

Bell Labs Prize 2023

There are only a few innovations that fundamentally shape the way we live, work and interact with each other and our surroundings.

Is your innovation one of them?

\$100K
1st prize

Our world has been profoundly changing in recent times, never more dramatically so than in the past two years. The pace of change is only accelerating; the scale and impact of change is ever expanding. As we move from the 5G era onwards to an AI-augmented, data-driven and automated era, and leading up to the 6G era, not only will the fabrics of communications and computing evolve but so will every aspect of the technologies that touch our lives. To address these rapid changes, Nokia Bell Labs is looking to shape the direction of technology in anticipation for a dramatically different world of 2030.

\$50K
2nd prize

Nokia Bell Labs is the world-renowned research and innovation arm of Nokia. Over its 95+ year history, Bell Labs has invented many of the foundational technologies that underpin information and communication networks, digital devices and systems and nearly 25% of the technologies that form the foundation of today's Internet. These breakthrough innovations resulted in nine Nobel Prizes, five Turing Awards, three Japan Prizes and a plethora of National Medals of Science, as well as one Oscar, two Grammys and three Emmys for technical innovation. And Bell Labs continues to conduct disruptive research focused on solving the key challenges facing humanity in the next technological revolution.

Imagine if you had access to the resources of Bell Labs' unique innovation powerhouse – software, hardware, systems, platforms and a set of brilliant collaborators from a huge variety of different disciplines and perspectives – to enhance your ideas and maybe even bring them to forefront of this next revolution?

\$25K
3rd prize

Are you ready to invent the future?

We're looking for disruptive innovations that could form the foundation of the next technology revolution and manifestly change the way we live, work and communicate. If you have an innovative new approach and proof of concept and are interested in developing it further with leading Nokia Bell Labs researchers, you've come to the right place.

Have your innovation become part of the fabric for the next technological revolution.



The Bell Labs Prize previous winners

Will you be next?

The winners of the 2022 Bell Labs Prize are tackling a challenge unique to the era of big-data computing: the problem of memory. University of Pennsylvania (Penn) professors Deep Jariwala, Troy Olsson and Eric Stach have developed a form of computer memory that integrates tightly with microprocessors - a new high-density, low-power memory device which could process reams of data much faster than traditional compute architectures.

The 2021 Bell Labs Prize was awarded to Asegun Henry from Massachusetts Institute of

Technology for using carbon as the primary means to store energy generated from renewable sources. Such a technology could go a long way to fully decarbonizing the power grid and drastically cut CO2 emissions.

The 2020 Bell Labs Prize was awarded to Firooz Aflatouni from the University of Pennsylvania for an integrated photonic-mmWave deep neural network for image, video and 3D object classification.

The 2019 Bell Labs Prize was awarded to Tianshi Wang and Jaijeet Roychowdhury

from the University of California at Berkeley for their groundbreaking work on "A 'Quantum Computer' in your Pocket." Their innovation is in a new type of processor element that will be significantly more efficient in computing the answers to discrete optimization problems.

The 2018 Bell Labs Prize was awarded to Samory Kpotufe, assistant professor at Columbia University, for his pioneering work on the critically important field of "transfer learning" in machine learning (ML), answering the question of how and when learning from one ML tool can be applied to another.

The 2017 Bell Labs Prize was awarded to Kaushik Sengupta, assistant professor at Princeton University, for his invention of a radical new transceiver chip technology that could power a truly universal software-defined reconfigurable radio, improving today's wireless communications and opening the door for new applications.

The 2016 Bell Labs Prize was awarded to Sungwon Chung, Hossein Hashemi and Hooman Abediasl from the University of Southern California for their work on large-scale plasmonic optical phased arrays for nanodevices.

Many of the Prize candidates have engaged in collaborations with Nokia Bell Labs researchers to further their research in new directions.



Register and submit your idea in 250 words or less (Applicants are also strongly encouraged to attach additional documentation). If your innovation is among the top 20 submissions, we'll invite you to work with one of our researchers to refine the proposition to maximize the potential impact.

Selected finalists will receive an all-expenses-paid trip to an august judging panel of Nobel laureates and other luminaries from their fields.

Three prizes will be awarded: \$100,000 (grand prize), \$50,000 (second place) or \$25,000 (third place), all paid directly to the prize winners.

Additionally, throughout the process, Nokia Bell Labs may engage with other contest participants who have unique proposals or ideas.

The competition is open to anyone in any of the participating countries. Contestants must own their ideas and meet the eligibility requirements. The deadline to enter the contest is April 21, 2023. For more information, visit the Bell Labs Prize website.

Please share this with your most innovative and uniquely talented students and academic colleagues so they can join us as technology trailblazers.

How can you create a winning proposal?

You need to submit a proposal that stands out from others in three distinct dimensions:

Innovation Potential

How is your proposal novel? What is the disruptive thinking that could result in a rethinking of the current limits of technology?

Technical Merit

How technically sound is your proposal? On what current principles and capabilities does it depend? Would it require future advancements and innovations to succeed?

Feasibility

Has a proof of concept, simulation or demonstration already been built, or could it be built in the course of the competition?

The competition submission deadline is **April 21, 2023**
To apply, visit the [Nokia Bell Labs website](#).

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