Commercial Translation in the Department of Biomedical Informatics and University of Pittsburgh Health Sciences

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sciVelo and the University of Pittsburgh Office of Innovation and Entrepreneurship partner on academic commercial translation

sciVelo’s purpose is to accelerate research of impact by preparing early stage research for commercialization by Office of Innovation and Entrepreneurship

Established in 2016, sciVelo is a first-of-its-kind translational research accelerator and was born from the Department of Biomedical Informatics and the Clinical and Translational Science Institute of the University of Pittsburgh Health Sciences.

sciVelo Themes:
AI and Digital Health
Regenerative Medicine
Precision Medicine
Drug Discovery
Cell Therapy
Immunotherapy
Brain Health

http://scivelo.pitt.edu
sciVelo’s project funding programs by theme

**Tier 1 - Expanding**

- AI and Digital Health
- Regenerative Medicine

- PHDA Center for Commercial Applications of Healthcare Data ($2M/yr to Pitt Innovators)
- Michigan-Pittsburgh-Wyss Regenerative Medicine Resource Center ($500K/yr to Pitt Innovators)
- Pennsylvania Pediatric Device Consortium ($100K/yr to Pitt Innovators)

**Tier 2 - Emerging**

- Precision Medicine
- Drug Discovery

- Precision Medicine Initiative for Commercialization (PreMIC) ($250K/yr to Pitt Innovators)
- Preemptive Pharmacogenomics Profiling Center of Excellence with ThermoFisher Scientific ($1M+ equipment and reagent savings to Pitt)
- Microphysiological Systems (NIH NCATS grant score pending)
45 sciVelo team members since forming in 2016 across interdisciplinary functions
Why UPMC, Pitt and CMU?

3.4+ million covered lives
340k admissions
5,800 physicians
$513 million NIH funding (#5)
23 startups formed (FY 2018)
98 patents issued (FY 2018)

#1 computer science program
#1 artificial intelligence prog.
#7 most innovative university

Two Centers Created

CCA (Pitt)
Center for Commercial Applications of Healthcare Data
Co-Directors: Mike Becich, Don Taylor

CMLH (CMU)
Center for Machine Learning and Health
Director: Joe Marks

Turn data into improved human health to change the practice of medicine.
PHDA funded projects

PHDA CCA Funded Project Examples

- **SPDx**
  - Digital pathology image analysis
  - Currently SpIntellx

- **Fall Sentinel**
  - Predictive risk model to reduce falls
  - Keeping senior population out of the hospital

- **PUMP**
  - Pressure ulcer prevention-sensors/EHR data/mobile
  - Addressing an $11B preventable cost

- **DioneX**
  - Tumor driver identification
  - Precision diagnosis and treatment planning

- **MEDIvate**
  - Consumer-centric medication reconciliation
  - Reducing medication errors at point of care

- **AuguryDx**
  - Cell-free circulating DNA for silent disease diagnosis
  - Earlier diagnosis for improved outcomes

- **OncoBioelectrx**
  - Nerve stimulation reducing inflammation
  - Treat cancer without chemotherapy side effects

- **CARE**
  - Clinical note abbreviation disambiguation
  - Enable automated medical note text processing

- **CADidME**
  - Precision cardiovascular disease risk assessment based on metabolites
  - Earlier diagnosis for improved outcomes

- **PI Predictor**
  - Combining pathology and radiology for personalized cancer risk identification and treatment
  - Reduces need for costly genomic testing

- **Aneurysm Prognosis Classifier**
  - Combining 3D AAA images, patient health data, and biomechanical analysis to define patient AAA risk
  - Reduces mortality and costly surgeries

- **Personalized Pain Treatment**
  - Decision-making tool to provide personalized predictions of pain treatment to patients
  - Reduce pain treatment cost & patient morbidity

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https://healthdataalliance.com/partners/university-of-pittsburgh/
Accelerating research of impact

sciVelo – in Partnership with Office of Innovation and Entrepreneurship

sciVelo Commercial Translation Funding Sources:
- UPMC Enterprises, Pittsburgh Health Data Alliance
- NIH NIDCR 1U24DE029462-01, Michigan-Pittsburgh-Wyss Regenerative Medicine Resource Center
- FDA 1P50FD006427-01, Pennsylvania Pediatric Device Consortium
- NIH NCATS 1UL1TR001857-01, Clinical and Translational Science Institute
- Richard King Mellon Foundation #9509, Precision Medicine Award

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