Project Seed

Phase II – Gap Analysis, Capital Provider Feedback and Financial Model

April 18, 2008

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April 18, 2008

Lynn Harwell
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Dear Ms. Harwell:

PricewaterhouseCoopers LLP ("PwC" or "we") has performed certain advisory services to assist California Institute for Regenerative Medicine ("CIRM", "Client" or "you") in your evaluation of existing state-funded programs in accordance with our engagement letter dated February 25, 2008 and subject to the terms and conditions contained therein.

Our services were performed in accordance with Standards for Consulting Services established by the American Institute of Certified Public Accountants ("AICPA"). The services did not constitute an audit conducted in accordance with generally accepted auditing standards, an examination of any type, an accounting opinion, or other attestation or review services in accordance with standards established by the AICPA, by the Public Company Accounting Oversight Board or by any other professional governing body. Accordingly, PwC provides no opinion or any other form of assurance with respect to the services or the information upon which our work was based.

The services were performed, and this report prepared, at the direction of and in accordance with instructions provided by CIRM, exclusively for CIRM's sole benefit and use. The services and report are not intended for, nor may they be relied upon by any other party. This report and its contents may not be distributed to, discussed with, or otherwise disclosed to any third party without PwC's prior written consent. This report is not to be referred to or quoted, in whole or in part, in any offering memorandum, prospectus, registration statement, public filing, loan or other agreement or document without our express written approval, which may require that we perform additional work.

PwC accepts no duty, obligation, liability or responsibility to any party, other than CIRM, with respect to the services and/or this report. PwC makes no representation regarding the sufficiency of the services for any purpose.

The underlying prospective financial information referred to in this report was prepared and developed by management. PwC did not prepare any prospective financial information nor develop any assumptions therein. Any tables aggregating PwC's comments and observations of vulnerabilities and sensitivities do not represent restatements of the prospective financial information, or revised prospective financial information; they are provided as a means of summarizing our comments and to assist you with your evaluation of the prospective financial information. It is your responsibility to consider our comments and make your own decisions based on the information available to you. Because events and circumstances frequently do not occur as expected, there will usually be differences between predicted and actual results, and those differences may be material. We take no responsibility for the achievement of predicted results.

To the extent the report is considered written advice under Treasury Regulations Circular 230, the report was not intended or written to be used, and it cannot be used for the purpose of: (i) avoiding penalties that may be imposed on any taxpayer, or (ii) supporting the promotion or marketing of any transactions or matters addressed in the report.

We appreciate the opportunity to assist you with this matter.

Very truly yours,

PricewaterhouseCoopers LLP

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Section 1
Executive Summary

We assisted CIRM with the development of its loan program through three work streams: benchmarking of similar programs, creating and testing loan terms in the investment community, and creating a loan model to estimate possible outcomes of the loan program

Work stream	Summary of work conducted	Summary of findings
Benchmarking Report	We provided a benchmarking report of existing similar loan programs. We profiled 12 programs in 10 states, examining average loan sizes, loan terms, procedures and review processes.	While no program was of a similar magnitude to the CIRM program, we identified a number of best practices that are applicable to the program in California. Detailed findings can be found in the Phase I Benchmarking Report.
Gap Analysis and Capital Provider Feedback	Based on this feedback from the benchmarking report, combined with input presented at CIRM Loan Task Force meetings and discussions, CIRM developed a sample term sheet. We conducted 14 interviews with industry representatives, Venture Capital and Venture Debt groups to test the proposed terms set forth by CIRM in order to identify necessary modifications needed in the program to meet anticipated future capital provider needs.	We found that most of the terms would be viewed as favorable to program applicants and follow-on investors. However, there was consensus among interviewees that the program's proposed repayment triggers need to be altered in order to attract applicants and investors. Some interviewees also recommended that the CIRM loan program eligibility extend beyond stage 2A in order to fulfill its purpose of assisting companies to cross the "valley of death." The term sheet and detailed findings can be found in section 2 of this report.
Loan Model	We developed a financial model of the possible results of the loan program. Our base assumptions incorporated interest rates, pre-money value, portfolio allocation, term (length) of loan, warrant coverage, pre-payment penalty, liquidity multiple and default and repayment rates experienced by similar early stage companies over time.	Given the base assumptions, we found that the structure of the loan program could yield sufficient returns to enable CIRM to perpetuate its loan program beyond the proposed 10 year window, if CIRM makes prudent investments and has reasonable levels of losses. Assumptions and the associated loan repayment schedule is included in section 3 of this report. A loan model, which allows users to alter the various assumptions, has been provided to CIRM.

