illumina®

Ultra comprehensive, customized consulting

Illumina High-Throughput Sequencing Consulting Service

Laboratory management

Capacity planning

Data analysis and delivery

Staffing and communications

Illumina High-Throughput Sequencing Consulting Service

High-performance computing

Risk management

Performance trending and troubleshooting

Inventory management
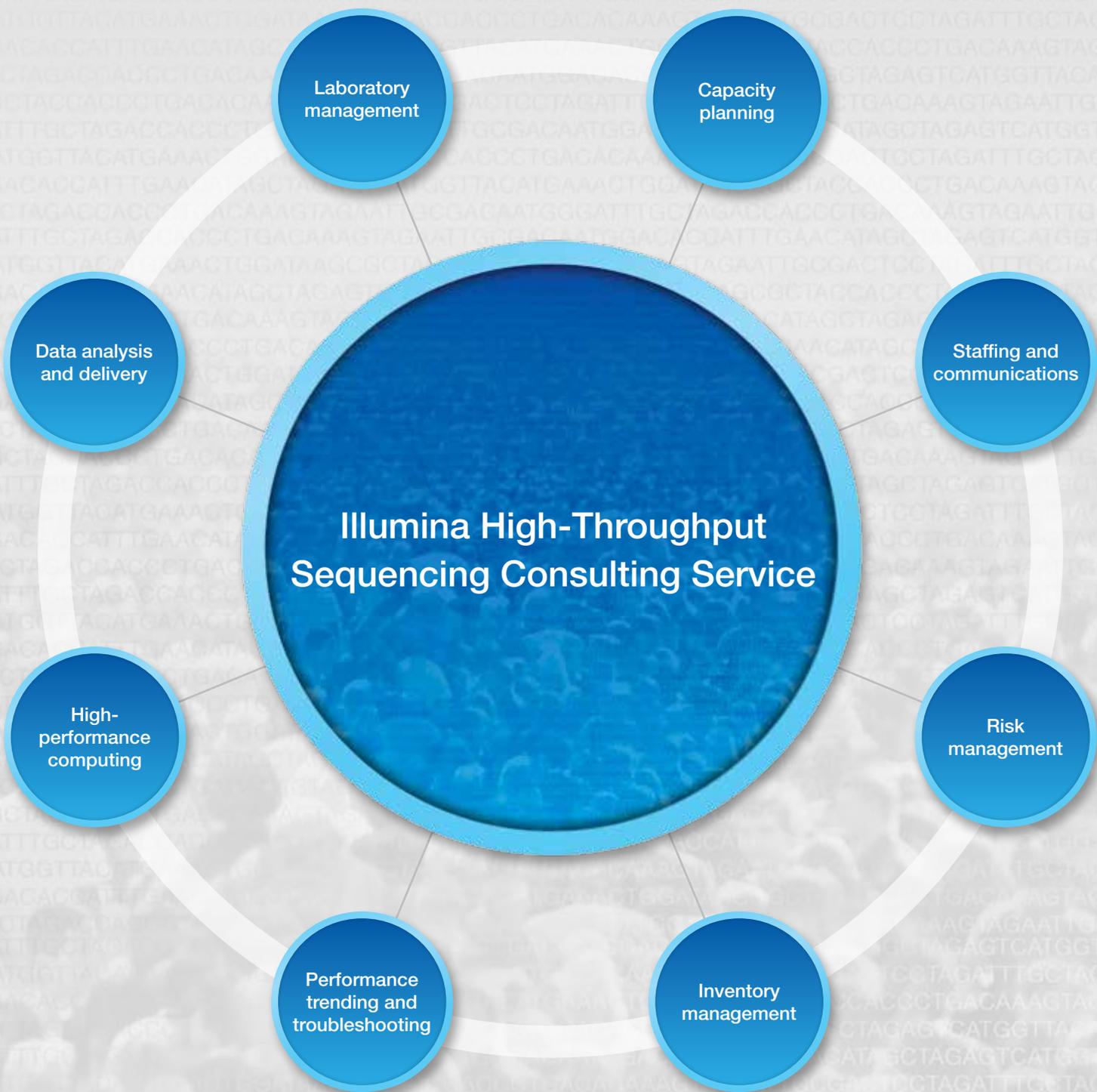
One comprehensive solution covering the spectrum of high-throughput genomics

Scale to ultra high-throughput with confidence

Illumina High-Throughput Sequencing Consulting Service delivers services and solutions to help genomics centers scale to ultra high-throughput production. Every facet of your operation is carefully evaluated and prepped for success with this comprehensive program.

