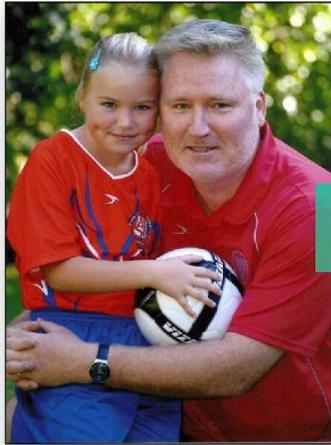


Invest in PROTXX

Wearable device that improves the lives of those with complex neurological conditions



PROTXX



PROTXX.COM MENLO PARK CA

[Software](#) [Hardware](#) [Technology](#) [Artificial Intelligence](#) [SaaS](#)

Why you may want to invest in us...

- 1 Invented 1 minute non-invasive test that identifies and quantifies neuromotor and neurosensory impairments
- 2 PAAS model enhances management and treatment of concussions, stroke, Parkinson's, multiple sclerosis
- 3 Our solution is commercially available with over 20 customers and pilots in U.S., Canada, U.K., Japan
- 4 We reduce time, travel, and costs for patients through remote patient monitoring
- 5 Institute of Health Economics set value-based pricing of \$5,000 per patient per month for PROTXX
- 6 Partnered with machine learning and neurophysiology leaders to develop predictive diagnostics

Why investors ❤️ us

WE'VE RAISED \$1,546,267 SINCE OUR FOUNDING



Protxx focuses on the tele-health segment of digital health with significant tailwind during and post pandemics when people and healthcare providers leverage sensors and app to remotely diagnose and improve patient health. The team is led by John Ralston whom I have known for over 20 years and is a highly accomplished and versatile technology innovator and entrepreneur. The team has received recognition from startup competition and shown perseverance, the company has a differentiated product and service, the distribution channel via care clinics, revenue model is clear and ramping up. The future is bright and timing is right to capture this opportunity.

Terry Hsiao Professor at Marymount University

LEAD INVESTOR INVESTING \$1,000 THIS ROUND & \$100,000 PREVIOUSLY



Because Josh told me to!

Matt Roper ☆



SEE MORE

Our team



John Ralston
CEO and Founder
2016 "Pioneer in Healthcare Technology Innovations Award" CEO, Sales & Marketing, R&D at 8 previous Silicon Valley companies (2 IPOs, 8 M&A exits)



James Walker
Chief Financial Officer
Has led 4 previous Silicon Valley companies thru IPOs



Joshua Roper
Vice President, Operations
GM, Product Executive, and Technology Leader experienced in Software, Hardware, Networking, Security, and IoT with more than 27M networked devices deployed and well over \$2B in revenue



In the news



Downloads

- [Monitoring-of-postural-sway-with-a-head-mounted-wearable-device MDER 30-apr-2019.pdf](#)
- [Physiological-vibration-acceleration-phybrata-sensor MDER Dec-8-2020.pdf](#)

Story

PROTX
("protects")

Wearable Precision Healthcare

John Ralston, PhD
CEO & Founder
<http://protxx.com>

WEFUNDER
February 2021

Forward-Looking Statements

This presentation contains "forward-looking information", including "future-oriented financial information" and "financial outlook", under applicable securities laws (collectively referred to herein as forward-looking statements). Except for statements of historical fact, the information contained herein constitutes forward-looking statements and includes, but is not limited to, the (i) projected financial performance of the Company; (ii) completion of, and the use of proceeds from, the sale of the shares being offered hereunder; (iii) the expected development of the Company's business, projects, and joint ventures; (iv) execution of the Company's vision and growth strategy, including with respect to future M&A activity and global growth; (v) sources and availability of third-party financing for the Company's projects; (vi) completion of the Company's projects that are currently underway, in development or otherwise under consideration; (vii) renewal of the Company's current customer, supplier and other material agreements; and (viii) future liquidity, working capital, and capital requirements. Forward-looking statements are provided to allow potential investors the opportunity to understand management's beliefs and opinions in respect of the future so that they may use such beliefs and opinions as one factor in evaluating an investment.

These statements are not guarantees of future performance and undue reliance should not be placed on them. Such forward-looking statements necessarily involve known and unknown risks and uncertainties, which may cause actual performance and financial results in future periods to differ materially from any projections of future performance or result expressed or implied by such forward-looking statements.

