CIRM
CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE

Memorandum

To: Members of the Science Subcommittee
From: Kelly Shepard, Director and Daisy Xin, Science Officer (Discovery and Education); Rosa Canet-Avilés, Chief Science Officer
Re: EDUC8 Concept for Strategic Updates to CIRM Bridges and COMPASS Programs; EDUC3 Concept Amendment for Strategic Updates to SPARK Program
Date: November 21, 2025

On November 21, we will present two concept proposals, **EDUC8** and **EDUC3**, for your consideration and recommendation to the Independent Citizens' Oversight Committee (ICOC) for approval at its upcoming meeting on December 11, 2025.

These proposals are part of the second phase in the implementation of the Strategic Allocation Framework (SAF), which was approved by the ICOC in September 2024. A central objective defined in the SAF is to strengthen CIRM's workforce development initiatives by addressing critical gaps and responding to the evolving needs of the regenerative medicine field through key training programs.

One major recommendation under the SAF was to enhance technical training opportunities by strategically updating the **Bridges** and **COMPASS** programs. A second recommendation called for the development of initiatives aimed at expanding outreach and education at the K-12 level, including enhancements to **SPARK**, which supports summer research internships for high school students.

This memo outlines the mechanisms through which these strategic priorities are being operationalized through the proposed EDUC8 and EDUC3 concepts.

I. Background: Education and CIRM's Mission

Since its inception, CIRM has recognized the crucial role that research training plays in cultivating and sustaining a robust pipeline of skilled professionals capable of driving innovation, overcoming technical challenges, and fulfilling the transformative potential of regenerative medicine. Accordingly, CIRM has invested in a comprehensive portfolio of educational initiatives designed to offer specialized coursework and hands-on laboratory research experiences to trainees across various academic levels throughout California.

These initiatives include:

1. **Research Training Awards ("CIRM Scholars" Program)**: prepares predoctoral, postdoctoral, and clinical fellows to become future leaders and innovators in regenerative medicine

2. **Bridges Awards**: provides undergraduate and master's-level students from state universities and community colleges with access to research training opportunities in academic and biotechnology industry labs
3. **SPARK**: provides immersive summer research internships for high school students
4. **COMPASS**: provides sustained academic and mentoring support to early-stage undergraduate students, with an emphasis on identifying untapped talent and fostering new perspectives within the scientific workforce.

Additionally, these programs instill trainees with a holistic understanding of patient advocacy and community outreach, tying their research to the therapies that will eventually impact the people of California.

As of November 2025, over **4200** trainees have completed an EDUC program and have gone on to become productive members of California's scientific ecosystem, spanning a wide spectrum of careers including technical associates, project managers, regenerative medicine faculty and clinicians, entrepreneurs, and even PIs and co-administrators of active CIRM Awards.

II. Importance of Continued Investments in Training

In CIRM's 20 years of existence, there have been remarkable advances in the field of regenerative medicine, from the discovery of induced pluripotent stem cells and first use of embryonic stem cells in clinical trials, to recent FDA approvals of over 45 cellular and gene therapy products. Nonetheless, there remain numerous challenges that must be overcome to unlock the true potential of these technologies. Beyond gaps in our knowledge of disease mechanisms and biomarkers, there are complex technical, manufacturing, and ethical challenges of therapeutic development. Further, these processes require long-term safety assessments to expand their application into a broader range of diseases, injuries, and patient populations, all of which depend on sustained investment for continued progress. CIRM's answer to these challenges is to re-invest in our established and successful EDUC initiatives, but with timely and important modifications to ensure that trainees are equipped with the most relevant knowledge and skill sets that will lead to novel discoveries and transformative new therapies.

III. EDUC8 as a mechanism to improve CIRM's Bridges and COMPASS Programs

In considering how to best implement strategic updates to Bridges and COMPASS initiatives, the CIRM team relied on three major sources of information.

First, we evaluated labor market analyses of high-demand skill sets and career paths for the life sciences, cell and gene therapy, and biotechnology sectors- the results of which were presented to the ICOC in September 2024 that culminated in the SAF recommendation.

