



Harness the Power of Proteins

Company Overview

- Impact Proteomics is an early-stage biotech startup that makes sample preparation tools for researchers in the biotechnology and pharmaceutical fields
- We have a patent pending platform technology that addresses multiple market opportunities within sample preparation, immune disorder diagnosis, and personalized medicine. Our first product addresses \$1 billion within the \$7 billion protein sample preparation market.
- Pathway to success includes consumable and services sales, immune disorder diagnostic development, and development of personalized medicine diagnostic for immune disorder diagnosis and monitoring.
- Our team includes successful inventors and award-winning innovators who have undergone intense training and customer discovery through the NSF I-Corps program, Innovation Fellowship program, and incubation at the accelerator AlphaLab Gear.
- Awarded \$1.2 M in non-dilutive funding from the National Science Foundation and raised a seed fund of \$300,000 for continued development of our sample preparation technology, expanding from our protein sample preparation prototype to include DNA and RNA sample preparation markets as well.

Company Vision

At Impact Proteomics, we make sample preparation tools that ensure every analytical workflow starts with a high-quality sample, allowing researchers to obtain useful data faster with higher statistical confidence, and ultimately accelerate time to market for high impact therapies, drugs, and diagnostic tools. This includes high impact diagnostic tools that were not previously possible due to technical challenges our technology can solve.

Our vision is to be the industry standard for protein sample preparation, enabling the discovery of important therapeutics and diagnostics and bringing them to market faster than ever before.

Meet the Impact Proteomics Team



Jonathan S. Minden, Ph.D.
Chief Scientific Officer

- Professor at Carnegie Mellon University
- Inventor of 2D-DIGE, a technology licensed to Amersham
- 20 years of proteomics experience
- Cited over 3,000 times



Amber L. Lucas, Ph.D.
Chief Executive Officer

- Innovation Fellow at the Swartz Center for Entrepreneurship, Tepper School of Business, CMU
- Entrepreneurial lead for NSF I-Corps team
- Principal investigator for \$1.25 M in SBIR grants from the NSF



Stephanie Biedka, Ph.D.
Director of research and development

- Richard King Mellon Foundation Presidential Fellow in the Life Sciences
- Roche/ARCS Foundation Award.

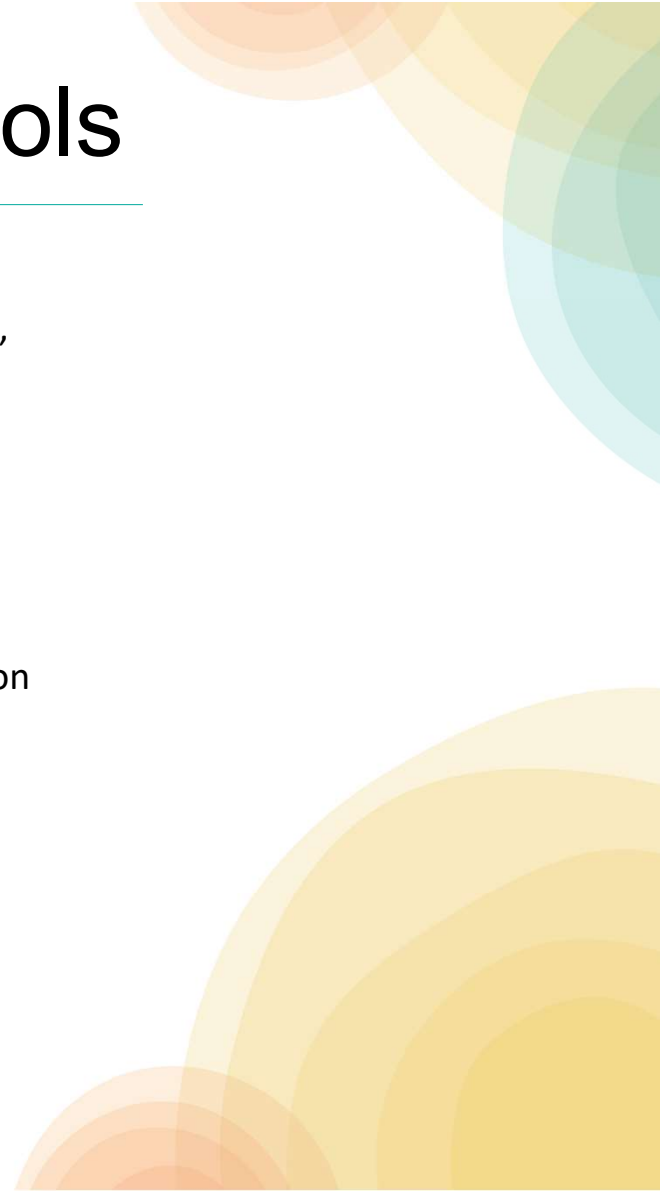
Protein research needs better tools

Proteins are the molecular machines of the body that do all the jobs that keep us alive, which is why they are used widely in all kinds of biotech, pharma, and academic research. Over 90% of medications we take target proteins.