Although forward-looking statements contained in this presentation are based upon what management of the Company believes are reasonable assumptions, there can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. The Company undertakes no obligation to update forward-looking statements if circumstances or management's estimates or opinions should change except as required by applicable securities laws. The reader is cautioned not to place undue reliance on forward-looking statements.

PROT~~X~~

Transforming the lives of tens of millions of people living with complex neurological medical conditions

- Injuries
- Disease
- Aging
- Genetic disorders

The Story Behind the Company

Neurophysiological injury in young athletes

PROTXX CEO & Founder John Raiston with daughter

Non-invasive wearable solution to quantify

- Neurophysiological disruptions
- Response to treatment and rehabilitation

Our Focus Today

Wearable neurophysiological sensors

Machine learning engine

17 million patients (U.S.)

\$286 billion annual healthcare costs

\$12 billion revenue opportunity

Concussion

Multiple sclerosis

Stroke

Parkinson's disease

Problem: Neurophysiological Conditions

- Disruptions widespread throughout brain
- Impairments to **multiple physiological systems**
 - Highly individual impairment profiles, fluctuating symptoms

Sensory

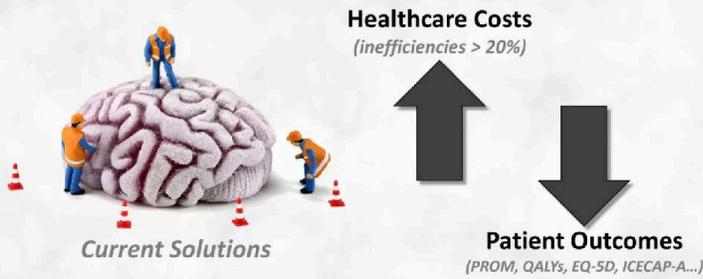
- Current solutions: (i) multiple time-consuming tests, multiple clinical specialists, expensive equipment; (ii) subjective observations, patient self-reporting.



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Clear Unmet Clinical Need

PROT[®]



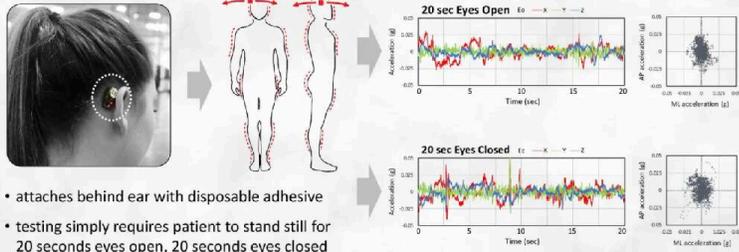
- Better tools needed to classify, quantify, and manage conditions with impairments to multiple neurophysiological systems.

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Technology (1/2): Phyrbrata Wearable Sensor

PROT[®]

**phybrata = physiological vibration acceleration*



- attaches behind ear with disposable adhesive
- testing simply requires patient to stand still for 20 seconds eyes open, 20 seconds eyes closed

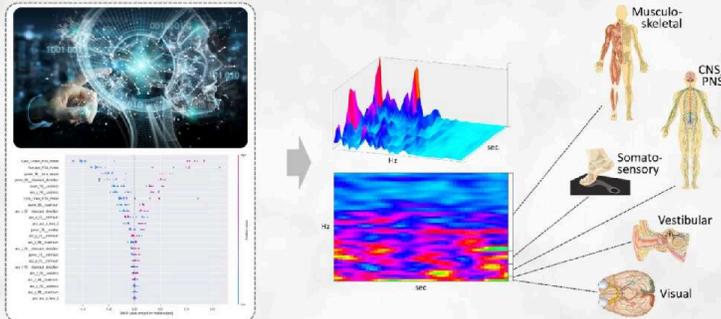
- Detects microscopic involuntary motions of the body, normal and pathological.

