

## [280a] MACHINE LEARNING FOR DRUG DISCOVERY AND DEVELOPMENT

David Harel, Founder and CEO, CytoReason, Israel

- **Investment Rational**

CytoReason has developed the first machine learning model of the immune system that can guide data-driven drug discovery and development, by uncovering the gene/cell/cytokine relationships at the heart of disease and its treatment. CytoReason's science is supported by 17 high-impact journal publications and validated by commercial deals with 3 of the top 8 global pharma companies and leading research institutions.
- **Business Strategy**

CytoReason's continually learning model lends itself to long-term collaborations that deliver novel biological insights and customizable IP. A typical collaboration would cover mechanism of action (target discovery/validation), biomarkers (disease or drug specific) and indication prioritization and expansion. Collaborations include up-front tech access fees, analysis fees and a portfolio of upstream milestones and royalty payments through a flexible asset ownership model.
- **Core Technology**

CytoReason's machine learning immune-focused models of disease and associated tissues is based on the largest proprietary molecular data and specifically designed technologies (deconvolution, cell specificity, multi-omics, natural language processing and summary-statistics). The continuously learning models grow in accuracy with each new dataset (accepting multiple data types) enabling insight generation with improved prediction power.
- **Product Profile/Pipeline**

CytoReason enjoys an exceptional growth trajectory. We currently have 10 ongoing collaborations and are actively expanding the number of pharma partnerships. These collaborations span discovery, development and post-market stages by identifying mechanism of action (target discovery/validation), biomarkers (disease or drug specific) and indication prioritization and expansion. New technologies in development and expansive new data from collaborations further strengthens our platform.
- **What's Next?**

CytoReason will expand its therapeutic focus, strengthen predictive power with new data and develop new technologies. This will transform a strong sales pipeline into increased collaborations with additional pharma/biotech companies. A new commercial partnership in Japan will also increase traction. Already, the largest system-immunology group worldwide, the team will grow to more than 40 people in the coming year.