

Office of Cooperative Research

Yale University



Yale Office of Cooperative Research

Presentation Highlights

02

About OCR

Commercialization Process

Overview of Success

Success Stories



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About OCR

The Bayh-Dole Act of 1980 gives universities the ownership of the inventions made with Federal funding

Founded in 1982, the Office of Cooperative Research (OCR) has built a significant portfolio of intellectual property that has grown into an engine of regional economic development.

OCR's mission is to facilitate the translation of research from Yale's labs into products and services that benefit society.



Commercialization Process



Evaluation of Inventions



Patent Protection
"Know-How"



Licensing



New Ventures



Corporate Partnership





\$98 MILLION

in VC investment into Yale
Companies in 2019



\$4.6 BILLION

in VC investment into Yale
Companies since 2010



70 STARTUPS

launched by OCR since 2010

OCR was averaging 4-5 venture-backed startups a year. In the last three years, that number has increased to 8-10, and there are 12-15 potential startups for FY 20.

Overview of Success



Biohaven Pharmaceuticals

06

- CEO, Dr. Vlad Coric is an Associate Clinical Professor of Psychiatry at the Yale School of Medicine.
- Biohaven is a clinical-stage biopharmaceutical company with proven leadership in industry and academic settings. Their portfolio is comprised of innovative, late-stage product candidates targeting neurological and neuropsychiatric diseases, including rare disorders.
- In May 2019, they raised \$168 million in IPO



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Arvinas

- Craig Crews - Lewis B. Cullman Professor of Molecular, Cellular, and Developmental Biology - founded Arvinas to develop a new class of drugs based on protein degradation.
- Arvinas raised \$60M in Venture Capital and has over \$1B in pharma partnerships
- In 2018, they raised \$120 Million in IPO and had 2 drugs in Phase I clinical trials



KLEO Pharmaceuticals

- Dr. David Spiegel – KLEO was founded in 2016 by Dr. David Spiegel and Roy Prieb to translate Dr. Spiegel's research in small molecule immunotherapies at Yale University into clinical treatments.
- KLEO has raised \$53M in financing.
Acquired by Celldex in Nov. 2016 for \$235M.
- In February 2020, received Investigational New Drug (IND) authorization to proceed from the U.S. Food and Drug Administration (FDA) to initiate a safety and tolerability clinical study





ReNetX Bio

- Stephen Strittmatter, MD, PhD, the Vincent Coates Professor of Neurology and co-founded the Yale Program in Cellular Neuroscience, Neurodegeneration and Repair, is the scientific founder & a current advisor at ReNetX Bio.
- They were established to provide first-in-class therapeutics to treat damage to the central nervous system (CNS).
ReNetX Bio has raised \$25M, launched a Phase 1/2 clinical trial proof of concept trial and was granted "Fast Track Designation" from FDA.



Quantum Circuits Inc. (QCI)

- Robert Schoelkopf, is a Co-Founder of QCI and its Chief Scientist. He is the Sterling Professor of Applied Physics and Physics at Yale University.
- They raised \$18M in Series A funding, co-led by Canaan and Sequoia.
- In January 2019, QCI officially opened its New Haven development and testing facility for quantum computing, which includes 6,000 square feet of state-of-the art laboratories and in-house manufacturing; it will house over 20 scientists and engineers.



NextCure

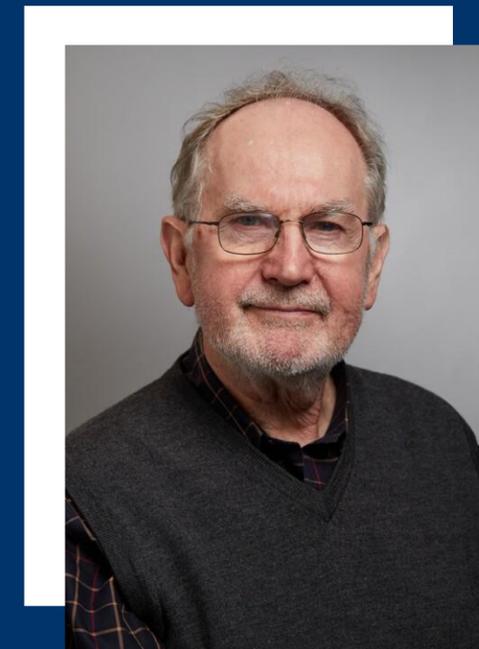
- Lieping Chen - United Technologies Corporation Professor in Cancer Research & pioneer of Immuno-checkpoint modulators (Opdivo of BMS and Keytruda of Merck) - founded NextCure to develop new cancer drugs.
- Raised a record \$67M Series A funding
- In Nov. 2018, announced the completion of a \$93 million series B equity financing
- NextCure is now a publicly traded company since its IPO in May of 2019