**J.D. Ralston et al, Medical Devices: Evidence and Research. 2020; 13: 411-438.*

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Technology (2/2): Phyrbrata Machine Learning Engine

PROT[®]

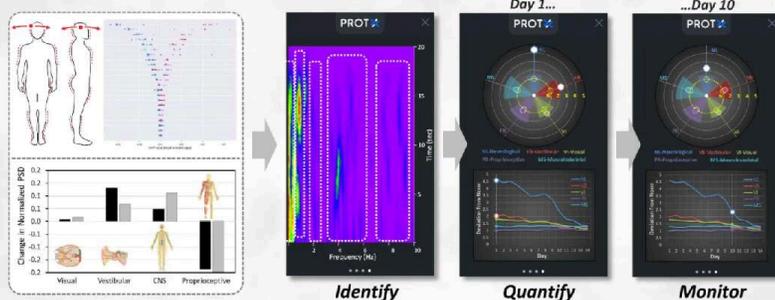


- Identifies, analyzes contributions of each physiological system to biomechanical stabilization of head and eyes as body's reference for balance and movement.

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Integrated Phyrbrata Solution

PROT[®]



- Identifies, quantifies, and monitors impairments using unique

biomechanical vibrational signature of each physiological systems.

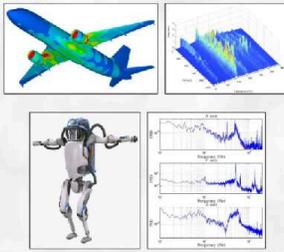
- Presents simple, intuitive test summary for clinician and patient.

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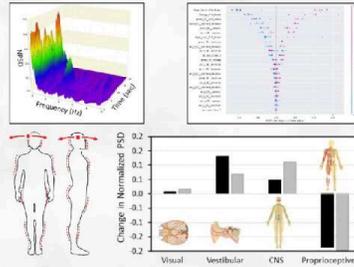
Industrial Origins of Phybrata Solution

PROTXX

- **Industrial origins** – detection, analysis of vibrational signatures for system design, remote monitoring, fault detection



- **Phybrata solution** – extends capabilities to precision healthcare
- Phybrata signatures enable digital biomarkers for human physiological impairments



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Validated and Protected

PROTXX



20 patent applications



Peer-reviewed research publications

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Product: B2B Platform-as-a-Service (PaaS)

PROTXX

Sensors, charging case



BLE

Mobile app



Cellular, WiFi

Cloud data services

- Signal processing
- Data analysis
- Machine learning
- Reporting

- **B2B solution:** (i) annual PaaS license (ii) Remote Patient Monitoring (RPM) per-patient duration-based fee (iii) data subscription

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Healthcare systems deploying branded PROTXX app



Customers

PROTXX



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Value Proposition

PROTXX



All of this...



...or just this.

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Enabling Precision Patient Care

PROTXX



Concussions



Stroke



Multiple sclerosis



Parkinson's disease

Phybrata sensor/biomarkers enable personalized planning/management of treatments, medications, and rehabilitation therapies.

- Adjust rehab therapies and medications more precisely and more frequently
- Reduce incidence, severity, duration of longer-term physical disabilities, cognitive impairments
- Accelerate return to functional independence (stroke, concussion)
- Slow progression of physical and cognitive impairments (MS, Parkinson's)

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Value-Based Pricing Validation

PROTXX



Economic Assessment Report
July 2020

"For stroke rehabilitation, the PROTXX solution can be priced in the range \$C[6,800 - 76,000] per patient per month and meet the cost-effectiveness criteria for the Canadian healthcare system."



Max price = (QALYs gained x \$50,000 (WTP)) + cost savings / 1 month

- \$6,842 > \$4,315 from QALYs gained, and \$5,727 from cost savings
- \$9,923 > \$4,366 from QALYs gained, and \$5,727 from cost savings
- \$75,719 > \$65,372 from QALYs gained, and \$6,377 from cost savings

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Addressable Market (U.S.) > \$12B

PROTXX

Medical Condition	Incidence	Prevalence	Avg Annual Cost per Patient (\$)	Total Annual Costs (\$B)	PROTXX Addressable Patients	PROTXX Value-Based \$/patient/yr	Revenue Opportunity (\$B/yr)
Concussions	4.3 M	5 M	12,000 (24,000 for extended rehab)	60	645,000 (15% inc in extended rehab)	2,400 (10% of ext rehab cost)	1.5
Stroke	800,000	9.8M	13,000 (29,000 1 st yr, indep rehab, 58,000 1 st yr, dependent care)	127	440,000 (55% inc in post-acute rehab)	5,300 (IHE study, 06/2020)	2.3
Multiple sclerosis	22,000	920K	51,000	47	782,000 (85% Prev with RRMS)	5,100 (10% of avg patient cost)	4.0
Parkinson's disease	60,000	1M	52,000	52	850,000 (85% Prev in physical therapy)	5,200 (10% of avg patient cost)	4.4
		17M		\$286B			\$12.2B

