

## Optimizing Biomaterials R&D with Data-Driven Insights

Bolt Threads is a biomaterials company developing sustainable fabrics. Bolt's Microsilks is a bioengineered fiber that replicates the properties of spider silk. Mylo is a leather-like material derived from mycelium cells. Bolt Threads aims to address global material waste with fabrics that consume fewer resources in production.



### PRIOR CHALLENGES

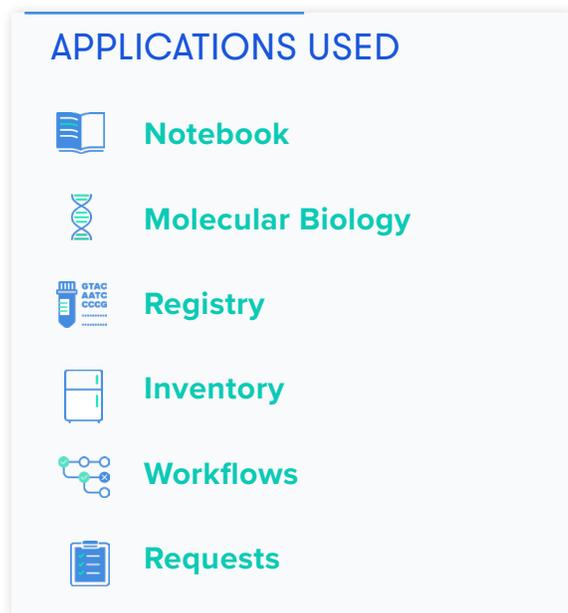
- 1 /** Bolt used a multitude of silos to capture project data, scattering their records and clouding their ability to both find specific data and see that data in its larger context.
- 2 /** Bolt's legacy tools required time intensive preparation to use, involved repetitive manual data entry, and made collaboration logistically challenging – all of which slowed progress and hindered efficiency.
- 3 /** Bolt's previous system of managing information was not flexible enough to handle the evolving nature of their R&D workflows and couldn't keep pace with the rate of their scientists' innovation.

### KEY BENEFITS

- 1 / A Single, Universal Source of Truth**  
Bolt's data is now centralized entirely within Benchling, which provides their organization a universal source of truth for all experimental data across their R&D teams.
- 2 / Streamlined Project Oversight**  
All of Bolt's scientists and teams can collaboratively track and manage both individual tasks and overarching projects so that information handoffs are simplified, output can scale up, and multi-step development processes are more streamlined.
- 3 / Rapid iteration to Empower Innovation**  
Bolt and Benchling work together to implement, configure, and adapt Bolt's R&D cloud as their established processes evolve and areas of research expand.

“ Benchling became a universal source of truth and a super flexible system that allowed us to evolve rapidly.

**Deven Dharm, Director of Software Engineering, Bolt Threads** ”



## Leveraging data centralization for deeper insights

- Benchling’s suite of applications is unified on a single data layer, so Bolt eliminates data silos and gives scientists access to data from across their organization.
- Bolt integrated their data visualization tool into the Benchling SQL warehouse so that their project data can be analyzed for performance and improvement.
- Bolt scientists can now track the end-to-end lineages of their entities, from proteins, to plasmids, to final products, giving scientists and decision makers deeper insights that accelerate discovery.

## Driving efficiency and streamlining operations

- Previously, Bolt’s core groups stored data on instruments or paper. With Benchling Requests, Bolt scientists share results data directly with request submitters, making project handoffs seamless.
- Bolt integrated their data visualization tool into the Benchling SQL warehouse so that their project data can be analyzed for performance and improvement.
- Individual scientists and entire scientific teams use Benchling to oversee and coordinate their interconnecting, multi-step functions, which both streamlines the overarching Bolt pipeline and simplifies each stage within it.

## Flexibility that ensures success for today and tomorrow

- During and after Bolt’s adoption of the Benchling platform, the companies partnered to configure and optimize Benchling’s tools to meet the specific needs of all the scientific teams at Bolt.
- When Bolt’s biochemistry team recently emerged in their R&D pipeline, Benchling was flexible enough to integrate with the team’s novel and complex workflows, and iterate as they evolve.
- Benchling’s adaptability empowers Bolt scientists to develop new materials, like mycelium-derived “leather”, and discover their novel uses. With Benchling’s support for rapid process iteration, Bolt can optimize their processes in lockstep with their scientists’ innovation.