Section 2
Gap Analysis and Capital Provider Feedback

We spoke with industry representatives from life science companies, Venture Capital and Venture Debt groups to test the proposed terms set forth by CIRM

We tested the following terms with regards to their attractiveness to applicants as well as to follow-on investors:

CIRM Loan Program Summary Term Sheet

Capital allocation	Will distribute roughly $70 million per year, which is equivalent to ~23 loans per year
Terms:	
Range of loan sizes	$1 - $5 million, depending on the stage of the company (Pre-clinical to Clinical 1A, 1B, 2A)
Disbursement	Milestone driven
Term of loan (number of years)	10 years (possibly up to 7 years)
Interest rate	Prime plus 2-4%, cumulative (non-cash pay)
Recourse	Can be recourse to the company or non-recourse - terms will differ based upon recourse
Warrants	Warrant coverage up to 10% of the CIRM loan amount for recourse loans, 50% for non-recourse loans, with cap on CIRM ownership of 20% on fully-diluted basis
Warrant strike price	Set at previous round of equity financing prior to CIRM loan approval
Triggers for acceleration of payment:	1) Twenty-fold financing (i.e. loan becomes due when the company gets 20 times the original amount of financing) 2) Within 90 days of FDA submission (just on devices and diagnostics) 3) Within 6 months of beginning a pivotal trial (for Therapeutics) 4) Any change in control
Prepayment	At anytime
Loan subordination	Willing to subordinate
Matching requirement:	Indirect requirement; company will need to raise more funds in order to reach milestones for additional CIRM funding
Application Process	
Timing of applications	Initial process may include 1-2 RFAs per year, 20-25 loans funded per year. Timeline for the RFA process is expected to be about 6-8 months
Eligibility: Stage of company's development	Seed, Preclinical, 1A, 1B or 2A (provide estimates of funding needed for each stage)
Decision Process	
Commercial Review	Business/Financial feasibility review, will primarily focus on board members and management experience
Scientific Review	Applications will undergo CIRMs scientific merit evaluation. Awards based upon the projects contribution to medicine as determined through the CIRM grant review process

Most terms were viewed as favorable by the interviewees

The following terms had few or no objections from interviewees:

Issue covered	Description	Notable comments, if any
Capital Allocation	Approximately $70 million to be distributed per year (~23 loans/year)	
Terms		
Disbursement	Milestone driven	
Term of loan	7-10 years (most likely 10 years)	
Interest rate	Prime plus 2-4%, cumulative (non-cash pay)	
Recourse	Can be recourse to the company or non-recourse - terms will differ based upon recourse	
Warrants	Warrant coverage up to 10% of the CIRM loan amount for recourse loans, 50% for non-recourse loans, with cap on CIRM ownership of 20% on fully-diluted basis	
Warrant strike price	Set at previous round of equity financing prior to CIRM loan approval	
Prepayment	Allowed at anytime	
Loan subordination	Willing to subordinate	Subordination is critical to encouraging follow-on investment
Matching Requirements	Indirect requirement; company will need to raise more funds in order to reach milestones necessary for additional CIRM funding	
Application Process		
Timing of applications	Initial process may include 1-2 RFAs per year, 20-25 loans funded per year. Timeline for the RFA process is expected to be about 6-8 months	
Decision Process		
Commercial Review	Business/Financial feasibility review, will primarily focus on board members and management experience	It is important that this program have a good commercial review. Looking at management is an appropriate way of evaluating businesses, and is the method that VCs typically use. One interviewee suggested that CIRM also consider the quality of existing investors when making lending decisions
Scientific Review	Applications will undergo CIRMs scientific merit evaluation. Awards based upon the projects contribution to medicine as determined through the CIRM grant review process	

However, the proposed loan sizes and stage of development eligibility was challenged by some interviewees

Issue	Commentary
Some believe that loan sizes are too small, whereas others believe that the loan amounts are fair	• Three of the industry representatives felt that the proposed loan amounts are too small, given the high overall cost of bringing a product to commercialization. – *"These amounts are really small. Just to get to pivotal trial requires $25-40 million."* CFO, Geron Corporation • Other respondents felt that the loan amounts are fair, especially if companies are eligible to apply for funding for successive stages of development. – *"The loan amounts seem okay as long as companies are still eligible to apply for funding once they have successfully completed an earlier stage."* VP Stem Cells & Regenerative Medicine, Invitrogen
Some feel that eligibility should extend beyond phase 2A	• Some interviewees felt that the "valley of death" extends beyond phase 2A and the loan program should therefore include later stage companies – *"CIRM has to think about what it is trying to do. What is the intent? This program is inapplicable to a company in our stage. When you talk about funding the gap, you need to realize that there is a huge gap, since VC do not invest in therapeutic stem cell technologies at any stage."* CFO, Geron Corporation – *"You have to ask what is the point of this program? Is this aimed at early stage companies? If the thought is to help some of the companies that wouldn't otherwise get funding, there are many later stage companies that need funding and could also benefit. And for the investors, they are less risky."* CFO, Cytori Therapeutics