Leveraging 15 years of leadership in next-generation sequencing (NGS), Illumina High-Throughput Sequencing Consulting Service will equip your facility with the best practices, strategic planning tools, and customized support you need. Our goal is to help you achieve the highest level of operational efficiency with your high-throughput sequencing systems.

We're here to empower your groundbreaking science.

Optimized ultra high-throughput operations

- Sample facility
- Sequencing facility
- Analysis facility

Automation

- Extraction
- Preparation
- Quality control

Standardization

- Samples
- Processes
- Results
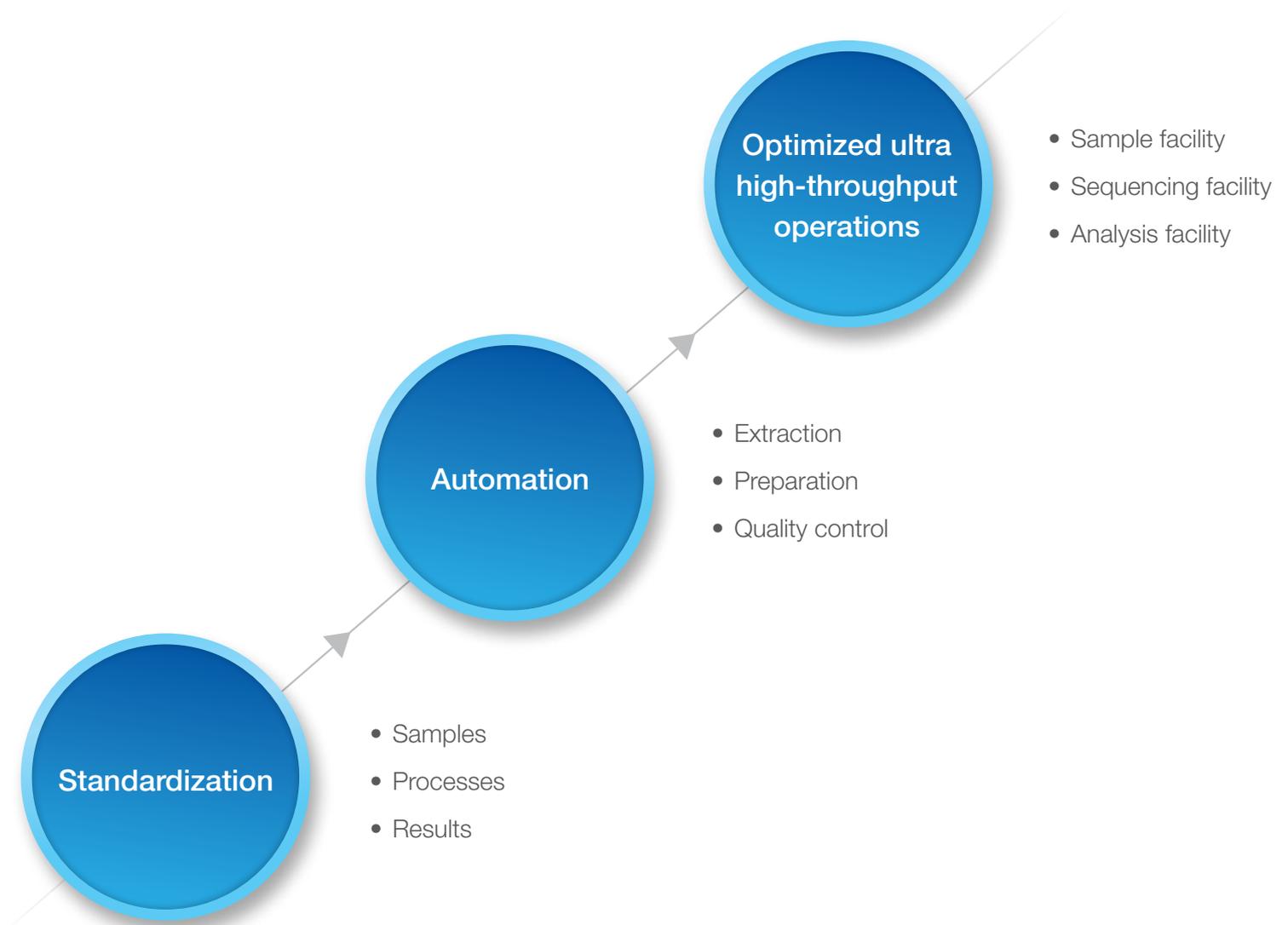
Laboratory management

Ramp up fast

Developing a genomics center that reliably produces high-quality data at maximum capacity requires extensive planning. To help guide the process, Illumina High-Throughput Sequencing Consulting Service provides a complete overview of ultra high-throughput sequencing center management principles and best practices.

