opentrons

Corporate Overview

Jon Laurent, co-founder of PRL

Ph.D. - Cell and Molecular Biology
University of Texas at Austin

B.S. - Molecular biology
Montana State University Billings

Experience

- Molecular biologist/genomic engineer by training
- Major focus on large-scale, high-throughput process design and experimentation
- Postdoc with Jef Boeke at NYU Langone - helped develop the platform technology that forms the foundation of PRL (as well as Neochromosome)
- Leading the PRL R&D group developing new diagnostics across NAAT, Serology, NGS and other platforms, as well as advising on scientific direction for Opentrons as a whole

Opentrons Leadership

Board Chairs

Myrtle Potter
Chair of Opentrons Board

CEO, Sumitovant Biopharma
Former President and COO, Genentech

Robert S. Langer
Chair of Scientific Advisory Board

Co-Founder, Moderna
Institute Professor, MIT

Leadership

Jonathan Brennan-Badal
CEO, Opentrons

Greg Greeley
COO, Opentrons

Former President, Airbnb
Former Head of Amazon Prime

Jef Boeke
Co-Founder PRL and Neochromosome; Head of SAB for PRL

Investors

SoftBank Vision Fund

khosla ventures

SANDS CAPITAL

Y Combinator

LERER HIPPEAU

Innovation in biology is too slow

Every other lab robot company

$100,000

Few application

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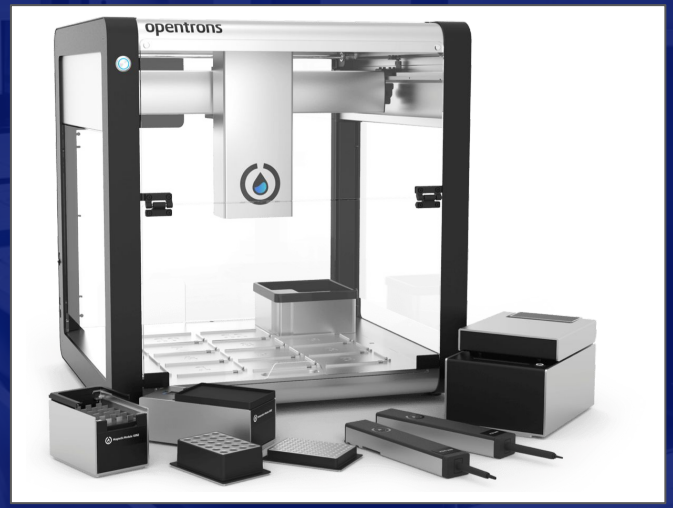


$5,000

1,000’s of user-generated applications

Fragmented offerings that require the scientist or organization to cobble together a solution