Second, we did an assessment of the current research funding landscape. This was based on recent changes at federal granting agencies, the evolving political climate, and real-time information from CIRM grantees on how these factors are impacting their research & development programs

and training infrastructure. We gathered this data through surveys and meetings with CIRM-supported scientists and educators from our research & development programs as well as EDUC grant administrators.

Third, to reduce administrative burden for both grantees and CIRM, and to provide more flexibility to leverage shared resources and adapt to uncertainty, the CIRM team drew from our own experience of administering EDUC programs. We looked for methods to reduce complexity, enable inter-program leverage, and streamline grant mechanisms to better serve the needs of those who manage these programs both at CIRM and at the grantee institutions.

In addition to program improvements, CIRM also considered the upcoming end dates of our current Bridges and COMPASS awards, some of which are supporting successful programs that have been continuously funded for over 15 years through competitive renewals. To maintain continuity and build on these investments, it is important that these entities have an opportunity to compete for new funding before support lapses, which can result in loss of institutional infrastructure and gaps in trainee recruitment.

Based on the above considerations, the CIRM Team identified a solution through EDUC8, an umbrella concept that encompasses both the Bridges and COMPASS programs under a single grant mechanism. This allows for streamlining of activities and administrative practices that are common to both programs, while maintaining the unique value of each. This umbrella structure further provides a new opportunity for institutions that currently have both Bridges and COMPASS programs to develop a “Dual Path” approach, with a possibility of streamlining and combining elements in new ways.

Applicants with expiring Bridges and COMPASS Awards may compete for new funding to update and extend their current programs. Additionally, new applicants may develop Bridges or COMPASS programs, which can extend their geographic reach to additional regions in California.

IV. EDUC8 Program Details

EDUC8 is an umbrella mechanism that can support different training paths tailored to serve two distinct trainee populations (Table 1).

Table 1. Features of current COMPASS and Bridges programs

	COMPASS	Bridges
Awardee	Institutions with bachelor’s programs	CSUs, Community Colleges
Target Trainee	Biology/STEM (curious)	Biology/STEM (committed)
Training Stage	Entry level, exploring	Progressing to career transition
Coursework	Foundational, soft skills	Advanced techniques, specialized
Internship	2-3 months, internal/external host	6-12 months, external host

Appointment(s)	Multi-year	1 year
Other Activities	Patient engagement, community outreach, formal mentorship, conferences	
Administrative	Trainee recruitment, alumni tracking, mentorship program	

The following section describes A) core EDUC8 program requirements that are common to both paths; B) path-specific requirements that include structural differences and institutional eligibility; and C) description of a Dual Path option for eligible institutions.

A) Core EDUC8 Requirements

1. Program Leadership

- Qualified Program Director: manage all activities supported by the program
- Key Personnel: expertise in trainee recruitment, structured mentoring, internship support and guidance, and interdisciplinary collaboration
- Co-Director for Dual Path programs (see details below)

2. Adaptive Outreach and Recruitment Plan (AORP)

- Defined goals and expected outcomes of the program
- Adaptive strategies to address and overcome deficiencies or biases identified in outreach and recruitment.
- Regularly scheduled assessments and analysis of the success of recruitment strategies i

3. Internships

Opportunities can include, but are not limited to:

- Biotech/pharma companies
- R1 institutions with regenerative medicine research and infrastructure
- Clinical trial sites/centers, clinical operations and coordination
- Manufacturing centers, GMP facilities
- CDMOs
- Other organizations or entities that play a role in therapy discovery, development, and patient access

Acquired skill sets can include these areas, but are not limited to:

- Lab research
- Project management
- Public health and policy
- Data science and computational biology

- AI and ML in research and medicine

4. Patient/Healthcare Engagement

Activities can include, but are not limited to:

- Volunteering in medical or patient-facing settings
- Structured interactions with patient advocates
- Participation in educational content with relevant experts
- Volunteering or hosting donation drives (eg. bone marrow donor drives, blood drives).