We'll evaluate your center's unique needs, while addressing critical operational considerations in each sub-segment of an ultra high-throughput facility: sample, sequencing, and analysis. Scaling up to ultra high-throughput involves protocol standardization and automation with stringent quality control.

We help your center ramp up to scale fast and maintain ongoing performance.

Capacity planning

Meet your production goals

Through capacity planning, we help you define your business and production model, and conduct a detailed analysis of your processes. Planning also involves assessing your library prep, sequencing, and data management capabilities. We compare capacity with anticipated demands, identify process bottlenecks and their financial impact, and provide weekly process schedules. The goal is to set up your facility to run at the optimal rate to maximize your investment.
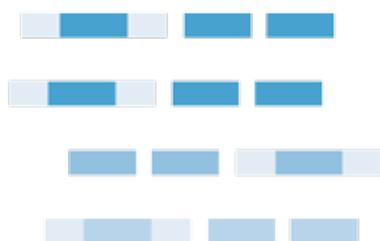
Sample
preparation
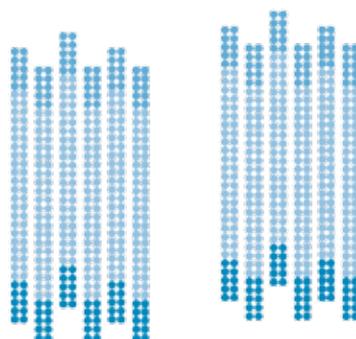
Cluster
generation

Sequencing

Deliverables include a comprehensive capacity analysis, a set of capacity calculators, and a customized plan for your center.

Staffing and communications

Staff smartly

Another critical component of a successful large-scale genomics center is having the right team in place. Balancing personnel roles and functions, and establishing clear lines of communication are essential.

Working closely with your team, we'll help create a staffing plan tailored to your organization. We profile the qualities and experience for your personnel from the institute director to the research associate.

Together, we'll help build your genomics center with the following:

- Organizational charts with team structures
- Number of shifts, people, and skill sets required
- Weekly meeting agendas

- Templates for monthly system and equipment reviews
- Guidance on cross-training and staffing for capacity
- Staffing models by roles and laboratory job descriptions

Risk management

Plan for success

Our comprehensive assessment lays the foundation for the customized risk management strategy we create for your genomics center. We identify potential points of failure, risks, residual risks, and mitigation plans. Strategies may range from leveraging work in progress (WIP) inventory to recommending simple procedural changes and identifying system redundancies—all to help minimize the interruption of critical functions.

**Mitigate risks.
Meet demands.
Drive results.**

Environment

Reagents

Personnel

Samples

Methods

Instruments

A custom risk profile and mitigation plan.

Inventory management

Manage inventory to performance goals

Illumina High-Throughput Sequencing Consulting Service guides you through a selection of the inventory management approach that best fits your center: a push system, a Kanban-style pull system, or a combination of both.