- Eliminate cost inefficiencies
- Remote patient management
- Improve patient outcomes

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Development Pipeline, Regulatory Roadmap

PROTXX

	2017-2019	2020	2021	2022	2023
Wellness Device	MVP development, pilot testing, peer-reviewed publication Transfer to manufacture Commercial release	*This non-medical device is not intended for diagnostic or preventative use. It measures physiological metrics and reports them to users or caregivers who then take the responsibility of making care decisions for the person being monitored.* Direct sales International distributors			
Balance Diagnostics	Discovery	Analytical validation	Clinical validation	FDA 510(k), HC MDEL	Commercial release
Concussion	Discovery	Analytical validation	Clinical validation	FDA 510(k), HC MDEL	Commercial release
Multiple Sclerosis		Discovery	Analytical validation	Clinical validation	FDA, HC, EU Commercial release
Stroke		Discovery	Analytical validation	Clinical validation	FDA, HC, EU Commercial release
Parkinson's Disease		Discovery	Analytical validation	Clinical validation	FDA, HC, EU Commercial release

Business Model: Strong Economic Fundamentals PROTXX

Annual PaaS Subscription

Sensor, Mobile App, Data Storage, Analytics, Reporting, EHR, Synch, Training, Technical Support

Revenue Streams

1. Annual PaaS license
2. Duration-based RPM fee
3. Data subscriptions, custom data reports

Sales Process

- Direct sales (key accounts)
- Global distributor partner

KPIs

- COGS = 8%
- CLV/CAC = 5-10 (est.)
- Customer ROI > 5X

B2B: Business-to-business solution, clinical neurology, rehab, sports medicine providers

PaaS: Platform-as-a-Service

RPM: remote patient monitoring

Global Distribution PROTXX

LOK Corporation and PROTXX Announce Global Distribution Partnership

October 2, 2020 - <https://lok-corporation.com/protxx-announcement/>

"We believe that PROTXX will be a game-changer in both neurology and sports medicine, two growing medical segments that we strongly believe in and that will be part of the core of our business in 2021."

Daniel Cloutier, CEO of LOK Corporation.

Clinical & Commercial Validation PROTXX

	Paid Engagements	Data Pilots
Concussion	BCI, CONCUSSION, UNIVERSITY OF STIRLING, Neurotrauma Foundation, CEPN, Durham University, Dignity Health, 东南同济医院	UCSB, VIBRANTcare, UNIVERSITY OF CALGARY Human Performance Lab, WARRIORS, Mount Sinai, AltaML
Multiple Sclerosis	UNIVERSITY OF ALBERTA, CRIT, Mitacs Accelerate	Dignity Health, AltaML
Parkinson's Disease	ESCAPE BIO, Dignity Health	HOTCHKISS BRAIN INSTITUTE, Sutter Health
Stroke	UNIVERSITY OF CALGARY CLINICAL SCHOOL OF MEDICINE, HOTCHKISS BRAIN INSTITUTE, ALBERTA INNOVATES	IHE INSTITUTE OF HEALTH ECONOMICS, Alberta Health Services, AltaML
Other*	UNIVERSITY OF CALGARY Human Performance Lab, Mitacs Accelerate, Dignity Health, RPPSM	Sutter Health, SUN CITY, MCKENZIE ROYAL UNIVERSITY, Libin, Stanford MEDICINE

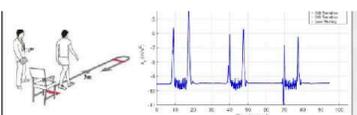
* Aging in Place, Peripheral Neuropathies, Chronic Pain, Neurosurgeries

