Right now.

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California Institute for Regenerative Medicine

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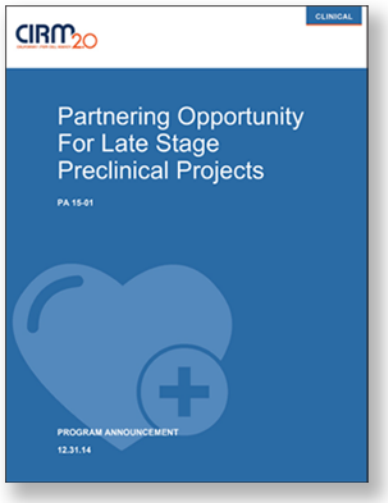
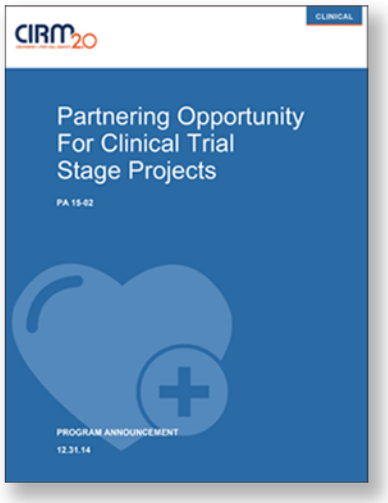
CIRM
CALIFORNIA'S STEM CELL AGENCY

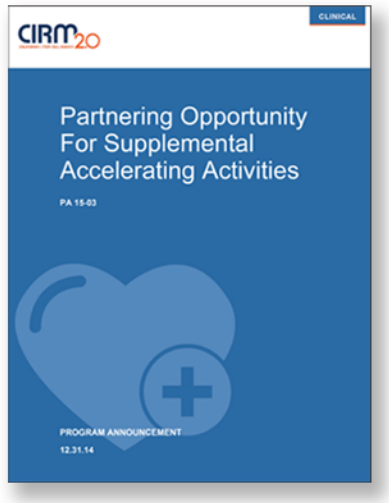
Every Moment Counts. **Don't Stop** Now.

Clinical Stage Programs

CLINICAL STAGE







CLIN 1 **CLIN 2** **CLIN 3**

Scoring System for Clinical Applications

- **Score of "1"**

  Exceptional merit and warrants funding.

- **Score of "2"**

  Needs improvement and does not warrant funding at this time but could be resubmitted to address areas for improvement.