Artizan Bioscience

12

- Richard Flavell, HHMI Investigator, and Noah Palm, Asst. Professor of Immunobiology - founded a microbiome startup, Artizan Bioscience, to develop therapeutic vaccines for IBD
- Artizan raised \$12M Series A by 2019



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Cybrexa Therapeutics

13



- Chief Scientific Advisor & Scientific co-founder is Ranjit Bindra, MD, PhD, a physician-scientist and biotech entrepreneur at the Yale School of Medicine.
- They have raised \$21M in financing.
- The Company's lead candidate, CBX-12, an alphalexTM-exatecan conjugate, is expected to enter Phase I in 2021 in advanced solid tumors. Cybrexa also has other preclinical toxin conjugate programs as well as synthetic lethality programs.



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Proteolix

- Co-Founded by Craig Crews - Lewis B. Cullman Professor of Molecular, Cellular, and Developmental Biology, Proteolix, Inc., was a private biotechnology company founded in 2003.
- Proteolix was acquired by Onyx Pharmaceuticals in 2009 for \$810 million (nominal value).



Isoplexis

15



- Isoplexis has developed a single cell immunoassay and software that provides in-depth understanding of immune cells and cancer cells based on technology from Yale professor Rong Fan, Associate Professor of Biomedical Engineering.
- Team was formed by matching Fan's technology with a School of Management student, Sean Mackay, the CEO and cofounder
- In May 2019, they closed a \$25 Million Series C Round bringing total funds raised to over \$66 Million



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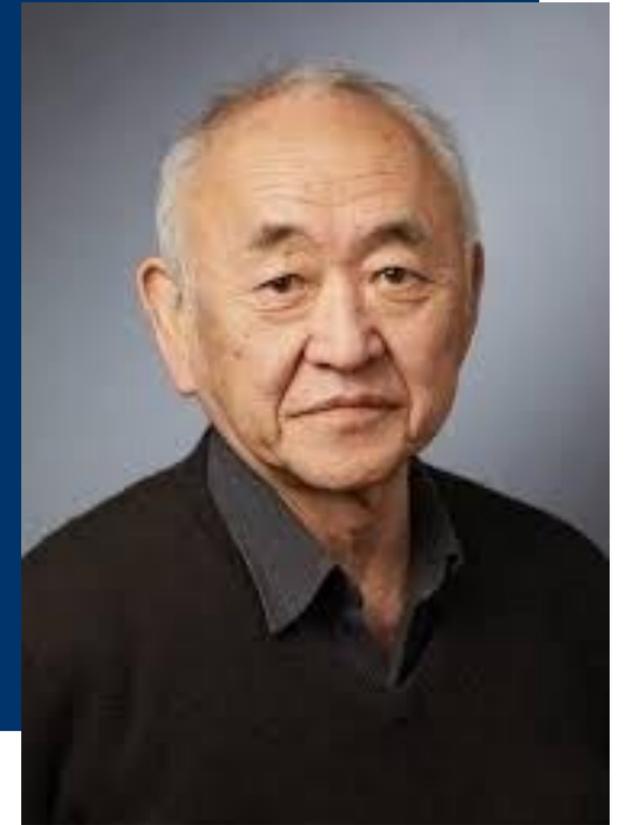
Achillion Pharmaceuticals



- Tommy Cheng - Henry Bronson Professor of Pharmacology - launched Achillion to develop improved antiviral compounds.
- Achillion raised \$50M in venture funding & another \$41.8M through direct offering.
- In Dec. 2016 they reached a clinical milestone for their chronic hepatitis C drug.
- In Dec. 2019, they were acquired by Alexion Pharmaceuticals.

Yiviva

- Developing therapeutics, inspired by botanical medicines, to treat chronic diseases and cancer - lead candidate cancer drug is based on an 1800-year old traditional Chinese medicine formula.
- Yiviva's pipeline is based around patented research from Dr. Yung Chi Cheng, the Henry Bronson Professor of Pharmacology at Yale and Chairman of the Consortium for the Globalization of Chinese Medicine.
- Cheng is the scientific founder of past venture successes Achillion and PhytoCeutica.
- The company won an Innovation Award at the US-China Health Summit in 2016



Kolltan

- Joseph Schlessinger - William H. Prusoff Professor, Chairman of the Department of Pharmacology - founded Kolltan to develop new cancer drugs.
- Kolltan raised \$80M in equity financing.
- Acquired by Celldex in Nov. 2016 for \$235M.