Repayment triggers were highly contested by interviewees

Repayment trigger	Comments/quotes:
Twenty-fold financing	• Four of the eleven respondents felt that repayment at the time of twenty-fold financing would be onerous. – *"Once you get to that level, the investors are pretty tapped out. They aren't going to want to give out additional money to pay back a loan."* SVP, Regional Managing Director - Technology & Life Sciences, Comerica
Within 90 days of FDA submission (Devices and Diagnostics) or within 6 months of beginning a pivotal trial (Therapeutics)	• All respondents expressed that the FDA submission and beginning of a pivotal trial triggers are inappropriate. Most suggested that the trigger should instead be tied to FDA approval – *"This trigger is not realistic. At the time of FDA submission companies are so strapped for cash; they can't raise money at that time. It is much more realistic to have the trigger be <u>after</u> FDA approval"* Managing Director, Enterprise Partners Venture Capital – *"These are not liquidity events. If CIRM thinks that these are good triggers because the company is close to getting more money, why not just wait until the company actually gets the money? The triggers should be tied to cash flow."* General Council, StemCells Inc. – *"This can potentially be an issue. Not every submission leads to approval. With a pivotal trial, you may be within six years of knowing anything. It should drive financiability, but it doesn't always."* CFO, Cytori Therapeutics
Any change in control	• Respondents in the VC community suggested that there should be some conditions around the change in control trigger – *"You can't say just <u>any</u> change in control. If it is a large acquisition that's fine, but not if it is just two small companies that merge. It would be better to say that repayment is required at the time that the investors have received two times their original investment, or something along those lines."* Managing Partner, Forward Ventures

Section 3

Financial Model

We developed a financial model of the expected results of the loan program over a ten year time frame

The following assumptions were used as a basis for our model:

CIRM Loan Program

Assumptions

$ millions

	% of Port	$ Alloc	Yr Alloc	$ Avg Loan	# Loans	PreM Val	War Cov	Liquidity Mult	Int Rate	Term	Pre PMT
Pre-clinical	10.0%	50	7	1	50	3	10.0%	3	8.0%	10	0.0%
1A	15.0%	75	7	2	38	6	10.0%	3	8.0%	10	0.0%
1B	30.0%	150	7	3	50	9	10.0%	3	8.0%	10	0.0%
2A	45.0%	225	7	5	45	15	10.0%	3	8.0%	10	0.0%
	100.0%	**500**			**183**						

Default Rate	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
Pre-clinical			10.0%	10.0%	30.0%						50.0%
1A				20.0%	10.0%	10.0%					40.0%
1B					10.0%	10.0%	10.0%				30.0%
2A							10.0%	10.0%			20.0%

Loan Repayment	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
Pre-clinical					10.0%	10.0%	20.0%	20.0%	20.0%	20.0%	100.0%
1A				10.0%	10.0%	20.0%	20.0%	20.0%	20.0%		100.0%
1B			10.0%	10.0%	20.0%	20.0%	20.0%	20.0%			100.0%
2A		10.0%	10.0%	20.0%	20.0%	20.0%	20.0%				100.0%

Note: Default and repayment assumptions were reviewed by VCs and VC lenders, who thought these assumptions seemed reasonable.

The loan model assumptions are based on CIRM decisions, interview feedback, and estimates that were reviewed by Venture Capital groups and Venture Lenders

The following is the rationale behind the loan model assumptions:

