



Tom Kelley:

So this next lucky speaker, Laura Granka, splits her time between Google, where she's a user-experience researcher, and Stanford University, where she's a full-time PhD student. I have a young son who, when he was eight years old, and we saw -- we were at an ice-cream shop and there's a Help Wanted sign in the shop and Sean says to me, "Dad is this ah -- can I -- can I work at an ice-cream shop when I grow up?"

[Audience laughter]

We sit there while eating our ice cream for a while and then he says, "Dad, I'd think I'd like to work on an ice-cream shop in the morning and IDEO in the afternoon, would that be okay?" [Audience laughter] And so I don't suppose Laura's job is exactly like an ice-cream shop in the morning and IDEO in the afternoon, but it sounds -- sounds pretty good to me. So, you know, I'm sure she has some intense roles in both places and Laura's deeply curious about how humans seek out and acquire new information. Pioneering the use of eye-tracking systems for analyzing search behavior, Laura's gained new insights on how people scan and select data that is presented to them. And in spite of the fact that Google has dominated the world of search for many years now, Laura still thinks there are still lots of opportunities to improve search, especially in a mobile world. Laura might be amused to know that when I was searching for the inside scoop on her, I used mostly techniques that were pretty 20th century. Just to say, I sent out a lot of e-mails and I made phone calls on my cell phone. And my spies inside the Googleplex came through with a full report saying that, among other things, Laura is a total rock star human-factors researcher at Google, that she is funny and enthusiastic, and, my favorite, that she's "quite the steel-trap brainiac." So please welcome rock star, brainiac, Laura Granka.

[Applause]

[Music]

Laura Granka:

Hello! Thank you, Tom. I'm really excited to be here today. Thank you for having me and I like, Tom said, when I was younger I think I told my parents that I wanted to be a chef in the morning, a teacher during the day, and a ballerina at night. [Audience laughter] And I don't do any of those things now, but I am at Google with user-experience research group. And user-experience research group is part of this whole user-experience team. And so we're comprised of researchers and designers and technical writers. And together with all of us, we work on all of Google's products. So we work on search. We work on Gmail. We work on maps. So anything that you see, we at some point touch and try to improve and make better for you. I've only worked on search and I've been working on search since I came to Google. And I worked on information access and seeking and my graduate studies, as well. So I'll be talking to you about what we know about search, how we got there, and how we design for it. So first, I'd just like to set the stage and talk about how information, accessing information has changed. And it changed quite a bit. The Internet's changed a lot of the ways that we get information. Remember we used to have to buy information and keep it on your shelf. Encyclopedias would come out every year with a new volume, new version. And every year it would change, but only once a year it would change and you had to buy it, or you can wait for it to be delivered. We could still wait for that. Or you look things up in a phonebook in this

alphabetical index. And then you could open up a little drawer in the card catalog and then walk through the library to pick it up. But wouldn't it be so much better to just say, "Look I wanna know about this. Can you just show it to me? Can you just make it be there?" And that's where search really comes in. So the issue of search is kinda like a librarian and the library. You show up, you go to the information desk and you say, "I wanna know about this; where are the books located?" And she'll say, "Oh you go over here or you should check out this book or that book." So we kinda say, "It's one box for everything you want to know." Alright.

