



Ahmet Badur, Elyse Hartnett, Shyamal Mehtalia, and Samuel Strom. Photos courtesy of their subjects

Every role makes a difference: Four Illumina employees share their stories

They come from diverse departments and backgrounds, but each is vital to making genomics useful and accessible to all

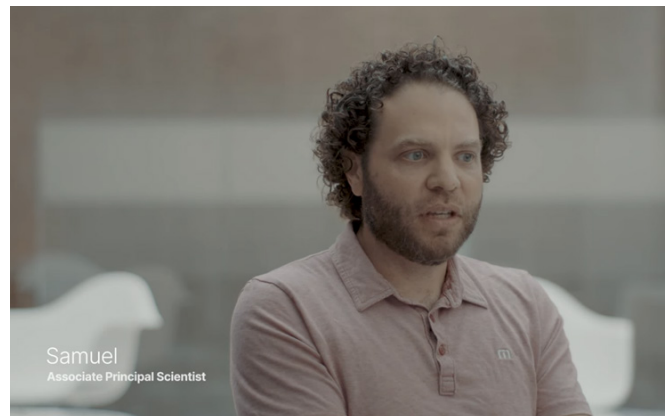
EVERY PERSON AT ILLUMINA has the chance to make a difference, and we recently sat down with four of our colleagues to learn how their individual contributions have added up to create extraordinary results. Watch the videos below for their thoughts on what it means to be innovative at work, and read on for the full details of their remarkable careers.

Watch Ahmet, Elyse, and Sam's video: youtube.com/watch?v=o8601V49YJQ

Watch Shyamal's video: youtube.com/watch?v=fq7CPIVEssQ

We create a culture of deep collaboration: Samuel Strom

A career in genomics starts with a passion for and dedication to learning. After earning his PhD in human genetics, Samuel Strom finished his formal training with a fellowship in clinical molecular genetics, and after seven years as a laboratory director he came to Illumina, where he's now a principal scientist in our Emerging Clinical Applications division of R&D.



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Much of his current work involves devising better techniques to read the most complicated sections of the genome, looking for specific "letter" variations that cause disease. Narrowing the search space and focusing on improving accuracy for the most important changes makes a massive difference, he says. "If you ask that more specific question, it reduces the noise. Instead of looking at millions of letters, now you're just looking at a few."

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Innovation can be difficult. Strom describes his time in academia as a valuable proving ground with the space to try and fail for years. “You have to figure out how to test and iterate your ideas quickly,” he says. “That really takes teamwork, because the person who creates isn’t necessarily the same person who knows how to test whether it works.”

In his first months at Illumina, Strom found a welcoming atmosphere where he could “knock on any door” to learn more about someone’s work. “No one ever said no,” he says. “Those connections lead to unexpected ideas, and that’s where innovation comes from.”

One successful recent innovation from his team was a targeted caller in the Illumina DRAGEN secondary analysis software that identifies variations in the gene *GBA1*, which is linked to Gaucher disease and Parkinson disease. “These are problems geneticists have been dealing with for 10 or 20 years,” he says, “and the assumption has always been, ‘You can’t test for that; it’s too hard.’ Now it’s like, ‘Well, no, there’s a DRAGEN algorithm for that.’”



We come together to grow beyond our individual disciplines: Shyamal Mehtalia

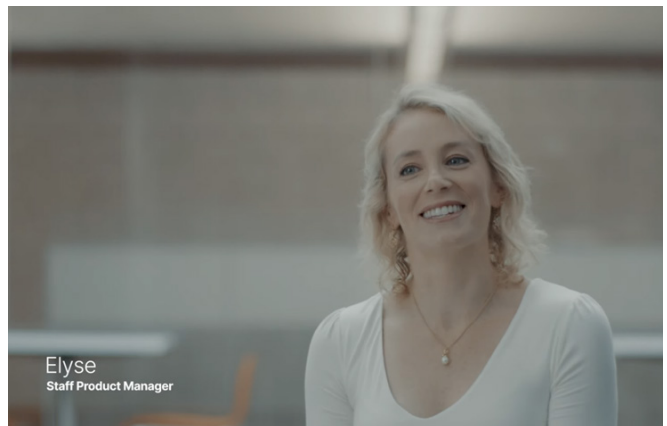
Successful new products arise where groundbreaking discoveries converge with customers’ unmet needs. Shyamal Mehtalia is a principal software engineer whose team focuses on customer collaborations. He proudly describes them as a Swiss Army knife that considers every kind of solution customers may need, “so that when we make products, those products are ready for the wider market to use. As engineers, we want to solve problems for our customers in the best possible way.”

