

EDUC8 AWARDS

9/24/2026

\$90,540,769 GWG RECOMMENDED

\$90,540,769 CIRM TEAM RECOMMENDED

\$99,000,000 AMOUNT AVAILABLE

\$0 BOARD APPROVED

APP #	TITLE	BUDGET REQ	GWG Recmd	CIRM Recmd	SCORE (MEDIAN)	Score Range				Number of GWG		Previous CIRM Funding	Path
						Mean	SD	Low	High	Y	N		
EDUC8-20332	Preparing Undergraduates for Careers in California's Regenerative Medicine Workforce	\$3,237,000	Y	Y	98	97	2	90	98	14	0	Y	COMPASS
EDUC8-20269	From Pluripotent Students to Stem Cell Scholars	\$6,918,000	Y	Y	96	96	1	95	98	14	0	Y	Dual path
EDUC8-20303	Pathways to Regenerative Medicine Training Program	\$5,776,082	Y	Y	95	95	1	92	95	15	0	Y	Dual path
EDUC8-20295	Preparing undergraduate and master's students for the regenerative medicine industry	\$6,446,520	Y	Y	95	95	0	95	95	14	0	Y	Dual path
EDUC8-20328	EPIC-IDEA: Expanded Pathways in Cell-Based Manufacturing to Increase Diversity, Equity, and Advancement	\$6,552,640	Y	Y	93	93	3	90	98	14	0	Y	Dual path
EDUC8-20287	Stem Cell Dual Path Training Program	\$6,490,600	Y	Y	93	92	2	90	95	15	0	Y	Dual path
EDUC8-20315	Undergraduate Talent Development through Stem Cell Training Programs	\$6,918,000	Y	Y	92	92	1	90	92	15	0	Y	Dual path
EDUC8-20270	Developing a Skilled and Diverse Master's-Level Workforce in Regenerative Medicine	\$3,868,800	Y	Y	92	92	2	89	95	14	0	Y	Bridges
EDUC8-20284	Advancing Diverse Stem Cell Scholars Through Integrated Research and Career Development	\$2,808,072	Y	Y	90	92	3	90	99	13	0	N	COMPASS
EDUC8-20299	CIRM Bridges Stem Cell Research and Biotechnology Training Program	\$4,192,500	Y	Y	90	91	2	88	98	15	0	Y	Bridges
EDUC8-20297	Training In Stem cell Science for Undergraduate Excellence	\$2,809,600	Y	Y	90	90	0	89	90	15	0	Y	COMPASS
EDUC8-20272	Bridges to Stem Cell Research and Regenerative Medicine	\$4,588,500	Y	Y	88	88	2	85	92	15	0	Y	Bridges
EDUC8-20324	Collaborative Pipeline to Workforce Development Training Program	\$5,928,000	Y	Y	86	86	1	85	88	14	0	Y	Dual path

APP #	TITLE	BUDGET REQ	GWG Recmd	CIRM Recmd	SCORE (MEDIAN)	Mean	SD	Low	High	Y	N	Previous CIRM Funding	Path
EDUC8-20264	Building the Regenerative Medicine Workforce through Stem Cell Internships in Laboratory-based Learning	\$5,857,000	Y	Y	85	87	3	85	95	15	0	Y	Dual path
EDUC8-20435	Hands-On Program for Excellence in Cell Therapy Manufacturing Sciences	\$6,918,000	Y	Y	85	85	1	84	87	10	3	Y	Dual path
EDUC8-20314	Building an Inclusive Regenerative Medicine Workforce: A Dual-Path EDUC8 Training Program in Biomedical Sciences	\$6,917,500	Y	Y	85	84	5	75	90	9	5	N	Dual path
EDUC8-20370	Building Bridges to Regenerative Medicine: Certificate Training, Mentoring, and Internship Pathways for a Diverse Translational Workforce	\$4,313,955	Y	Y	85	83	4	70	87	11	3	N	Bridges
EDUC8-20282	Advancing Stem Cell Education and Career Navigation and Development (ASCEND)	\$3,226,320	N	N	70	72	3	70	80	0	15	N	COMPASS



Application #	EDUC8-20332
Title (as written by the applicant)	Preparing Undergraduates for Careers in California's Regenerative Medicine Workforce
Public Abstract (as written by the applicant)	This COMPASS program is a two-year undergraduate training program designed to prepare students for careers in regenerative medicine, one of the fastest-growing areas of biomedical science. Regenerative medicine focuses on developing therapies that repair, replace, or restore damaged tissues and organs, including cell and gene therapies that are transforming the treatment of serious diseases. The program combines hands-on laboratory research with coursework, professional development, and exposure to clinical and industry environments. Students begin with an intensive summer training experience to build foundational laboratory skills and understanding of how new therapies are developed. Over the next two years, they conduct mentored research while also participating in workshops focused on biotechnology, clinical trials, manufacturing standards, data analysis, science communication, and career preparation. In their second year, students may choose specialized tracks that expose them to areas such as biomanufacturing, clinical research, commercialization, or science communication. This flexible structure allows trainees to gain both scientific expertise and practical skills needed for today's regenerative medicine workforce. The program also includes structured mentoring, professional and leadership coaching, and training on how genetic, environmental, and social factors influence access to new therapies. By integrating technical training with real-world perspectives, this COMPASS program helps students understand not only how therapies are developed, but how they are delivered to patients. Graduates of the program are prepared to pursue advanced degrees, clinical research positions, biotechnology careers, and other roles that support the development and implementation of regenerative medicine therapies. Through this training model, this COMPASS program contributes to building a diverse and highly skilled workforce capable of meeting California's evolving needs in regenerative medicine.
Statement of Benefit to California (as written by the applicant)	The proposed training program will directly benefit the State of California by preparing a skilled and adaptable workforce to support the rapidly expanding field of regenerative medicine. California is a global leader in cell and gene therapy development, biomanufacturing, and clinical innovation. Sustaining this leadership requires a pipeline of professionals who are trained not only in scientific discovery, but also in clinical translation, regulatory processes, manufacturing standards, data science, and patient-centered implementation. This program provides undergraduates with early, structured exposure to the full therapeutic development pathway—from laboratory research to clinical application and industry translation. By combining hands-on scientific training with professional skill development and mentorship, the program equips trainees to pursue careers in biotechnology, clinical research, biomanufacturing, regulatory science, and related life science sectors that are central to California's innovation economy. The program also prepares trainees to understand how genetic diversity, environmental factors, and social determinants influence therapeutic access and outcomes. This perspective strengthens the capacity of the future workforce to develop therapies that are scientifically rigorous and responsive to the needs of California's diverse communities. By supporting the progression of trainees into graduate education, healthcare research, and biotechnology careers, the program contributes to workforce stability,



	economic growth, and continued advancement of regenerative medicine therapies that improve patient care across the state. In doing so, it advances California's leadership in biomedical innovation while expanding opportunities for students to participate in and contribute to this high-impact sector.
Funds Requested	\$3,237,000
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG." Patient advocate members unanimously affirmed that "The review was carried out in a fair manner and was free from undue bias."

SCORING DATA

Final Score: 98

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	97
Median	98
Standard Deviation	2
Highest	98
Lowest	90
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	14
(1-84): Not recommended for funding	0

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses
- This EDUC8 program builds on successful prior CIRM COMPASS EDUC5 award and will take advantage of the experience gained from this earlier award. It is likely to generate valuable long-term professional opportunities for the trainees thereby fostering their commitment to the CIRM mission. - The program will continue to strive for expanding the participation of Californians in the regenerative medicine workforce through targeted outreach aimed to identify untapped talent, which reflects California's diverse population. As the applicant organization continues to build a diverse undergraduate student body with the incoming freshmen of the fall 2024 class composed of 25% first-generation college students and 32% coming from historically underrepresented groups, this effort is likely to succeed. - Strengths: First-year student outcomes are impressive; very well-written, structured curriculum, many opportunities for students, choose your track to find their way, workshops for applied skills and workforce



readiness, engagement of alumni, need to include patients and population impact; mentors need training and are evaluated.

- An outstanding training program is in place to train the next generation of laboratory professionals.
- Minor Weakness: The program is very recent.

Value Proposition - Evaluate the program's value and potential for impact.

- The sustainability of the regenerative medicine workforce pipeline will be strengthened by the early engagement of students in research activities and increasing awareness among those with strong academic potential but limited prior exposure to research opportunities. The progression outcomes of the trainees will be assessed annually.
- The COMPASS program for 40 junior and senior undergraduate students is supported by program team leadership and integrates rigorous scientific training, translational immersion, structured mentorship, a first-year mentored research experience, a second year "choose your track" internship, and a final capstone project.
- Very comprehensive course and workshop plan to foster readiness and commitment to several aspects of regenerative medicine while giving the trainees the flexibility to find their preferred path.
- Alumni are continuously engaged within the COMPASS program.
- Plans are in place to address all the required activities.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- The Adaptive outreach and recruitment plans (AORP) will be evaluated and readjusted yearly to continually improve the recruiting outcomes and extend reach to students who would benefit from COMPASS support.
- Applicants with a strong potential for success in regenerative medicine careers will be evaluated using a holistic framework that considers experience, attributes, and academic metrics. Recruitment efforts will emphasize structured pathways for students interested in translational science, biotechnology, science communication, program development and evaluation, community engagement, and clinical applications.
- Long-term trainees' outcomes tracking strategies for the COMPASS program will be constructed based on the strategies developed during previous EDUC5 award period. It will utilize a secure alumni database that tracks contact information and professional outcomes, including current employment position and sector enrollment in post-graduate degree programs; participation in regenerative medicine or related life science fields; and geographic location and employer type.
- Databases are maintained to capture baseline and longitudinal data including academic status and preparation, participation in outreach events, research interests and career goals, and student background characteristics and educational context.
- The database also tracks alumni outcomes, and all prior COMPASS scholars join a private LinkedIn page.
- The database follows students from recruitment through their careers and includes a private LinkedIn page for alumni.
- All COMPASS scholars join a private LinkedIn page. Designed under EDUC5.



- Work across three schools and partner with campus centers serving first-generation students, veterans, LGBTQ+ students, Latino/Chicanx students, Black students, and Native American and Pacific Islander students.
- The program team will reach out to community colleges to identify strong students before they transfer to the applicant institution.
- Faculty spread the word through classroom announcements and personal referrals.
- The program has an active website and social media presence.
- The applicant uses a holistic review model that weighs experiences (research, work, leadership, community involvement), personal attributes, and academic metrics. Structured interviews are conducted to keep the process fair and consistent.
- Strong AORP.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- The proposed structured curriculum successfully integrates the coursework with research experience to result in successful transition to successful careers. The training commences in the summer of Sophomore year and continues through Junior academic year, summer of Junior year, and Senior academic year. The program concludes with a capstone project and presentation at the COMPASS Symposium, which will integrate scientific and translational skills acquired during the training.
- The quality of the proposed multifaceted hands-on research activities is excellent. The hands-on basic science and translational activities are incorporated into the COMPASS curriculum at multiple points of the trainees training experience and are strongly targeted to their potential career paths.
- An outstanding curriculum is in place.
- The COMPASS mentoring program builds on the high-quality framework established during the EDUC5 award period. The program incorporates evidence-based mentoring practices to ensure excellent trainees' support. It integrates faculty mentorship, professional coaching, cohort-based programming, and external career exposure to prepare trainees scientifically, academically and professionally for their careers in regenerative medicine.
- In addition to coursework and professional workshops, there will be communication with the public coursework, training in clinical trials, sessions on Community Engagement Studios, engaging directly with patients, and caregivers.
- Trainees will have to incorporate a "Patient and Population Impact" component into their capstone projects.
- For outreach, in partnership with Shared Research Laboratory (SRL), COMPASS will host hands-on workshops for local high school students.
- The mentorship plan is structured at multi-levels including three meetings per year with COMPASS leadership to establish and monitor their IDP and also meet regularly with their research lab PIs and with their professional coaches.
- Mentors need to attend training and are regularly evaluated with metrics.
- Students will also interact with leaders in the field through course-embedded workshops.



- Partnership with the Alpha Clinic allows students to sit in on clinical trial design session, talk directly with patients and caregivers in Community engagement studios.
- An outstanding internship program is in place.
- Community outreach is critical to the program. The students are asked to give back and at the same time learn how to speak to the public about science and the work they do.
- A structured training component led by a medical sociologist covers how genetics, environment, and social factors affect disease risk, treatment response, and access to new therapies.
- Letters of support from hosting institutions are provided.
- Trainees are encouraged to connect with patient advocacy organizations tied to their own research interests to see how the realities of being a patient can inform their research.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- COMPASS program leadership is composed of highly qualified faculty who led the earlier EDUC5 COMPASS program.
- The proposed program has access to all needed resources, the applicants have institutional support to carry out the proposed training activities, and all key partnerships are in place. The budget is appropriate to support the proposed number of trainees.
- The PD has been involved with the applicant's previous COMPASS program and has mentoring experience and leadership positions.
- Letters of support and commitment from the applicant's leadership team are provided.
- Several (85 pages) letters of support are provided from research mentors, internship and outreach collaborators, from both academic and industry partners.
- Table is provided with remarkable achievements for 1st cohort, though it includes only 21 previous trainees since the program is new.
- Mentors will be trained in mentoring.
- A mentoring plan is in place. It is not clear if mentoring will continue for alumni.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- Trainees will be well placed to provide the delivery of stem cell therapies to patients.
- The program will incorporate perspectives from underrepresented communities through multiple facets of their COMPASS training such as coursework in stem cell biology and translational medicine, which will incorporate ethical, regulatory, and societal considerations in therapy development.
- The program has strong plans to engage a diverse student population and train on all aspects of regenerative medicine with personalized plans across a high number of resources.



Application #	EDUC8-20269
Title (as written by the applicant)	From Pluripotent Students to Stem Cell Scholars
Public Abstract (as written by the applicant)	The EDUC8 Dual Path training program will identify, engage, and recruit undergraduates and graduate students who aspire to science careers in regenerative medicine and related fields, including many students of backgrounds and circumstances who are often denied access to research training and mentorship. Seniors and graduate students conduct a 12-month research internship with regenerative medicine-focused mentors at partner institutions. Early-stage trainees complete a two-year, multi-phase internship program that in the first mentored phase emphasizes foundational research skills, after which trainees conduct capstone research internships with regenerative medicine-focused mentors at partner institutions. Through a curriculum of lecture and laboratory coursework and structured research internships, trainees on both training paths build project experience, technical foundations in lab skills essential to biotechnology and regenerative medicine, and networks of mentors and professional connections. Further mentoring, workshops, and guided activities guide them in learning needs and challenges in healthcare and underserved communities and exploring how their scientific and professional interests can make impactful contributions. Students will finish either training path prepared to launch careers in medicine, research, biotechnology, industry, and science and healthcare policy. The five-year program will train 32 early-stage STEM students and 50 seniors and graduate students. Training elements include: 1. Courses and workshops on stem cell biology and technical handling and analysis ensure that interns have skill sets to be successful and receive maximum benefit from their research internships. Further coursework familiarizes them with the regulatory affairs process to understand disease research and therapeutics development, as well as how to communicate science effectively to the public. 2. Volunteer opportunities to ensure students engage with and learn from their multiple California communities. Students will engage with patient groups, participate in healthcare activities and organize educational seminars to interested members of the community, volunteer services at local hospitals or on campus to organize healthcare related events. 3. Community Outreach activities, many of which are organized through the Student Society for Stem Cell Research. Students perform community outreach by hosting open to public events on campus, giving presentations at local K-12 schools, helping instruct workshops for K-12 students, and participating in Stem Cell Symposia and seminars organized in the area by the Inland Empire Stem Cell Consortium. 4. Mentoring and career advice. Program leadership and research project mentors take meaningful roles in mentorship of student interns, plus networking activities that will enable all of our interns to procure meaningful and satisfying careers in stem cell research and therapy sectors.
Statement of Benefit to California (as written by the applicant)	This program with dual training paths aims to identify, recruit, engage, mentor, and comprehensively train both undergraduate and graduate students in research internships with goals to develop health and disease research skills and affinity and readiness to join career tracks in biotechnology, gene therapy, and regenerative medicine. The training program provides students with a variety of community outreach and volunteer opportunities, including patient engagement and healthcare access and disparities curricula. Our EDUC8 program will provide highly trained and



	qualified graduates to join California's regenerative medicine workforce with experiences to respond to the needs of our California communities. Our program has the following components: 1. Identification of awardees by an innovative use of project-based, lab-intensive classes for recruitment. 2. Laboratory research internships. Seniors and graduate students will conduct research internships in regenerative medicine-focused labs at partner institutions. Early-stage undergraduates will begin with research projects mentored by our campus faculty to build foundational skillsets and project experience, followed by research internships in regenerative medicine-focused labs at partner institutions. 3. Courses, workshops, and sustained mentorship that will enrich the education of our students, along with scientific skills development, career advising, and professional networking. 4. Courses that will be completed by the awardees will allow them to earn a Certificate in Biotechnology as they complete their bachelor's or master's degrees. Highlighted courses include stem cell biology, developmental biology, animal tissue culture, biotechnology, genomics, and bioethics. Workshops offered will include healthcare access and disparities, bioprocessing and therapeutics development, and communicating science to the public. 5. Patient and healthcare engagement by volunteering in support groups, non-profits, providing community education and becoming aware of the challenges that are particularly pervasive in their local community. 6. Educational outreach components that will include local campus seminars, Stem Cell Symposia, delivering lectures at middle and high schools, attending regional conferences that are patient centric, and events organized through the Student Society for Stem Cell Research. CIRM trainees will also host and contribute to 'stem cell bootcamp' workshops for high school students. Our goal is to prepare students to enter the workforce and contribute their perspectives, expertise, and training in a variety of health research and healthcare delivery settings, from carrying out disease and therapeutic research in a lab, having careers in regulatory affairs or clinical studies, to being stem cell or gene therapy physicians. We see ourselves and our students as part of the mission of improving health and quality of life for the millions of people for whom no therapies are available.
Funds Requested	\$6,918,000
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG." Patient advocate members unanimously affirmed that "The review was carried out in a fair manner and was free from undue bias."

SCORING DATA

Final Score: 96

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.



Mean	96
Median	96
Standard Deviation	1
Highest	98
Lowest	95
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	14
(1-84): Not recommended for funding	0

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses

- This is an excellent Dual Path training program that targets a diverse population of students; many of these students are first-generation Latinx college students and underrepresented minorities (URMs) in STEM from a socioeconomically disadvantaged area of Los Angeles Inland Empire. The Program is designed to significantly boost the students' long-term professional development and their commitment to CIRM mission.
- The training program is positioned by its location and partnerships to provide a significant impact on the life course of trainees. The Inland Empire represents an underserved area which will greatly benefit from this broader application of workers trained for regenerative medical work.
- Strong proposal with excellent track record. The integration with the Inland Empire population is a strength. Access to more than 100 mentors.
- Strong overall. Good outreach. Area of great, underserved need. Non-traditional recruitment plan helps to diversify. Good mentoring. Very strong leadership.
- The applicant has a large, diverse student body including first-generation, underrepresented (URM), and socioeconomically disadvantaged students from the Los Angeles "Inland Empire," and is therefore able to broaden participation of Californians in the stem cell biology/regenerative medicine workforce. Past program participants have been representative of the student body.
- The Adaptive Outreach and Recruitment Plan (AORP) is a major strength of this application, leveraging integrated course-based undergraduate research experiences (CUREs) for recruitment and holistic selection of students based on interest, technical skills, persistence, and collaboration in the most relevant setting.
- The proposed COMPASS and BRIDGES Programs are unique, but students can advance from COMPASS into BRIDGES, serving in more advanced roles in any shared activities that they are included in for a second time. Near-peer mentoring and a larger pool of trainees has added benefits for this Dual Path Program.



- Over 90% of previous BRIDGES Program participants have proceeded to successful first steps in regenerative medicine careers, including medical and dental school, PhD programs, and positions in biotech and clinics.
- The program leadership team is diverse and includes an alumna now part of faculty.
- Minor weaknesses: Some mentors are relatively junior; the communicating science workshop and some GE courses are still under review.