So if you look at Google, our company overview, we say, "We want to organize the world's information and make it universally accessible and useful." So that sounds great, right? There's a lot of information out there. You guys all need it. And so we wanna make it available. But so the first question is "What is organize?" So is it this -- is it this alphabetical index? The thing with books that most people had been used to before search engines, is that books start with the table of contents and you know what pages you can go to, in the end with some sort of index. I like this index. You see "insurance," then there's subtitles for "insurance companies," for "insurance salesman," whatever it may be. And so you know you can go to this part in the back of the book, look up whatever letter starts with for whatever you wanna know, and then you know exactly what pages it's on. And if it's not in the index you know that it's not in the book, and you have to find another book. So the challenge then with the search engines is that you have to offer access to the search engine -- to the index. The challenging thing there is that the search index is always changing. It started in 1998 when -- well it didn't just start, but in 1998 when Google started, there was about 26 million, and then in the year 2000 there was about one billion documents, and then now in July we announced that we have over a trillion. So the thing is, it's not like a book where you publish it once a year and everything in that book is going to be there and only that be there. Search engine is changing and we have all of this -- everything we have is sort of invisible to you. We can't see it like a book. So you don't know really what's out there. And if you get your information you don't know -- if you can't get what you want you don't know if it's because it's not just on the Internet or it's because you did something wrong. And so these are a lot of the challenges that I'll be talking about, how we have to try to solve for that. So the fundamental part about search engines is that you have to use this thing called the query. So you have to take what you want to know. You're maybe talking to your friend saying, "You know, let's plan a trip to Machu Picchu in Peru, I heard that place is really cool." You might have a long conversation and you get to this box and you have to type something in. And this box is great for some things because we assume -- we -- you can type what you want. And so it's great like if you wanna type in, "weather in New York," we can do things like this. We can make accessing information that much easier, we can put up the weather right on the page for you. So we do some things like this. Or the population of Japan, we can just present the population of Japan for you right there. These are all little tricks that make the query box really useful because if you wanna know something, then we can just give it to you. Like the time in Australia, we give you all the time zones, or number of horns on the unicorn is one.

[Audience laughter]

So -- alright. But other times query formulation can actually be hard. There are a lot of times when we realize the language of a conversation is very different than the language of a query. And when you're talking, you're not confined to a box. You can talk as long as you want. You can say whatever you want, whatever words. But here when you have to think of, "Okay, what words are going to be really good for the search engine to know what I want?" it can be tricky. So what we do is we do a lot of user studies at Google. And so we talk to people about what they want to know, what they wanna find, how they go about it. And one woman we're talking to is, her granddaughter was visiting. So she was looking for some fun activities to do. She

didn't wanna just take here granddaughter to the movies but do something a little bit different. And so we started the search and... so we first started to search for "activities." And search -- you type in activities and she wasn't really quite -- not finding what she wanted, so then she typed in local -- she typed in "local activities." And this may seem like a fine query to you, but the thing with "local" is she didn't really say where she was. She just said "local." So, how are we supposed to know? I mean there's obviously some technical ways we can know based on your IP address or your geography, but again it's not really intuitive to people to say, "Okay I am here. You should just know that I'm here." And also "weekend activities," this was really difficult for this woman to break out of this -- this word "activities," like, "What else can I type in to find some things to do with my granddaughter?" And she is really stuck in this model of "activities." So just all for that, some things we've done. We've launched what we call refinements. And so you see the top of the page there's list like "kids' activities," "printable activities," "things to do." And this has been really effective to help people get a better sense of what else they can do with this query box. So a lot of times people are stuck. You know, it's really difficult to know how you should articulate what you want. And at the bottom we repeat it again, so -- with more. So if you look at all the results and you still don't find what you want, then maybe something else here will help, like "crafts," or "word search," or "coloring activities," "activities and games." So we do a lot of things like this to help people make sense of their results and figure out what else they should do differently. And we just launched this about a month ago on the homepage. And so this is what we called Google Suggest. And this is actually, as you're typing letter by letter, we offer you suggestions. And this has been really effective because often when people are starting to type things in there, they're still not really sure what they wanna type in. You kind of figure it out as you type sometimes. And so this has been helpful to people, as well. So just to recap that. We know that the query formulation can be hard, knowing -- taking what you wanna say to somebody, what you wanna find, and putting that into a little box can be difficult. So we have to anticipate for that, then we have to design solutions that, you know, can help people figure out other -- to say things in a different way.

