledge this and then to find alternative paths.

Khari: So how do you foresee, sort of, future data collection systems? Not just in the sense of Facebook or Google, but also if you have intelligent infrastructure everywhere and say there are cameras on lights that monitor how frequently you stop or...

Beth: ...You get a better insurance rate because your car knows that you're a safer driver? Home health has these questions in abundance, right? Because our notion is, how do you connect the home into the healthcare system so that you're not having to move into nursing care or you're able to successfully return home from being in the emergency room and back home, and not bounce back. So there's all these questions about how we actually have a sense of the well-being and behavior of someone's home and support healthy behaviors. It's a fine line there. I think where we've lost our way: we're no longer even consumers. we're producing in ways that we're not even conscious of, we've lost that social contract.

If my hospital says we're sending you home because our medical science has shown that if you take this homekit home, you're less likely to show back up in the emergency room for 30 days, but this is how it works, and by the way after 30 days put it in the box and send it back. That's a different social contract than this is always in your home, and you don't have to pay for anything, but we're going to advertise to you and collect data about you for an indefinite period of time.

Khari: Right. Or you talk about behavior modifications, that sort of goes back to the "who's authority question" we were talking about with the self-harm question: if you have health systems that are capable of not just moderating your data, but enforcing behavior modifications within your own home, who's to say that those modifications are reasonable, both for individuals, because individuals are different, or I guess on a moral level, acceptable?

Beth: So part of what I try to do in my design work — because it is a quandary as I said — is about empowering the person on the other end. I try to be more about, here's the best device that is out there — I've done this in diabetes management — and then here's a system that lets you set goals. But you get to pick, you know, you define the

goals on your own terms and you get to prioritize, and then the system doesn't penalize you for ignoring other things. It lets you prioritize and it tries to meet you where you are.

I recall when I was pregnant, I felt like every book basically said eat nothing but broccoli for nine months.

[Laughter]

Here is how you can be optimally pregnant and at the same time, I'm craving cheeseburgers and chocolate milkshakes. It was very much not meeting me in the middle. So I think with a lot of these systems, we have to say, okay, we're going to meet in the middle. Nobody's gonna be the perfect pregnant woman, no one's gonna be the perfect diabetic, but what are the tradeoffs you're willing to make and how do we help you make those choices and how do we empower you? That is quite different from, “here is the regimen that you have to follow and we're going to monitor and control your home environment to push you towards that regimen.” Some physicians don't like this because they have very strong opinions about exactly how you should behave. But when you get down to people's behavior 24/7, it's their choices and their values.

Khari: So another thing I thought was an interesting point that she raises in the book, is the impact that 9/11 had on sort of the surveillance in the state and how it pushed a lot of regulations aside and enabled the government to collect more data. Do you have any fear that building these kinds of systems — even if they're mediated now or in the immediate future — that another sort of event could precipitate utilizing them in a negative ways? Or is that, you know, maybe it's not worth considering.

Beth: It is a real question. You need a podcast series on the Black Mirror TV series.

[Laughter]

My daughters watched all of them and immediately took almost every smart appliance out of our house. I think there are questions. So, for example, I work with colleagues

around disaster response. There is a real question around the support for individuals with disabilities in these types of scenarios. Hurricane Harvey was a disaster, but it was also a disaster in the sense that who needed a generator, who needed access to different types of medicines or medical equipment; people were being transported out and they would get out, but not their wheelchair. You know, the logistics of that. There's a real desire to have that information omnipresent in the system so that if you have to react quickly, “ok well, here's what Beth needs and here's what her neighbor needs.” But then that also has a lot of privacy implications associated with it as well, so we have to be very careful with the legal framework that we set around these things.

Kate Crawford and others I look to as terrific scholars in the space, because we have tended to try to legislate what data is collected, and that turns out to be a slippery slope because you don't quite realize the power of mashing up data sets until you've got them. But if you actually go downstream into this and you legislate how data is used and setting that up is the social contract that your society is based on, you're much more likely to kind of catch the gaps there than trying to do it upstream, just purely around data collection.

[History of the CCC - 00:24:28]

Khari: Right. So I know we're running out of time here, so I’ll throw a couple more positive questions at you.

Beth: Yeah something easy man, something easy.

[Laughter]

Khari: So you've been involved with the CCC for a long time, basically more or less from its inception. How have you seen it grow? What kind of things does the CCC do that you didn't think it would do or does it not do that you thought it would or should do?

Beth: Yeah, so I've been on the CCC, I guess...I'm stepping off at the end of June, and I think it's been a full decade. So I'm probably now the longest serving council member. I wasn't there with the group when they came up with the idea, which is brilliant, but when they did with the first full scale nomination process, my name popped up to the top then. It was really because a whole pile of people in human-computer interaction wanted to make sure that that subdiscipline of computing was at the table, so they all ganged up and said, “Okay. Beth, we want Beth.” And that worked out well for me and I think hopefully well for the community.