Value Proposition - Evaluate the program's value and potential for impact.

- Given the extensive trainees' coursework in STEM-related subjects, the internships and research projects opportunities as well as trainees' engagement in patient and healthcare activities, it is likely that the program will create a sustainable pipeline of professionals who will contribute to the regenerative medicine workforce.
- Excellent track record, more than 150 trainees. The COMPASS program is already running, with approximately 25% transitioning to BRIDGES.
- The Dual Path (COMPASS + BRIDGES) Program will have a meaningful, positive impact on trainees' careers in biomedical research broadly and stem cell biology/regenerative medicine specifically.
- Applicant university has a large, diverse student body including first-generation, underrepresented, and socioeconomically disadvantaged students from the Los Angeles "Inland Empire," and is therefore able to broaden participation of Californians in the stem cell biology/regenerative medicine workforce. Past program participants have been representative of the student body.
- The proposed COMPASS Program will support 4 cohorts of 8 students each and the proposed BRIDGES Program will support 5 cohorts of 10 students each for a total of 82 supported students during the grant period, adding to the pipeline of trainees ready to contribute to the stem cell biology/regenerative medicine workforce.
- Strong Inland Empire mission fit.
- Very valuable addition.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- The Adaptive Outreach and Recruitment Plan (AORP) for both COMPASS and BRIDGES programs is focused on identifying and evaluating trainees through course-based laboratory research experiences. This robust approach builds on leveraging laboratory courses for students' recruitment and on holistic evaluation approaches to assess students' technical skills, persistence, collaboration, and scientific potential.
- The alumni tracking plan builds on the leadership team's prior experience with the BRIDGES program. The leadership will maintain a centralized, regularly updated database of alumni contact information, career outcomes, and professional achievements.
- The program is committed to building strong alumni networks that extend beyond individual mentorship to broader community.
- These networks will provide access to career advising, job opportunities, and professional connections, which are especially valuable for students from historically underrepresented and first-generation college backgrounds. Alumni will also play a key role in expanding institutional partnerships and outreach efforts that may benefit other training programs.



- The recruitment plan, which includes outreach in a variety of ways organized by the Inland Empire Stem Cell Consortium is very robust, and this reviewer thinks the dual-track approach also magnifies the outreach success chances. The follow-up plans to include the mandatory reporting of career tracks on LinkedIn seems very well thought out.
- Uses non-traditional metrics for recruitment, de-emphasizes GPA.
- Assessment is a genuine, closed loop (monthly host check-ins, formative/anonymous feedback, advisory review).
- The Adaptive Outreach and Recruitment Plan (AORP) is a major strength of this application, leveraging integrated course-based undergraduate research experiences (CUREs) for recruitment and holistic selection of students based on interest, technical skills, persistence, and collaboration in the most relevant setting.
- Alumni feedback is collected through alumni tracking and continued engagement and used for continuous program improvement. Alumni tracking uses self-reporting, biannual program outreach (highlighting achievements), and LinkedIn profiles which are introduced as part of professional development during the programs.
- Dissemination plans include student presentations and publications as well as sharing program materials through the CIRM Hub as well as through STEM education publications and workshops.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- The proposed curriculum spans areas from basic genomics and molecular cell biology to regenerative medicine. This curriculum has been developed over 15 years of CIRM training programs at the host university. The Dual Path COMPASS/BRIDGES training emphasizes laboratory research experiences appropriate to students at each stage culminating in independent research projects with internship mentors at applicant university (COMPASS) and at research partner host sites (COMPASS and BRIDGES).
- The program provides a strong foundation in training students in biomedical sciences, including curricula emphasizing stem cells and regenerative medicine, gene therapy and genomics, as well as a variety of laboratory and project research skills. This is a high-quality research experience sufficient to build competency in regenerative medicine and to advance the trainees' career paths.
- The mentoring program includes individualized and cohort-based approaches to support trainees' personal and professional development. Specifically, each trainee develops an Individual Development Plan (IDP) with support from their mentor facilitator and their internship mentor. The IDP is used to guide goal setting, track trainees' progress, and facilitate mentor-mentee discussions. The IDPs are revisited regularly to ensure alignment with trainee goals and evolving needs and interests.
- The dual path approach, the multiple partners and the robust mentorship opportunities seem to open a wide variety of career opportunities.
- Matured curriculum including cell biology, stem cells, regulatory, tissue culture, with complementation of stem cell methods, organoids, and bioprocessing. Extensive mentor training.
- Knowledge and skills have been well-integrated into curricula.
- Listed patient/healthcare engagement and community outreach activities are numerous and strong, although it is not clear which (or how many) are required or which are choices based on students' interest and availability. Student organization involvement is a positive and should help with planning and attendance.



- Hands-on research experiences are numerous and appropriately scaffolded to build on one another.
- Mentors are selected based on commitment to inclusive mentoring practices and past training and mentoring discussions are part of quarterly meetings with the leadership team.
- Individual Development Plans (IDPs) are integrated into student and cohort activities.
- Layered mentoring structure leverages faculty, near-peers and alumni and effectiveness is evaluated through multiple measures.
- Patient engagement is detailed and specific. Mentor training is extensive.
- The proposed COMPASS and BRIDGES Programs are unique, but students can advance from COMPASS into BRIDGES, serving in more advanced roles in any shared activities that they are included in for a second time. Near-peer mentoring and a larger pool of trainees has added benefits for this Dual Path Program.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- All members of the leadership have excellent qualifications to achieve the goals of the proposed training program. The director and co-director have extensive prior experience managing training programs together. For example, they served as co-coordinators for the Biology MS program for five years.
- Overall, the extensive prior training experience of the members of the leadership team increases the program's chances for success.
- The leadership team seems very impressive and well-prepared. Indications are that the proposal has the full support of the applicant organization and of their very impressive set of partners. Previous training programs appear to have been very successful.
- Program Director has received many awards as an advisor at the local and national level. Prior legacy BRIDGES program director will continue as the ad hoc contributor, having 15 years of experience serving as the director of the CIRM BRIDGES 1.0 program.
- The program director's past experiences teaching, mentoring, and serving as program director in a successful predecessor program are strengths and he has the support of a strong and experienced leadership team with complementary strengths and roles.
- The proposed program has the necessary institutional support and resources as well as established partnerships with research-intensive institutions. The existing program funding will support a 2026 cohort and this new funding would support a 2027 cohort with cost savings for administrative support to mitigate any overlap.
- Budget and program scale are appropriate and increased due to evaluation of actual effort required from prior support.
- Over 90% of previous BRIDGES Program participants have proceeded to successful first steps in regenerative medicine careers, including medical and dental school, PhD programs, and positions in biotech and clinics.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.



- The program incorporates perspectives from diverse communities consisting predominantly of first-generation, Latinx, and economically disadvantaged students through a combination of community engagement, inclusive training practices, and partnerships with campus and regional organizations.
- The program leverages a robust network of campus-based resources and organizations that support diverse student populations in STEM. COMPASS and BRIDGES trainees are actively connected to these resources and encouraged to participate in community-building and professional development activities that reinforce identity, belonging, and awareness within the scientific community.
- Strong integration with the Inland Empire population. Trainees are exposed to health disparities in their own community. "Training activities are designed to support the development of scientific identity while remaining responsive to the diverse backgrounds of trainees."
- The applicant university student body and past program participants include underrepresented students in STEM, and the program provides needed support for research experiences and continuing education. Alumni of the program are also included to enhance mentoring and networking opportunities.
- The program leadership team is diverse and includes an alumna now part of faculty.
- Genetic, environmental and societal factors influencing science and access are incorporated throughout the program in coursework, workshops, patient/healthcare engagement, and community outreach activities.
- Research experiences, mentoring, and professional development and outreach activities are all contributing to development of students' scientific identities.
- Excellent proposal geographically important.



Application #	EDUC8-20303
Title (as written by the applicant)	Pathways to Regenerative Medicine Training Program
Public Abstract (as written by the applicant)	In 2004 the people of California, recognizing the significance and potential of stem cell therapies for the treatment of many diseases including degenerative diseases like Alzheimer's disease and macular degeneration, to cancer and even heart disease, passed proposition 71 to fund stem cell research and the development of stem cell therapies. The California Institute of Regenerative Medicine (CIRM) was established to manage the funds, plan and execute programs that would facilitate the development of stem cell therapies. Recognizing the need for a large workforce in stem cell research for the development of stem cell therapies, the initial phase of the program was focused on research and training of individuals in stem cell fields. These efforts have resulted in a substantial increase in the number of scientists and technically trained individuals in the field of stem cell biology and, more importantly, an increase in the number of laboratories and biotechnology industries focused on stem cell research and regenerative medicine in California. In 2020, the people of California passed Proposition 14 to continue to develop treatments, advance clinical trials and achieve new scientific breakthroughs for California's patients with unmet medical needs. Our Pathways to Careers in Regenerative Medicine Training Program will produce 70 well-trained and "ready-to-start" laboratory professionals committed to accelerating the discovery, development and delivery of stem cell, gene therapy and related technologies for improving human health. The program leverages long standing training collaborations with premier host research institutions advancing cellular based therapies from bench to bedside regenerative and a newly established CIRM Shared Resources Laboratory (SRL) to extend our 17-year history of rigorous scientific postbaccalaureate training in basic stem cell research, translational science, and good manufacturing and laboratory practices (GMP & GLP) to include lower division undergraduate students from diverse backgrounds. Together, the two pathways support up to 20 trainees annually, training a maximum of 70 students over the program's duration. The trainees will participate in community outreach and patient engagement activities designed to educate and broaden access to regenerative medicine to rural, medically underserved regions of Northern California. Throughout the duration of the 12-month internship, they will receive personalized career counseling, so they are poised to enter the workforce upon completion of the program.
Statement of Benefit to California (as written by the applicant)	The substantial investment of funds by the people of California in stem cell biology and regenerative medicine through Proposition 14 will continue to develop treatments, advance clinical trials and achieve new scientific breakthroughs for California's patients with cancer, diabetes, heart disease, Alzheimer's, Parkinson's, HIV/AIDS, ALS, MS, sickle cell disease, lung diseases, kidney disease, bubble baby disease (ADA-SCID), age-related blindness such as macular degeneration and genetic blindness, epilepsy, stroke, schizophrenia, autism, other mental health and brain conditions, and even infectious diseases like COVID-19. As the first chairperson of the California Institute for Regenerative Medicine Robert Klein stated, "This medical revolution holds the promise of restoring health and quality of life for many of California's individuals and families suffering from chronic disease and injury. However, the last tactical mile to bring this broad spectrum of therapies to patients will require more funding and the thoughtful support of California's public as the human trials and discoveries are refined and tested, overcome numerous obstacles or complications, and ultimately serve to improve life and reduce the suffering of every one of us." Our Pathways to Careers in Regenerative Medicine



	Training Program will develop a workforce technically trained in stem cell and regenerative medicine able to meet these challenges. It will build upon our tremendously successful program history that has attracted 150 talented young people to a field that is responsible for over 100 FDA-Approved clinical trials and thousands of discoveries. We have designed our Pathways to Regenerative Medicine Training Program to provide students from diverse backgrounds with training in stem cell and regenerative medicine and a good understanding of the needs of patients with potential for stem cell therapies. They will also be educated with regard to the regulatory process and ethical issues. The development of such a workforce is critical for the future success of the field of stem cell and regenerative medicine, and Pathways to Regenerative Medicine Training will have tremendous impact on the present and future economy of the state of California.
Funds Requested	\$5,776,082
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that “The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG.” Patient advocate members unanimously affirmed that “The review was carried out in a fair manner and was free from undue bias.”

SCORING DATA

Final Score: 95

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	95
Median	95
Standard Deviation	1
Highest	95
Lowest	92
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	15
(1-84): Not recommended for funding	0

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel’s discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses
Serves a uniquely diverse population (rural, Indigenous). Good track record of success with prior award.



- Outreach was a strength as was understanding the challenging journey patients must go through with these therapies and how important that is to convey to those working in the field.
- Based on feedback provided by reviewers, strong proposal, loved the dedicated focus/connections to recruit from Native American populations.
- Strengths: track record, location, and opportunity for underserved students; flexibility of selecting their interest; support from partner institutions and university.
- Location and outreach serve a critical part of the state.
- Outreach is diverse and reported as such, location in underserved area of California; benefit of reaching Native American students; strong outreach.
- Overall, this is a strong application with potential for impact. A more detailed process evaluation may help with course correction of areas and/or processes that are not optimal. Additional details on past success would have enhanced this section.
- AI seems like an important component that was not thoroughly covered.
- Minor weakness: It is unclear why the applicant is outsourcing some professional training.
- The applicant could strengthen the ethics course and courses that deal with data use.
- One moderate weakness is the ambitious curriculum for a 2-month program.

Value Proposition - Evaluate the program's value and potential for impact.

- Provides a training program in an underserved area.
- Both programs offer coursework, research internships, clinical research and patients' exposure needed for a career in academia and industry as indicated by previous trainees' success (see table with outcomes for 142 previous trainees).
- Course- and lab-work will prepare them theoretically and practically, while a number of other initiatives will get them exposed to real problems and outreach possibilities; further evaluation of their mentors will ensure each student will get a pleasant experience that will grow their interest.
- Excellent design and track record of training.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- Surveys and continued engagement of trainees will enable longitudinal tracking as evidenced by the table provided.
- Table of success of previous trainees; expanding to COMPASS is a natural development of the program to increase impact.
- Recruitment includes seminars, presentations, and outreach events.
- The selection process includes professional goals and background, and transcripts (COMPASS) and critical thinking, lab skills, basic knowledge (BRIDGES).



- Selection for both programs is committee-based and equity-focused, taking into account a range of factors, not just grades.
- Program directors assess outcomes annually, share findings with an advisory board of faculty, medical professionals, and community partners, and use that feedback to improve recruiting techniques, selection, and other partnerships yearly.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- Strong mentoring program description. The mentorship team brings together a small, diverse group that includes the applicant university's faculty, CIRM Shared Resources Laboratory staff, relevant program staff, COMPASS and Bridges alumni, and research mentors from partner institutions.
- The trainee experience for both programs is well described. Students will participate in immersive coursework, internships, and workshops to develop technical skills, scientific literacy, and professional growth, with a focus on regenerative medicine. Year 1 Summer: 5-week introductory course with credits, hands-on research, and bioinformatics. Students gain experience with specialized equipment and current research methods.
- Alumni are supported through social media, professional networks, and community events to maintain connections and share opportunities, and enhance and maintain engagement. Propose to track employment, further education, publications, and career progress.
- Mentorship success is assessed through a multi-layered evaluation system: trainee surveys of their mentors once each semester, host/mentor semester, host PI feedback forms during internship, and an annual mentor team debrief in which all trainers complete a self-assessment with a validated MCA-21 instrument.
- The proposed program will leverage internal and external resources, including professional courses in GMP and GLP standards; internships are based on careful mentor selection through students' selection and mentors' previous evaluation to ensure successful outcomes; exposure to clinical work will ensure understanding of human conditions to treat.
- A number of activities are planned to include the group workshops, capstone project presentation, communication with the public, engagement with medical professionals (locally and at internship site), community outreach at different levels.
- Mentors are carefully selected and evaluated; each student is provided with different mentors at local institution and at internship institution, including previous trainees; students have their own IDPs and serve as peer mentors.
- Patient engagement and outreach activities help students understand what patients actually go through - navigating rural healthcare systems, accessing clinical trials, and dealing with communities that are distrustful of the medical community.
- Students get connected with local hospitals and clinics in the county and some can shadow physicians for up to 40 hours.
- At their research internship sites, students attend lectures from practicing physicians and patient advocates so that they can understand real-world applications.
- Trainees are expected to take what they've learned and share it publicly, suggestions include school visits, health fairs, farmer's markets, and poster sessions open to the community.



- Emphasis on reaching rural, underserved, and Indigenous communities and trains the students to communicate in a way that connects with people.
- No major concerns - consider augmenting plan with computation/AI and more ethics.
- It may be important to clarify why professional coursework on GLP and GMP is being outsourced rather than leveraging available resources and to clarify the number of trainees supported per year per program.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- Prior and similar training programs at the applicant university have a 17-year history of Bridges program success, with strong recruitment and trainee progression. The applicants state that the program has successfully transitioned students into careers and further education, with demonstrated capacity for recruiting diverse students and supporting their career development. Additional details would have enhanced this section.
- The program director has years of expertise and proven success given the previous funding (17 years and hundreds of trainees); co-director also has relevant experience.
- Internal and external resources are appropriate and previously validated given the track record of previous successful educational grants.
- Letters of support provided from main institution and partner ones, and table of previous trainees is provided.
- Leadership includes qualified program directors overseeing curriculum, recruitment, and mentorship. The Program Director has extensive experience in stem cell research and education. Co-Director and key personnel will facilitate program activities, mentorship, and outreach. Dual Path coordination ensures communication and resource sharing between pathways. Administrative oversight ensures program quality, compliance, and continuous improvement.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- Focus on underserved populations, including Native American tribes and rural communities. Activities to promote awareness of external factors influencing research outcomes and access. Goal is to foster a culturally aware, inclusive regenerative medicine workforce that benefits all Californians; Well-described section.
- The applicant university is uniquely situated in a rural, medically underserved region of Northern California.
- The program targets and will benefit first-generation college students, low-income students, and rural students.
- The program will promote training in Northern CA.



Application #	EDUC8-20295
Title (as written by the applicant)	Preparing undergraduate and master's students for the regenerative medicine industry
Public Abstract (as written by the applicant)	Our proposed regenerative medicine training programs include interdisciplinary groups of undergraduate and master's students representing 3 different majors and departments from 3 academic units and based upon over 15 years of experience directly training students in this area. The goal of both our BS and MS programs are to graduate day-one ready professionals who are capable of advancing CIRM's mission of accelerating regenerative treatments and cures to patients with unmet clinical needs. The first step in achieving this goal in both programs is a year of coursework at our institution, which will prepare students by training them in the knowledge and skills relevant to regenerative medicine. At the master's level, students will become proficient in laboratory techniques such as cell culture, fluent with primary literature, clear communicators across many audiences, familiarity with the process of biologic therapy development empathetic to the patient experience, and capable of designing and executing independent research projects. At the undergraduate level, students will also become proficient in laboratory techniques such as cell culture, familiar with current advancements in the field, and empathetic to the patient experience. With these skills and knowledge, we will prepare undergraduates for 3-6 month summer or summer-fall industry internships while master's students will complete 10-month internships over the entire second year of their degree. Students will work full-time during these internships, as they refine relevant skills while contributing to a variety of current real-world applications. (The results of our students' previous internship projects have been included in journal publications, conference presentations, patent applications, and regulatory approval documents filed with the FDA.) Common to both undergraduate and graduate students is a capstone project experience that graduate students execute to prepare for their internship, while undergraduate students execute to demonstrate learning gains from the internship. At the conclusion of our program, students will be poised to enter and directly impact the regenerative medicine field. Therefore, this award will allow us to contribute to CIRM's mission of accelerating treatments to patients with unmet clinical needs by providing the crucial workforce with specialized skills.
Statement of Benefit to California (as written by the applicant)	Our proposed program will benefit California in several ways, beginning with the first beneficiaries- the students in the program. Through our broad recruitment strategies, we will attract a diverse cohort of students to benefit from the comprehensive training and nearly 100% employment placement historically achieved by our program. The activities of our undergraduate and graduate student cohorts will in turn benefit countless Californians by accelerating the development of regenerative medicines to treat patients with unmet medical needs. This contribution depends upon this grant allowing us to deliver a pre-internship curriculum that would not be possible without CIRM support, and that provides highly effective preparation for the internship. As a result of this preparation, students at their internships can help advance both translational research and product development and accelerate the identification of new therapeutic targets or strategies. Without CIRM support, most internship opportunities would not be possible, as the start-up companies developing regenerative medicines and cures are often without the revenue stream required for an internship program. In this way, our program accelerates the development of regenerative medicines by providing companies with the technically skilled emerging professionals needed to develop these new therapies. The regenerative medicines and cures that our students and future alumni help develop will directly benefit Californians who receive these innovative therapies, while also indirectly benefiting the entirety of our state by growing and strengthening



	California's economy. Graduates of our program have historically impacted, and will continue to impact, a number of fields, such as performing fundamental and translational research in academic laboratories and for-profit companies, developing and manufacturing regenerative medicine products at for-profit companies, and participating in clinical-trial organization at large medical centers. Our graduates will help position California as the world leader in regenerative medicine by providing the workforce necessary for this field, and the economic benefits of this outcome are great. Beyond the students that matriculate into our program and the benefits they impart, our outreach activities will also help build a diverse 'pipeline' by community college students to pursue bachelor's and advanced degrees in the fields that support regenerative medicine. These outreach activities will also develop awareness, support, and enthusiasm among the general public for regenerative medicine. In summary, our program will benefit students and patients, help strengthen California's economy, and help build the regenerative medicine talent pipeline with the promise of a rewarding career and the chance to enhance medical practice and treatment options for patients with unmet clinical needs.
Funds Requested	\$6,446,520
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG." Patient advocate members unanimously affirmed that "The review was carried out in a fair manner and was free from undue bias."