So the next thing we have to do is we have to organize all this information that we have. And so as I mentioned before with the book, you have a table of contents, and you have an index and there's everything in between. And you know it's in the book because you know it's in the contents and the index. But in the search engine, you don't really know as much because it's invisible to you. So we started -- Google started indexing what we call web pages. And here you may have to take -- and you may say, "Okay, isn't everything on this Internet a web page?" And yes you maybe right. But so what Google started to do was differentiate different content types. So we have web pages and then we said, "Oh look! Maybe people would wanna search specifically for images." So we have another link on our homepage and said, "Okay. Click on images and you can look for images." And then news, so if you wanna look for recent information and news information you can do that. And blogs, we separated out blogs, as well. And then there was -- as well, maps and local information. So if you wanna look for plumbers in Ohio you can find it on a map. [Audience laughter] So the thing is we -- so we had all these different areas to go to. And we've kind of organized this information differently within Google. And so we thought of stuff, here's the Web, here's images, here's map, here's local, but what we realized is that's not always how people think. People don't think, "What type of information do I want to answer my question?" People said, "Look, I wanna answer my question, and so I don't care where it comes from, if it's like a picture or a web page, because really what is the difference between a news story on a webpage versus some other thing like a web page, just general content?" So what we did is we introduced what we call universal search. And so that brings a whole lot of different content into one page. So if you search for "milk," there's a movie "Milk" in 2008 and then Wikipedia, and then we have images for milk, and some video results for milk for some songs, and then

news about milk that's been in the news recently. And then at book results and again search is related to milk. So this has been really helpful because first of all, people don't know that we access all of this or we have all of these different content types. And then second of all, even if they know they don't always know that they should be going to it. So we said, "Look! We'll just bring it to people and we'll provide the most relevant information no matter where it's from." So similarly if you do something for "New York," let say a map and some news for New York, and then as well like books and things related to New York. So to recap there, we have this issue that we have, we classified everything differently. And that's not always how people think. So based on user studies and talking to people and watching how they look for information, really is that we don't need to do that. We can still keep it separate and so we set up these links that you can go to if you want it. But our main issue is answering questions that people have and giving them the most relevant information. And so that's what we have -- are now doing no matter where the content comes from.

Now we've talked a lot about, "Okay so how do people get access to the information we have? How do we provide information to people?" Next we have to know what the people do when they actually see the information that they get. So in graduate school, I did a lot of eye-tracking research. And what eye-tracking is, is it's basically a little device that can tell where your eyes are looking on a page. And so there's -- yeah. And so this is an image of an eye-tracking scan, a heat map. So this is an aggregate view of lots of people looking at this one page. And what things we've noticed is that people tend to view the top few results, and they don't always scroll down as much as people at the tenth-ranked result might like. And so -- but it depends of course on the task. And that's what these aggregate maps overlook. So if people are really motivated, and you're planning your trip to Peru, you're not gonna just click on the first result and be done because there's a whole lot of other stuff to do. And so you look at more results. And again, individuals are very different. So what we did at Google is we also do eye-tracking studies. And so with eye-tracking studies just so that we can, you know, analyze the results in the best way. We gave users a series of assignments. So we say you wanna find out something like this, and then you wanna find about this and that, and for this, this assignment was to find out who the tallest active player in the NBA was. So all users did a search and they all saw the similar page. And so we see that perceptions of quality and ability to interpret the results differs by -- vary tremendously by user. This is the first user who saw this page, tallest active player in the NBA. And this is -- so they read the first two results and saw the answer in what we call the "snippet," which is basically that black text, then they were done. They say, "Look! I got the answer. Great!" But then another person came in and read a lot more. They weren't really sure like "Well is this really the answer? I'm not sure if this is the answer so let me look more. And well I don't know, should I click on this one or that one? And maybe I should just change what the query is because I don't think this is getting me what I want." So you can see that this is the same exact page and one user had a very different reaction to it than another user. And so it's something we have to be very cognizant of, in that -- so obviously things will differ based on the task and what you're trying to do, but also users interpret the page very differently.