2021: New Remote Patient Monitoring Capabilities PROTXX

COVID-19 has accelerated demand for remote patient monitoring

Phybrata Gait Analysis

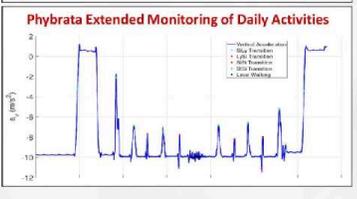
BioWorld MedTech **In wake of COVID-19 funding, PROTX and Canadian university press for wearable MS monitoring device**
MULTIPLE SCLEROSIS NEWS TODAY PROTX, University of Alberta collaborate to develop remote healthcare platform for MS



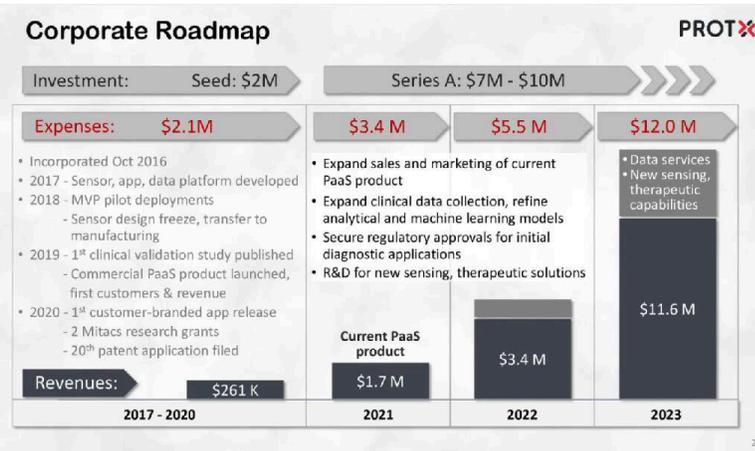
Medical Wearables 2020
DECEMBER 8-10, 2020 ONLINE

FEATURED SPEAKER
John Ralston, PhD
 Founder and CEO
 Protx

PRESENTATION TOPIC
 Wearable Technologies for the Management of Degenerative Neurological Conditions



Competition	Quantify multiple impairments	Continuous & remote monitoring	Integrated diagnostics & therapeutics	Easy-to-use low-cost wearable
PROTX (20 patent applications)	✓	✓	✓	✓
Existing alternatives: CDP, EMG, EVS, fMRI	✓	✗	✗	✗
Clinical balance/gait systems: Bertec, Biodex, BodITrak, BTrackS, CSMi, Korebalance, Tekscan	✓	✗	✓	✗
Video motion capture systems: BTS BioEngineering, Kinetisense	✓	✗	✗	✗
Wearable medical sensors: APDM, BIOPAC, BTS, Cerebrotech, Forest Devices, Jan Medical, NuroChek	✗ ✓	✓	✗	✓ ✗
Mobile apps: (Balance, movement, activity tracking) Sway Medical, C3 Logix, KD Balance	✗	✓	✗	✓



Disclaimer: The above timeline & revenue projections cannot be guaranteed.

Management Team & Advisory Board

John Ralston, PhD, MBA – CEO & Founder

- 2016 "Pioneer in Healthcare Technology Innovations Award"
- CEO, Sales & Marketing, R&D at 8 Silicon Valley companies (2 IPOs, 8 M&A exits)

Christy Lane, PhD – Advisory Board

- Founder and Co-CEO, Vivametrica
- Expertise in R&D and commercialization of wearable technology for digital health, rehabilitation medicine, and InsurTech.

Josh Roper – VP Operations

- Seasoned IoT and SW engineer, product manager, business unit executive: Silver Spring Networks, SAP, Oracle, Portera, TXU

Chris Wood, FACHE, MHA – Advisory Board

- Vice President, Neuroscience and Orthopedics, Dignity Health
- 20 years in neurology, orthopedics, telemedicine, healthcare administration

Andreas Hauenstein, PhD – Dir Platform Eng

- 23 years experience in advanced data analytics, mobile apps, SW platform development for financial services, wearables, industrial drones.

