



CONNECTICUT BIOSCIENCE INNOVATION FUND

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CBIF

The legislature established the [Connecticut Bioscience Innovation Fund](#) in 2013 to finance a wide range of commercially viable bioscience projects aimed at creating jobs while lowering health care costs and improving the delivery of health care services.

The legislature capitalized the fund by authorizing the issuance of up to \$200 million in general obligation bonds over 11 years and established a 13-member advisory committee to oversee it. [Connecticut Innovations](#), the state's quasi-public economic development agency, administers the fund.

The committee may grant, loan, or invest the bond proceeds in bioscience projects proposed by startup or newly formed businesses, colleges and universities, and nonprofit organizations (CGS §§ [32-41aa](#) to [32-41dd](#)).

ISSUE

Provide information on the Connecticut Bioscience Innovation Fund's (CBIF's) performance. Specific questions and answers follow.

How much money has the state bonded for CBIF and how much remains in the fund?

The legislature authorized up to \$200 million in bonds over 11 years according to the schedule shown in Table 1.

Table 1: CBIF Bond Authorization Schedule*

<i>Fiscal Year</i>	<i>Amount</i>
2013	\$10,000,000
2014	10,000,000
2015	15,000,000
2016	15,000,000
2017	0
2018	25,000,000
2019	25,000,000
2020	25,000,000
2021	25,000,000
2022	25,000,000
2023	25,000,000
Total	200,000,000

*PA 16-4, May Special Session, § 257 deferred CBIF's FY 17 \$25 million bond authorization to FY 23.



According to Connecticut Innovations (CI), the fund’s administrator, the state has adhered to this schedule, issuing \$50 million in bonds through 2016, with \$150 million in additional bonds to be issued in FYs 18-23.

As Table 2 shows, of the \$50 million in bonds issued to date, CI committed almost \$20 million to 20 projects and paid out about half that amount.

Table 2: Status of CBIF Bonds as of FY 16

<i>FY</i>	<i>Total Bonds Authorized (in millions)</i>	<i>Total Bond Funds Committed (in millions)</i>	<i>Total Bond Funds Paid Out (in millions)</i>
13	\$10.0	\$0.0	\$0.0
14	10.0	0.0	0.0
15	15.0	1.5	1.2
16	15.0	18.4	8.6
Totals	50.0	19.9	9.8

Source: Connecticut Innovations

How many jobs have CBIF-funded projects created?

CBIF has created about 21 jobs to date, according to CI. (CI also reports that five CBIF projects have created five additional indirect jobs, that is jobs created by organizations that provide goods and services to the entities receiving CBIF funding.)

How much private investment has CBIF leveraged?

As of July 2016, CBIF funded projects leveraged about \$678,527 in private investments, 96% of which was leveraged by Yale University’s Demetrios Braddock from Alexion Pharmaceuticals with a \$500,000 “royalty bearing grant” from CBIF. DuraBiotech leveraged about \$25,000 from the Atlantic Pediatric Device Consortium with a \$492,340 secured convertible loan from CBIF. (Loon Medical, Inc. leveraged \$85,500 in public funds from the Connecticut Labor Department.)

Table 3, which CI prepared on our behalf, provides details about each CBIF funded project. Attachment 1, which is CBIF’s 2016 annual report, provides more details about the fund and its investments.

Table 3: CBIF Economic Impact by Project for Closed Awards, January 2014 — July 2016*