So one step we've tried to take to help people feel more comfortable with the results that they're getting is to identify some sources. So if you do a search for "diabetes," we give you some options at the top if you wanna look for either treatment for diabetes or symptoms. And then what we've done, we've partnered with some what you might call reputable sources. And so for treatment like the WebMD or Mayo Clinic or the National Institute of Health, NIH, we'll say, "Look, these sites are good for treatment. These sites will be helpful to you if you want -- are looking at treatment for diabetes or symptoms for diabetes and we try to label them." So that's just one kind of baby step we've taken to help people feel comfortable with results, but there's still a lot more that we can do. So just to recap. There's a lot of individual

variation and task variation in terms of what people, how people interpret pages. And so we have to design solutions that can identify good sources and that can also accommodate for the differences between all of our users. And then perhaps most importantly, what we've talking about is everything that's on this Google page. And in doing all of our studies, we go out into people's homes. We do field studies into their places of work, all around the world. And we realize that this whole search process is more than just Google as much as we like say that, you know, Google is everything. It's really not. And we have to really be aware of all these other things that make up the whole information-seeking process. So we go into people's homes. We sit with them and we talk with them while they look for information, what they do with that information, and why they wanna look for that in the first place.

And so I'll just share with you some of the things we've learned and why it'll be important going forward in the future. As far as this, this is one of -- this is one girl that we talked to. And this is her setup here, her laptop on her coffee table. And then this is a little zoom in of her notes. So she is writing down directions on a piece of paper and then writing down a phone number so that she can make reservations at the Susie's Restaurant later. And so this is very -- this is obviously very common. We see that search is augmented with other tools. And that's important because we need to know that the search doesn't end once you click on the page that gives you information, there's something else that people often have to do with that. So just another example, one woman was trying to find a way to call her daughter in Australia and she was thinking maybe of changing her long-distance plan. And so then she got out her calculator and calculated rates. And so it's not just about finding this page, it's about doing something with the information you find on that page. And then finally keeping track of this information can be hard. You know Deavon here had her pieces of paper and then she also e-mail things to herself. And what if you lose the piece of paper, is it in my e-mail too, or how do I find it again? And there are a lot of question that people have, especially if you're going to your own bookmarks in your computer, there's probably going to be something there that you would say, "What's this?" Because most people do, they, you know, you bookmark stuff that you think you wanna get back to later or "I should read this at some point." And there's a lot of stuff in there that you don't always read or you don't even know that's there. And so keeping track of all that information that you find is a challenging thing.

So we also know that search can be very social. Since people are gathered around and just looking at something while you, you know, you're maybe looking at a YouTube video with friends or whatever it is that you're looking for. But more than just collaborating with people, we see multiple times, you know, families will be searching for something together, you know, like, "We need a backpack to carry the baby in when we go hiking," and the husband and wife were both there and they're both talking about it and the wife says, "No, no, no! Type in this one," or "I heard this is a great brand." But also people turn to other people, instead of Google, before Google, during or after the search engine. So I might see a friend who has, like, great hair. And then I'll say, "Where did you get your haircut?" And I might just go to the hairdresser and not even turn to the Internet or I might ask her and then look at some reviews online of the hairdresser and see. But then often times that happens with things that people have to buy and they're not quite comfortable with, like digital goods, like digital cameras. People might do some research online and find a digital camera that they like, but when you have to spend money on something, you kinda want some validation and verification from your friends that, you know, you should actually be spending money on this and that's okay. So people will say, "You know, I'll e-mail John because he is my techy friend and he tells me that, you know, these things are good or not." So this is important and there should be better ways to facilitate this. Right now people, you know, might pick up the phone or e-mail, but is there something else we can do in that space to make it easier for people?

And this is the new Google phone that we're launching. So you're one of the first people ever to see this in the presentation. But so we know that people need information when they're not in front of a computer and I'm not sure why that's not popping out but there was a little text box there. There it is. So again, this is -- just because you are sitting in front of your computer doesn't mean that's the only time you wanna know something. So we've seen mobile search is becoming increasingly important, especially in other parts of the world or people have phones with them and they wanna look for information on the go. "I'm lost." "I'm here." "I need a good restaurant," whatever it is. And then this -- we also know that search experience is as different in other parts of the world, so we went to Egypt and we did research there to see how people in Egypt search. And this is an Internet cafe and so the Internet, Google, here! And so -- and this is how people got information. But we know that the search experience is different. For one: access, how do you get access to the Internet is of course different. But then there's a whole a lot of other differences, because if you think about it, when you search in English, you could pretty much say that most of the -- a lot of the content on the Web, maybe the majority of it is in English. And so when you're searching in a language like Arabic, there's so much less content, and so it's a lot harder to get you what you want because there's a lot less information out there. In addition to things like input, when you have to change the keyboard and characters, or it's right to left. There are a lot of other challenges that are still presenting a lot of opportunities for people in the search space.