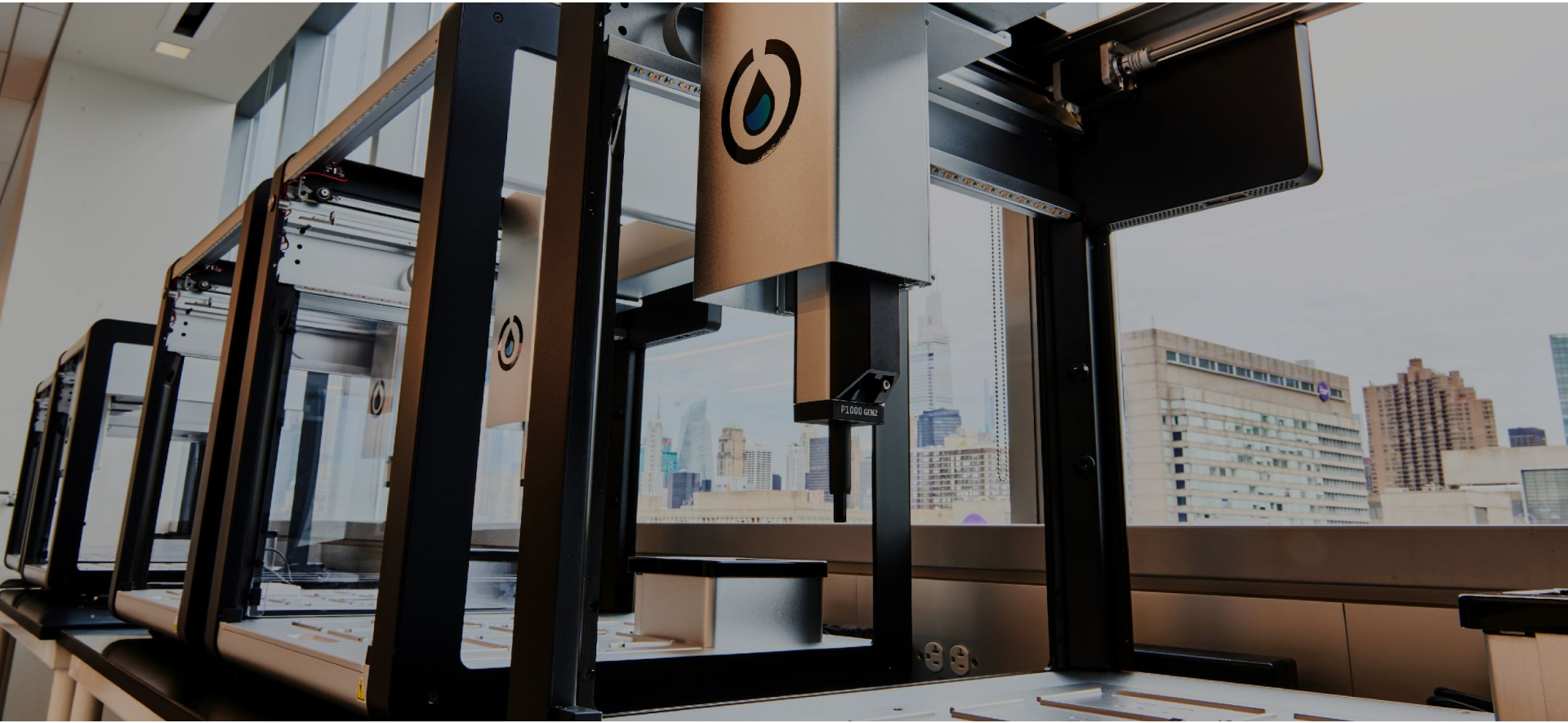
- Protocol
- Pipetting Technique
- Instruments
- Automation
- Reagents
- Labware
- Environment
- LIMS
- LIS
- QC
- Analytics
- Sample Tracking
- Inventory Management
- Lab Tech Training
- Instrument maintenance
- Assay Validation
- Process Validation
- And More

Pandemic Response Labs

Majority of COVID testing capacity for NYC

80% of the Sequencing Capacity for NYC

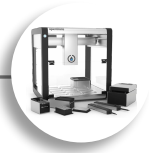
5 million tests processed in year 1 of operation


P1000 GEN2

The Opentrons platform

Vertical integration brings together every resource to rapidly commercialize under one roof

Proprietary R&D ecosystem, from open-source community to research hospital partnerships