We review the principles of vendor-managed inventories to help you determine the best protocol for your needs and create a customized plan.
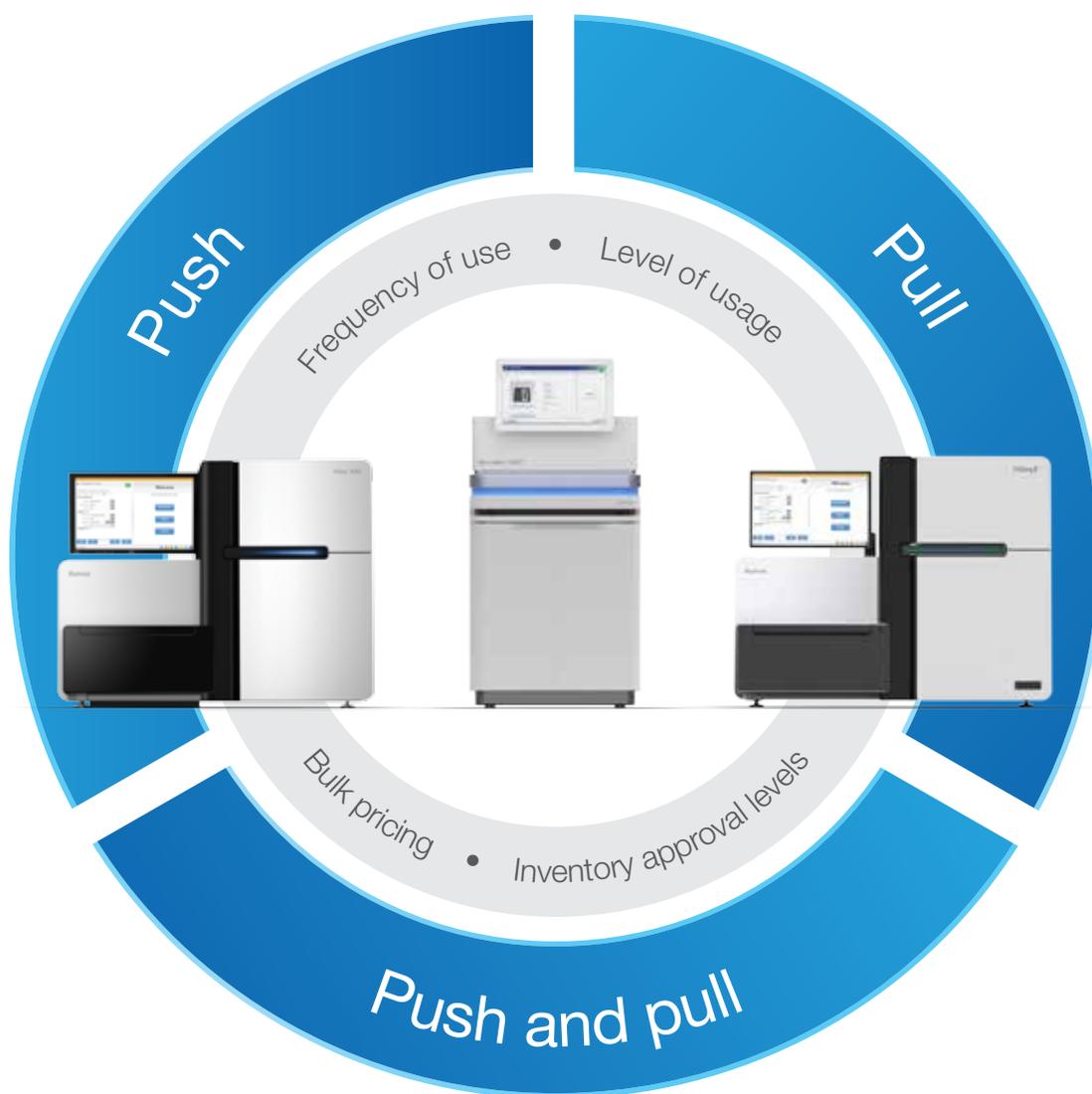
Evaluating inventory management system requirements

Performance trending, troubleshooting, and support

Maximize productivity

With regular performance trending in ultra high-throughput sequencing, we enable rapid troubleshooting to reduce costly interruptions. We also help identify key performance indicators and develop a customized plan to help increase and maintain productivity.

When failures happen or an unsuccessful run takes place, the impact is obvious. Less obvious but equally important is the slow degradation of performance over time that can adversely affect production and the bottom line. That's where Illumina High-Throughput Sequencing Consulting Service comes in, with guidance and tools to help you monitor and manage ongoing performance.

Employ effective steps to trend at scale including the following:

• Select a set of quality metrics.

• Monitor the metrics over a period of time.

• Set up a plan—manual or automated—to assess and report on trends.

Computing and storage

Configure your genomic infrastructure to scale

Illumina High-Throughput Sequencing Consulting Service encompasses a detailed evaluation of your IT infrastructure to plan the optimal configuration for your specific center. We consider your data analysis and management needs, as well as your specific business model.

The goal: to help ensure that the size and sophistication of your IT system is on par with the demands generated by an ultra high-throughput genomics organization.