SCORING DATA

Final Score: 95

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	95
Median	95
Standard Deviation	0
Highest	95
Lowest	95
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	14
(1-84): Not recommended for funding	0

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.



Key Strengths and Weaknesses

- This is a highly compelling and mature training program with a strong track record, outstanding institutional and industry integration, and clear alignment with CIRM workforce development goals.
- The program's major strengths lie in its comprehensive training model, proven leadership, and extensive internship ecosystem.
- This program builds upon highly successful existing BRIDGES and COMPASS programs. The continuity of activities and leadership is a strength.
- Interaction with industry and translational elements of the curriculum are strong.
- Internship partners and processes for onboarding are strong.
- Mentoring, tracking, and alumni engagement plans are compelling.
- Well written proposal, no major concerns after group discussion.
- Primary weaknesses relate to limited reporting of scholarly outputs, incomplete long-term outcome tracking, and lack of external evaluation of impact, rather than deficiencies in program design or execution.

Value Proposition - Evaluate the program's value and potential for impact.

- Strong, clearly articulated dual-path (BRIDGES + COMPASS) program with a proven track record of training students for regenerative medicine careers and integrating BS and MS pipelines.
- Curriculum tightly aligned with workforce needs, incorporating advanced laboratory training, translational science, and communication skills to prepare "day-one ready" graduates.
- This dual BRIDGES-COMPASS program provides high value-added training in stem cells and regenerative medicine. The combination of lab and lecture courses, internships, and professional development activities have proven effective in establishing a workforce to support CIRM's mission.
- The program strives to broaden participation of groups traditionally underrepresented in STEM in California through targeted recruiting and partnerships with other institutions.
- Given current and past success, there is a strong value proposition, and the applicants have a strong likelihood of success.
- The program has been able to support a trainee pipeline and is likely to continue to do so in the future through dynamic and innovative partnerships with industry.
- The proposal is for a dual Path Program that will support 5 cohorts of 10 BRIDGES students to complete their Master of Science degree and 4 cohorts of 6 COMPASS students at the junior and senior year leading to a Bachelor of Science degree.
- There is a great track record here. The applicants have operated a CIRM BRIDGES Program since 2009 and have graduated 146 students from that program. Every student who has started an internship has completed it and earned their degree. Program alumni include working in biotechnology, medical devices, academic labs, consulting, and education, along with pursuing PhDs, post-doctoral fellowships, and advanced degrees in the health professions.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.



- Thoughtful, dual AORP strategies tailored separately for BRIDGES and COMPASS populations, including strong community college and underrepresented student outreach.
- Holistic selection processes (e.g., de-emphasis of GPA, emphasis on potential and lived experience) effectively target “untapped talent.”
- The recruitment plan targets seniors at the applicant institution and other institutions for an MS program across three departments. COMPASS targets the applicant institution's sophomores and students at regional community colleges. This plan identifies a diverse pipeline for the program.
- The existing programs have been successful and are recruiting trainees.
- The balance of direct and indirect recruiting strategies is a strength. The recruiting plan is very detailed and multifaceted.
- The recruiting assessment plan is clear and well-considered.
- The program uses holistic criteria to evaluate students.
- The proposal is very articulate in describing the recruitment and assessment process for BRIDGES vs. COMPASS cohorts, and the description and the thought put into how the two cohorts differ is appreciated. While the assessment criteria are not novel or using non-traditional metrics, that seems to be on par with other proposals. There is a lot more thought into some of the recruitment strategy than some of the other proposals.
- The goal is for a diverse cohort of students by reaching out to those at the applicant institution as well as students at regional community colleges and partner high schools. The recruitment plans to include students who experience social, educational, or economic barriers to careers in STEM, including students who are first-generation college students, foster youth, low income, military veterans, and disability-eligible, for example.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- Highly integrated and rigorous curriculum combining coursework, capstone research, and substantial industry internships.
- Strong mentoring structure (faculty, industry, alumni, IDPs, and trained mentorship facilitator) with formal mentor training components.
- Extensive, well-documented internship opportunities across leading biotech companies and research institutions.
- The dual programs provide deep training in cutting-edge concepts of regenerative medicine. Translational and biomanufacturing aspects are strong.
- Capstone research projects provide hands-on tailored experiences that complement the internships.
- Science communication and other professional development skills are conveyed through seminars.
- The program provides a breadth of internship opportunities in academia and industry with long-standing partners.
- Plans to onboard new internship partners are clear and appropriate.



- Outreach options include science cafe for BRIDGES and community college outreach for COMPASS. The community college outreach is nicely integrated with recruitment goals.
- The mentoring program is very strong, with mentor-mentee training and mentorship from faculty, internship supervisors, coordinators, peers, and alumni.
- BRIDGES students will complete a 2-year master's degree program which includes the internship. BRIDGES students will complete nine courses as part of their scientific curriculum.
- COMPASS students will be supported during their undergraduate junior and senior years. The junior year is focused on lab-intensive coursework and patient engagement. As seniors, COMPASS students will complete a summer internship or a summer-fall co-op experience at one of the industry partner sites. In their senior year, COMPASS students will conduct community outreach and complete a capstone research project.
- This reviewer likes the strength and thoughts behind the mentoring program, the alumni mentoring, and the strengths/development plans. All mentors will complete the advancing inclusive mentoring course.
- Plans to update existing curricula for the programs in this rapidly moving field are not clear.
- There are a few points of commonality between the BRIDGES and COMPASS programs, but it seems that there could be additional value in identifying additional ways to integrate the programs.
- The programs provide patient engagement through an annual patient panel and readings in the COMPASS courses. This seems effective, although additional options for trainees could strengthen the program.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- Strong and experienced leadership team with long-standing success managing CIRM-funded programs.
- Extensive institutional support, including dedicated facilities (Cell Therapy Lab) and cross-college collaboration.
- Demonstrated ability to sustain and evolve programs over multiple funding cycles with consistent trainee recruitment and completion.
- The leadership team is very strong with long-standing experience with an existing BRIDGES and a relatively new COMPASS program. Continuity of leadership and integration of the leadership team is a strength of this proposal.
- The program has excellent partnerships with industry and academia in internships, recruiting and courses/seminars.
- The record of the ongoing BRIDGES program is outstanding with a very high completion rate and excellent career progression to regenerative medicine and other biotechnology industries.
- Excellent program team and resources. The Program Director has directed the BRIDGES program since organizing initial brainstorming sessions in response to the original RFA in the summer of 2008. As part of the COMPASS program, the PD developed the two lecture courses, helped develop the laboratory portions, and led the outfitting of the Cell Therapy Lab.
- Additionally, the PD has spearheaded the applicant institution's joining of the National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL) and the Alliance for Regenerative Medicine (ARM).



- The co-director has been running the BRIDGES program since the original RFA and program inception in 2008. The co-director has developed and taught two of the BRIDGES core courses, facilitated internship matching, served as a mentor, and been a key part of program operations and renewals for the past 18 years.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- Strong emphasis on diversity, equity, and access through targeted recruitment (community colleges, partner programs, underrepresented groups).
- Integration of patient engagement, societal context, and health disparities into curriculum and training activities.
- The program has a focus on equity in community engagement, courses, and research.
- The applicants are looking to achieve balance in each between the three areas of biomedical engineering, biological sciences, and animal science. The goal is a diverse cohort of applicants achieved through advertising and targeted recruitment strategy addressing both internal and external undergraduates with no consideration to race or other factors excluded by law.



Application #	EDUC8-20328
Title (as written by the applicant)	EPIC-IDEA: Expanded Pathways in Cell-Based Manufacturing to Increase Diversity, Equity, and Advancement
Public Abstract (as written by the applicant)	The applicant institution proposes the EPIC-IDEA Dual Path Training Program, an innovative education and workforce initiative designed to prepare students for careers in regenerative medicine. Regenerative medicine is a rapidly growing field focused on developing treatments for diseases such as cancer, blood disorders, and degenerative conditions. This program builds on the college's successful biotechnology training programs and expands opportunities for students to gain the skills, experience, and support needed to enter high-demand careers in the life sciences. EPIC-IDEA creates a clear and accessible pathway for students by combining two training programs: Bridges, which provides hands-on training and extended internships for early college students, and COMPASS, which supports advanced students completing a Bachelor of Science in Biomanufacturing. Students can begin with entry-level training and progress into more advanced coursework, research experiences, and internships, allowing them to build skills step-by-step and transition successfully into the workforce or graduate school. Participants in the program will receive training in areas such as stem cell science, gene therapy, and biomanufacturing, along with hands-on laboratory experience in real-world settings. Students will also benefit from mentorship, career guidance, and professional development opportunities. In addition, the program includes community outreach and patient engagement activities, helping students understand how scientific research directly impacts people's lives. The program prioritizes recruiting students from diverse and underserved backgrounds, including those who may not have previously considered careers in science. By expanding access to education and training, EPIC-IDEA helps create new opportunities for students while strengthening California's workforce in biotechnology and regenerative medicine. Through strong partnerships with universities, hospitals, and biotechnology companies, the applicant institution will provide students with meaningful, career-connected experiences. Ultimately, this program will help develop a skilled and diverse workforce, support innovation in healthcare, and contribute to improving the lives of patients across California.
Statement of Benefit to California (as written by the applicant)	The EPIC-IDEA Dual Path Training Program at the applicant institution will provide significant and measurable benefits to the State of California by strengthening the regenerative medicine workforce, expanding equitable access to high-wage careers, and supporting innovation in biotechnology and healthcare. By integrating education, hands-on training, and structured career pathways, the program advances California's leadership in the life sciences while addressing critical workforce and health equity needs. California's biotechnology and regenerative medicine sectors continue to expand rapidly, creating urgent demand for a highly skilled and adaptable workforce. EPIC-IDEA addresses this need by preparing students with industry-aligned skills in stem cell biology, gene therapy, and biomanufacturing, as well as training in regulatory science, data management, and quality systems. Through structured internships and partnerships with leading academic institutions and regional biotechnology companies, trainees gain real-world experience that directly translates into workforce readiness.



	By producing job-ready graduates, the program strengthens California's talent pipeline and supports continued economic growth in a critical sector. A central benefit of EPIC-IDEA is its focus on expanding access for Californians historically underrepresented in STEM. The applicant institution serves a highly diverse population, including first-generation college students and individuals facing economic barriers. Through an outreach plan that prioritizes potential, resilience, and motivation, the program identifies and supports untapped talent that may otherwise be excluded from traditional pathways. This approach promotes equity while ensuring that California's workforce reflects the diversity necessary for long-term competitiveness. The program's Dual Path structure provides a scalable and replicable model for workforce development. By integrating Bridges and COMPASS pathways, students can enter at multiple points and progress from foundational training to advanced education and career placement. As a community college offering a Bachelor of Science in Biomanufacturing, the applicant institution is uniquely positioned to expand access to advanced STEM education. EPIC-IDEA also contributes to improved health outcomes and public engagement through patient engagement activities and partnerships with organizations such as the National Marrow Donor Program. These efforts increase awareness of regenerative medicine, promote participation in donor initiatives, and help ensure equitable access to emerging therapies across California's diverse communities. Finally, the program builds on a proven track record of success. The applicant's COMPASS program has demonstrated near 100% placement of graduates into industry or advanced education. EPIC-IDEA expands this success by increasing capacity and access, producing skilled professionals prepared to contribute to California's innovation economy and future.
Funds Requested	\$6,552,640
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG." Patient advocate members unanimously affirmed that "The review was carried out in a fair manner and was free from undue bias."

SCORING DATA

Final Score: 93

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	93
Median	93
Standard Deviation	3
Highest	98
Lowest	90
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	14
(1-84): Not recommended for funding	0



FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses

- Strength: This proposal builds on and expands a successful COMPASS program.
- Strength: The applicant institution has led a biotechnology program for more than 30 years. It is situated in one of the most diverse regions in California. The program will engage students in a Bachelor of Science in Biomanufacturing, anchoring a K-PhD educational pathway that includes stackable certificates and associate degree programs.
- Demonstrated success in prior awards and shown that they can track trainee success and development, which is a challenge.
- The history of success and the impact this program has made on the workforce, and the state of California is remarkable.
- It is clear from the proposal that the program and its directors understand what is required to build, maintain, and evaluate a successful program.
- Strength: This program makes earning a baccalaureate in biotechnology affordable and thus has significant potential to broaden participation in stem cell-relevant research and application.
- Strength is the inclusion of key parts of the jobs including project management, planning, experimental design, time management, etc. This is not included in many proposals.
- The EPIC-IDEA dual program is considered a strong option for training in regenerative medicine.
- Loved this application. Combines Bridges and COMPASS. Focuses on skill building to prepare for the workforce.
- Strong proposal: engaged with communities, all key areas addressed well, mentoring good, soft skills explained well.
- The one moderate weakness is the lack of industry partners. The program lists strong academic partners like Stanford and others, but there are no listed industry partners. Given that this is an important part of the proposal, it's critical to know they have identified willing partners who will provide a positive and meaningful experience.

Value Proposition - Evaluate the program's value and potential for impact.

- Strength: The program leverages and enhances a well-developed biotechnology degree program that includes practical training in topics such as zero-defect manufacturing and translational science. The proposal will provide trainees with longitudinal supports and mentorship to ensure that trainees accumulate credentials, including degree attainment.



- Strength: The institution serves and is situated in a high need, diverse area. The project will provide opportunities for diverse students, especially students from lower income backgrounds, to enter and succeed in regenerative medicine-relevant careers at multiple levels.
- Strength: The proposal will support and expand an existing pipeline from high school to advanced degrees.
- Create a pathway for learning and career development which would lead directly to rewarding and high paying careers.
- The value proposition is seen as high by the integration of the two programs and strong recruitment program.
- Strong combination of learning and including hands on experience.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- Strength: The project leverages articulated high school biotechnology programs as a primary pipeline into the program. This direct connection with high schools will enable the project to recruit untapped talent early in the students' academic career.
- Strength: The project has a well-developed plan for connecting with and involving diverse communities, including high school teachers and students. The formal articulation between the college and partner high schools provides a strong conduit for two-way communication with diverse communities with diverse needs.
- Strength: The project will also involve diverse student groups on campus and relevant college programs to recruit trainees, including the MESA program.
- Diverse approaches for student recruitment, including lectures, visits, and even one-on-one mentoring.
- The recruitment plan is designed to align with the dual program, with a statewide impact.
- Focus on underserved communities with a focus on 100% placement!
- Strength: There is a comprehensive plan for ongoing evaluation of the applicant pool to support recruitment of untapped talent. This information will help the program fine tune their efforts as needed.
- Weakness: The program plans to select trainees by interviewing "qualified students" but does not define how "qualified" is defined. These criteria need to be formalized in advance and communicated with potential applicants.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- Strength: The biotechnology degree curriculum is comprehensive, and includes training in Good Manufacturing Practices, regulatory science, and FAIR data principles. As a result, students gain expertise and knowledge efficiently as they move through their degree program.
- A very broad range of courses are offered including uncommon courses like six sigma and Lean, bioethics, quality, and audits, etc...
- There are more than 30 courses available. Each is one well described.



- The strength of this proposal is that there seem to be well integrated "stepping stones" for the learners that take them from one course or topic to the next in a seamless way.
- Strength: The mentoring component includes development of IDPs, an evidence-based practice that supports student success.
- Excellent mentor program to ensure future job placement.
- Trainee-based competency assessments are a strength.
- Focus on experiential learning but in a practical way that emphasizes soft skills.
- Strength: The proposal includes a well-developed plan for placing trainees in internships and for supporting their success, including development of IDPs.
- Weakness: The proposal lists many courses and workshops that are relevant to biotechnology and regenerative medicine, but it does not describe the curriculum that trainees will take to complete their degree and meet CIRM requirements.
- Weakness: The proposal devotes significant space to describe requirement of new internship mentors but doesn't describe that mentors are currently available. This raises concern that there may not be enough mentors to meet trainee needs/interests.
- Concern: The proposal offers only one path by which trainees will engage with patients: the BeTheMatch donor registry. Although relevant and certainly important, there is concern whether this one rather passive option is sufficient to serve diverse trainees. Having multiple, varied options for patient engagement would strengthen the proposal.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- Strength: The project leadership team has demonstrated decades of success in developing, teaching, and improving biotechnology courses and curricula. This project builds on and extends an already strong, highly successful biotechnology program and partnerships that have been developed over years of collaboration.
- Strength: The project team has managed a highly successful CIRM program, directly demonstrating their capacity to manage the current proposal.
- Strength: The project team shares their innovations and results through peer reviewed publications. In this way, the results of CIRM funding can be broadly and formally disseminated.
- Strength: The addition of an academic success coordinator will help to ensure that trainees stay on track and access help they may need to complete their academic programs.
- Great leadership, and the institution has all the resources required with a new biotech building.
- Well-connected program, ensuring equitable access.
- Strength: The applicant's campus hosts a biotechnology manufacturing education center. This center provides a potential resource for this proposal, but the proposal does not clearly explain how the project interfaces with the Center.
- Outstanding collaborators including Stanford, UC Davis, though it's less clear who the industry partners will be.



Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- Strength: This project is situated in a high-quality community college with a strong track record of success in biotechnology education. The College serves a community that is generally more diverse and has higher needs than in the UC system.
- High, the recruitment program goes into detail how students are going to be attracted to the program.
- Focus on diverse and underserved backgrounds and focus on improving the lives of Californians.
- Can train up to 20 trainees annually; 10 in COMPASS and 10 in Bridges.
- Weakness: The proposal doesn't address how it will help trainees understand the impact of genetic, environment, and societal factors on science and access of communities to scientific advances.