And then finally, just a little bit different is to kind of break out of this notion of "seek and we shall give you what you want." But there's a lot information that Google has just based on what it knows, about what people search for, and the documents out there. And so instead of just saying, okay, this whole model of "people want, have a question, and we're gonna give them an answer." We recently launched this on Google Insights for search. And it allows you to take sort of a more in-depth look at what's going on in the Web. So what you can do is just enter in any particular words which should be search queries for any parts of the world, for any period of time, and you can kinda see how the search pattern differs. So here I just put in "Obama," "McCain" and "the Olympics," and this is a little graph of, you know, the search volume for these three things. And obviously in "the Olympics" you can see that -- searching for "the Olympics" was much more popular in the United States than "Obama" and "McCain" searches actually are right now, but then you can see the spike and so it's kind of interesting. It's a thing about other ways that we can present information, what other type of information can we give people.

So again, information access will still change. We talked about how we went from, you know, seeing these tangible books and knowing what's in the book. But basically, this invisible search engine that's growing, this whole Web is growing so much if they -- and getting access to the information and enabling people the power to do so, will still change. So we have to anticipate these new opportunities. But if you think about it, Microsoft had Encarta which was an encyclopedia and then they put it on CD ROM. If you think about it, they were not the first people to put that information online or create a really powerful search engine. And sort of like if you're stuck in this model of "we have a profit model of an encyclopedia," we're gonna sell books or, you know, we can -- instead of selling books, we'll sell CDs. But everything's changing so it's just you have to be aware of the whole experience: What are the users actually trying to do, how is the technology changing around you, and what can you be doing to really think differently for the future? Questions? Thank you.

[Applause]

Tom Kelley:

You really -- you took me by surprise there.

[Audience laughter]

Tom Kelley:

Okay, so questions. So my first question I gotta say having been to the Googleplex only once or twice. So anybody been to that space in Mountain View, California? Not too many, here we are in the East Coast. Is -- so you go -- I'll let you describe it more but basically you go in, it's incredible. There's the full-size dinosaur sculpture outside. They got spaceship one hanging in the lobby. They got like hot and cold running, you know, four-star, you know, restaurant food, whatever. You know even -- so you know, I knew about the restaurant but then you go to the kitchen, so you don't have to walk all the way to the free, you know, great restaurant down the hall. You can like basically at your desk reach over to the kitchen. And it's almost as if somebody at Google said, "Look! We wanna make sure we have the most expensive juices in the fridge. So could you -- could somebody go out and look and see is Odwalla juices or Naked juices or Nantucket Nectars, which ones are the most expensive and we're gonna make sure we got that one, right?" And they do. And in the Silicon Valley, you know, it got to be fashionable for people to have like a foosball table or a pool table but they got a pool table on every floor. And so -- like, or I don't know, as a competing employer in the Silicon Valley, it does make me slightly crazy. But, so, as a competing employer in Silicon Valley, please tell us that it's not quite as like, wonderfully over-the-top, tremendously nice as it appears to be.

Laura Granka:

Ow!

[Audience laughter]

Tom Kelley:

Or -- or that it is, yeah. Just tell us -- people who haven't experienced it. What it was like for you coming in as a new employee?

Laura Granka:

Sure! Okay. So everything Tom said exists. So it's hard to say that you're a liar, you know, things aren't there and they are. So I first started at Google, well I interned at Google first, before the IPO and that was really exciting time and as an intern of course with no stock, you wonder why everybody is so happy all of the sudden. But then you realized -- but again the whole place is just -- it is amazing because, quite, it's grown a bit but it is also grown a lot and fun and when I first got there, there was no swimming pool and another is --

[Audience laughter]

Tom Kelley:

Because you need one of those, right? You gotta have the pool, a free laundry.