NovaSeq™ 6000

Data analysis and delivery

Implement quality data management

Illumina High-Throughput Sequencing Consulting Service helps you implement data management strategies covering your center's turnaround policy, as well as data retention and deletion practices, sample contamination detection, and genome quality measurement protocols.
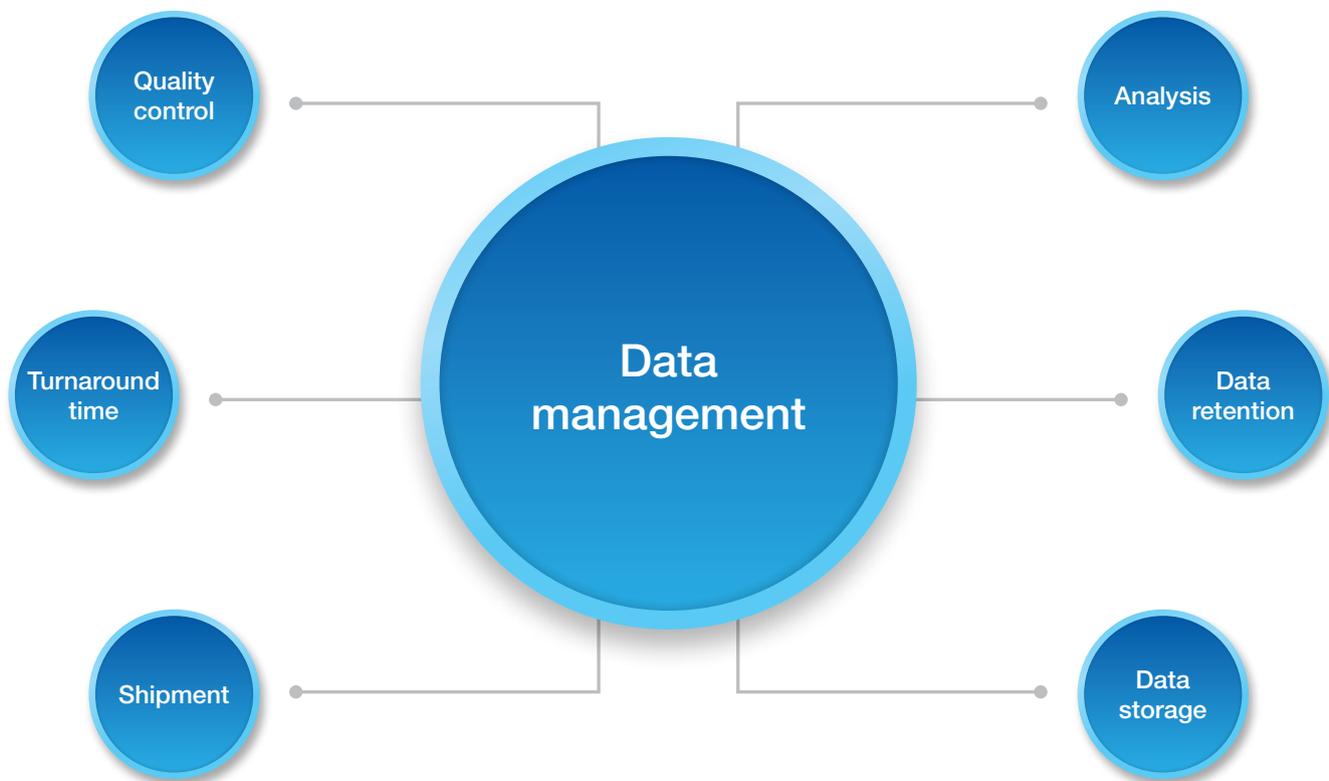
A comprehensive, customized data management plan

World-class solutions.

A community of support.

From sample prep, library prep, arrays, and sequencing to informatics, Illumina next-generation solutions empower researchers and clinical researchers across the globe to find the answers they seek.

When you join the Illumina community, you become part of a dynamic scientific movement that includes thousands of researchers and industry thought leaders. Throughout the year, we host user group meetings, symposia, consortia, online forums, and other initiatives—all designed to bring the best minds together to share ideas and advance science.

In addition to on-site training, ongoing support, and phone consults, we offer webinars and courses at various Illumina locations. We're here with all the resources you need to accelerate progress.

Discover how our Illumina High-Throughput Sequencing Consulting Service can help you achieve ultra high-throughput success. Contact your Illumina representative to learn more or visit www.illumina.com/product-services.

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