Even though proteins tell us the most about our health and disease, they are hard to work with because of their chemical and physical complexity.

Because of this complexity, no one has created standardized protein sample preparation tools like those that exist for DNA and RNA.

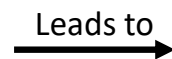
The lack of protein sample preparation tools has led to low rates of success for drug discovery projects, long project times, and billions of dollars wasted on failed projects



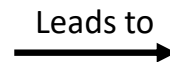
Current technology is not addressing the customer's needs

Problems with current technology

- Poor reproducibility
- Only purifies a small subset of proteins
- Sample loss and contamination
- Tedious workflows
- Lack of automation



- Discovery phase failure
- Slower time to market



Lower profit and global impact



Current technology is not addressing the customer's needs

Average time for discovery phase: **3-10 years**

Average cost for discovery phase: **4-30 million dollars**

Only **~0.1%** of products that make it through discovery actually make it to market

Poor standardization of protein sample preparation is a main contributor to this low degree of success and the length of time required per project

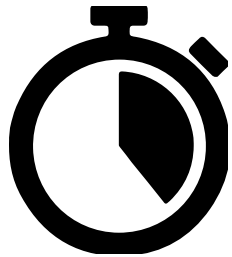
Solution: A protein sample preparation kit that accelerates drug discovery

At Impact Proteomics, we offer patent-pending protein sample preparation kits that utilize the natural surface chemistry of proteins that clean up biological samples to prepare them for analysis.

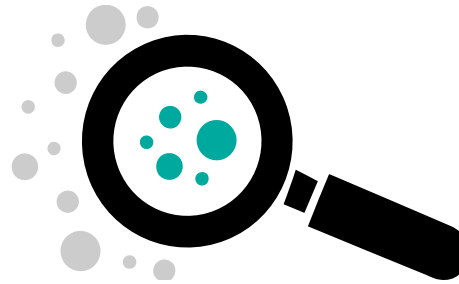
These kits are fast, easy-to-use, high yield, and accelerate our customers work-flows by up to 600%