Application #	EDUC8-20287
Title (as written by the applicant)	Stem Cell Dual Path Training Program
Public Abstract (as written by the applicant)	This application aims to develop a new comprehensive dual path stem cell training program at a large comprehensive urban public state university that is in a region known internationally as a center of bio-innovation. The program prepares undergraduate through master's level students for the emerging regenerative medicine and biomedical technology workforce. Over the five-year period, the program will support 20 COMPASS trainees and 50 Bridges master's trainees providing two years of COMPASS funding (during their junior and senior years) and one year of Bridges science master's funding. The program leverages the robust student training experiences and practices already institutionalized at our university and the strong and productive collaborations with academic and industry partners to prepare highly diverse and motivated undergraduate-master's students for success in careers in stem cell science and regenerative medicine. The training will feature inclusive mentorships, strong academic instruction in cell and molecular biology, developmental biology, stem cell science, biotechnology, data science, and hand-on research training in biomedical, stem cell technologies and regenerative medicine. The program will identify high-impact practices best suited for the CIRM trainees as an ongoing practice, as well as to set and monitor equity-minded program goals in student recruitment, outreach, training, and professional development. The program will augment current training success at our campus to prepare forward thinking, compassionate and competent undergraduate-master's students for entrance into the stem cell, gene editing, cell therapy and regenerative medicine fields.
Statement of Benefit to California (as written by the applicant)	The program will benefit the State of California by developing a comprehensive dual path training program focused on stem cell and regenerative medicine training to prepare a broadly inclusive, well-trained STEM workforce. The program will contribute to the further diversification of the research and scientific workforce, as it supports underrepresented and disadvantaged California students providing them a solid science foundation to launch their careers, and to nurture the development of support networks crucial for academic success and career advancement. Trainees will emerge from this program with highly competitive portfolios and the connections to personal and professional networks that will promote their professional careers. The program further engages with patient advocacy groups, local and CSU programs and community initiatives that promote respect, inclusiveness, fairness and equal opportunity. This program will augment partnerships between our university and other academic institutions and the private biotech sector to increase biomedical workforce talents and infuse the California economy. The program will contribute to CIRM's collective efforts in promoting awareness of how genetic, environmental, and societal factors can impact scientific outcomes and access of different California populations to scientific advances. The outcome and impact of the program will be substantial, transformative and long-lasting.
Funds Requested	\$6,490,600
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG." Patient advocate members unanimously affirmed that "The review was carried out in a fair manner and was free from undue bias."



SCORING DATA

Final Score: 93

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	92
Median	93
Standard Deviation	2
Highest	95
Lowest	90
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	15
(1-84): Not recommended for funding	0

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses
- Well-designed proposal with a strong history of success, a strong mentoring plan, excellent qualified leadership, strong evaluation plan, and a strong outreach, recruitment, and selection processes. - A major strength is the outstanding track record of success in previous training programs. - The program has in the past and will clearly continue to broaden participation in the stem cell research community, which the applicant is clearly at the heart of in the Bay Area. The program has shown that it has in the past and will continue to sustain a pipeline of highly trained individuals. - Strength: Established program with a solid track record. Interesting course offerings, experienced academic and industry partners, solid recruitment approach, and excellent mentoring plan. Population impact is outstanding. - The applicant university serves one of the nation's most culturally and ethnically rich student populations, and this program aims to recruit students that reflect California's population. The program proposes to recruit students who are considering alternatives to traditional academic PhD and medical school career paths, with consideration for students from disadvantaged socioeconomic backgrounds. - The proposed COMPASS Program will support 20 students during their junior and senior years and 50 BRIDGES students during one year of their master's degree. The Dual Path is well-aligned to a proposed 4+1 BS Biology-MS Biomedical Science Program. - Proposed courses and laboratory training and experiences build from foundational to more stem cell focused. Directed reading in stem cells seminar and intensive summer research skills training bootcamp are strengths of the COMPASS Program that should prepare students well for capstone experiences and master's research.



- Electives for “hybrid skillsets,” including translational research, data science, science education and communication, add value for BRIDGES students.
- Program resources will be made available to CIRM and other collaborative institutions, but other opportunities to present or publish should be considered.
- The PD is an experienced faculty member and the Founding Director of the MS in Biomedical Science with concentrations in Biotechnology and Stem Cell Science. The PD has served as PI on previous grants from a foundation and NSF to support this work and is the current Program Director for the CIRM BRIDGES and COMPASS Program.
- The PD has assistance from a Co-Director and Mentorship Facilitator but is also serving as Outreach Coordinator (additional 3.4% effort) with help from a consultant. Support is also requested for program administration, a stem cell-biotech advisor/lecturer, and research skills training advisor/lecturer, which should help augment the PD's 5.7% effort as PD.
- More than 90% of past COMPASS and BRIDGES Program participants have entered academic research institutions, PhD programs, medical schools, and the pharmaceutical, gene/cell therapy, and biotech sectors.
- Weakness: No explicit course work that addresses the process for development and regulation of new therapies. Explicit course for data science and sharing principles is not provided. 4+1 BS Biology-MS Biomedical Science Program is not yet approved.
- Long-term experience in outreach is good. GMP training is not included in the program. The program has a good track record.

Value Proposition - Evaluate the program's value and potential for impact.

- Aims to establish the stem cell dual path training program to prepare diverse undergraduate and master's students for careers in stem cell research and regenerative medicine through comprehensive academic, research, mentorship, and outreach activities.
- Supports 20 COMPASS and 50 BRIDGES trainees over five years. Provides two years of undergraduate (COMPASS) and one year of master's (BRIDGES) training.
- Focuses on inclusive, active-learning curricula, hands-on research, mentorship, and outreach, while taking advantage of existing institutional strengths and collaborations with universities and biotech industry partners. The program's aim is to diversify the biomedical workforce, reflecting California's demographics. Well-developed program with strong potential for impact.
- The program, with multiple previous CIRM awards both completed and active, will clearly have a huge impact on trainees' professional careers. Their follow up data clearly shows this.
- Collaborations with universities and biotech industry partners which are aimed to diversify the biomedical workforce, reflecting California's demographics.
- Yearlong workshops that address the critical equity gap at urban, teaching-focused institutions that provide limited prior laboratory exposure.
- The dual path (COMPASS + BRIDGES) Program will have a meaningful, positive impact on trainees' careers in biomedical research broadly and stem cell biology/regenerative medicine specifically.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.



- Adaptive, culturally sensitive outreach and holistic, inclusive selection processes to recruit diverse, talented students. Recruitment from biology juniors, community college transfers, first-generation students, and those facing immigration hardships. Multiple channels: university website, newsletters, social media, campus events, and conferences. Peer-to-peer outreach and targeted recruitment at community colleges and diversity-focused events.
- Selection criteria emphasize academic merit, personal qualities, leadership, adversity overcoming, and potential, rather than solely GPA. Applicants complete a self-assessment "My Flower" to evaluate goals, traits, interests, skills, and preferences. Admission involves interviews assessing academic direction, determination, and mentoring. The program will monitor alumni career progression and encourage ongoing participation.
- Annual assessment of employment and further education. Strategies to maintain alumni engagement and mentorship roles. Alumni success disseminated to motivate future trainees and foster a supportive community.
- The applicant's ability to track long-term trainee outcomes is clearly shown by the data that the applicant shared, and it appears that the applicant's history has already been used by other applicants to shape the outcome measurement procedures.
- Successful Adaptive Outreach and Recruitment Plan (AORP) with a focus on sophomore biology students and associate degree transfer students.
- Use of multiple channels is proposed, e.g., university website, newsletters, social media, campus events, and conferences.
- Solid monitoring of success - regular progress evaluations using mentor-mentee agreements and surveys.
- Use of an interesting self-assessment form "My Flower" to evaluate goals, traits, interests, skills, and preferences.
- The Adaptive Outreach and Recruitment Plan (AORP) will focus on sophomore Biology students as well as associate degree transfer students, but the pathways through the programs for these students are distinct.
- Recruitment strategies on and off campus are robust and alternative selection based on 7 "petals" of a flower should result in both holistic review of applicants and program fit.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- Trainees will engage in research at academic institutions and biotech companies, gaining hybrid skills relevant to regenerative medicine. Opportunities include labs at local universities and biotech startups. Research areas: stem cell biology, regenerative medicine, cancer, genetics, developmental biology, cardiovascular, and infectious diseases. Each trainee will participate in one or two internships, either yearlong or in the summer.
- Strategies include recruiting new host sites and mentors, with existing commitments from faculty at applicant university and local universities. Extramural internships at universities and biotech companies during senior year. Activities designed to enhance trainees' understanding of patient experiences and healthcare disparities; will include patient engagement, caregiving perspectives, and health equity; this is a strength of the program to incorporate the patient side of the science/healthcare.
- Trainees will participate in activities that foster empathy and awareness of societal impacts on health outcomes. Aims to integrate diverse community perspectives into research and training. The mentoring



program emphasizes inclusive, structured mentorship with ongoing assessment and resource support. Mentors trained to foster personal and professional growth.

- Mentoring includes individualized development plans and cohort activities. Regular progress evaluations using mentor-mentee agreements and surveys. Focus on justice, equity, empathy, and cultural awareness, especially for underrepresented groups.
- Trainees participate in science festivals, ambassador programs, and rare disease awareness workshops. Industry and community partnering -- the program collaborates with top research institutions, biotech companies, and community organizations.
- Industry partners provide internship sites, mentorship, and networking opportunities. Biotech startups and established companies support summer training and employment pathways. The program will actively recruit new mentors and host sites through professional networks and institutional collaborations.
- Hybrid experience is a major strength.
- The interaction between BRIDGES and COMPASS trainees presents a model for other training programs to follow.
- Past success speaks for itself: More than 90% of past COMPASS and BRIDGES Program participants have entered academic research institutions, PhD programs, medical schools, and the pharmaceutical, gene/cell therapy, and biotech sectors.
- The inclusion of courses that prepare the next generation is a strength, e.g., a mini-project auditing stem cell misinformation by distinguishing evidence-based science from AI-generated or human-led misinformation.
- Rare disease awareness workshops, stem cell awareness day, Bay Area science festival, and other education and outreach activities engage students and allow them to contribute in various ways.
- Mentor-mentee mentorship agreements, Individual Development Plans (IDPs), "precision mentoring," monthly program meetings, and professional development workshops contribute to program strengths and are assessed by trainees and mentors.
- While the COMPASS and BRIDGES Programs support students at different education stages, administration, program activities, and lab placements may be shared to maximize benefits.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- The program is overseen by qualified leaders with clear roles in administration, mentorship, outreach, and recruitment. Leadership includes the Program Director, Co-Director, and key personnel. Dual Path plans ensure effective communication and resource sharing between paths. The leadership team will monitor progress, evaluate outcomes, and adapt strategies for success.
- Leveraging past training experience of the director and co-director. Current cohort demographics show promising diversity: 50% female, 40% male, 10% non-binary; 60% first-generation; 60% Hispanic/Latino, 10% Black, 10% with disabilities, 10% military veterans. Past alumni have advanced to PhDs, biotech roles, and clinical training.
- 17-year history with programs. Through previous CIRM awards (2022–2027), over 160 students trained, with 20% entering PhD programs and 50% working in biotech or academia. Strong outcomes from past programs.



- The partnerships the applicant has with other Bay Area resources like local universities and biotech companies are outstanding. The applicant is geographically and historically well positioned to contribute.
- Excellent: The PD is the current Program Director for the CIRM BRIDGES and COMPASS Programs.
- Support from key external partners in academia and industry is strong.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- Comprehensive, inclusive, and multi-faceted training program designed to prepare diverse students for careers in regenerative medicine and stem cell research has strong potential to lead to a continued impactful program. Focus on California's broad demographic, including underserved and disadvantaged populations. Activities will address how genetic, environmental, and societal factors influence research outcomes and access.
- The applicants have specific strategies outlined to provide trainees with awareness of how genetic and social factors can influence access to treatments.
- Impressive alumni involvement - alumni will form an advisory team for support of diverse students.
- Plans to include relevant professional societies and STEM organizations, and an alumni advisory team will allow for support of diverse students.
- Inclusion of relevant professional societies and STEM organizations.
- Technical, research and professional skills are emphasized over environmental and societal factors influencing science and access, but public science communication workshop series and patient engagement activities with partners may fill some of these gaps.



Application #	EDUC8-20315
Title (as written by the applicant)	Undergraduate Talent Development through Stem Cell Training Programs
Public Abstract (as written by the applicant)	Serving a highly diverse student population, the EDUC8 COMPASS and Bridges (BSCR) programs form an integrated training model that prepares trainees for regenerative medicine careers by pairing rigorous scientific instruction with workforce-relevant competencies and community-engaged perspectives. Trainees with genuine interest in the field will participate in high-impact practices, including hands-on research training, product-oriented coursework, one-on-one mentoring, soft skills development, and structured personal and mental health support to sustain readiness for California's biomedical workforce. All trainees will complete a course designed specifically for EDUC8, Healthcare Engagement and Impact, which scaffolds community outreach, FAIR principles, health equity, healthcare engagement, patient advocacy/engagement, population impact, professional development, and public scientific communication. Communication training will prepare trainees to translate science for diverse audiences, reinforced through outreach and patient engagement. Course products will include trainee-recorded micro-lectures on stem cells and regenerative medicine that can reach 500+ general education students per semester and build "pay-it-forward" engagement with communities across California, while reflecting on how genetic, environmental, and societal factors shape outcomes and access. Recruitment is designed to reach 1,000+ local STEM students through online and in-person events, laboratory skills workshops, and advising, with low barriers to entry (no minimum GPA or prior research requirement). BSCR and COMPASS are structured as 19- and 24-month programs, respectively, integrating stem cell biology, research methods, advanced organoid techniques, regulatory affairs, and CIRM-recommended activities into the bachelor's degree pathway. In EDUC8, advanced senior undergraduate BSCR trainees will complete a 12-month, full-time paid internship, and sophomore/junior undergraduate COMPASS trainees who are exploring biotechnology careers will complete two 3-month, full-time paid summer internships, continuing proven models. BSCR has placed 140+ interns in 75 labs over 15 years, and COMPASS has placed 12 interns in 15 internships across 14 labs over two years. Across both pathways, trainees progress from research foundations to full-time partner-site internships, gaining project-specific skills and exposure to leading-edge research, strengthening a workforce prepared to meet California's scientific, clinical, and community needs. With nearly 80% of the current programs' alumni pursuing research and biomedical career pathways, EDUC8 is well-positioned to continue contributing to the advancing needs of the regenerative medicine workforce.
Statement of Benefit to California (as written by the applicant)	California's sustained leadership in regenerative medicine has created a rapidly expanding demand for a highly trained, diverse workforce, and this EDUC8 program has been designed to directly contribute to this need by preparing undergraduate trainees with the technical expertise, professional competencies, and community-informed perspectives required to advance stem cell biology and biotechnology innovation. The current Bridges and COMPASS programs have addressed limitations of the traditional biology curriculum by providing hands-on training in cell, molecular, and stem cell biology techniques, enabling trainees to meet expectations of biotech companies and research institutions led by experienced scientists. The mentoring program, research experiences, capstone projects, and internships in some of the most advanced labs in the world have motivated nearly 80% of our programs' alumni to pursue research and biomedical career pathways, aligning with CIRM's vision to address workforce demands. The EDUC8 program will continue to select trainees



	from diverse socioeconomic backgrounds, including first-generation college students and Pell Grant-eligible populations, and train them to become exceptional interns in leading laboratories. Historically more than 70% of students from this university are expected to remain in California, thereby retaining talent and strengthening the state's biomedical workforce. By incorporating a special healthcare topics course, trainees will be encouraged to reflect on how genetic, environmental, and societal factors shape scientific outcomes and influence equitable access to innovation. Through these discussions, they will engage communities historically underrepresented in high-technology sectors, contributing to a more inclusive and equitable regenerative medicine enterprise. These efforts will inspire trainees to represent diverse perspectives in research and to share knowledge of stem cell biology with broader communities. Collectively, the EDUC8 Bridges and COMPASS programs will continue to contribute to innovation and productivity in California's stem cell-based companies and support the translation of discoveries into therapeutics and diagnostics, ultimately benefiting California's economy, public health, and global leadership in regenerative medicine.
Funds Requested	\$6,918,000
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG." Patient advocate members unanimously affirmed that "The review was carried out in a fair manner and was free from undue bias."

SCORING DATA

Final Score: 92

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	92
Median	92
Standard Deviation	1
Highest	92
Lowest	90
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	15
(1-84): Not recommended for funding	0

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.



Key Strengths and Weaknesses

- The proposal builds upon highly successful BRIDGES and COMPASS programs. The modernization of the curriculum and addition of common content between the two programs is a strength.
- Recruitment and mentoring plans are very strong. Improved alumni tracking is well-considered.
- Efforts to engage industry and provide more industry internships would improve the impact on students and the growing California regenerative medicine industry.
- Strong alumni tracking and assessment program.
- Strong track record.
- Outreach and patient engagement are well-integrated into the curriculum, and a broad range of activities are available.
- This is a very strong application for a dual program. The applicants are proposing two complementary pipelines to prepare undergraduate students in regenerative medicine.
- Strong history and skill set.
- Good track record, good outreach, robust educational experiences, and alumni tracking are good.
- The comments about industry connections and/or connections to top research/academic labs are well taken.

Value Proposition - Evaluate the program's value and potential for impact.

- This dual BSCR-COMPASS program builds upon highly successful existing BRIDGES and COMPASS programs to provide unique and impactful workforce development at the undergraduate level.
- The program is well-aligned with CIRM's commitment to delivering transformative regenerative medicine treatment to patients. Partnership with other CIRM projects is a strength of this proposal and helps maintain the alignment with CIRM's mission.
- The program reflects the diversity of the host institution's student population and will broaden participation in the California regenerative medicine workforce. The recruitment plan has numerous targeted approaches to ensure diversity in the program.
- The programs have successfully met their recruiting targets and have an excellent track record in providing professional competencies and are likely to continue to do so in the future.
- The proposal balances continuation of effective practices as well as adding innovative new elements such as new courses, recruiting, outreach, and integration of elements of the BSCR and COMPASS programs.
- There is a well-structured recruitment program. The details of the requirements are well described.
- Brings in Latinx and other underrepresented groups in a well targeted way.
- The program will add significant value to CIRM's portfolio.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.



- The program proposes an effective multi-pronged recruiting strategy that identifies potential participants at multiple stages of their education through both general and targeted approaches.
- The use of holistic approaches in the admissions process can identify students who would benefit from and thrive in the program, but who may lack traditional quantitative metrics.
- The assessment of trainee progression and outcomes is strong and thorough, building upon prior experiences of these programs.
- Plans for alumni tracking and continued engagement are clear and appropriate.
- Dissemination plans are appropriate.
- The recruitment plan is well-structured, with all requirements described in detail.
- Strong alumni tracking plan, especially for Latinx and other underrepresented groups.
- The current plan building on past successes has created a curricular path that builds the skills needed for basic stem cell work as well as advancement to careers with leadership roles.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- The formal coursework consists of a blend of traditional and laboratory experiences. The scope and depth of the hands-on training is a particular strength of this program. The content gets very deep into topics at the forefront of regenerative therapies.
- The proposal presents significant updates to course content in areas such as data science and organoid manufacturing.
- A new course in healthcare engagement and impact formalizes training aspects of outreach, communication, patient impact, equity, and professional development.
- Program elements for internship preparation are strong, including establishing expectations. Flexibility in course offerings to provide depth in technical areas related to internships is a strength of the program.
- Interactions with CIRM projects at multiple research institutions appear effective.
- The program provides high expectations and broad opportunities for patient engagement.
- Integration of shared elements of the BSCR and COMPASS programs appears well-considered.
- The programs have excellent records of meaningful internships through a network of established partners.
- Peer mentoring plans are strong.
- Trainee tracking and evaluation plans are appropriate, with multiple points of contact through each stage of the program.
- Courses, internships, and community interaction are considered appropriate.
- The current plan building on past successes has created a curricular path that builds the skills needed for basic stem cell work as well as advancement to careers with leadership roles. The university plans a robust plan for patient engagement and community outreach activities including a required monthly seminar series



for students and participation in the CIRM designed interactive role play series. The mentoring program is very strong including as it does a multi-tiered structure.

- The most significant weakness of the program is the small number of industry internships to date (only 3). Stronger plans to identify and foster industry opportunities are needed to provide broader career options to the trainees as industry in this area continues to expand.
- The data science component could be augmented more with AI.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- The program leadership has done an excellent job and continuity in leadership is maintained in this proposal.
- Partnerships with other CIRM programs and with internship partners is a strength. Expanding industry partnership would further strengthen the program.
- The proposal represents continuation and improvement of existing, highly successful programs in terms of trainee outcomes.
- Strong leadership. Mentoring is strong and good plan for student tracking.
- The team, especially the PD, is clearly well prepared for this work and has a track record of proven success in all aspects of this training program. The resources and partnerships are very well developed, including ten universities, a non-profit research institute, and three biotechnology companies.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- The program has done an excellent job in admitting and training students from groups traditionally underrepresented in STEM, including women and Hispanic students.
- The training plan has activities specifically designed to teach trainees about rural challenges, aging populations, and other structural activities.
- The proposal will have a dual impact: one is the training of members of underrepresented populations, preparing them for the academic and/or industry market in regenerative medicine. Second, by reaching into the community through several patient engagement activities.
- Brings in underrepresented groups.
- The plans that the applicants have to support the success of the students are impressive and include individualized resources, plans, and mentors.