Laura Granka:

Yeah there's laundry now. We have two laundry rooms. No, but so -- but the thing is it's a great place to work because it keeps people there. And everybody is happy to be there. And that's basically the point of it, because you run into a lot of really great conversations actually -- and with people based on the things that you have and that's what I think the best part is. And that's originally why they created the micro-kitchens and the cafeterias is so that you'll have inspiring conversations with people that you don't work with directly in the micro-kitchen. And um, which good, they have these micro-kitchen things on every floor, so that has the juice and --

Tom Kelley:

And what juice are we stocking these days?

Laura Granka:

Well -- [giggles]. Well, they try to be very organic, but the Naked juice is only in the lobbies for our guests. Googlers don't drink Naked juice in the micro-kitchens, so....

Tom Kelley:

There you go. So it is -- I'm still, there's a sweatshop in the back room somewhere at Google.

[Audience laughter]

I just haven't found it yet. So okay, but you know, one of my friends who works at -- there's these little requisition slips and he says you can ask for anything like, you know, would somebody please bring my dry cleaning to my house or I'd like to have a party day after tomorrow for 10, 000 people up by the dinosaur sculpture and he says, either one it just happens. So pretty idyllic, there was -- Oh, go ahead.

Laura Granka:

Oh, we have a ticket system, that's what he's talking about. So I think, once the pools were available, people wanted to dry their hair afterwards.

Tom Kelley:

Sure, of course. I have that problem.

Laura Granka:

So, I made the ticket. Right? So I wanna hair dryer in this bathroom over here and then the next day hair dryer is there so... [Audience laughter] the tickets were very effective.

Tom Kelley:

There was a blogger in the Bay Area who did this thing about most desirable places to work and he put Google as number one and he put my firm IDEO as number two and that upset some people at IDEO and I said, "You're kidding, right? You haven't been to the Googleplex if you're saying that." So --

[Audience laughter]

Tom Kelley:

Anyhow just as long as, you know, in case you didn't get the message yet, when you get the big offer from Google definitely take it, because it looks pretty amazing. So you know -- I think most of what you've talked about was more on the Google side of your life. If you talk about the PhD part of your life would we be able to follow and do you want to talk about that a little bit?

Laura Granka:

Yeah, sure. So I'll give you a little bit of background on how I initially got into this whole search thing. I won't bore you with all of the details, but basically I went to do my masters at Cornell after I graduated and look, I was, "Look, you know, I don't want to pay for school anymore so I need to get funded somehow." And so my advisor said, "Okay look, we just wrote this grant and you should just do some research with eye-tracking." And I said, "Oh, wow! What's eye-tracking? It's cool." She said, "Figure it out, I don't really know myself." So, well, I mean, she didn't say it that way. So I spend a lot of time understanding eye-tracking

and eye-tracking is traditionally in psychology so it looks at like hand-eye coordination a lot if you're pouring some cereal, do you reach for the milk first or do you look at the milk first, that sort of thing. So then just randomly, I happen to be at a talk for -- there was pizza, when you're a grad student you want free food, so you go to whatever talk is offering the food. So I showed up at this computer-science talk and this guy ended up being my adviser, Professor Joachims, and so what he was doing is he was predicting relevance of search results based on what people click on. And so he would say, "Look, for any given query if people click on the third result, we might say that it's more relevant than the first and second because they click on the third one." So I said, "Oh, this is cool, maybe eye-tracking can tell us if we'd actually look at things in that order." And so he said, "Yeah that would be great." So I ended up working with him and we use eye-tracking to really evaluate how people look at search pages. And we did some variations on that as well so we said, "Okay, look, people look at the first results a lot." And they click on -- we look at the first two results almost equally, but we click on the first one a lot more, and so we were like, "Is this just because people trust Google or is it actually because the first one is that much better?" and so we switched the order. So we did another experiment we put the tenth rank result in the first position, nine and two, eight and three, and saw that change patterns. And -- and again yeah of course people still view things in a linear order because it's presented in the linear order but it changed what people click on. So people are aware of equality and people -- that was kind of inspiring that, you know, people are pretty selective in terms of what they click on.