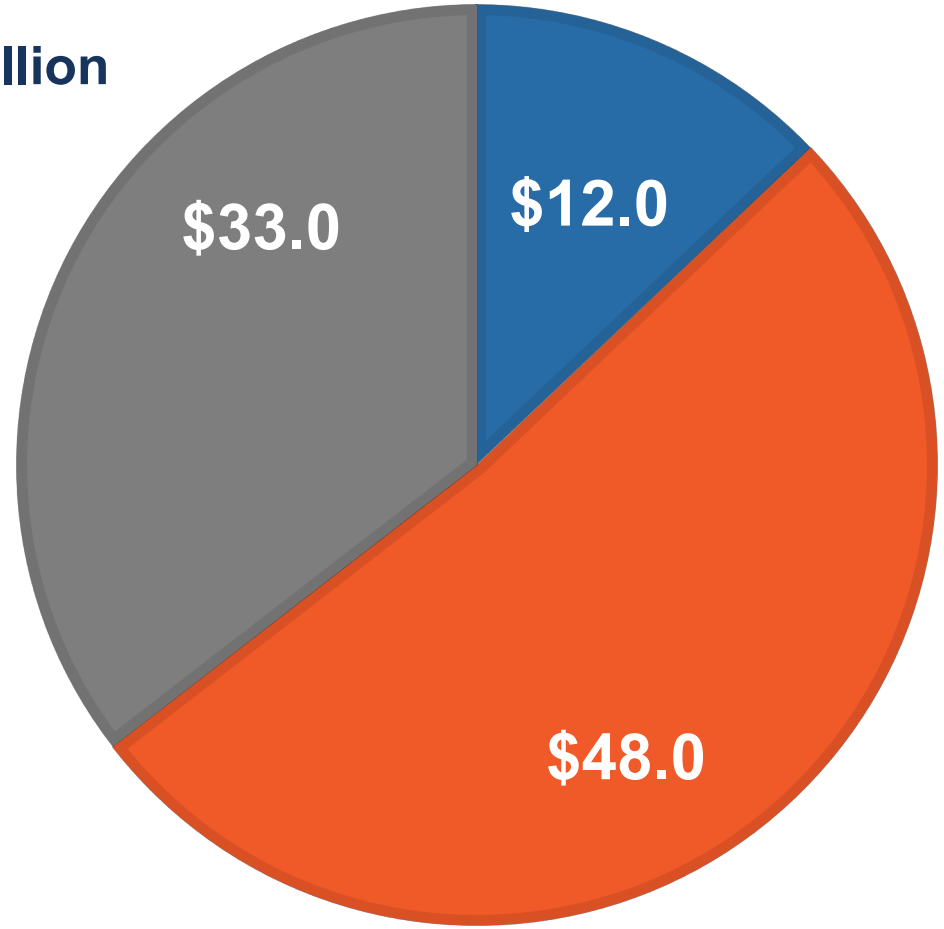
- **Score of "3"**

  Sufficiently flawed that it does not warrant funding and the same project should not be resubmitted ***for at least 6 months****.*

Applications are scored by all scientific members of the GWG with no conflict.

2019 Clinical Budget Status

Annual Allocation: $93 million

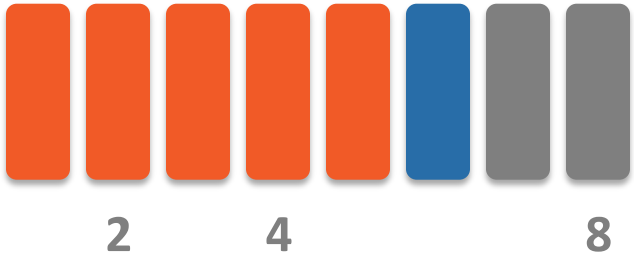


- Amount Requested Today
- Approved Awards
- Unused Balance

Amounts are shown in millions

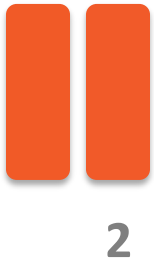
2019 Clinical Award Targets

CLIN2
Clinical Trials



GOAL

CLIN1
Late Stage Preclinical



GOAL

Approved Award

Awaiting Today's Approval

CLIN2-11478: Project Summary

Therapy	Autologous CTNS gene-modified CD34+ hematopoietic stem cells
Indication	Cystinosis
Goal	Phase 1/2 trial completion
Funds Requested	$11,999,944 ($0 Co-funding)

Maximum funds allowable for this category: $12,000,000

CLIN2-11478: Background Information

Clinical Background: Cystinosis is a lysosomal storage disease caused by CTNS gene mutations and is inherited in an autosomal recessive pattern. Cystinosis affects 1 in 100-200K newborns worldwide. The CTNS gene mutation results in accumulation of cystine crystals in cells of all organs; the kidneys and eyes are especially vulnerable to damage. The most severe form of cystinosis is early-onset and results in renal Fanconi syndrome and eventual kidney failure.

Value Proposition of Proposed Therapy: Cystinosis is managed by daily oral and eye drop administration of cysteamine, which does not prevent renal Fanconi syndrome or end-stage renal failure. The proposed gene therapy has potential to be a one-time treatment option that maintains kidney and eye function. The proposed MOA of cell-cell contact mediated transfer of lysosomal protein by gene-modified tissue macrophages has potential for effect in similar diseases.

Why a stem cell project: The therapy includes gene-modified CD34+ progenitor cells.

Sources: JDRF, NIDDK, CDC

CLIN2-11478: Related CIRM Portfolio Projects

CIRM is currently supporting applicant's IND stage activities for the same project (please see next slide).

There are currently no clinical stage projects targeting Cystinosis in CIRM's active projects portfolio.

CLIN2-11478: Previous CIRM Funding

Project Stage	Project Outcome	Project Duration	Award Amount	Milestones*
IND	Ongoing	11/01/16 - 09/30/19	$5.27M ($5.27M issued to date)	**OM1:** Large-scale GMP vector production (Achieved on time)
				OM2: GMP tech transfer (Achieved on time)
				OM3: Pharm/Tox safety studies (Delayed with minor concerns)
				OM4: File IND (Achieved with minor delays)
				OM5: Trial startup (Achieved with minor delays)

CLIN2-11478: GWG Review

GWG Recommendation: Exceptional merit and warrants funding

Score	GWG Votes
1	15
2	0
3	0

CIRM Team Recommendation: Fund (concur with GWG recommendation)

Award Amount: $11,999,944*

*Final award shall not exceed this amount and may be reduced contingent on CIRM's final assessment of allowable costs and activities.