Application #	EDUC8-20270
Title (as written by the applicant)	Developing a Skilled and Diverse Master's-Level Workforce in Regenerative Medicine
Public Abstract (as written by the applicant)	The proposed master's-level Bridges training program is designed to prepare a diverse and highly skilled workforce for careers in regenerative medicine. Regenerative medicine—including stem cell research, gene therapy, and cell-based treatments—holds tremendous promise for addressing unmet medical needs. Continued progress in this field requires professionals with expertise in laboratory science, translational research, regulated manufacturing, and clinical research, guided by ethical and patient-centered considerations. The Bridges program is the cornerstone of the home institution's Master of Science in Biotechnology degree. The program integrates advanced graduate coursework with a 12-month, full-time research internship in stem cell and regenerative medicine laboratories, embedded within the 21-month master's program. Recruitment and admissions are guided by an Adaptive Outreach and Recruitment Plan (AORP) designed to expand access and strengthen participation from students across diverse backgrounds. Trainees receive coordinated cross-institutional mentoring from faculty trained in inclusive mentoring practices to support academic progress, research development, and career planning throughout the program. They gain rigorous preparation in stem cell biology, gene editing and cell-based therapies, molecular and cellular techniques, data analysis, and experimental design, along with exposure to regulatory science and Good Manufacturing Practices (GMP) that govern cell and gene therapy development. Beyond technical training, the program emphasizes teamwork, professional development, and science communication, with trainees presenting their work at scientific meetings, including a CIRM-sponsored trainee conference. Stipend and tuition support reduce financial barriers and enable full-time engagement in coursework and research. The program also emphasizes patient engagement and community outreach. Through interaction with patients, advocates, and diverse communities, trainees gain a deeper understanding of healthcare equity and access, including how genetic, environmental, and social determinants shape disease risk, treatment outcomes, and access to therapies. By promoting inclusive research and equitable access, the program prepares graduates to advance solutions that reduce disparities and ensure regenerative therapies benefit all Californians. Through sustained hands-on research and close collaboration between the home and host institutions, this initiative provides trainees with meaningful, immersive experience in real-world regenerative medicine settings. Graduates are prepared for roles in biotechnology, academic research, clinical research organizations, regulated manufacturing, and related sectors supporting California's regenerative medicine workforce, contributing responsibly to the field's continued growth.
Statement of Benefit to California (as written by the applicant)	This program strengthens California's leadership in regenerative medicine by preparing a highly skilled, master's-level workforce equipped to support stem cell research, gene therapy, and cell-based treatment development. Through hands-on training and immersive internships in translational and regulated research environments, graduates are prepared to meet workforce needs across biotechnology, manufacturing, and clinical research sectors. By developing a diverse pipeline of scientists and promoting inclusive research practices, the program helps ensure that advances in regenerative medicine benefit all Californians. These efforts contribute to economic growth, expand access to high-quality biomedical careers, and improve health outcomes across the state.
Funds Requested	\$3,868,800
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available



Process Vote	All GWG members unanimously affirmed that “The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG.” Patient advocate members unanimously affirmed that “The review was carried out in a fair manner and was free from undue bias.”
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SCORING DATA

Final Score: 92

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	92
Median	92
Standard Deviation	2
Highest	95
Lowest	89
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	14
(1-84): Not recommended for funding	0

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel’s discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses
- Strengths: Impressive outcome data positioning students in different areas; responsive to previous students’ outcomes (redesigned the program to reduce the number of students); 12-month internship in a great place (large choice of programs); strong plan for trainee tracking and measuring success. - Outstanding track record of success, graduating >121 students across all CIRM-affiliated programs. - This Bridges program proposes to continue a partnership between the applicant institution and an established partner university's stem cell program through the CIRM Bridges to Stem Cell Research Program; the outcome data are impressive with ~85% of 121 MSc-level graduates progressing into STEM- and health-related careers or advanced degree programs. - Strengths of the ongoing program will be maintained including integration of Bridges program as core component of Master of Science in Biotechnology and the effective recruitment strategy. - The 12-month internships conducted at the partner stem cell program are a significant strength of the program; trainees have the opportunity to engage in cutting edge research topics, spanning engineering vectors for CAR-T therapy, biomaterials development for tissue regeneration, and functional genomics projects, among many other listed topics.



- Highly focused program on master's students which makes the training highly specialized, easy to understand, and likely to be successful.
- Partnership with a California university that has established stem cell infrastructure is seen as a key strength.
- The trainee placement strategy is clearly robust, as is the process for recruiting new internship mentors.
- Minor weakness: internships are only at the university partner; reducing the trainee numbers will cut opportunities.
- Weakness is reducing the number of trainees for this proposal from prior years. This reviewer would like to see this scaling up and not down, even if that means tweaking other areas to improve retention and quality.

Value Proposition - Evaluate the program's value and potential for impact.

- This redesign is full of support for the trainees; all specifically aimed at ensuring their professional development and commitment to the CIRM mission.
- The outcome data from the current program are impressive – ~85% progressed into STEM- and health-related careers or advanced degree programs, with graduates in biotech, academia, regulatory positions, public health, and science education – based on these data, the program is highly likely to continue to produce a pipeline of regenerative medicine trainees and clearly illustrates a strong commitment to CIRM's mission.
- Strengths include: multi-disciplinary training program, experience (since 2009), and previous trainee success.
- The very trainee specific design, education, activities and plans for dissemination and commitment to provide support as future alumni support a sustainable pipeline and workforce in regenerative medicine/related careers.
- Strong recruitment strategy including motivation (more than GPA) as an important point.
- Variety of coursework and activities that promotes personal scientific growth and exposure to everything that is needed for a successful career in stem cell and gene therapy regenerative medicine, along with personalized mentorship.
- Have the potential to make a meaningful difference for many students, though that is tempered somewhat by the proposed decrease in learner class size.
- This is a redesign of the bridges program for this institution. This grant application specifically comments on designing the program around 8 participants per year vs 10 per year from the past 3 iterations of the previously funded bridges program.
- This proposal is very trainee-specific for doing well in all the bullet expectations, but with the cutback in number participation, this program is not broadening the participation and perspectives of Californians in the regenerative medicine workforce.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- Strong strategy for measuring trainee success: trainees will now sign an Outcomes Reporting Acknowledgement at the outset of the program. This acknowledgement describes the importance of reporting post-graduate outcomes and requests a commitment to maintain current employment information



by either (1) keeping a LinkedIn profile up to date, (2) responding to periodic inquiry emails, or (3) directly notifying the Program Director of employment updates.

- The Program will continue to make use of its successful adaptive online and recruitment program (AORP) – a nice aspect of the recruitment strategy is that current Bridges trainees play an active role, by presenting their research at local community colleges, and multiple CSU campuses.
- AORP improvement strategies make use of the program's alumni tracking and engagement plan. The plan has been very successful with data available for all but 3% of alumni.
- Strong strategy for recruitment: outreach to four local and regional community colleges through presentations and materials; holistic review process that considers not only academic preparation, but also research potential, resilience and motivation to pursue regenerative medicine.
- A very robust recruitment plan and defined outreach plan to maintain successful participation in this master's graduate program.
- Good outreach to the regional city college feeder sites as well as description to other CSUs throughout California to promote the graduate master's program in regenerative medicine.
- It is odd that some attention to outreach to the pipeline of future STEM students at the SPARK programs was not mentioned. It may not have been an expectation in the application, but attention to the overall umbrella of pipeline recruitment should warrant comment.
- The strategy seems quite passive, relying on strategies such as handing out pamphlets, participating in career seminars and graduate school workshops. These may self-select for specific populations or demographics.
- It is not clear how success targets will be measured.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- The program combines relevant coursework (theory and hands-on), presentation, outreach, and patient engagement activities, with 12-month internships offering the possibility for the trainees to select among a variety of research disciplines all of which are relevant and critical for a successful career in regenerative medicine.
- Clearly described plans for theory and hands-on training, patient engagement and education, and community outreach with clear timelines and involved third parties.
- Well described educational and coursework design, very robust.
- One-of-a-kind partnership with an established stem cell program which is outstanding. It covers hands-on training in cutting edge science such as iPSCs and includes important topics such as regulatory affairs, GMP, etc.
- The 12-month internships conducted at the the partner stem cell program are a significant strength of the application; trainees have the opportunity to engage in cutting edge research topics, spanning engineering vectors for CAR-T therapy, biomaterials development for tissue regeneration, and functional genomics projects, among many other listed topics.
- Hands-on research is well described with internships at the partner stem cell program and other affiliated programs. Exposure to the Alpha Clinic and the affiliated GMP facility are strengths.



- The trainee placement strategy is clearly robust, as is the process for recruiting new internship mentors. Trainees participate in “bench-to-bedside” colloquium, and the program also features a patient advocacy engagement plan.
- Robust mentoring plans are described as well as emphasis on individual development plans with continuing review and updates.
- Clear description of mentoring for all activities (recruitment, resources, structure): each trainee is paired with a faculty mentor for the duration of the program and a research mentor during the 12-month Bridges research internship. Biweekly mentor meetings, milestone-based IDP reviews, and immersive year-long research supervision.
- Mentors at both institutions participate in training facilitated by program leadership in inclusive, bias-aware mentoring practices. Mentorship effectiveness is evaluated through annual trainee surveys and formal milestone reviews. Trainees have access to confidential reporting pathways.
- Bench-to-bedside colloquium and the patient advocacy engagement plan, which connect trainees with patient and clinician perspectives and contextualize scientific training within real-world therapeutic impact.
- Patient engagement and interaction with patients/advocates in areas of neuroscience/neurodevelopment, blood and cancer, inflammatory diseases, pediatric and fetal surgery, among other areas. Bench to bedside colloquium and a patient advocacy engagement plan.
- Lacks clear outcome measurements for each of the core components of the training plan.
- There is also a lack of focus on soft skills like writing short but informative reports, effective communication, and the ability to present clearly and effectively. Some of this was briefly mentioned – students will present to a non-technical audience, which is great, but it needs to be better articulated and integrated into each of the courses.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- Outstanding program team and resources.
- Outstanding leadership team and advisory committee led by the PD as well as leaders in the field.
- This has been a very successful Bridges program and has a strong core leadership. PD has been involved in program leadership for over 10 years.
- PD and research internship mentorship coordinator well suited based on experience and previous success.
- Letters provided from core facilities and lab PIs (16 pages) at the partner university's stem cell program institute for regenerative cures and associated GMP and clinical research facilities.
- The team is well prepared in education design and leadership.
- The program outcome data report 85% of the 121 trainees who completed the program since 2009 have remained in STEM and health related careers or advanced degree programs.
- The most recent funding cycle from 2022-2027 does show less trainee participation which is not well explained.
- It is unclear whether, with less trainees per year, the institutional support funding is proportioned accordingly.



Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- It is clear from the proposal and from collaborations that this application considers the potential impact on broad segments of California.
- Demonstrated success from prior support of training programs. The applicants currently support 11 active trainees and have graduated 121 students across all CIRM-affiliated programs.
- The knowledge sharing plan has generated tangible impact and will undoubtedly continue to disseminate effective training practices in alignment with CIRM's mission.
- The applicant organization is a federally designated Hispanic-Serving Institution (HSI) and an Asian American and Native American Pacific Islander-Serving Institution (AANAPISI).
- The applicants enroll large numbers of first-generation, low-income, and historically underrepresented students.
- The coursework, patient engagement activities, and communication and outreach expectations hit all marks on enhancing population impact.
- Patient engagement plans describe activities that capture patient perspectives in the design of the trainee's program.
- Robust resource support to all trainees and participants described.



Application #	EDUC8-20284
Title (as written by the applicant)	Advancing Diverse Stem Cell Scholars Through Integrated Research and Career Development
Public Abstract (as written by the applicant)	We propose a cohort-based, discovery-driven training program designed to expand access to stem cell and regenerative medicine research for undergraduate students from historically underrepresented backgrounds. By integrating structured mentorship, experiential learning, and inclusive research environments, the program provides students with hands-on training in stem cell biology, genome editing, and regenerative medicine, fostering both technical proficiency and critical scientific thinking. The program pairs foundational coursework in stem cell biology, with Course-based Undergraduate Research Experiences (CUREs), where students engage in authentic, discovery-driven laboratory research rather than following predetermined protocols. Trainees will engage in coursework that covers data design and interpretation, ethics, scientific communication, and an optional Good Manufacturing Practices (GMP) component for those interested in biomanufacturing careers. Trainees then participate in intensive summer internships and capstone projects that emphasize translational relevance and professional dissemination, preparing them for advanced study or careers in regenerative medicine, biotechnology, or related fields. Through scalable research experiences embedded in the undergraduate curriculum, the program directly addresses equity gaps in the stem cell and regenerative medicine workforce and enhances participation and academic achievement, supporting students' persistence, degree completion, and readiness for graduate and professional pathways. By cultivating a diverse and highly skilled cohort, this program contributes to the development of a regenerative medicine workforce capable of advancing innovation and maintaining California's leadership in biomedical research and therapy development.
Statement of Benefit to California (as written by the applicant)	The proposed training program will support the development of a highly skilled and diverse workforce in regenerative medicine, strengthening California's leadership in stem cell research and biotechnology. By providing undergraduate trainees with rigorous scientific training, hands-on research experiences, and exposure to translational and industry-relevant practices, the program prepares individuals to contribute to the advancement of novel therapies for a wide range of diseases and conditions affecting Californians. In doing so, the program helps accelerate the translation of scientific discoveries into clinically meaningful treatments that can improve health outcomes and quality of life. In addition, the program expands access to high-quality research training for students from historically underrepresented backgrounds, contributing to a more inclusive and representative scientific workforce. This broadening of participation enhances innovation, supports equitable access to career opportunities in high-growth sectors, and strengthens the state's capacity to meet future biomedical and healthcare needs.
Funds Requested	\$2,808,072
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG."



Patient advocate members unanimously affirmed that “The review was carried out in a fair manner and was free from undue bias.”

SCORING DATA

Final Score: 90

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	92
Median	90
Standard Deviation	3
Highest	99
Lowest	90
Count	13
(85-100): Exceptional merit and warrants funding, if funds are available	13
(1-84): Not recommended for funding	0

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel’s discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses
- Strengths: Well-rounded program that is strong across program leadership, curriculum, trainee development (technical and professional), patient & community outreach and engagement (both incorporated into formal curriculum). - One direction the program should strengthen is sustainability beyond CIRM grants. - The applicant proposes a CIRM COMPASS program that builds on a longstanding commitment to advancing the success of underrepresented students in STEM through the Division of Student Success and other initiatives. The goal is to support 5 new trainees per year (25 trainees through the program). - The curriculum is strong and includes established course-based undergraduate research experiences, lab series courses, developmental biology, stem cell biology and others – a very nice component of the course curriculum is the CRISPR stem cell lab developed by the PD of this proposal. - The research mentorship opportunities are excellent, with outstanding participating faculty from the applicant institution, two companies, and a regional biotech innovation hub.
Value Proposition - Evaluate the program's value and potential for impact.
The program is highly likely to have a positive impact on its trainees. They will be immersed in the outstanding stem cell research environment at the applicant institution – the program will make use of



established institutional partnerships with biotech companies, and additional industry partners will be engaged through a local biotech incubator.

- The plan has five main components: recruitment, foundational coursework in stem cell biology, labs in iPSC biology and genome editing, intensive internships in stem cell labs, and culminating capstone and professional dissemination of projects. The applicant has a strong running start with the proposal in that the CRISPR lab is in place, with the idea that training in genome editing and stem cell therapies, two of CIRM's priority areas, will be added.
- Provides a well-integrated training model combining stem cell coursework or labs in CRISPR/iPSC-based research, internships, mentoring, outreach, and capstone experiences that should strongly support trainee development and career readiness.
- Aligns closely with CIRM's mission by offering authentic regenerative medicine research experiences, biotech industry exposure, and professional development opportunities that are likely to encourage long-term engagement in the field.
- The program demonstrates exceptional commitment to broadening participation through recruitment of first-generation, transfer, and historically underrepresented students, supported by the applicant institution's HSI/AANAPISI status and partner HSI partnerships.
- Strong institutional resources, the stem cell research environment, and biotechnology partnerships provide trainees with relevant technical, translational, and workforce competencies needed for regenerative medicine careers.
- The program is likely to generate a sustainable pipeline of well-trained trainees.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- Adaptive outreach and recruitment plan goals include outreach through large introductory science courses at both the applicant institution and three partner colleges – attendance at events and engagement will be evaluated, and efforts realigned as necessary; progress of students during the program will be assessed and interventions will be planned as needed to ensure success; assessment will include mentor evaluations during the research training phase – these types of evaluations are well established.
- There are close relationships with local colleges, each selected for their robust biomedical or biomanufacturing programs and established transfer pathways. There is a strong focus on community outreach including acknowledgment of being one of only 17 federally recognized Hispanic serving institutions.
- The outreach is community-centered with direct engagement with students. Efforts will focus on high-traffic academic environments and introductory science courses (biology, chemistry, and biotechnology) at both the applicant institution and the partner colleges, led by the PD.
- The AORP is well-developed and proactive, leveraging partnerships with community colleges, introductory STEM courses, and STEM support programs to identify students who may not traditionally pursue research opportunities.
- An external faculty selection committee will utilize holistic evaluation criteria, including scientific motivation, persistence, and engagement in preparatory coursework rather than relying primarily on GPA or traditional metrics, aligning well with COMPASS objectives.
- Strong focus on addressing representation gaps through intentional recruitment of first-generation students, transfer students, and historically underrepresented populations, supported by culturally responsive mentoring and support services.



- The proposal includes a comprehensive assessment framework that tracks trainees across the pipeline from recruitment through internship placement, program completion, and post-graduate outcomes, enabling data-driven program improvement.
- Alumni tracking and dissemination plans are solid, utilizing annual surveys, LinkedIn networks, career tracking, conference participation, and sharing of best practices through publications, workshops, toolkits, and the CIRM Hub.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- The program leverages existing expertise, and faculty guidance will be augmented through a structured peer-mentoring model, led by the PI for graduate students – this will be expanded to the COMPASS cohort, who will be paired with advanced undergraduate students.
- All trainees will complete a capstone project (senior research project), with a mentor or an approved industry partner – the mentorship aspect of the capstone component is strong, with structured meetings with mentors, cohort workshops, scientific presentations and written reports, and a culminating symposium.
- The proposed training program appears to be very strong. The identified foundational course work, the critical lab work and the internship combine to make an excellent proposal.
- Through structured mentorship, seminar series, and outreach initiatives, trainees will explore how genetic variation, environmental exposures, and social determinants of health influence both biological outcomes and the accessibility of scientific advances. Trainees will participate in discussions and case studies highlighting disparities in disease prevalence, therapeutic access, and clinical trial representation.
- The curriculum is highly integrated and aligns well with COMPASS requirements, combining stem cell biology, CRISPR/iPSC-based research, computational training, translational science, ethics, science communication, and career development to prepare trainees for diverse academic and biotechnology career pathways.
- Patient engagement and community outreach activities expose trainees to patient perspectives, health disparities, advocacy organizations, and public science communication, creating a well-rounded training experience that connects research to societal impact.
- The hands-on research experience is a major strength, providing authentic regenerative medicine training through CRISPR/iPSC labs, mentored laboratory research, and internships with institutional stem cell investigators and biotechnology partners.
- The mentoring framework is robust, incorporating faculty mentors, near-peer mentoring, culturally responsive mentor training, Individual Development Plans (IDPs), regular cohort activities, and structured evaluation of trainee progress.
- Strong plans are proposed for assessing mentorship effectiveness and disseminating best practices through program evaluation, publications, workshops, toolkits, conferences, and the CIRM Hub, although additional details regarding mentor training content would strengthen the approach.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- Partnerships with a wide range of industry and academic host sites are well documented, with detailed letters of collaboration confirming internship opportunities and demonstrating alignment with workforce needs.