Ashutosh Raina, MD – Advisory Board

- Medical Director, Ctr of Excellence Pediatric Neurology, Dignity Health, Sacramento.
- Co-Founder, Concussion Medical Clinic

Jim Walker – Chief Financial Officer

- 25+ years experience as Silicon Valley CFO, COO developing, commercializing wide range of technologies and products (4 IPOs)

IoT device and data platform engineers Clinical neurology practitioners and researchers Digital healthcare business professionals

Company Information (http://protxx.com)

Founded: Oct 2016

- Locations: Menlo Park, CA; Calgary AB
- Well-established partner network: R&D, manufacturing, clinical pilots, distributors



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Why Invest

PROTX

- Innovative and proven precision healthcare solution
- Large underserved market, high margin business model
- Defensible IP
- Experienced team, efficient use of cash to develop/launch revenue-generating product
- Potential for exceptional ROI



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Contact

John Ralston, PhD
CEO & Founder
<http://protxx.com>

PROTX

Investor Q&A

What does your company do? ▾

— COLLAPSE ALL

PROTX integrates wearable sensor and machine learning innovations to replace bulky and expensive clinical equipment and time-consuming testing procedures for neurological conditions in which patients suffer from impairments to multiple physiological systems. PROTX solves the difficult problem of identifying and quantifying these impairments, enhancing patient care with easy-to-use, low-cost, in-clinic and remote patient assessments.

Where will your company be in 5 years? ▾

Of the \$800B in annual healthcare costs generated by neurodegenerative conditions in the U.S., over \$100B arise from inefficiencies that can be reduced or eliminated using the PROTX solution. The addressable annual revenue opportunity for PROTX exceeds \$12B, and our target is to be the leading global provider of these solutions and to secure the leading share of this market within 5 years. These projections cannot be guaranteed.

Why did you choose this idea? ▾

I founded PROTXX to address the challenges encountered by clinical neurology and sports medicine providers treating young athletes with sports-related neurological disruptions, after my youngest daughter was forced to stop playing soccer following 2 severe concussions. Related clinical applications now include stroke, MS, and Parkinson's disease.

How far along are you? What's your biggest obstacle? ▾

PROTXX has integrated the company's "phybrata" sensors, mobile app to configure and run tests, and cloud-based data analytics and reporting services into a platform-as-a-service (PaaS) solution protected by 20 patent applications. Launched in 2019, the PROTXX platform is already utilized in over 20 customer and pilot partner deployments in the U.S., Canada, U.K., and Japan, including clinical neurology, rehabilitation and sports medicine, and research organizations focused on improving the care of patients with a wide range of neurophysiological conditions. In October 2020, PROTXX entered a global product distribution partnership with medtech specialist LOK Corporation to address our biggest obstacle, the complex healthcare sales cycle.

Who competes with you? What do you understand that they don't? ▾

Existing alternatives for the same level of diagnostic detail require multiple complex tests carried out by multiple clinical specialists using expensive clinical equipment. Competing sensor-based solutions include a variety of wearable devices and mobile apps that measure the user's activity, mobility, or balance. But none of these solutions are able to identify, quantify, and monitor multiple impairments with the sensitivity of the PROTXX platform, while enabling continuous and remote monitoring, all in an easy-to-use wearable device.

How will you make money? ▾

The PROTXX solution is currently marketed and sold as a non-medical device, but we have a clear FDA 510(k) regulatory pathway with multiple predicate devices for our target clinical applications. Our revenue streams include (i) an annual per-clinician PaaS license fee (ii) duration-based remote patient monitoring fees (iii) customized data access subscriptions. We manage key accounts via direct sales, and have entered into a global distributor partnership to expand our sales engagements and geographic coverage. We expect to be profitable in 2023 and annual sales are forecast to exceed \$50M in 2024, although these projections cannot be guaranteed. Our economic fundamentals are strong, with COGS at 8% of selling price, estimated Customer Lifetime Value at 5-10X of Customer Acquisition Cost, and customer ROI greater than 5X.

What are the biggest risks? If you fail, what would be the reason? What has to go right for you to succeed? ▾

Technology ownership and IP risks are being addressed by developing all patentable and trade-secret-protected intellectual property internally or under development contracts that assign ownership to PROTXX.

Product development and manufacturing risks have been addressed by leveraging a well-established network of R&D, product design, manufacturing, and pilot deployment partners.

Market development risks have been addressed by leveraging distributor partnerships and securing pilot commercial deployments with leading healthcare R&D and service providers in target markets.

Healthcare regulatory risks are being addressed by securing appropriate regulatory approvals to support target clinical applications and marketing claims.

Even after our solution receives regulatory approval, it may fail to achieve the degree of market acceptance by physicians, patients, third-party payors and others in the medical community necessary for commercial success.