5. Community Outreach and Education

Activities can include, but are not limited to:

- Participation in CIRM-supported outreach activities
- Volunteering with K-12 students
- Sharing regenerative medicine science with community groups
- Hosting lab tours

6. Mentorship Training Program

The Mentorship Training Program must include:

- Trainee individual development plans
- Formal mentor training that includes topics such as implicit bias, respecting cultural differences, and working effectively with the full breadth of people represented in California.
- Activities that promote personal and professional growth such as:
    a. Resume/CV workshops
    b. Presentation skills and scientific writing
    c. Career exploration opportunities
    d. Networking events
- Career counseling and introduction to different careers

7. Alumni Tracking and Engagement

Programs will include a plan to enable annual assessment and reporting on post-graduate employment positions taken by program alumni.

8. Resource and Knowledge Sharing

Programs must share CIRM-supported educational resources and events within and outside their institutions, and specifically with CIRM via platforms such as the CIRM Hub.

B) Path-Specific Requirements and Structure

Bridges Path Structure

Eligible applicant institution:

- California public university, college, or private non-profit academic institution
- Did not receive a CIRM Major Facility or Shared Lab Award under Proposition 71, i.e. lacks faculty/major research infrastructure for regenerative medicine science (i.e. CSUs, community colleges)
- Has an accredited certificate, associate, bachelor's or master's degree program in a biology-relevant discipline

Internships:

- Take place at a partner/host site
- 6 to 12 months in duration

Courses:

- Required and specialized courses within certificate or degree program at home institution
- Advanced techniques course
- Principles of translation, e.g. therapy development
- Data science and sharing
- Communication of science to the public
- Research ethics

COMPASS Path Structure

Eligible applicant institution:

- California public university, college, or private nonprofit academic institution
- Has an accredited bachelor's degree program in a biology-relevant discipline

Internships:

- Equivalent to 2-3 months full-time work
- Can take place over a summer or academic period
- Can be distributed as part-time effort over a longer duration
- Trainees doing multiple internships can continue in the same opportunity or explore a rotation of different opportunities,

Courses:

- Foundational coursework in stem cell/regenerative medicine, integrated within a bachelor's program
- FAIR principles of data sharing (Findable, Accessible, Interoperable, Reusable)
- Good research habits (planning, documentation, time management)

- Principles of translational research
- Specialized options of value, for example computational biology, bioengineering, data science or analysis, statistics, etc.
- Communicating science to the public
- Research ethics

Capstone Project:

- Trainees must develop a Capstone Project under the guidance of mentor(s), highlighting training outcomes including any co-authorship of publications as part of the research team

Dual Path Structure

Institutions that are eligible to support a Bridges path can develop a “Dual Path” program that can support both Bridges and COMPASS trainee paths. One example is a flexible or accelerated mechanism for trainees to transition from a COMPASS to a Bridges program. These programs are required to have a Co-Director to ensure that the value of independent program features is retained.

Award Amounts and Structure

Awards will be made in the form of a grant and will provide up to 5 years of support that includes direct project costs + 10% indirect costs on eligible expenses, as elaborated below. Applicants may request sufficient funds to support up to 10 trainee slots per year, per path.

To establish an appropriate budget, the CIRM Team analyzed true categorical expenditure growth and cumulative (estimated) Consumer Price Index% increase since 2021. Budgets for 2026 generally reflect a 20% average increase across cost categories compared to EDUC programs that were issued in 2021 and 2022 (Figure 2).

Figure 2 Budget Components for EDUC8 Paths

Direct Costs (Allocated Per Trainee)	Bridges (1 year)		COMPASS (per year)	
	2021	2026	2022	2026
Research Stipend	$3000/mo	$3600/mo	$3000/mo	$3600/mo
Travel Allowance	$1000	$1200	$1000/yr	$1200/yr
Other Trainee Costs*	$14,300	$21,900	$11,800	$17,100
Total Direct Costs/Trainee	$51,300	$63,300	$33,800	$39,900
Total Direct Costs/Cohort (10)	$513,000	$633,000	$338,000	$339,000
Program Administration	$150,000	$180,000	$200,000	$200,000

Annual Costs	Bridges (10)	COMPASS (10)	Dual Path (10:10)
Trainee Direct Costs	$663,000	$399,000	1,062,000
Program Administration	$180,000	$200,000	$215,000
Direct Costs Per Cohort, Per Year	$843,000	$599,000	$1,277,000

Total Award Costs (5 Years)	Bridges	COMPASS	Dual Path
Direct Costs for 5 Years	$4,215,000	$2,995,000	$6,385,000
Overhead (10% IDC)	$373,500	$242,000	$533,000
Total Award Amount	**$4,588,500**	**$3,237,000**	**$6,918,000**
Per Trainee Costs	**Bridges**	**COMPASS**	**Dual Path (approximate)**
	$91,770/yr	$64,740/yr	$90,500/yr

Bridges trainees are supported for one year. COMPASS trainees are supported 2-3 years, i.e. $128-180K investment per trainee.