- The leadership team is a significant strength – the PD has considerable experience in curriculum development, course design and implementation, and leading interdisciplinary training initiatives.
- The proposal offers a well-considered and strong approach and resources to achieve clearly delineated goals.
- The leadership team combines strong expertise in regenerative medicine and stem cell research, undergraduate research training, STEM education, curriculum development, mentorship, and program administration, positioning them well to manage recruitment, trainee development, industry engagement, and program oversight.
- The team has a demonstrated track record of building academic-industry partnerships, mentoring diverse trainees, administering large training programs, and fostering workforce pathways, positioning the program to effectively recruit, train, support, and place students in regenerative medicine careers while continuously improving program outcomes.
- The applicant institution offers an outstanding training environment through a dedicated stem cell research institute, extensive core facilities, and partnerships with biotechnology companies, a biotech innovation hub, community colleges, and patient advocacy organizations that collectively support all major program activities.
- The proposed program addresses a clear unmet need by expanding access to regenerative medicine research opportunities for first-generation, transfer, and historically underrepresented students through a scalable training pathway.
- The applicant institution and its stem cell research institute demonstrate substantial experience operating NIH-funded and other STEM workforce training programs, with established infrastructure for recruitment, mentoring, trainee support, and career development.
- The requested program scale appears appropriate for the available resources and mentoring capacity.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- The program aims to actively engage historically underrepresented and diverse communities across California – trainees will gain perspective on how research impacts different populations, fostering not only scientific competence but social awareness, with the obvious positive societal impacts.
- There is a great opportunity to bring underrepresented groups into regenerative medicine.
- The program demonstrates a strong commitment to broadening participation by recruiting first-generation, transfer, Hispanic/Latino, and other historically underrepresented students through partnerships with community colleges and the applicant institution's HSI/AANAPISI-serving infrastructure.
- Community outreach, patient engagement activities, alumni interactions, and partnerships with advocacy organizations provide trainees with exposure to perspectives and experiences that may not be represented within the program leadership or faculty mentor pool.
- The curriculum intentionally incorporates discussions of health disparities, genetic variation, environmental influences, and social determinants of health, helping trainees understand how these factors affect scientific outcomes and access to emerging therapies.
- The program provides multiple support structures, including culturally responsive mentoring, near-peer mentoring, IDPs, STEM diversity programs, wellness resources, and cohort-based activities that promote trainee success, retention, and belonging within the regenerative medicine field.



- While the proposed activities are thoughtful and well-integrated, the proposal would be strengthened by more clearly defined metrics for measuring population-level impact and demonstrating how lessons learned will extend beyond the relatively small trainee cohort.



Application #	EDUC8-20299
Title (as written by the applicant)	CIRM Bridges Stem Cell Research and Biotechnology Training Program
Public Abstract (as written by the applicant)	This program will provide advanced-level training in regenerative medicine and stem cell biology for upper-division Bachelor's, post-baccalaureate, and master's students. Participants will be provided with the opportunity to develop their knowledge, technical expertise, and the practical skills needed to succeed in regenerative medicine and to contribute to the development of new treatments and cures. Each year ten interns are selected from the qualified applicant pool. Participants complete coursework in biotechnology, stem cell biology, drug development and regulation, bioethics, and research conducted in biomedical laboratories at a large urban primarily undergraduate institution, known for a student body that closely reflects the community it serves. Program participants bring their broad and valuable perspectives to the scientific field. During the program, participants actively share their knowledge and experiences through community engagement at all levels from high-school, community college, university, and the local/statewide population. Participants also receive intensive hands-on training in advanced stem cell methodologies and complete ten months of full-time research in regenerative medicine at a host laboratory at a local research-intensive university, research institute, or biotechnology company. In addition, trainees participate in patient engagement activities designed to foster a deep understanding of and respect for the perspectives and lived experiences of individuals with unmet medical needs, as well as to reinforce the urgency of advancing stem cell therapies. Trainees are supported through an extensive mentoring program providing individual advising, and personal and professional development workshops to ensure successful academic progression and career placement for both current participants and alumni. This program ensures its participants are highly trained and are ready to enter the California workforce to address present and emerging scientific and technical challenges in regenerative medicine.
Statement of Benefit to California (as written by the applicant)	California benefits from this program through the development of a highly trained regenerative medicine workforce that reflects the demographics of the state and strengthens the state's leadership in biomedical innovation. By preparing students to enter careers in regenerative medicine, stem cell research, therapy development, and biotechnology, the program helps meet current and future workforce demands across academia, research institutions, medical fields, and industry. The program also provides numerous opportunities for community engagement and outreach aimed at educating the public about progress in regenerative medicine and stem cell research. These efforts can have meaningful statewide impact, particularly in California, where public awareness and voter support play an important role in the funding and advancement of emerging biomedical technologies. The talent pipeline created by this program supports the growth of stem cell and life sciences companies, accelerates the translation of discoveries into therapies for patients with unmet medical needs, and contributes to the state's economic vitality through job creation and expansion of the tax base. In addition, sustained recruitment and retention of skilled scientists reinforces California's position as a global leader in regenerative medicine and the biomedical sector.
Funds Requested	\$4,192,500
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG." Patient advocate members unanimously affirmed that "The review was carried out in a fair manner and was free from undue bias."



SCORING DATA

Final Score: 90

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	91
Median	90
Standard Deviation	2
Highest	98
Lowest	88
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	15
(1-84): Not recommended for funding	0

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses
- Strengths: robust curriculum; strong track record of successful recruitment and retention into the biotech workforce. - This is a strong proposal with an excellent track record. The trainee experience section is very well developed. Having more than 40 labs with 100% host willingness to re-host is a plus. The population impact is clearly stated. - There is no doubt the applicant will succeed given past success. - The discussion in the review panel meeting about mentoring and soft skills training was appreciated. While one reviewer felt it was inadequate and/or general with respect to reaching non-traditional student audiences, this reviewer considers the mentoring and soft skills training plan to be very strong. - Minor weaknesses are related to the assessment plan. The BRIDGES program would clearly benefit from having a COMPASS program. - Good track record, alumni involvement, diverse trainees, development of soft skills, some missed components in being robust in training opportunities, some selection biases. - Weakness: absence of contingency plans for the course offerings with prerequisites that include specific grades. It is unclear how the program would handle trainees unable to meet those prerequisites and subsequently complete expected course credits.
Value Proposition - Evaluate the program's value and potential for impact.



- High value proposition. The program has a great track record of alumni impact from the existing BRIDGES program with alumni placement into current faculty and more than 95% of former trainees being retained in the biotech workforce. There is also an excellent record of recruiting and retaining URM scholars.
- There is a large pool of students for recruitment from 3 departments at the applicant university. The BRIDGES program has an outstanding record, running for 17 years with more than 95% of alumni working in regenerative medicine, biomedical, healthcare, or biotechnology. The trainees are highly ethnically and culturally diverse (64% female, 54% Latino, 45% first-generation college students).
- Minor weaknesses include that new industry partnerships need to be established and the "future expansion" section is aspirational rather than funded.
- There are some concerns about some aspects of the evolving regenerative medicine field, including minimal exposure to manufacturing and clinical implementation. These topics are becoming increasingly critical as technologies move through the development pipeline and may not be adequately addressed in this project.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- The AORP is robust and the program has a strong track record of recruiting diverse and URM trainees. The applicant has a strong alumni tracking and engagement focus.
- The proposal described how recruitment would largely focus on existing students at the university, in particular planning to engage students in the many clubs and relevant classes on campus. The applicant was planning to leverage existing collateral (e.g., a video) to help encourage students. In addition, it is notable that current interns will also promote the program in the community at the community-focused events, which provides some sustainability to the overall program pipeline.
- The AORP is well-described, with activities likely to reach most of the potential candidates. Tracking is strong, with annual surveys and a dedicated LinkedIn group.
- Graduates will have an established network of mentors, peers, and potential employers to support their career success.
- Data from the existing BRIDGES program at this site show a moderate level of engagement and a high number of students working in the regenerative medicine field.
- There is a missed opportunity to collect quantitative pre/post data from program participants about metrics related to future success in a STEMM field.
- There are vast existing opportunities, resources, and networks to support outreach and recruitment.
- There are some concerns about the rigor of the selection process, which will largely rely on two faculty members and does not include specifics about the criteria of potential for success (versus prior accomplishments), which may create unequal access to a program that is meant to improve representation in the pipeline of learners prepared for careers in regenerative medicine. This process is inadequately described to ensure that empirically based strategies for the selection process will be applied.
- Minor weakness: the assessment plan, while real, is described more as data collection than a closed-loop adaptive process.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.



- The team is strong, and the budget is appropriate. Given the strong history of successful CIRM funding, there are no doubts about the program's ability to succeed.
- This is a strong section, well-described (Figure 1) with specific workshops. All mentors have to complete the Advancing Inclusive Mentoring program (12 hours of training). Trainees' IDPs are shared with host mentors.
- The program includes a stem cell techniques course at a local private biotech center, an FDA module, and specific patient engagement. Trainees receive hands-on experience at strong hosts. Combined, there have been more than 14 different mentors since 2024 (30 mentors in 17 years).
- The ABLE lab experience will allow for "catchup" in learning essential biotechnology lab skills so that learners who may have had a less direct path toward this field can be as successful as their peers who may have benefited from earlier guidance, mentorship, and knowledge about educational pathways and career trajectories.
- There are existing and well-established courses that cover the range of topics required to launch a career in regenerative medicine as well as highly specialized external coursework.
- There are a variety of learning opportunities in addition to coursework, including seminars and applied research skills development.
- Mentorship will start with the application process, which reduces bias and barriers to early career researchers who may not have had prior exposure to careers in STEMM and college-level education.
- Mentors are required to undergo formal training.
- There is a strong curriculum with coursework and workshops covering a good breadth of regenerative medicine principles. One potential weakness is the absence of contingency plans for the course offerings with prerequisites that include specific grades. It is unclear how the program would handle trainees unable to meet those prerequisites and subsequently complete expected course credits.
- The mentoring program is rather general and does not address issues like hidden curriculum and types of support that are particularly relevant to groups who are underrepresented in STEMM.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- Strong program leadership that includes former CIRM program trainees now on faculty. The Advancing Inclusive Mentoring program in place for research mentors is an excellent resource. The program has a strong track record of trainee recruitment and retention into the biotech workforce, including as applicant university faculty.
- The survival workshop the project is running is a critical piece in ensuring the students can hit the ground running in their internships. Given the large number of interns and significant number of identified hosts, this preparation will be essential.
- The team is very strong. The PD is the director of the BRIDGES and Biotechnology Certificate Program. The internship mentor and outreach coordinator have extensive experience leading these efforts. The advisory committee is well represented, with representatives of all the host institutions.
- The program director and other named team members have track records of leading career development programs and mentorship and internship coordination.
- A minor weakness is that the PD has only been the director for two years.



- While the program is embedded in a very diverse institution with strong ties to community, the BRIDGES program lacks intentional programming focused on the specific trainee cohorts' communities and relies on existing strong but not necessarily emerging and expanding partnerships.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- Applicant university's student population closely mirrors California's demographics, and the BRIDGES program follows suit. Trainees participate in the "Transforming your Potential" workshop aimed to 'celebrate all aspects of trainees' identities.'
- The program has a well-established history and high success metrics for graduates employed in regenerative medicine. Participants receive a breadth of training across many relevant fields for regenerative medicine through a combination of coursework including specialized external courses, laboratory and internship experiences, and networking and community engagement events.
- The plans for patient/healthcare engagement and community outreach are a relative strength of this application.
- The applicant university has a proven track record of outreach and recruitment of students from diverse backgrounds that represent the population of CA, and this includes in the biological sciences and laboratory settings.



Application #	EDUC8-20297
Title (as written by the applicant)	Training In Stem cell Science for Undergraduate Excellence.
Public Abstract (as written by the applicant)	The COMPASS Program for Training in Stem Cell Science for Undergraduate Excellence is a two-year program designed to prepare undergraduate students for careers in stem cell biology and tissue engineering. This interdisciplinary initiative brings together the School of Natural Sciences and the School of Engineering to provide comprehensive training for students majoring in Molecular Biology, Cell and Developmental Biology, Human Biology, Biochemistry, Bioengineering, Chemical Engineering, and Materials Science and Engineering. The program integrates academic coursework with hands-on research and professional development. Students complete core courses in Cell Biology, Developmental Biology, and Tissue Engineering with a laboratory component, along with an elective aligned with their interests and career goals. In addition, each student completes a capstone mini-thesis based on original research conducted under faculty mentorship. A key component of the program is experiential learning. Students participate in faculty-guided research projects and complete an external industry internship to gain real-world experience in biotechnology or related fields. They also receive one-on-one mentoring, engage in patient-centered activities to better understand the impact of stem cell therapies, and contribute to community outreach efforts that promote science education and awareness. The program provides specialized technical training in human induced pluripotent stem cell (hiPSC) culture, characterization, and differentiation techniques through the CIRM Shared Resource Laboratory. These experiences equip students with practical skills that are highly relevant to both academic research and industry settings. To support professional growth, students attend monthly COMPASS cohort meetings and workshops focused on research communication, ethics, and career readiness. These sessions help students develop the ability to communicate complex scientific concepts to both scientific and general audiences, while also building skills in resume and cover letter writing and interview preparation. Over a five-year period, the program will train four cohorts of five students each, for a total of 20 trainees. By combining rigorous academic training, hands-on research, and professional development, the program aims to cultivate a next-generation workforce. The program aims to cultivate a next-generation workforce equipped to drive innovation in regenerative medicine and accelerate the development of therapies that improve patient outcomes.
Statement of Benefit to California (as written by the applicant)	The COMPASS Training Program provides significant benefits to the state of California across economic, workforce, and societal domains. Its primary goal is to strengthen the state's talent pipeline by preparing skilled, job-ready graduates for high-demand careers in biotechnology and healthcare industries. By equipping students with practical, hands-on training in stem cell science and tissue engineering, the program helps address critical workforce needs in one of California's fastest-growing sectors. Advances in stem cell science have the potential to regenerate damaged tissues and enable curative therapies rather than symptom management. By training the next generation of researchers, the program contributes to innovation in regenerative medicine and gene therapy, with applications for conditions such as Parkinson's disease, Alzheimer's disease, diabetes, heart disease, and spinal cord injuries. These advances have the potential to improve patient outcomes while reducing long-term healthcare costs. The program also enhances undergraduate education by integrating hands-on technical training with traditional coursework, ensuring students graduate with both strong foundational knowledge and practical skills. It expands access to research and career pathways for students in California's Central Valley, including those with limited prior exposure to biomedical research, by providing paid research experiences, mentorship, and professional development. Through these combined efforts, the COMPASS program helps strengthen California's biomedical workforce, supports innovation, and contributes to the



	development of future therapies that benefit patients and the broader healthcare system.
Funds Requested	\$2,809,600
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that “The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG.” Patient advocate members unanimously affirmed that “The review was carried out in a fair manner and was free from undue bias.”

SCORING DATA

Final Score: 90

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	90
Median	90
Standard Deviation	0
Highest	90
Lowest	89
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	15
(1-84): Not recommended for funding	0

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel’s discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses
- Strengths: - The institution is an HSI that serves a diverse student population. As a result, it is likely to broaden participation in areas relevant to regenerative medicine. - The leadership team has led a successful CIRM project, demonstrating the capacity to effectively manage a CIRM project. - The project leverages campus offices and resources, including the admissions office. This partnership will support efforts to access a broad range of potential trainees. - Key strengths:



- The recruitment plan seems well-devised. There are mechanisms in place to recruit participants from a variety of pools, including those that recently transferred from community college.
- Robust assessment of recruitment outcomes at each stage allows the group to adapt to recruitment needs in real-time.
- The tiered-selection process starting with the inclusive excellence statement (holistic approach) is appreciated. Though rubrics are mentioned, it would be beneficial to see examples.
- Key strengths:
 - Trainee experience.
 - Comprehensive training (coursework and hands-on/technical).
 - Intellectual independence via highly structured programming.
 - The applicants are utilizing a multiple mentor model for this where trainees receive input from their research mentor, program faculty, and peer mentors.
- Key strengths:
 - Multi-pronged approach.
 - Career advancement opportunities to the applicant institution's students (highly diverse campus).
 - Trainees spend time in patient care settings, which adds a level of depth in understanding in the needs of the surrounding communities. Two events are aimed to engage the public; this reviewer likes that the applicants are engaging with local high schools and CCs for outreach and inviting the public to the annual symposium. Some of the public science communication materials are to be shared with communities.
- The program brings together natural sciences and engineering schools, integrating academics and hands-on experience with a focus on experiential learning.
- Key weakness:
 - Very ambitious schedule, coupled with a lack of clear evaluation strategies for measuring success and action plans if the trainees need additional support (e.g., course grades fall, milestone completion).
 - Statements made about prior success of AORP (adaptive outreach and recruitment plan) but no data shown to support this.
- Weakness:
 - The proposal lacks detail in several places, raising concerns about how the project will work in practice. Areas needing more attention include how the project will leverage campus offices, including admissions and office of equity, justice, and inclusive excellence; the rubrics for trainee selection; details about the observership and external mentors.
 - The proposal does not adequately explain how an undefined online course will improve the trainees' competency in scientific communication.



- Strength/Weakness: Selection of trainees will use standardized rubrics, supporting the potential for fair and unbiased selection. However, the proposal does not describe the rubrics and does not clarify whether or not candidates will have access to the rubrics in advance.
- “Four cohorts of 5 Scholars each, totaling 40 Scholars over 5 years” does not add up to 40 scholars. This needs to be checked.

Value Proposition - Evaluate the program's value and potential for impact.

- A strength of this program is that it focuses on the Central Valley which is an under-sourced part of California. Providing promising trainees from this part of the state with opportunities to develop as scientists in the regenerative medicine workforce and then connecting them as talent to parts of the state with greater resources is a smart strategy.
- Trainees should, by the end of the program, have the training to help deliver stem-cell-based/gene therapy treatments.
- Numerous training opportunities for trainees.
- The training program presents as a well-constructed, two-year opportunity for comprehensive professional development covering multiple aspects of the CIRM mission. Trainees will receive technical skills development, learn to contribute intellectually, and be provided immersive experiences in patient-care settings that will inform their research.
- Strength: The PI is leading a successful CIRM COMPASS effort, suggesting that the new program is likely to be similarly successful.
- The program has creative and intentional patient care and outreach activities which may have a lasting impact on communities in the central valley.
- This reviewer appreciates that the program emphasizes gaining real-world experience and gaining patient-centered care and understanding the impact of their work.
- Concern: It is unusual for an undergraduate research effort to focus on second and third years of college. That choice is not explained. It is unclear whether a lapse of support after junior year will inhibit a timely graduation.
- Weakness: Although an external research experience is required, there is not yet a collection of individuals who would be effective undergraduate research mentors.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- The recruitment plan seems well-devised. There are mechanisms in place to recruit participants from a variety of pools, including those that recently transferred from community college. Robust assessment of recruitment outcomes at each stage allows the group to adapt to recruitment needs in real-time. It would have been beneficial to see a sample rubric if it was allowed to be included in the application.
- Recruitment outcomes from prior funded project (utilizing similar approaches) delivered a competitive pool of applicants (e.g., “application rates exceeding available positions”) and staged selection process identified cohorts that reflected the undergraduate population.
- Great plan to combine two schools of interest to gather a diverse population.