Mehtalia holds a master’s degree in electronics and communications engineering, and he worked in the cellular industry for over 13 years before joining Edico

Genome, the original developers of DRAGEN, where he took his experience processing cell tower signals and applied them to detecting nucleotides.

In telecom, he says, “we hit a saturation point in terms of innovation, whereas when we came into the life sciences industry, we found so much untapped potential.” He never would’ve expected his skills to translate, but he quickly found that Illumina’s portfolio needs experts from a breadth of backgrounds. If you’ve ever built a product while keeping in mind how customers will use it, “that can directly translate into something we build here.”

Mehtalia has been with Illumina ever since it acquired Edico in 2018. He’s particularly proud of the company’s recent collaboration with the Minderoo Foundation, which installed a NextSeq 2000 System directly aboard a marine research vessel. There, scientists are collecting environmental DNA from seawater and producing high-quality genomic data in mere hours, revealing which species are present and how climate change is impacting that region. “We’re seeing the benefits of our technology applied to that space, which I never would’ve thought was possible even a few years ago,” he says.



We set vital standards of ethics and integrity for the industry: Elyse Hartnett

Uniting minds from diverse backgrounds and perspectives in pursuit of a common goal is what Elyse Hartnett loves most about her job. She came to Illumina with a bachelor’s degree in chemical engineering and quickly rose through the ranks while simultaneously earning her master’s in business administration.

Now, her duties as an oncology staff product manager call her to understand and advocate for Illumina’s customers. This understanding is critical to uncovering gaps in Illumina’s product portfolio where new solutions can better serve the market. And if certain gaps can be

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filled via third-party collaboration, she's first on the scene to lay the groundwork for new partnerships that meet our high quality standards.

For instance, Illumina's customers require a suite of options for oncology therapy selection and hereditary risk assessment, which include solutions with competitive content that are fast, easy to use, and provide focus on disease targets. After uncovering this as a gap within the company's existing portfolio, Hartnett and her team took action.

"We had to establish brand-new criteria," she says, "not just for the products we needed, but for the partnership we wanted to create as well." Her team reconciled countless vital points for risk mitigation with an outside organization that has their own governance in place—the fundamental question being "How do you make sure they're marching toward the same strategy you are?"

Ultimately, Hartnett and her team forged a successful partnership with Pillar Biosciences to deliver a full suite of targeted oncology assays. "This is a big deal," she says. "It's directly impacting patient lives, further democratizing lifesaving technology and helping clinicians get answers faster."



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**We find opportunities for innovation everywhere:
Ahmet Badur**

Folks at Illumina readily admit that having a brilliant idea isn't enough. Scaling up those proofs of concept so they can make a global impact takes people with specialized skill sets—people like Ahmet Badur.

Badur came to Illumina eight years ago with a doctorate in chemical and biomolecular engineering and worked his way up to innovation engineering

manager. Now his team solves the challenge of getting new products from prototype to mass manufacturing. "We partner with dev teams that are responsible for building things once at small scales," he says. "We figure out how to make it repeatedly, robustly, consistently, continuously." His team contributes vital perspective on practical aspects that may not be apparent at the drawing-board stage—and often improves workflows that have been in place for years.

Recently, they discovered they could eliminate the double-layer polyester packaging that shipped with many of Illumina's products in favor of more sustainable material. Finding a better solution was a challenge, since any change to our high-volume manufacturing process cascades to our facilities around the world.

Badur's team often sets out to solve one problem and ends up solving several others they hadn't even considered. In this case, beyond the obvious environmental benefits, they also found a way to spare customers the extra labor of using scissors to cut through all that plastic by hand. Every little improvement counts, and they show that we consider the customer's perspective at all times. "There was very good feedback from our customers that these changes helped them out," he says. "Our primary goal was to reduce waste, and the secondary benefit was less ergonomic stress."

When we rise to the challenge, the outcomes are deeply rewarding

One thing all four of these employees mention is being motivated by the knowledge that their work has a direct and substantial benefit to people's lives.

"We're working with researchers trying to find the cause of a rare disease," Mehtalia says. "With doctors at a children's hospital trying to diagnose newborns, with pharma companies trying to solve cancer-related issues. That's more fulfilling than what I've done in the past."

Hartnett concurs, admitting that in the rush before a deadline, it's easy to get tunnel vision: "It feels very theoretical at times, but after the fact, when you talk to a customer and understand that what you did actually impacted someone's life and got them the answer they've been searching for—that's incredibly rewarding."

Strom puts it simply: "Being a part of those innovative solutions is why many of us come to Illumina. The work that we do is used to improve human health, full stop." ♦