Tom Kelley:

If you know what people are looking at, do you feel like you can like, peer into their souls, I mean you, like, outside of the search engine world? If you knew, if you followed me around, if I wore the eye-tracking stuff all day, though it would be pretty geeky, but say I did, don't you feel like you'd know kind of what was on mind just by what I was looking at?

Laura Granka:

In some ways, yeah it's hard to say 'cause eye-tracking, your eyes move very quickly, I mean within 200 milliseconds your eyes are somewhere else. And you don't always know what they're focusing on. So it was funny when we were initially testing the eye-tracking 'cause we tested on one of the other graduate students and we just showed him a web page and then you can see his eyes keep going back to this ad of a pretty girl on the left side.

Tom Kelley:

Imagine that!

Laura Granka:

Yeah.

Tom Kelley:

I think there's a YouTube video about that. So, you know, the thing that blew me away that I didn't know was coming in your talk is this thing about Google Insight search. So I was wondering if you could talk a bit more about that. So if you go to Googleplex they have both the public version in the lobby and then the fully unexpurgated version, you know inside, about what's being searched on and it's, you know, zipping by like a million characters a second. And so I imagine that maybe somebody at Google stood their and watch the screen and, you know, like tried to learn from it but clearly you're looking more deeply at it. And so you kind of know what's on peoples' minds. Can you talk about that?

Laura Granka:

Sure.

Tom Kelley:

You know what it's being use for now and what you see for the future?

Laura Granka:

Yeah. Sure. So initially we had Zeitgeist I don't know if you are familiar with that, and that's basically Google compiles things like at year end. Here's the most popular searches for this country or here's the most popular searches in the celebrity category or whatever it maybe. But then we thought, look, actually a lot of people could use this information, so people that are like trying to do marketing or education and trying to figure what exactly are these trends that are happening. And so what we do is we normalize all the data so you don't know the exact number of queries but it's good to get an overall sense of, "Okay what's more popular right now?" Do you want search for, you know, who is searching for mortgages or car loans you can see, you know, differences in those graphs. And so that's actually just something that we launched so I don't, I don't know if I can speak too much about future plans. But it's generally -- we wanted to provide a service to everybody that's using our information and that's basically our job, that's what we wanted to do with that.

Tom Kelley:

Right. Okay, so you know, you talked about -- you mentioned a series of new releases at Google, new ideas. And the stuff that was there and I didn't know was there. I love the, what's it called, suggestive search or whatever. I now use that all time.

Laura Granka:

Good, good.

Tom Kelley:

But in the process, to the extent that you see that in the process of developing those things, you know, the mythology is always that there's this kind of eureka moment, where the, you know, the researcher says, "Oh, there is the future." So you must have been involved in some of this in your role as experience researcher. Can you tell us about how some of those ideas be at the suggestive searches -- is that was it called suggestive search?

Laura Granka:

Google Suggest, yeah.

Tom Kelley:

Ah, Google Suggest, how some of those came about or to the extent that you saw those in the process?

Laura Granka:

Sure, sure. So Google Suggest is, that was initially in Google Labs a long time ago and so I worked on it when I was doing Google Labs but then realized that this, it's really powerful. But the thing with Google and especially working as a researcher and designer in search is that you can't always see your things launch until the quality is really good. And quality is a kind of the biggest challenge 'cause we want to make sure that even if we have a really cool design for a feature and it looks awesome and it solves needs, if the information we put in that is not the best information, then it's not gonna be helpful. So, that's an example of something. And query refinements, as well, we've been slowly increasing coverage for that,

but we don't want to present some random coverage of a query. Like other -- some search engines will may tend to look at, you know, we want to provide maximum amount of suggestions or expansions of your query, whatever but, so the notion at Google that we've traditionally strived for is to just put the best stuff there even if it's less. And so whether you're working on projects like this to provide suggestions that -- it ends up -- you end up working on it for awhile because there's a lot of different steps, there's how should it look, how should it interact, and then how should we get the best information there. And then you get the bits of information, you kind of go back to the other stages of "Okay, now that we have this great information, let's make sure that the flow is good and we must present it in a good way."