Proprietary robotics and consumable stack, from mass-market to custom solutions

Proprietary SW stack, from machine code to LIMS & EHR to AI

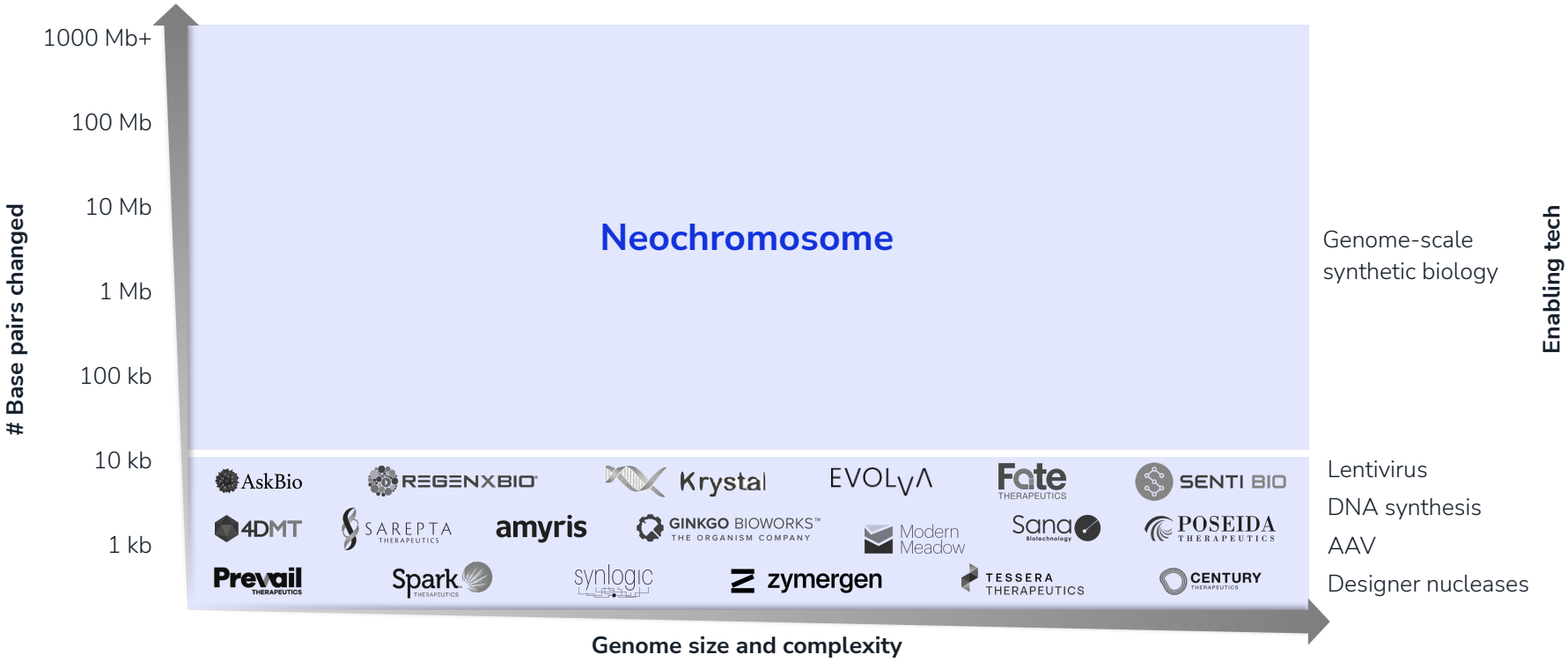
Proprietary lab operations, from deployment to scaling

Leveraging Opentrons Platform to Expand PRL Menu

Test category	Diagnostic technology	# of targets
Infectious Disease	PCR	150
Immunoassays	ELISA	25
Oncology	Next Generation Sequencing (NGS)	625
Total		800

Provided as panels priced at 80% below market

For our competitors full genome cell-engineering is 5+ years away, for Opentrons, it is now



We are targeting therapeutics opportunities uniquely enabled through genome-scale cell engineering

Platform Technologies

neoYeast

Synthetic protein manufacturing

- Non-canonical amino acids to improve protein therapeutics (bioconjugation, stability, structure, size, immunogenicity)
- Market size exceeding $200B

neoVector

Long DNA gene therapy manufacturing

- 150kb gene therapy payloads, enabling 30-fold increase over current best-in-class AAV technology
- Addressable market size of $25-50B over the next 10 years

Core Capabilities

Long DNA Manufacturing

- ~100 kb DNA constructs produced at 3 Mb/mo

Genome Rewritten Cells

- 0.1-100% of genomes in cells modified with long DNA by design

ML-driven Protein Design

- ML-powered design build test cycle for protein improvement

Opentrons
Join us in changing the world

PRL is led by a team of experts in genetics, clinical diagnostics, and robotics. PRL's state-of-the-art labs use knowledge and technology licensed from NYU Langone based on research led by world-class geneticist Dr. Jef Boeke. PRL is a subsidiary of Opentrons Labworks Inc., a leading diagnostic life sciences company based in Brooklyn, NY.
PRL leverages proprietary innovations in automation, sample accessioning, sample processing, and assay sensitivity to enable <24 hour turnaround time with 20% increased sensitivity and <200 ml limit of detection vs benchmark sites. Cost-effective, unmatched capacity, and unparalleled turnaround times

PRL implements multiple instruments of top of the line lab robotics working in parallel within a single lab. This not only enables high-throughput testing, but also next generation sequencing for 10% positive specimens across the lab network

Science Track

- Biology
- Chemistry
- Biochemistry
- Biomedical Engineering
- Computer Science / Data Science / Statistics
- Regulatory
- Other life sciences / STEM fields
- Computer Science/IT

We are looking for talented and dedicated students interested in pursuing science careers in the life sciences sector.