VII. Administrative Improvements and Efficiencies

EDUC grants are administratively complex, combining elements of education, research, financial aid, mentorship, personnel management and more, all while maintaining strict compliance with both government regulations and institutional practices. The bureaucracy between different grantee institutions can vary greatly, making it challenging to develop a one-size-fits-all approach.

Building on lessons and experience from the past 20 years, the CIRM team has iteratively improved on many aspects of EDUC grant administration and is introducing some modifications to EDUC8 that will lead to faster program execution and optimized value per investment.

Administrative Improvements

- Unified guidelines and procedures for program management
- Trainee Support Fund (e.g. tuition, research-related funds, course fees, etc.) to allow flexible spending of non-stipend trainee costs in the context of differing institutional policies or unanticipated circumstances
- Streamlined activities for trainees at institutions with both COMPASS and Bridges

- Improved collaboration and resource-sharing across programs via the CIRM Hub platform

VIII. SPARK Program Updates

To address the SAF recommendation to relaunch and update the SPARK (EDUC3) program, the CIRM team is presenting an updated concept to align training with current needs.

Retained Elements from Current (2021) Concept

- Internships at host laboratories doing regenerative medicine-related research
- Attendance and poster presentation at CIRM-sponsored conference
- Auxiliary educational activities that prepare students for research and augment the internship experience
- Patient (or patient advocate) and healthcare engagement activities
- Community outreach and education activities
- Alumni tracking plan

Updated Elements

- Expanded scope of internship opportunities (e.g. manufacturing, regulatory and quality, data science/bioinformatics, and other disciplines relevant to innovating and advancing cell and gene therapies)
- Collaborations with CIRM INFR programs, such as Alpha Clinics, CCCEs, SRLs for internships, courses, field trips, etc.
- Required resource-sharing within and across programs, and with CIRM
- Public science communication and research ethics

Budget

EDUC3 Awards will be made in the form of a grant and will provide up to 5 years of support that includes direct project costs of up to $640,000 + 10% indirect costs on eligible expenses. Direct project costs include trainee stipends, travel funds, and administration The maximum total award amount per program over five years is $704,000. Each award can support up to 12 trainees per year.

To establish an appropriate budget, the CIRM Team analyzed true categorical expenditure growth and cumulative (estimated) CPI% increase since 2021. Budgets for 2026 largely reflect a 20-22% average increase across cost categories since 2021.

Table 3. SPARK 2026

Item	EDUC3 (SPARK) Costs
Trainee Stipends	$5,500
Travel to annual conference	$1,000
Direct Costs to Trainee	**$6,500**
Program Administration	$4,167
Indirect Costs	$1,067 (10%)
Total Cost per Trainee	**$11,733**
Total Award Amount	**$704,000**

Proposed Award Budgets (12 trainees/year, 5 years)

Trainee Funds

- Stipends: Up to $5,500 for a full-time research internship of 8-12 weeks duration
- Travel: Up to $1000 for travel to attend the CIRM-sponsored conference. Excess funds may be used to cover other program-related travel for the trainee.

Program Administration Funds

- Up to $4,167 per year per trainee may be requested for administrative support salaries
- Activities in patient engagement, community outreach, or others
- Includes mentor stipend or supplies budget for the host lab, if appropriate

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Requested Action: We seek Science Subcommittee recommendation to send EDUC8 and EDUC3 to the ICOC for approval. The proposed allocations and award structure are as follows:

Program	Proposed Budget	Anticipated Awards
EDUC8 2026 Cycle	$99M	15-18
EDUC8 2027 Cycle	$99M	15-18
EDUC3 (2026)	$8.5M	12