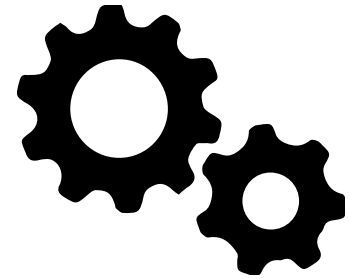
Why our customers love us



Faster Preparation
3 days to 2 hours



More Sensitive
Find more of
the right targets



Automatable
Reproducible, fast
data acquisition

Our technology can
save customers

**5 years and
\$15 million**

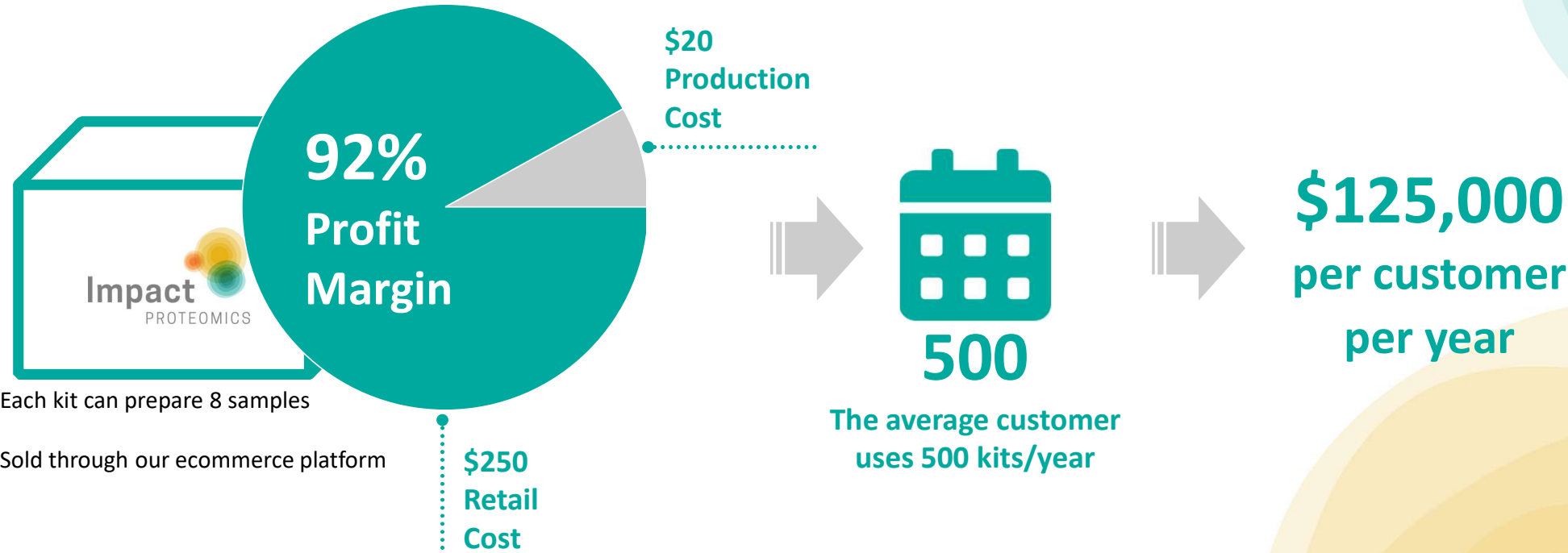
per project



Why people are switching to us

- **Universal use** with all sample types used in industry and academia
- **In as little as two hours** get a clean, ready to use sample; 2-15 times faster than current technology
- **Prevent sample loss** with a one tube reaction
- **Get deeper coverage** - capture chemistry reacts with *every* protein/peptide as opposed to only a few
- **Unmodified final sample** enabling downstream manipulation and analysis that was previously unavailable
- **Remove contaminants** such as SDS, DNA, RNA, lipids, carbohydrates, and salts
- **Automatable** for high throughput workflows

We make money by selling our consumable kits directly to our customers



This is a tried-and-true business model that has been successful in the DNA and RNA markets