- A mentoring program is in place, but it does not appear to continue for alumni. The program facilitator will also reach out independently and the institution's office of alumni relations will contact students.
- Alumni tracking will be in collaboration with the institution's office of alumni relations and the center for institutional effectiveness. Alumni receive surveys on employment outcomes, newsletters, and event invitations for ongoing engagement at regular intervals (notably 1, 3, and 5 years post). The program conducts exit interviews and connects trainees via social media.
- Strength/Weakness: The proposal relies on the innate diversity of the institution's student population. The proposal states that the AORP was developed in collaboration with key campus resources, including the office of equity, justice, and inclusive excellence. However, how that collaboration works in practice is not described.
- Strength/Concern: Selection of trainees will include evaluation of a potential trainee's demonstration of inclusive excellence. The proposal does not adequately describe how it will assess inclusive excellence or ensure that candidates understand the rubrics that will be used. There is concern about the potential for bias during the application of this selection criterion.
- Dissemination plans are standard. This reviewer does like that there is a specific mention of dissemination to the public.
- A weakness is that there isn't any data shown to support prior success of AORP. Some numbers would be helpful.
- Weakness: Recruitment is focused on passive actions, such as letting students in current courses know about the opportunity. A more active and inclusive recruitment strategy would strengthen the proposal. For example, each eligible student could receive an invitation to apply. The program could develop a program of stem cell-relevant symposia or other activities that are open to all interested students. The pool of attendees could then be invited to apply.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- Strength: The team has led a successful COMPASS effort, indicating that it can prepare students for career paths relevant to regenerative medicine and industry.
- First internship in a lab and the second in industry.
- Extensive courses are in place to train students in stem cells.
- Good balance of hands-on and in-class learning focusing on job-ready graduates.
- The hands-on research component is also well-structured with multiple opportunities to build intellectual independence (year 1 IDP and project development, presentations of plans, followed by full-time research and presentations at the end of year symposium). The applicants are utilizing a multiple mentor model for this where trainees receive input from their research mentor, program faculty, and peer mentors.
- The PI (with a senior graduate assistant) provides hand-on foundational training in cutting-edge facilities, the new CIRM-funded shared research laboratory.
- The patient engagement and community outreach activities add a level of depth in understanding in the needs of the surrounding communities. The individual exposure to patient care settings and cohort involvement in outreach day provide a well-rounded experience. Inviting the public to the symposium and having a science communication scaffold for the outreach week are innovative approaches that bridge science and society.



- The external industry internships during the final summer sound like a unique component to the training program. Though not at the bench, trainees get an inside look at how these companies operate. It is appreciated how challenging it might be to find partners outside of the host institution. Tapping into the local biotech network is smart. It is notable that the applicant is consistently working to add additional sites.
- The curriculum (required coursework + electives) aligns with the foundational requirements of COMPASS programs and integrates with the trainee's major requirements. This reviewer appreciates the comprehensive approach by including CV/resume writing, technical writing, and interviewing, in a formal and structured way. However, this reviewer did not see an explicit indication of FAIR data use and sharing as part of the course content.
- One weakness in this proposal is that there seem to be a lot of academic requirements and professional development pieces, which are difficult to understand what is compulsory and what is not. The SURI covers a lot of content, and it is hard to understand how that is coordinated with monthly cohort meetings and required scientific coursework. A better sense of how much time is required for the program outside of other major coursework is needed to assess feasibility.
- A weakness of this proposal is clear evaluation strategies for measuring success and action plans if the trainees need additional support (e.g., course grades fall, milestone completion like unsuccessful interviews for external internships as the trainee outcomes table for the current program shows that about 50% had their final summer internship at the host institution).
- Weakness: The proposal does not adequately describe the trainees' experience. Particular concerns include cohort development, the value of short experiences such as an 8-hour observership, and the nature of scientific communication training.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- Strength: The proposal leverages input and expertise from college offices, including admissions and equity/inclusion. This approach broadens the expertise and resources for project success.
- Strength: The team has demonstrated success in previous other CIRM education programs.
- Program Director is current director of the EDUC5 COMPASS grant.
- Institutional commitment is in place and two years of results have been reported for a previous COMPASS program.
- The PDs have a track record of success; the existing program has supported 17 scholars over the last 4 years. The scholars are all successfully employed in science or continuing their education. The applicants have also been involved with NSF CREST and NIH URISE training programs that have successfully supported scholars from underrepresented backgrounds in STEM careers and education.
- The program has access to resources required for the success of the trainings, including a committed pool of faculty mentors, designated laboratory spaces for hands-on training (i.e., teaching and research), shared resources, and clinical and industry partners spread across California.
- The extensive description of program mentors is appreciated, especially that the host institution's research mentors bring a wide range of backgrounds including "individuals who are first-generation college graduates, international scholars, non-native English speakers, and those who began their education in public institutions or lower-income regions." Having faculty that can reflect the diversity of the cohort is very important.



- The program team, roles, and responsibilities are well-defined. The PD and Co-PD have designated effort that seems feasible for their roles (and other funded projects). Each key personnel have qualifications and appropriate experience to execute the proposed program.
- The budget seems justified though it is unclear to me how costs associated with doing an industry internship outside of the central valley/bay area are handled.
- A weakness is that letters are missing from key institutional collaborators (office of alumni relations and the center for institutional effectiveness). Letters of support would be expected to confirm the stated access to resources.
- Trainees will be working in some of the diseases with the greatest impact on Californians.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- The program takes a multi-pronged approach to enhance the future regenerative medicine workforce by providing 1) specialized training working in the lab with stem cells and other advanced regenerative engineering techniques, helping build confidence as a regenerative medicine scientist, 2) skill building workshops in effective scientific communication (academic writing, public speaking, etc.), and 3) real-world exposure to patient care.
- Many opportunities to interact with patients and the community.
- The program places trainees in patient care settings where they can better understand the needs of patients living in the Central Valley. Scholars who do not go into clinic have an alternate activity evaluating clinical trials which provides another unique experience to understand how treatments are moved from preclinical studies to bedside.
- Two events are aimed to engage the public; it is especially notable that the applicant is engaging with local high schools and community colleges for outreach and inviting the public to the annual symposium. Some of the public science communication materials include creating outreach flyers ("Stem Cell Myths") about regenerative medicine to be shared in communities and on social media.
- Strength/Concern: There is a good overall plan to provide opportunities outside of the classroom. However, the proposal does not describe efforts to help trainees unpack, internalize, and share their experiences and learning. Thus, the program does not describe a strong plan to support trainees' development of a sense of identity in the regenerative medicine field.
- Strength/Concern: The program depends on the inherent diversity of its student body to engage a diverse cohort of trainees. It lacks descriptions of how it engages those students or their communities in planning or guiding the proposed activities.
- The applicant did not speak a lot about the population impact; they focused more on the impact that the graduates will have in the real world. The program focuses on students of the Central Valley.
- Concern: The program depends on the individual trainee's experiences in internships and outreach activities to "automatically" provide awareness of how genetic, environmental, and societal factors can impact the practice of science and the access of different communities to scientific advances. Active, targeted training and experiences would be more effective.



Application #	EDUC8-20272
Title (as written by the applicant)	Bridges to Stem Cell Research and Regenerative Medicine
Public Abstract (as written by the applicant)	This project will support further development of an existing stem cell biology training program featuring varied internship opportunities at established host institutions, a rigorous curriculum, substantive auxiliary training, and advanced stem cell techniques coursework. The institution anticipates that trainees recruited for this project will reflect the diversity of California's population, supported by targeted outreach through partner community colleges, STEM student interest groups, and community engagement activities, including high school outreach. This EDUC8: CIRM Bridges Program will provide ten one-year internships annually over five years. Trainees will be offered research and relevant training opportunities with mentors in fields ranging from basic science of stem cells to translational research, gene therapy, and regenerative medicine. Trainees will complete structured coursework in biotechnology and stem cell biology, including laboratory-based training in specialized techniques and instrumentation, fluorescence microscopy, bioinformatics, and stem cell-based biomanufacturing. Additional coursework and training will include advanced stem cell techniques, FAIR principles and data science sharing, research ethics, public science communication, and exposure to the development and regulation of new therapies. Auxiliary training will include seminars, specialized workshops, opportunities to attend scientific meetings through host institutions, and research presentations at the home institution that support technical skill development and professional growth. Trainees will also participate in patient and healthcare engagement activities, including patient/caregiver panels, to better understand patient experiences, clinical challenges, and the broader context of translating research into therapies. Training will incorporate exposure to ethical, regulatory, and societal considerations relevant to regenerative medicine. The program will implement an Adaptive Outreach and Recruitment Plan and mentoring practices that incorporate targeted strategies to expand the applicant pool among students from historically underrepresented and socioeconomically disadvantaged backgrounds. By combining established programs and partnerships, rigorous curriculum, professional development mentoring, research experiences at host institutions, the program will contribute to the development of a skilled and diverse workforce prepared to meet the evolving demands of the regenerative medicine field.
Statement of Benefit to California (as written by the applicant)	This CIRM Bridges to Stem Cell Research and Regenerative Medicine program aligns with and will fulfill the CIRM EDUC8 priorities to create training programs that significantly enhance the technical skills, knowledge, and research experience of a diverse cohort of trainees in stem cell biology, gene therapy, and regenerative medicine, and to foster their commitment to accelerating delivery of stem cell-based technologies and genetic therapies to patients. The program will prepare a skilled and diverse workforce to meet the growing demands of California's regenerative medicine and biotechnology workforce by combining academic preparation, hands-on laboratory training, professional development, and mentored research internships aligned with high-demand careers. The grant supports and enhances an existing stem cell biology training program that includes internship opportunities with mentors in areas ranging from basic stem cell biology to translational research, gene therapy, and regenerative medicine; ten one-year internships annually over the life of the five year grant; a rigorous curriculum focused on biotechnology and stem cell technologies; established partnerships between the home institution and host institutions; and substantive



	auxiliary training opportunities, including seminars, specialized workshops, scientific meetings, and research presentations that develop technical, data science, and professional skills. Trainees will also gain exposure to research ethics, public science communication, and the regulatory pathway for therapy development. The program expands access to workforce training through an Adaptive Outreach and Recruitment Plan that prioritizes outreach to students from historically underrepresented and socioeconomically disadvantaged backgrounds at the home institution, partner community colleges, and STEM student interest groups, ensuring that participants reflect the diversity of California's population. Patient and healthcare engagement activities, community-facing seminars, and outreach events will build public awareness of regenerative medicine and provide trainees with insight into patient experiences and societal impacts of emerging therapies. These combined attributes will ensure that the program produces highly qualified, diverse personnel prepared for employment in biotechnology, stem cell research, and regenerative medicine, for transfer to 4-year colleges, or continued education in advanced scientific and medical programs, thereby strengthening California's talent pipeline and supporting the advancement of new therapies that improve health outcomes for its residents.
Funds Requested	\$4,588,500
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG." Patient advocate members unanimously affirmed that "The review was carried out in a fair manner and was free from undue bias."

SCORING DATA

Final Score: 88

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	88
Median	88
Standard Deviation	2
Highest	92
Lowest	85
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	15
(1-84): Not recommended for funding	0

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses



- This excellent CIRM BRIDGES Internship Program will provide educational and research experiences for biotechnology students - applicant institution is a comprehensive, public two-year community college serving a multi-ethnic, local urban community. The program's goal is to provide research experience for the trainees, as well as broader workforce preparation in stem cell biology and regenerative medicine.
- The program will be instrumental in broadening the participation of Californians, especially those from underrepresented groups in the regenerative medicine workforce. The program will increase the access of underserved California students to professions in the regenerative medicine domain. Moreover, since many students continue their education by transferring to 4-year colleges, the program might enhance the regenerative medicine pipeline at graduate degree levels.
- Alumni included throughout; high school outreach robust; lots of coursework; mentoring strong; team is a strength.
- Applicant college serves a multi-ethnic, urban community and enrolled close to 30,000 students in Fall 2025, of whom 80% identify as minorities, 54% come from low-income households, and 40% are first generation to attend college so it can broaden participation of Californians in the stem cell biology/regenerative medicine workforce. Past BRIDGES participants have been even more diverse with 86% identifying as minorities.
- New proposed mixed methods approach incorporating both quantitative and qualitative outcomes for alumni and leveraging external evaluation is a strength.
- High school outreach activities including trainees are robust and have reached more than 4,168 high school students over 16 years.
- The PD's experience as director of the biotechnology program since 2005 and CIRM BRIDGES program since 2009, as well as their connections to other nearby universities are strengths of this application.
- The inclusion of host internship coordinators in the budget and a host institution's advisory and selection committee should support the program's continuation and benefit trainees.
- The Adaptive Outreach and Recruitment Plan (AORP) has strong goals, metrics, and plans, but seems disconnected from past program participants. Recruitment to high schools and within First Year Experience (FYE) and other student groups at the applicant's college as well as other community colleges is great, but most past participants have come from 4-year colleges and universities. If this program is meant to serve as a post-bacc/certificate, recruitment may make more sense through a workforce development organization.
- Weakness: relatively low number of trainees.
- A general education course in regenerative medicine is proposed, but it is unclear how this will be connected to the BRIDGES Program.
- Although required foundational coursework/prerequisites are clear, it is difficult to ascertain which advanced/specialized coursework is required versus elective and when students take these.

Value Proposition - Evaluate the program's value and potential for impact.

- Over 16 years of the CIRM BRIDGES program, most of its 104 trainees were able to secure academic or biotechnology industry employment immediately following their training. Given its high academic standards and outstanding track record, the proposed program is likely to have a positive impact on trainees' professional development and foster their commitment to CIRM's mission.
- 16 years of experience with training is a great starting point to validate the value proposition.



- There is a demonstrated track record of success: 104 trainees have participated, with 48% securing employment in academic research laboratories or the biotechnology industry immediately following their internship and 26% advancing to graduate-level education. 44 publications and/or patent applications were reported for 28% of participants, reflecting strong research outcomes.
- The proposed BRIDGES Program will have a meaningful, positive impact on trainees' careers in biomedical research broadly and stem cell biology/regenerative medicine specifically.
- The proposed BRIDGES Program will support "approximately" 10 trainees per year, but it is notable that 86% of past trainees have already completed a BA/BS so this program provides the training and experience that they were not able to obtain previously.
- Good mentoring plan.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- The AORP is well-formulated and robust. They include increasing the diversity and size of the applicant pool, improving recruitment and selection outcomes, expanding access for students with limited prior research exposure, and supporting successful progression into internships, employment, transfers to 4-year colleges/universities, and advanced education.
- The plans for tracking long-term outcomes are built on the currently implemented CIRM BRIDGES Program system where they use structured alumni tracking and engagement approach while expanding longitudinal assessment of trainee outcomes.
- The outreach and recruitment efforts are thought out and are robust. There are long-standing partnerships with local high schools that provide a strong recruitment pipeline. Outreach activities include presentations by CIRM interns, invitations to annual virtual CIRM BRIDGES poster sessions and stem cell seminars. On-campus one-day training experiences have been shown to increase student awareness of careers in stem cell research, regenerative medicine, and biotechnology.
- Strong integration of institutions across LA.
- Nice adaptive outreach.
- Dissemination of program materials will occur through the CIRM hub shared resources platform as well as CIRM networks.
- Students share work in program events, including seminar series, annual virtual poster session, stem cell awareness day, and high school workshops.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- The curriculum and research training activities are well-integrated. They will address how genetic, environmental, and societal factors impact scientific outcomes and access to care and will support transition of the trainees into the workforce.
- The quality of the proposed hands-on research experience is outstanding. It will be obtained through internships in laboratories directly engaged in stem cell biology, gene therapy, and regenerative medicine research, including academic research institutes, clinical research environments, and translational programs.
- The mentorship program is structured to optimize the outcomes for the trainees. The program will include mentorship training where the program director, key person, members of the internship mentoring



committee, and CIRM alumni mentors will participate in mentorship training, including best practices and implicit bias training.

- Notable innovative courses - in particular a data sharing course.
- Under the proposed biotechnology program, students are required to complete biotechnology coursework at applicant college, including stem cell culture, stem cell journal club, fluorescence microscopy, specialized instrumentation, and stem cell-based biomanufacturing. There is a structured pathway leading up to and feeding into the CIRM internship. The program has existed as an associate degree track since 1999 and now appears to be on its way toward a baccalaureate program.
- Numerous patient/healthcare engagement opportunities are offered, but it is not clear which and how many are required. Required courses for either bringing stem cells to the clinic or cell and gene therapy development is a strength.
- The trainee's role in securing an internship and short-term trial internship first should lead to more effective 12-month internships aligned to trainees' interests and desired career paths.
- Mentoring includes an internship mentoring committee to help the student develop the IDP, as well as a research mentoring team with monthly check-ins and biannual self-evaluations.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- The Program Director for CIRM BRIDGES Program has served as Director of the Biotechnology Program since 2005 and of the CIRM BRIDGES internship program since 2009.
- A key person supporting outreach, trainee development, and mentorship coordination has over 10 years of experience with the CIRM BRIDGES program. They have expertise in student recruitment, selection, and placement into regenerative medicine research internships.
- The program leadership is fully qualified to meet all the demands of the proposed program. The program has access to all needed resources. The budget is appropriate for achieving the goals of the proposed program.
- There is a strong support capability to achieve the key objectives. Just one subset is the important mentoring program that builds upon a well-established structure developed through the current CIRM BRIDGES Program. Trainees are supported by the program leadership team as well as research mentors at host institutions.
- The inclusion of a BRIDGES alum with an Ed.D. for outreach, trainee development, and mentorship coordination is also a plus.
- Institutional support is provided from various offices at the applicant's college as well as through a BRIDGES advisory committee.
- Budget and % effort is appropriate for the BRIDGES Program and indicate an understanding of support required.
- Immediate past program outcomes include 37% of trainees obtaining research positions in academia, 10% in the biotechnology industry, and 29% continuing their education (in both graduate/professional programs or at 4-year institutions).

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.



- Community perspectives will be incorporated through both program structure and a variety of student engagement activities. Community perspectives will also be integrated through structured outreach at local high schools, college-wide events, and community events to promote CIRM priorities where they communicate scientific concepts to diverse audiences and engage with individuals from a range of cultural and socioeconomic backgrounds.
- Outreach to 2-year students is strong.
- Given the catchment area and the ties to local programs, there is a capability to draw from a wide-ranging pool of applicants. There is a demonstrated track record in particular related to underrepresented populations including first in college applicants.
- The program includes mentoring from alumni and extensive opportunities for patient/healthcare engagement and community outreach.
- Courses and workshops provide an appreciation of genetic, environmental, and societal factors influencing science and access.
- Support of trainees during internships and through external advanced coursework is exemplary.