So what's changed is we spent a huge amount of time, even once we were there, trying to figure out what the CCC could do and how we could have an impact. Mostly all the council members were kind of rowing on one ship, right? Could we focus our attention on some major initiatives? We had the economic downturn, invented the CIFellows program along the way, but we were just feeling our way, and by the time I became chair we had figured out best practices. We knew how to run visioning workshops, we knew how to produce white papers, we knew how to walk things around D.C. into different communities. So what we decided to do is to say, “okay, there's still only about 12 or 16 people on the council, but how do you make them as impactful as possible?” So now the CCC, as opposed to being one ship, is like this flotilla.

[Laughter]

Is that the right metaphor? So the intelligent infrastructure people are off running around and doing this, and now we have an industry taskforce and they're working, and we're doing this great work around AI. You see the trick has been, is that it's no longer just the work of the council members, but through task forces and through these different groups, we have figured out how to build that capacity within the community to be able to to lift more water, to to do more.

Just from a notion of building an organization, it's finding its purpose, figuring out what works, and then scaling it as much as possible. Then one of the things that I pushed for and I've just been thrilled to see is: when we started with CCC the question is, “how do we articulate these audacious visions for competing research and get people to buy into

them?" And so we had a bias towards senior researchers, the so-called greybeards, even though I will never have a greybeard.

[Laughter]

So we emphasized participation by senior members of the field. We needed the oomph and the perspective and experience. We finally have realized that, first off, the young members of our field have a lot of great ideas and they have a lot of energy and enthusiasm to making them happen. And if you want to have an impact on the field, getting to people early in their career is a great way to do that. So I love seeing the diversity of who the CCC interacts with in terms of stage of career, in terms of type of institution, to have broadened significantly during this past decade. So we had the symposium last fall.

Khari: The Early Career Symposium.

Beth: Yes, the Early Career Symposium. I think it was one of the best things we've ever done. The energy levels were amazing to have a hundred-plus early career researchers for us that were defined as just around that tenure threshold if you were an academic. And connecting them with, okay, you've gotten through those first difficult steps of your career, now how do you, again, amplify your impact and get engaged in these larger issues? So I just felt like we had great mentoring sessions with them, great discussions with them, and then we just created a whole other cadre of members of our community who can carry these ideas forward.

Khari: Yeah, flotilla becomes an armada potentially I guess.

Beth: We need a flag.

[Laughter]

[Work/Life Balance - 00:28:49]

Khari: So I throw one more question at, but I'll cheat and make it a multi-part question. So you sort of referenced learning from different organizations. What have you learned at the CCC that you've then used at IPaT and vice versa? And you mentioned the Early Career Symposium, how have you sort of balanced everything that you have going on in your life, both work and family? You participated at the symposium in a panel with Councilman Shwetak Patel. It was called, "Balance: Doing It All While NOT Working Twenty-Four Seven". There's video of that available on the CCC web page and CRA YouTube channel. Thoughts on that?

Beth: Yep. So you've discovered my secret trick, which is that I go to DC and do CCC work and I learn things and I bring them back to Georgia Tech and then I'm at Georgia Tech and I learn things and I go to DC and share those. So if you're always just bouncing back and forth, sharing what you've learned it's a great way to always have new ideas.

I think starting with a Shwetak and that symposium. I mean, people were laughing because I think both Shwetak and I have the reputation of always being on and always doing, and I would say especially even him, way more so than me, and we both got up there and said, "no, here's how we set boundaries, here's how we manage life, here's how we put family first." I think I get more sleep than Shwetak, but you know, here's how we stay healthy. And both of us talked about how it's really important that when students are interacting with me and they only see me giving talks or catching planes to D.C., they think that's what I do all the time. So they may say, well, that's interesting, but that could never be me. And I've had to learn to be very conscious when I use Facebook or when I send out my status reports or I talk to students like, "no, you know, my daughter does aerials and taking her to practices and performance has been really important. And my favorite hobby is cooking and this is what I do and this is how I get sanity." Because they need to see that this life is a tractable life.

We forget what we look like if they just see us only in the workplace. I'm not an athlete, I have asthma, I have horrible lung capacity. I did actually like long distance running. I do think the work I do is kind of trying to figure out that pace and figuring out the

environmental conditions and then figuring out how to make it all work. You know, one day at a time, one week at a time, one year at a time; and realizing that is my responsibility to who I am, and it's my responsibility to my family, and it's my responsibility to my colleagues.

[Wrap-up/Final Thoughts - 00:31:26]

Khari: Well, anything else you want to mention or research you wanna tell people to look at...papers?

Beth: Oh, just so much excitement. My current work with the breast cancer project has been getting a lot of attention right now because it's caught up in the AI heyday and we use some really simple AI techniques in that work. But I do think one of the things that I'm encouraged about the AI Report that's coming out and the national conversation has looked at AI around amplifying what is best about people, amplifying human abilities, amplifying collaboration. So I hope we put more emphasis on those types of problems and that actually gets us back to our roots as a field of augmenting human abilities. I think that's very much a glass half full, but a very optimistic way of framing our goals going forward.

Khari: Sounds great. Well, thanks for taking the time.

Beth: Thank you. This has been fun.

[Outro - 00:32:28]

Khari: Yeah, so stay tuned for more work from the CCC. That's it for this episode of Catalyzing Computing. I hope you enjoyed it. We'll be back soon with more episodes. Until then, remember to like, subscribe and rate us five stars on iTunes. Peace.