\$7.7 billion net worth



COVAGEN 
Advanced Biopharmaceuticals

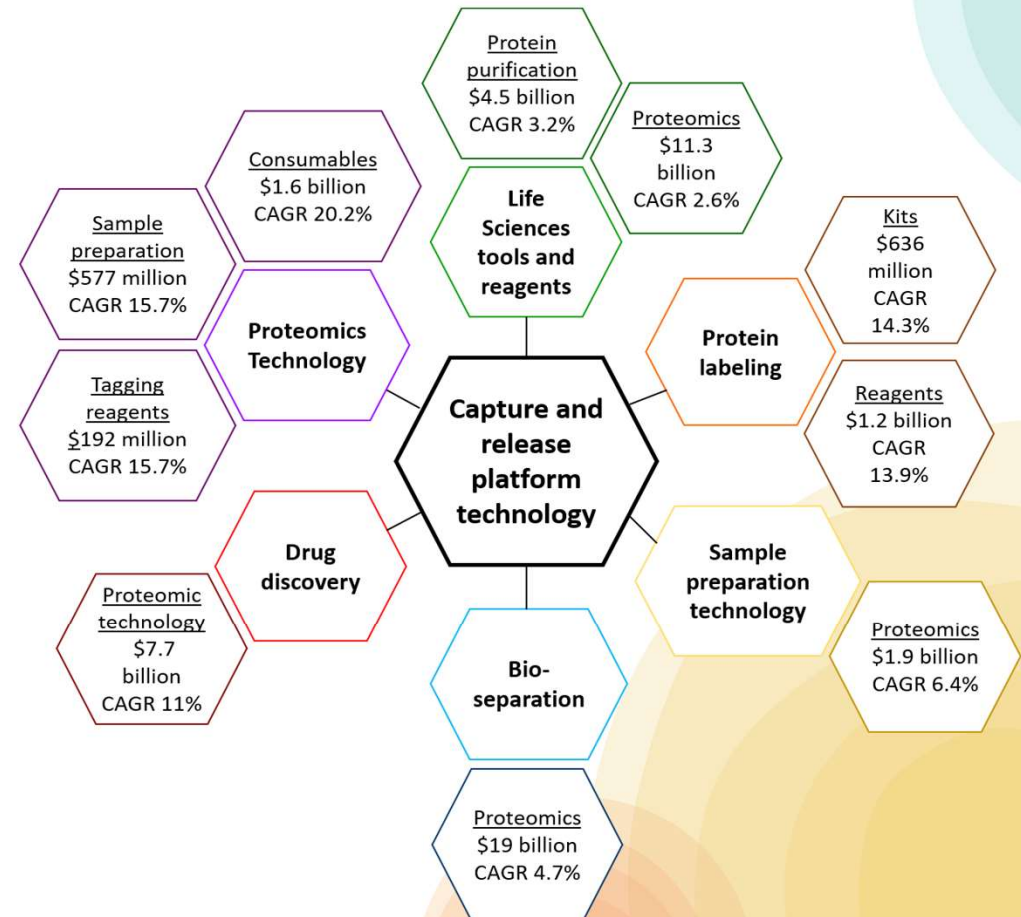
\$215 million acquisition

Many companies have been incredibly successful using this business model to address the need in the DNA and RNA sample preparation markets

There are many addressable markets for this platform technology

Our platform technology addresses multiple growing market segments, but our initial entry will be into the sample preparation market.

Our technology can immediately address needs in this market, and we have already done extensive customer discovery to understand their pants-on-fire needs.



Our pathway to success

Step one: Launch initial protein sample preparation kits for proteins, multi-biologics, and immunoproteomics samples

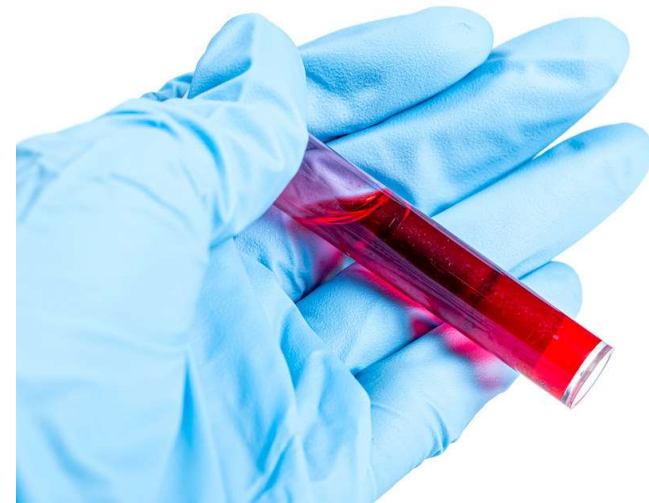
- This step gets our foot in the door with our potential customers and was a quick way to market to start earning income.
- This has been completed and we have acquired our first sales organically without a sales/marketing team.
- Currently selling a suite of six sample preparation kits and offering contract services for sample preparation as income.
- Addresses a **\$7 billion opportunity** in the sample preparation market



Our pathway to success

Step two: Develop diagnostic test for autoimmune disorders

- Over 13.5 million patients suffer from >70 autoimmune disorders that lack diagnostics due to technical issues arising from antibody contamination.
- Our technology enables the rapid detection and quantification of proteins and eliminates the problem of antibody contamination, poising us to become a leader in autoimmune disorder diagnostics
- The core technology developed in step one is now being applied to develop diagnostics for autoimmune disorders. Current collaborations with immunology leaders at the University of Pittsburgh have already led to >\$30k in assay development for these diagnostics.
- This expansion addresses an additional **\$18 billion immunoprotein diagnostic market** with additional potential for revenue from therapy monitoring, disease progression monitoring, and complication prediction.



Our pathway to success

Step three: Personalized diagnostics and monitoring for autoimmune disorders

- After step two is complete and FDA approved, we will have a means for characterizing biomarkers from the >70 autoimmune disorders that do not currently have diagnostics and understanding how those biomarkers change during disease progression and in response to therapeutic treatments
- Utilizing the tests we will have developed, we will be able to create tailored patient-based biomarker tests that can predict if a patient will get a disease, the severity of the disease, monitor disease progression, and detect that patient-specific response to a therapeutic treatment.
- This expansion addresses the Personalized medicine diagnostics is a **\$40 billion personalized medicine diagnostics market** and is one of the fastest growing markets today.