Guide to Assumptions

Term	Description	Notes
% of Port	Percent of loan portfolio in terms of dollars	Subject to change; allocation to be decided by CIRM
$ Alloc	Amount of money allocated to each loan group (Pre-clinical, 1A, 1B, 2A)	Calculation: (total budget) x (% of portfolio)
Yr Alloc	Number of years over which the $500 million budget is distributed	As per discussion with CIRM
$ Avg Loan	Average loan size for each loan group	As per discussion with CIRM
# Loans	Number of loans for each loan group	Calculation: (Allocation) / (Average loan size)
PreM Val	Pre-money value	Calculation: (Loan amount) x (Liquidity multiple)
War Cov	Warrant coverage	As per discussion with CIRM, Warrant coverage to up to 10% of the CIRM loan amount for recourse loans, 50% for non-recourse loans
Liquidity Mult	Liquidity multiple	Interviews with VCs indicate expected return is 3-5 times their money back within 5-7 years
Int Rate	Interest Rate	Prime rate plus 3% (this is similar to interest rates in other programs)
Term	Term of loan	As per discussion with CIRM, loan term is 10 years
Pre PMT	Early repayment penalty	As per discussion with CIRM, there will be no pre-payment penalty (our interviews with other programs indicate that it is common to assess a pre-payment penalty)
Default Rate	Default Rate	Default schedule based on interviews and feedback from PwC MoneyTree
Loan Repayment	Schedule of early repayments	Loan repayment schedule was reviewed by VCs and VC lenders, who though the assumptions appeared reasonable

Based on our assumptions, we found that the loan program could yield sufficient returns to enable CIRM to perpetuate its loan program beyond the proposed 10 year window

According to the model, by year ten CIRM would have issued $500 million in loans and could have increased its assets from $500 million to $662 million.

CIRM Loan Program

Summary Financial Information

Cash	**Yr 1**	**Yr 2**	**Yr 3**	**Yr 4**	**Yr 5**	**Yr 6**	**Yr 7**	**Yr 8**	**Yr 9**	**Yr 10**
Pre-clinical	42.9	35.7	28.6	21.4	14.9	9.1	4.6	8.9	14.8	22.4
1A	64.3	53.6	42.9	33.4	25.2	19.8	17.4	28.8	43.6	58.6
1B	128.6	107.1	88.7	73.0	64.0	61.8	66.7	101.1	135.4	167.8
2A	192.9	164.9	141.4	127.5	123.6	130.4	148.6	199.2	245.7	288.3
Total cash	**428.6**	**361.3**	**301.5**	**255.3**	**227.8**	**221.1**	**237.2**	**338.0**	**439.6**	**537.1**

Loans	**Yr 1**	**Yr 2**	**Yr 3**	**Yr 4**	**Yr 5**	**Yr 6**	**Yr 7**	**Yr 8**	**Yr 9**	**Yr 10**
Pre-clinical	7.7	16.0	24.1	31.7	35.9	39.9	42.7	36.6	28.3	20.3
1A	11.6	24.1	37.6	47.8	56.0	60.2	61.9	50.4	37.9	24.2
1B	23.1	48.1	72.4	95.6	110.8	116.6	116.6	93.5	68.2	43.6
2A	34.7	68.4	100.6	126.5	139.7	139.7	139.7	104.6	70.4	37.1
Total loans	**77.1**	**156.6**	**234.6**	**301.6**	**342.4**	**356.4**	**361.0**	**285.0**	**204.8**	**125.2**

Assets	**Yr 1**	**Yr 2**	**Yr 3**	**Yr 4**	**Yr 5**	**Yr 6**	**Yr 7**	**Yr 8**	**Yr 9**	**Yr 10**
Pre-clinical	50.6	51.8	52.6	53.1	50.8	48.9	47.3	45.5	43.1	42.7
1A	75.9	77.6	80.4	81.2	81.2	80.1	79.3	79.1	81.5	82.8
1B	151.7	155.3	161.1	168.6	174.8	178.4	183.3	194.6	203.6	211.4
2A	227.6	233.3	242.0	254.0	263.3	270.1	288.3	303.8	316.1	325.4
Total assets	**505.7**	**518.0**	**536.2**	**556.9**	**570.2**	**577.5**	**598.2**	**623.0**	**644.3**	**662.4**

Note: Our model assumes that all funds collected go into a cash account with 0% return
Warrant trigger assumed at repayment time; model assumes total loss for companies that do not enter into repayment

Appendix 1
Interviews

We conducted 14 interviews with industry representatives, Venture Capital and Venture Debt groups to test the proposed terms set forth by CIRM

Company	Category
Bay City Capital*	Venture Capital
Comerica	Venture Debt
Cytori Therapeutics	Industry Representative
Enterprise Partners Venture Capital	Venture Capital
Forward Ventures	Venture Capital
Geron	Industry Representative
Geron	Industry Representative
Hercules Technology Growth Capital	Venture Debt
Invitrogen	Industry Representative
Novocell	Industry Representative
Proteus Venture Partners*	Venture Capital
Silicon Valley Bank, Private Equity Group*	Venture Capital
Square 1 Bank	Venture Debt
StemCells Inc.	Industry Representative

* Denotes interviewees who provided guidance in creating the terms, which were then tested by the other interviewees.