Eligibility

- Enrolled Students must be US citizens or US permanent residents (including DACA participants), or holders of visas that allow completion of the internship without sponsorship
- *Preference* will be given to rising juniors, and graduate students. PRL may consider those who have already graduated if they are within a year of graduation, meet all other criteria, and are willing to commit to the program for the full duration of the internship period.
- Students must be at least 18 years of age.
- Students should have a cumulative GPA of at least 3.0. Students with a GPA under 3.0 may apply but must write an explanation of extenuating circumstances.
- Participants must be able to commit to a 20-25 hours work week for the ten weeks of the program, must commit to the work requirements and are expected to attend and actively engage in all scheduled seminars, events, and activities.

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There are several parts that will take some time to prepare:

- Personal Statement: Please explain your interest in participating in the PRL internship program. How does this program fit in your future career goals? What professional and personal skills do you hope to learn during this internship? Note that this program welcomes both scientists and non-scientists; either way, we want to hear about your interest in being a part of the life sciences industry in New York City. Please include a brief description of the type of work you would like to do in your internship; in particular, specify if you would be interested in both business and science track roles. Science majors are encouraged to be open to both types of opportunities if at all possible in order to maximize chances of obtaining an internship (up to 500 words).
- Relevant Courses: Provide a list of any relevant courses you have taken, as well as specific skill sets
- Transcript / Resume: Provide a copy of your latest academic transcript (unofficial copy is acceptable) and your current resume
- Optional Video: You have the option (not required) of providing a video of up to 3 minutes expressing the reasons why you are interested in participating in the PRL internship program.
- References: You will need 1-2 people to provide letters of reference for you. You should ask professors, advisors, work supervisors or personal references as long as they aren't family members or friends, and give them plenty of time to submit a reference for you.

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Job Description Title: Laboratory Internship

Reports to: Lab Supervisor

Schedule: Flexible; 24/7 days operation

During the height of the coronavirus pandemic, a group of leading experts came together to launch the Pandemic Response Lab (PRL) which was announced by NYC's Mayor De Blasio in August 2020. As New York City reopens, we recognize the need for fast, accurate and widespread testing. Based in Innolabs in Long Island City, PRL is a state of the art high complexity lab dedicated to currently processing COVID-19 tests with results within 24-48 hours and other validated tests in the future.

We are currently seeking a Laboratory Internship to join our growing team.

General role: The Laboratory Intern provides support for the clinical laboratory to ensure that clinical operations and special projects are performed in a timely manner.

Responsibilities:
Handle specimen plates for running on various automated laboratory protocols.
Locate, retrieve, and transport specimens as needed.
Store samples in designated storage areas.
Handle specimens with utmost consideration to maintaining specimen integrity, safety, easy retrieval, and organization.
Provide assistance to Lab Technologists in any area when necessary.
Remove and/or discard expired samples from the storage area as required.
Maintain a safe and clean workspace at all times.
Maintain a well-organized work area with adequate supplies.
Maintain documentation of assigned functions as required.
Escalate any/all issues or questions through appropriate channels.
Escalate any/all issues or questions to a Lead, Supervisor or Manager.
Attend department training and meetings and interact in two-way communication to assist in process improvement.
Other duties as assigned
Basic qualifications:
Previous lab work experience, lab automation a plus.
Must be enrolled in a physical science degree program.
Basic computer skills.
Good written and verbal communication.
Ability to work in a team environment.
Problem solving skills.
Sitting, standing, and/or walking for hours.
Advanced qualifications:
Familiar with various laboratory automation, especially Opentrons, Tecan, Analytik Jena

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