



Agilent Technologies
Agilent Research Laboratories
Fact Book

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Agilent Research Laboratories

Description

The purpose of Agilent Research Laboratories is to power the growth of Agilent Technologies through breakthrough science and technology. Agilent Research Laboratories create competitive advantage through high-impact technology, driving market leadership and growth in Agilent's core businesses and expanding Agilent's measurement footprint into adjacent markets. At the cross-roads of the organization, the Labs are able to identify and enable synergies across Agilent's businesses to create competitive differentiation and compelling customer value.

The Research Laboratories include 1) Agilent Labs, which focuses primarily on Agilent's highest growth priority, bio-analytical measurement, and 2) the Measurement Research Lab, which is part of the Electronic Measurement Group's Technology Leadership Organization and focuses mainly on technologies that support growth in electronic measurement. The majority of our research is located in the United States in Santa Clara, Calif., with additional locations in Europe (Leuven, Belgium; and Edinburgh, Scotland), Asia (Beijing and Shanghai, China), and Australia (Melbourne).

Fundamental strengths of the Research Labs include deep technical expertise, a strong base of technology disciplines, a core competence in transferring technologies to Agilent's businesses, and employees who enjoy the richness of a broad, world-class science and engineering environment.

Research

Agilent Research Laboratories conduct three kinds of research to meet the needs of Agilent's customers across a range of markets and industries:

- Research that will lead to breakthrough and disruptive technologies and applications to grow Agilent's existing businesses in electronic and bio-analytical measurement systems;
- Research that leads to technologies that create new businesses adjacent to Agilent's current markets but within Agilent's field of interest; and
- Research that leverages synergies across Agilent's breadth of measurement expertise to create compelling customer value and sustained competitive advantage.

Research in Labs advances measurement across Agilent's businesses. Customers need the highest quality data, the resources to understand this data rapidly in the context of their application domains and results that provide insights into their increasingly complex measurement goals. Research programs to address these needs include software to improve integration, programming and automation of multiple instruments; and software for measurement data management to enable large scale data visualization and analysis.

Research to advance electronic measurement focuses on technologies to address trends such as new wireless communication formats and standards, the emergence of modular architectures for instruments and sensors; the growing network complexity driven by internet-enabled data, voice and video services; and new paradigms for large scale data analysis. Areas of research include the following:

- High performance ASICs, including analog-to-digital and digital-to-analog data converters for competitive advantages in measurement instrumentation;
- Technologies for measuring increasingly complex wireless networks, including physical and protocol measurements for WiMAX, LTE, and newly emerging communications formats and approaches; and
- Innovations in advanced photonic measurement and imaging.

Research to advance bio-analytical measurement addresses solutions for chemical analysis and life sciences to enable new understanding of living systems, more precise analysis of organic and inorganic compounds, accelerated drug development, and medical research for the diagnosis and treatment of disease. This research benefits from the trends of miniaturization and integration that are converging nano-scale science and engineering with biological understanding. Areas of bio-analytical research include the following:

- Detector technologies for mass spectrometry, liquid and gas phase separations, microscopy, nuclear magnetic resonance and spectroscopy;
- Microfluidics and separation chemistry for HPLC-chip/MS solutions, and materials, devices and systems to drive microfluidics-enabled applications;
- Biological chemistry such as innovative reagent chemistries and applications for genomic, proteomic and cellular assays; and oligo library and nucleic acid synthesis technologies; and
- Genomics, protein sciences and metabolomics for workflow solutions in areas such as bio-pharmaceutical discovery and development and food safety, including novel sample preparation and detection of bio-molecules and pathogens.

Agilent Research Laboratories focus externally to monitor emerging trends, and to co-develop, validate and advance our technologies with industry and customer thought leaders. Labs researchers collaborate around the world with universities, government research organizations, start-ups and corporate partners to further these goals. Researchers are active in developing and contributing to industry standards and provide leadership in the science and technology community as members of numerous centers of excellence, and academic and government-sponsored technology advisory, standards and editorial boards.

Agilent Research Laboratories/business partnerships

Agilent Research Laboratories and Agilent's businesses collaborate closely to provide innovative solutions to customers. These partnerships are critical for achieving successful business results.

Teams from the Research Labs and the businesses collaborate formally and informally at all levels of the organization to understand continually evolving customer needs, market conditions, and technology goals.

Labs/business teams work together on product development and commercialization. The Research Laboratories track technology advances, and the businesses have the best perspectives on evolving customer needs and markets. These teams also collaborate to identify and understand 'problems that matter' for Agilent's customers. These are problems in need of new technology - that if solved, could create significant value for our customers and new opportunities for Agilent's differentiated leadership.

Contributions to Agilent

The Research Labs measure their success based on the financial impact of the technologies that are transferred from the Labs to the businesses and by their contributions to the scientific community.

The Laboratories are a key competitive advantage to Agilent because addressing the complex problems customers face requires teams of people with deep knowledge and experience in multiple disciplines. About 70 percent of the research staff has advanced degrees that cover a wide range of scientific and engineering fields, including biology, chemistry, computer science, distributed measurement, electrical engineering, image processing, materials science, mathematics, microfabrication, microfluidics, software, informatics, optics, physics, physiology and signal processing.

Labs researchers care deeply about their research as they strive to question the status quo. They are committed to longer range, high-risk research and are driven to help achieve business results.

Key Executives

Darlene J.S. Solomon, Ph.D., Agilent Chief Technology Officer

Neil Cook, Ph.D., Vice President and Director, Agilent Laboratories

Steve Newton, Ph.D., Vice President, Technology
Director, Measurement Research Laboratory