**First round of CBIF awards were made in July 2014*

Applicant		Project Title	Connecticut Bioscience Innovation Fund		Leveraged Dollars		Jobs Created		Return on Investment to CBIF(1)
Name	Institution and Type		Total Funding	Type of Funding	Amount	Source	Direct	Indirect	
CaroGen Corporation	Company	Development of a therapeutic vaccine for the treatment of patients with chronic hepatitis B virus infection	\$500,000	Secured Convertible Loan	0		0	0	0
DuraBiotech	Company	Animal implant studies of a novel, low profile Transcatheter aortic valve replacement device	\$492,340	Secured Convertible Loan	\$25,000	Atlantic Pediatric Device Consortium	2	2	0
Tangen Biosciences, Inc.	Company	Point of Care Molecular Diagnostic for TB	\$500,000	Secured Convertible Loan	0		5	0	0
Loon Medical, Inc.	Company	CareSentinel	\$458,000	Secured Convertible Loan	\$80,500	CT Department of Labor; Eastern CT Workforce Investment Board	5	1	0
MIFCOR, Inc.	Company	MIFCOR: MIF-2 Commercialization	\$500,000	Secured Convertible Loan	0		0	0	0
Smpl Bio, LLC	Company	Smpl Bio MVP Development Project	\$500,000	Secured Convertible Loan	0		0	0	0
My Gene Counsel	Company	My Gene Counsel Precision Medicine Portal	\$500,000	Secured Convertible Loan	0		0	0	0
Shoreline Biome, LLC	Company	Microbiome Diagnostic for Clostridium Difficile	\$500,000	Secured Convertible Loan	0		0	0	0
CatheRx	Company	Caveolin modulators for the treatment of uveitis	\$497,400	Secured Convertible Loan	0		0	0	0
Demetrios Braddock, M.D., Ph.D.	Yale University	Validation of NPP1 Enzyme Replacement to Treat Diseases of Ectopic Bone Mineralization	\$500,000	Royalty Bearing Grant	\$653,527	Alexion Pharmaceuticals	4	0	0
Craig Crews, Ph.D.	Yale University	Addressing Proteasome Inhibitor Resistance in Multiple Myeloma	\$500,000	Royalty Bearing Grant	0		0	0	0
Richard Flavell, Ph.D.	Yale University	A Mouse Model of the Human Immune System	\$500,000	Royalty Bearing Grant	0		0	0	0

Table 3 (continued)

Applicant		Project Title	Connecticut Bioscience Innovation Fund		Leveraged Dollars		Jobs Created		Return on Investment to CBIF(1)
Name	Institution and Type		Total Funding	Type of Funding	Amount	Source	Direct	Indirect	
Dianqing (Dan) Wu, Ph.D.	Yale University	Development of anti-colorectal cancer immunobiologics	\$500,000	Royalty Bearing Grant	0		0	0	0
Mark Reed, Ph.D.	Yale University	Multiplexed Implantable Sensor Technology	\$500,000	Royalty Bearing Grant	0		0	0	0
Robert Clark, M.D.	University of Connecticut Health Center	Development of a Blood Biomarker for Use in the Diagnosis and Treatment of Multiple Sclerosis	\$477,554	Royalty Bearing Grant	0		0	0	0
Quing Zhu, Ph.D.	University of Connecticut	A Near Infrared Imager as an Add-On unit to Standard Ultrasound for Breast Cancer Treatment Prediction and Monitoring	\$497,665	Royalty Bearing Grant	0		5	2	0
Pramod Srivastava, M.D., Ph.D.	University of Connecticut Health Center	Genomic-driven personalized immunotherapy of human ovarian cancer	\$500,000	Royalty Bearing Grant	0		0	0	0
Chengsheng Zhang, Ph.D.	The Jackson Laboratory for Genomic Medicine	Adaptive Clinical Genomics for Precision Medicine	\$499,980	Royalty Bearing Grant	0		0	0	0
PITCH	Yale University (Craig Crews); University of Connecticut (Dennis Wright)	Program in Innovative Therapeutics for CT's Health	\$9,999,995	Royalty Bearing Grant					
Bioscience Pipeline Program	Yale University; University of Connecticut; Quinnipiac University	Bioscience Pipeline Program	\$1,000,000	Royalty Bearing Grant					

Note: (1) Returns on investments to the fund occur when a convertible loan is turned into equity or a deal funded with royalty bearing grant licenses the technology.

Source: Connecticut Innovations

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