Tom Kelley:

So in addition to the hot and cunning -- cold-running free food and the pool table and stuff like that, there's this thing about being able to work on your own projects even if there is no obvious commercial value?

Laura Granka:

Right.

Tom Kelley:

Or are you able to take advantage of that and can you speak to that program at all?

Laura Granka:

Sure, so that's what we call 20 percent time and hopefully Googlers are -- ingenious enough to think of something that will actually contribute to the company. Things like Calendar were initially 20 percent time. A lot of other projects were initially conceived by our engineers and say, "Look we need this thing and let's just work on it" and sometime it becomes a bigger deal. So everybody at engineering has an opportunity to work on something like that.

Tom Kelley:

Innovation as it seems like it's almost always about experimentation. You are running all those experiments kind of behind the scenes, if you clicked on "more", right.

Laura Granka:

Right.

Tom Kelley:

You discover that there's like 32 different Google offerings we haven't seen yet.

Laura Granka:

Yeah.

Tom Kelley:

Is there a kind of internal competition about, 'cause it only if it's get really good does it make it in that little tiny bar at the top of the homepage. Is there like a kind of spirit of competition among people who come up with these ideas like I want mine on the homepage or how does that work?

Laura Granka:

Yeah, so it's a little bit of -- well ultimately we think about the value for the user, right.

[Laughter]

So in terms of what gets presented on the homepage or what's in the drop-down box it's mostly about, a lot of it comes down to quality, how good is this information and how valuable will it be. And so most people are pretty aware of that, you know, if their quality is not good or if they don't have this big of a reach that doesn't really need to be there. So there are not too many fights.

Tom Kelley:

Okay. The um -- I'm interested in the kind of contextual search, you've use the example of the grandma who wants to take her granddaughter whatever out on a weekend activity.

Laura Granka:

Yeah.

Tom Kelley:

And you mentioned that you do have one piece of data about her, you know that the grandma is in greater metropolitan Detroit or, you know, kind of where she is based on where she's signing on. The other online, you know, sites, they know a lot more about me so Netflix knows, you know, I've rated 2000 movies, so they know a lot about me. You know Amazon knows kind of -- it's like is there any, I mean, do you have any other information available to you, is there a way to do a contextual search so that -- so that you could, you know, that it can be more -- more kind of mass-customization, customized to me.

Laura Granka:

Yeah. We do only do that for people that are signed in to a Google account because we, privacy is a huge deal. So if you are not signed in then, you know, we kind of we don't know who you are at all. But so if you are signed in we have thing, personalized search, where based on things you searched for before we could modify your search results. We also can give you -- we can also show you your search history, things if you like have Tool Bar installed, or if you actually are signed in to like your Gmail account while you're searching, then we can provide more in the context to you based on knowing where you are. But we can do location now on mobile and search. So we do say, "Okay, so if we know you're here maybe do you want directions or whatever for geographical searches."

Tom Kelley:

So I'll just ask one last question which you may not have an answer for, which is, is there anybody at Google that you know of, looking at the way people search inside their own brains? You know, we've got aging populations in places like western Europe and America and people -- or my theory is, people would pay if you could help them figure out, "Oh, what was the name of that guy that was at the party last night that I'm suppose to know his name today?" Some sort of facial recognition thing. But that kind of brain searching, I know it's not your field but anybody working on that you know of?

Laura Granka:

Not that I can say. We wish we could help people find their keys, as well, but not too much. But we've talked about, you know, things like using FMIR or looking at, you know, with brain scans and brain imagery to look at cognitive processing but it's nothing that we have done anything with.

Tom Kelley:

I want -- in the future I want to be able to come to my office and, you know, ask Google, you know, "Tell me the latest news about the big meeting," and have Google know what the

"latest" -- what I mean by "latest news" and what I mean by "big meeting" and say, "Oh, glad you asked, Tom."

Laura Granka:

Exactly, well, put that big meeting in your calendar, your Google Calendar.

Tom Kelley:

There you go, then it will know. Okay, thank you very much.

Laura Granka:

Thank you Tom.

Tom Kelley:

Alright.

Laura Granka:

Thank you.