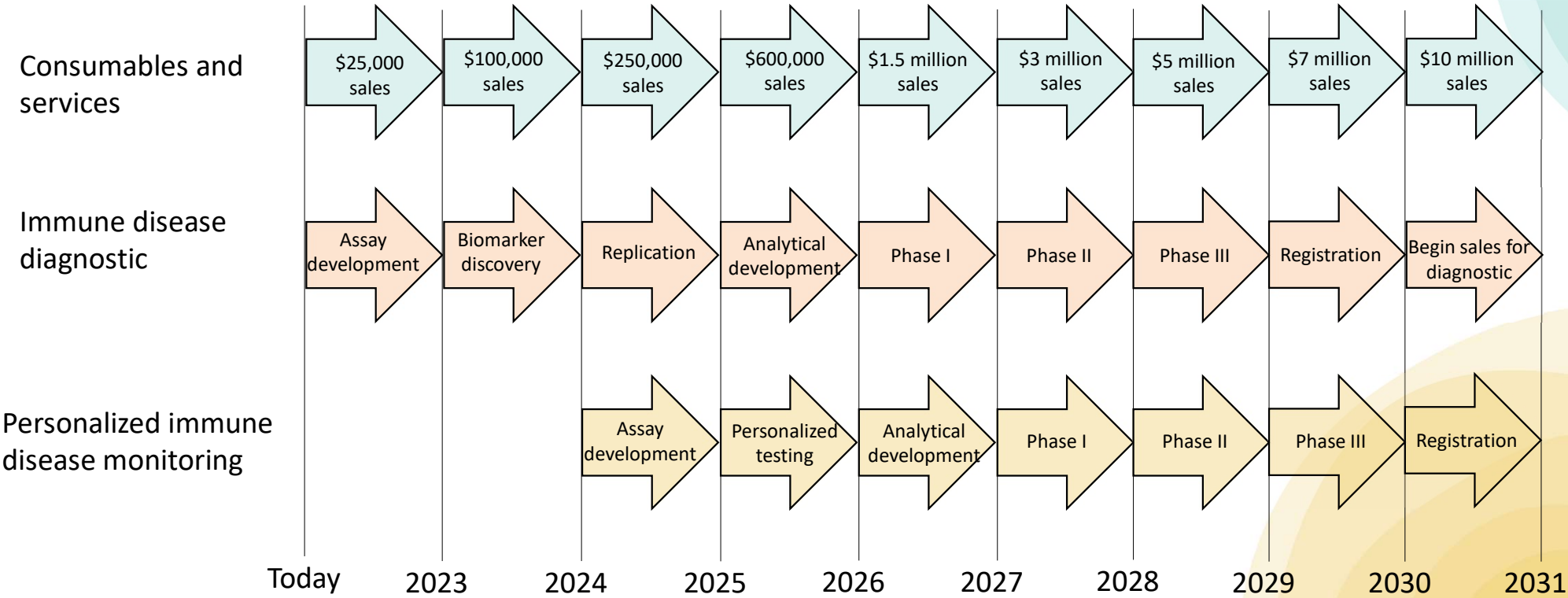


Our pathway to success

By entering into progressively larger markets over time, we de-risk development of our diagnostic technologies that take longer to get to market by continuously earning revenue from the consumables and services that we currently offer.

With our consumable products, services, and FDA approved diagnostic tests we will have a total opportunity of **\$65 billion**.

Our pathway to success



Patent strategy

Foundational technology licensed from Carnegie Mellon University in 2019.

Patent “Protein and Peptide Purification Methods” Filed June 7, 2019 and published August 19, 2021. Publication number 20210253630

Provisional patent for immune disorder diagnostic filed in June 2019.

Patent strategy includes patenting general immune disorder diagnostic workflow as well as any discovered biomarkers, drug targets, and therapies developed as a result of the diagnostic workflow

Additional patent for personalized immune disorder monitoring and testing to be filed upon project initiation

Seeking \$15 million in series A round for further development and FDA approval of immune disease diagnostic

\$15 million in series A funding to accomplish the following goals:

- Hire sales and marketing team to launch and scale sales for consumables and services.
- Bring on Chief Financial Officer, Chief Operations Officer, and Director of Business Development
- Scale manufacturing of consumable sample preparation kits to support goal of \$1.5 million in sales annually by 2027
- Complete development of Immune disease diagnostic test
- Complete replication studies for immune disease diagnostic test
- Accomplish translation of immune disease diagnostic test into assay compatible with clinical setting
- Establish team and practices to accomplish CLIA certification
- Expand laboratory to include fully functional mass spectrometry center for in-house diagnostic testing