Application #	EDUC8-20324
Title (as written by the applicant)	[Redacted institution] Collaborative Pipeline to Workforce Development Training Program
Public Abstract (as written by the applicant)	Our program is a dual path program focused on both COMPASS and Bridges trainees. Our primary recruiting goals are to reach a wide pool of applicants reflective of the regional population, including students from groups underrepresented in STEM, identify trainees with strong potential and recruit and create clear, supportive pathways from community college through undergraduate and graduate education into regenerative medicine careers. These goals align with the targeted trainee paths spanning community college, undergraduate, and graduate levels, ensuring broad participation and workforce development. For the COMPASS path, up to 10 trainees per year will be appointed for 12 months. COMPASS trainees will conduct research and experiential learning activities for two months over the summer. For the Bridges path, up to 10 trainees will be appointed for 12 months and will conduct research and experiential learning for that entire period. Our trainees will also participate in community engagement and patient advocacy which will contribute indirectly to workforce development. The range and scope of internship opportunities available to trainees are designed to reflect the full spectrum of the regenerative medicine and biotechnology workforce across California and specifically our region. Trainees will be introduced to stem cell research through our academic courses. Some of these courses will enroll other science students which will contribute indirectly to workforce development. Our trainees will be placed in leading research institutes such as those within the regional stem cell research community; biotechnology and life sciences companies, biomanufacturing environments and alpha clinic. These experiences will expose trainees to diverse aspects of the field, including basic and translational stem cell research, preclinical development, and industry-driven applications. In manufacturing-focused settings, trainees will gain exposure to the manufacturing environment, cell therapy production workflows, quality control, and regulatory processes essential for clinical translation. Across all placements, trainees will contribute to hands-on projects that include stem cell culture and differentiation, genome editing, molecular and cellular assays, bioinformatics and data analysis, and participation in interdisciplinary research teams. These experiences are further enriched through engagement in seminars, scientific conferences, and collaborative research presentations, ensuring trainees develop both technical expertise and professional competencies. Collectively, this range of opportunities prepares trainees for diverse career pathways in academia, industry, and biomanufacturing, while emphasizing the real-world application of regenerative medicine in advancing therapies and improving human health that will contribute directly to workforce development.
Statement of Benefit to California (as written by the applicant)	California is a leader in advancing stem cell and regenerative medicine and the field is progressing rapidly towards viable therapies and cures for human disease. In order to continue to accelerate this progress and drive future innovation, we must provide a pipeline for the training and development of a pool of stem cell scientists. Our program is designed to meet this need by providing an opportunity for college students to receive comprehensive training and education allowing them to enter this field more quickly than traditional pathways. Additionally, we develop well rounded stem cell researchers who understand the full “bench to bedside” process of bringing treatments to the clinic. Simultaneously, they learn the need for public communication and outreach so that the regional community understands the benefits from their research. Our institution has partnered with four regional community colleges to ensure recruitment from our broad geographic area and diverse student population. We deliver a robust and comprehensive internship program from primarily the



	undergraduate and graduate levels for an intensive summer (COMPASS trainees from [applicant institution]) or year-long (Bridges trainees from [applicant institution] or the local community colleges) research experience at academic or biotechnology industry laboratories. Trainees focus on a variety of applications of stem cell research to treat complex neurological diseases such as Alzheimer's, Parkinson's and autism, and other disease targets such as cancer and diabetes. Our student trainees receive college credit and will be supported by educational enhancement and patient advocacy activities through community organizations. At the end of their internship year, our trainees will be prepared to contribute to California's workforce pipeline and/or continue their academic journeys. Our program impact is significant as we will train 20 trainees each year, who are representative of our diverse region and most often remain in the area to join the scientific workforce. Therefore, California will benefit from this additional pool of well-prepared stem cell scientists from diverse backgrounds that have a broad understanding of the benefits of stem cell research and can continue to advocate and accelerate California's commitment to advancing stem cell research, treatments and therapies for human diseases.
Funds Requested	\$5,928,000
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG." Patient advocate members unanimously affirmed that "The review was carried out in a fair manner and was free from undue bias."

SCORING DATA

Final Score: 86

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	86
Median	86
Standard Deviation	1
Highest	88
Lowest	85
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	14
(1-84): Not recommended for funding	0

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.



Key Strengths and Weaknesses

- This is a strong, very collaborative program for training the future workforce of regenerative medicine. The number and intensity of the offered courses are seen as appropriate. Good recruitment program and alumni tracking.
- Overall recruitment plans are strong, including partnering with regional community colleges and recruiting across a broad variety of degree programs.
- Industry interactions are a strength of the program.
- Mentoring and alumni engagement activities are well-considered.
- Impressed with the focus on a stipend and tuition fees that shows that they are looking at making this program accessible to those who may have an economic disadvantage.
- Strengths: good program; hands on activities and good course program; many opportunities for students to present their research; great outreach program.
- The proposal builds on generally successful established COMPASS and Bridges programs. There is some room for improvement in degree/certificate completion rates among trainees, however.
- Weaknesses: course topics quite dated (lack of modernization), limited patient engagement activities.

Value Proposition - Evaluate the program's value and potential for impact.

- The proposed dual path program targets a diverse student population and includes career-oriented academic, research, and professional training along with individualized and structured mentoring and engagement with previous trainees. Training will occur in both academic and industrial training and will include hands-on activities to prepare for a career in regenerative medicine and biotechnology.
- This dual path COMPASS-BRIDGES project would provide high impact professional development training in the stem cell and regenerative medicine field through coursework, internships, and other development activities.
- Existing programs have a strong record of supplying a workforce for regenerative medicine science and industry in California.
- The proposal describes some modifications to existing curricula, including a new course on Introduction to Regenerative Medicine as part of both programs.
- The programs have and are likely to continue a strong pipeline of trainees from the applicant institution and partnering community colleges in the San Diego and Riverside areas.
- The COMPASS program has demonstrated success in integrating diverse populations into the regenerative medicine pipeline.
- Academic, research, and professional training is focused on understanding and applying stem cell and gene therapy. Several opportunities to present the trainee research at conferences and outreach events will likely foster the trainees' passion for this field. Provided data of previous trainees demonstrates the success of the proposed program in retaining trainees in this field.



- This looks like a very strong proposal providing for strong growth and opportunity for its students.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- The programs propose blended broad and targeted recruitment plans from STEM majors at the applicant institution and partners. These have demonstrated effectiveness in recruiting students that represent the high diversity of the applicant institution student population.
- The use of a mixer to help Bridges students interact with potential internship sponsors as part of the recruitment phase is a strength.
- Trainee tracking through IDPs and other metrics (mentor and self-assessments) is appropriate.
- The target is populations that are underrepresented in STEM programs.
- Excellent outreach plan in their diverse community.
- The applicants have had a CIRM Bridges award since 2009 and a CIRM COMPASS award since 2022. A table with previous trainees' outcomes is provided.
- Trainees are required to fill surveys and join a special LinkedIn group. The provided table demonstrates the capability to track previous trainees.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- The proposed curricula offer a good blend of lecture courses, laboratory courses, and seminars to build skills.
- Both program trainees will take the Introduction to Regenerative Medicine in the Spring semester which is a 360-degree introduction to all aspects of regenerative medicine and will attend 4 research seminars.
- The new course in Regenerative Medicine is a good way to bring together the two programs, and content is well considered.
- Courses and internships look appropriated for training. Good tracking program using social media.
- Partnership with Breakthrough T1D and seminar courses provides opportunities for trainees to interact with patient populations and understand the impact of regenerative therapies.
- Both cohorts receive significant training in technical communication and opportunities to implement this training at symposia and conferences.
- The programs provide K-8 outreach opportunities in San Diego area schools.
- A broad base of internships is available, including academic and industry options. This appears to be very successful. Plans to onboard new partners are well-designed.
- Their plan is to be included in leading research institutes with diverse aspects of the field.
- The COMPASS program for 10 early-stage undergraduate students (selected from the applicant institution's STEM majors) includes 2-months summer research after 1-week training at the CIRM Shared Resource Lab. During the two semesters before, these trainees take several Biotechnology courses in the



Biotechnology major at the applicant institution. At the end of the overall training, the trainees will present a poster at the Summer Scholars showcase at the applicant institution.

- The Bridges program for 10 trainees will include a 12-month research internship (2 semesters of Stem Cell Internship course) after attending an intensive two-week Stem Cell Techniques Training course at Thermo Fisher to prepare them for their research experience.
- For the Bridges program, activities are guided by the Entering Research Curriculum available from the Center for the Improvement of Mentored Experiences in Research at the University of Wisconsin-Madison.
- Bridges trainees present their research in Spring during colloquia, poster symposium in June at the Sanford Consortium for Regenerative Medicine at UCSD, ISSCR annual meeting, and CIRM Annual Trainee Meeting.
- Each student will have an IDP and collective mentoring with 2 meetings per year. Mentors are required to take training workshops to ensure mentors create safe and inclusive research environments and experiences for trainees. The mentees will meet weekly at seminars.
- Great outreach program.
- Patient/Patient Advocate and Healthcare Engagement Activities could be improved.
- The program is evaluated internally on a regular basis based on well-defined metrics.
- It seems that some content in existing courses would benefit from updating. For example, the stem cell course at Thermo Fisher teaches some topics that are rarely used anymore.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- The PI has extensive experience in leading both BRIDGES and COMPASS programs. Continuity of this leadership is a strength of the proposal.
- The program director has served in this role for the existing CIRM Bridges to Stem Cell Therapy since 2009 and for the CIRM COMPASS grant since 2022 in addition to other educational leadership positions.
- Other leadership roles are well-defined with broad representation across the applicant institution and partnering community colleges.
- Interactions with industry partners and other academic/research institutes in the San Diego area are numerous and effective.
- There are no concerns. Strong leadership.
- Emphasis on exposing students to a wide range of experiences including hands on and in class learning with an emphasis in real world application.
- Institutional commitment based on letters provided and track records.
- Overall outcomes have generally been strong, with the majority of past trainees completing degree/certificate programs and many working in regenerative therapy or related industries. There is some room for improvement on the degree/certificate completion rate, however.
- Though not well described in the proposal, several letters of support are provided from selected partners both from industry and academia.



Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- The programs have a strong record of training students from diverse backgrounds, including minorities, first generation college students, veterans/active military.
- Leadership has strong diversity and has identified a Chief Diversity Officer.
- Implicit ethics workshops and outreach events seem to be effective ways to promote awareness of the impact of science on different communities and provide a sense of identity in regenerative medicine.
- High impact and has the potential to provide high-quality training on regenerative medicine.
- Primary recruitment is to reach a wide pool of applicants reflective of the regional population to include underrepresented students.



Application #	EDUC8-20264
Title (as written by the applicant)	Building the Regenerative Medicine Workforce through Stem Cell Internships in Laboratory-based Learning.
Public Abstract (as written by the applicant)	Stem Cell Internships in Laboratory-based Learning is a consortium of scientists, faculty, and administrative leaders from Bay Area institutions who have made a commitment to training students for careers in stem cell biology. Our proposal, titled "Building the Regenerative Medicine Workforce through Stem Cell Internships in Laboratory-based Learning" will enable training programs that provide relevant coursework, instill key competencies, and support paid, hands-on internships to produce technically skilled individuals who can deliver on CIRM's mission. Our proposal outlines our plans for a Dual Path program, building on our long-standing Bridges program, and adding a COMPASS program for undergraduate students. [redacted institution] has successfully run a Bridges training program for master's level students since 2009. We have trained over 160 students who are contributing to the biotechnology industry (~57%), pursuing doctoral training (~15%), and working in academic labs (~20%). Students engage in rigorous coursework as well as patient interaction activities and develop community outreach activities to share their knowledge with their communities. Each Bridges trainee will complete 12 months of full-time hands-on research at an internship host site. More than 50 stem cell researchers are committed to mentoring students. On the successful completion of the curriculum and internship, students are awarded a master's degree in Stem Cell Biology. Our new COMPASS program will provide a unique opportunity for undergraduate students to gain access to high-impact research experiences. Students will join a research lab and perform research during the academic year. Students will attend workshops and collaborate with Bridges students to engage in patient interaction and community outreach activities. During the summer, students will complete a 3-month, full-time paid internship at the university or one of our host sites. Students will complete a thesis project, including a written draft manuscript and oral presentation, during their final semester of undergraduate studies. Through funds requested in this grant, we will produce outstanding scientists who will accelerate stem cell therapies in the state of California. Innovative recruitment and retention strategies will identify untapped talent in undergraduate and master's level students. Strategic mentoring practices will support students to prepare for opportunities in regenerative medicine and facilitate efficient transition of trainees to careers in the life sciences. Our graduates broaden the participation and perspectives of Californians in the regenerative medicine workforce through producing well-trained, adaptable, and committed professionals for the regenerative medicine workforce.
Statement of Benefit to California (as written by the applicant)	The state of California is in urgent need of therapies for a variety of diseases that are rooted in stem cell dysfunction or may be addressed through stem-cell-based cures. The process of translating basic research innovations into useful, proven patient therapies is complex and requires professionals at various levels. In creating the California Institute for Regenerative Medicine (CIRM), the voters in California ascended to a leadership position in developing stem cells for therapeutic applications. Through CIRM funding, the Stem Cell Internships in Laboratory-based Learning Program continues to generate well-rounded professionals who accelerate the development of stem cell therapies. We train students who will provide the engine supporting California's stem cell research and industry. We partner with premier institutions in the San Francisco Bay Area to train interns at one of the research university partners and at one of the corporate partners. We train our students to understand and communicate with their neighbors and classmates about critical issues in stem cell biology through targeted community outreach.



	Further, the program will provide undergraduate and graduate students of California from diverse backgrounds with a high level of support as they complete degree requirements in science and explore career opportunities in this expanding California industry.
Funds Requested	\$5,857,000
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that “The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG.” Patient advocate members unanimously affirmed that “The review was carried out in a fair manner and was free from undue bias.”

SCORING DATA

Final Score: 85

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	87
Median	85
Standard Deviation	3
Highest	95
Lowest	85
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	15
(1-84): Not recommended for funding	0

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses
- Strong program plan and past successes point to continued success with the program. Strong and well-organized outreach plans, selection process, and evaluation plan. - The track record of the BRIDGES program is strong. Career outcomes are outstanding. PI recognizes the demographic gaps. Well-developed BRIDGES curriculum and strong host network. - There is some lack of clarity around topics vs. courses; for example, it is unclear whether "patient interaction" is a topic within a course or a course by itself. Emphasis on some of these population science focused areas is critical to enhanced translational initiatives.



- Key reason for a lower score was lower detail provided on how the applicant would do recruitment and selection of underserved populations, which is critical for the new COMPASS program the applicant is expanding into.
- Also, population impact was a simplistic argument and assumption that the applicant would have impact because the cohort would reflect the population.
- Weaknesses are the COMPASS path is less specific than BRIDGES, i.e., recruitment via email to faculty and visiting one course.
- Feedback from reviewers will help address noted weaknesses.

Value Proposition - Evaluate the program's value and potential for impact.

- This proposal details the dual path program, a comprehensive training initiative combining stem cell research internships, coursework, and mentorship to prepare undergraduates for careers in regenerative medicine.
- Given past successes, this reviewer believes the program has potential to broaden participation and perspectives of Californians in the regenerative medicine workforce.
- The program builds on the applicant's successful CIRM BRIDGES program since 2009. For the two components, there will be 70 students total trained over five years--50 through BRIDGES, and 20 through COMPASS. This seems like an ambitious number of trainees.
- The value proposed in this application is adding a COMPASS component to the applicant's current portfolio in the BRIDGES program. 5 students per year for a total of 40 over the 5-year grant award. The increase in numbers benefits the scientific community and the community at large. The added numbers of students seeking education in regenerative medicine has potential to feed directly into the Bridges program for master's degree potential.
- Dual path/umbrella description of all components of required program design are described. This program has a robust BRIDGES program in place since 2009 with strong personnel and collaborative training sites in regenerative medicine.
- This program is designed to train students in stem cell biology and regenerative medicine with undergraduate and graduate pathways that integrate coursework, internships, mentorship, and outreach.
- Given past success as a BRIDGES program, this reviewer has no doubt the applicant will succeed as a COMPASS program and sees a very strong and well-articulated value proposition. No issues.
- Ambitious proposal aimed to train 70 students over 5 years. Strong track record on the BRIDGES program, providing a 12-month internship to graduate students (155 alumni), now adding COMPASS for undergraduate students with a 3-month internship at the applicant's university or host institution.
- Graduate outcomes are described in a table from the tracking of the BRIDGES participants. The program comments that from the BRIDGES program 57% move on to biotech positions, 15% to doctoral programs, and 20% to academic labs.
- Career outcomes of trainees are remarkable.
- A minor weakness is that the COMPASS program is not as specific as BRIDGES.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.



- Strategic outreach plans are described to recruit diverse students through social media, campus events, and collaborations with several universities and biotech companies.
- BRIDGES students are recruited via faculty outreach, campus visits, and conference participation.
- The interviews focus on research experience and the applicant's motivation to be in this program and this career rather than the GRE requirement. Applicants are selected based on interest, motivation, and alignment with research opportunities.
- The goals for the BRIDGES program recruitment plan are well articulated, and the AORP is shared at quarterly meetings with the program leadership for feedback. The AORP uses applicant and admitted-cohort demographics. Students are all interviewed (for BRIDGES) and have a grace period to complete the applications.
- AORP does not rely on early elimination criteria. All applicants are reviewed and those that are delayed in aspects of the application are assisted to complete.
- GPA 2.8 minimum; questions are asked on previous lab experience or research, which might be a negative for some students to apply even if some may have an interest but no opportunity to develop experience in research/lab.
- There is a graph of demographic descriptors for the BRIDGES program over the years; however, the applicant does not describe the demographic comparison to the location/community feeder areas, so this is a missed opportunity to really work on the representation in the recruitment and selection. It would also be nice to have data on gender identification and financial disparities.
- From page one, it is very clear that the applicant feels the vision of what the applicant is looking to do in moving from a BRIDGES program to a dual path program; the focus and commitment to broadening participation is very clear. That being said, there was not as much detail provided in terms of how the applicant would recruit from new and underserved populations, just an acknowledgement that the applicant would.
- If colleges are looking to diversify the population who participate in these programs, this reviewer does not see from this applicant any outreach or connection to local high school feeder programs geared for science and technology or for that matter any SPARK program outreach.
- The recruitment plan for COMPASS is less developed and seen as a weakness in the proposal.
- This reviewer did not see much evidence of leveraging non-traditional metrics in assessing success.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- This program offers specialized coursework, workshops, and experiential learning to develop technical and professional skills. The coursework for the BRIDGES component includes stem cell biology, molecular techniques, ethics, data science, and community outreach.
- There will also be lab courses with hands-on training in cell culture, flow cytometry, confocal microscopy, and transcript analysis. There is an emphasis on translational research, regulatory affairs, and community engagement.
- The COMPASS coursework includes stem cell biology, molecular techniques, ethics, and elective courses. Research experiences are gained through lab work, and the applicants are also taught to develop skills in science communication.



- Both pathways share workshops on outreach, translational research, time management, and professional development. The program believes this will also serve as a pathway from BRIDGES to COMPASS.
- Extensive coursework in stem cell biology, molecular techniques, ethics, and translational research is included. Master's degree requires courses in regulatory affairs, data science, and research ethics.
- The BRIDGES courses include topics such as bench to bedside and regenerative medicine, "community outreach," "patient interactions," which covers the translational and research implementation component. It is unclear whether these are courses or topics. Emphasis on some of these population science focused areas is critical to enhanced translational initiatives.
- Mentors from over 50 faculty across institutions, with ongoing collaborations and new site development.
- The mentorship component includes structured mentoring, partnerships with academic and biotech sites, and professional development skills and goal setting.
- Mentors will receive training, while students will participate in monthly workshops.
- The students will participate in tailored internships with eight local institutions. The BRIDGES students will complete a 12-month research internship, while the COMPASS students do three-month full-time internships. These internships for both include opportunities for community engagement, outreach, and professional growth.
- Internship placement processes include interviews and feedback with collaborative matching focusing on challenging yet supportive environments. Mentors from across faculty and industry professionals will be included.
- Overall experience looks strong. The planned approach for both patient engagement and community outreach is impressive. Compared to some of the other proposals, the approaches were well grounded into the program pedagogy and leveraged resources on and around campus (e.g., nursing program).
- The curriculum for BRIDGES is well developed. Mentor training for BRIDGES and COMPASS mentors are/will be required.
- COMPASS trainees need required courses to join and participate in workshops. Strong letters of support from host sites are provided.
- A minor weakness is having the PI acting as the primary mentor for all COMPASS students, which seems excessive.
- The proposal does describe the curriculum, the research expectation, mentoring, and community engagement in detail, but what this reviewer does not see is the evaluation by the student participants of the effectiveness of the program. Lots of generalities are described.
- As this proposal is a dual path program application the description does describe the differences of both programs, how the programs would share resources and the potential for interaction to foster cross collaboration.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- There is a strong leadership team over the program as well as an advisory board. Program leaders have significant experience with mentoring, curriculum development, and overall training programs since 2009.



- Regular reviews are proposed to enhance effectiveness, as well as quarterly reviews of recruitment and program processes. Annual reports on recruitment, retention, and outcomes will be shared with stakeholders.
- The advisory board includes industry partners, faculty, and institutional leaders, which represents the range of partners/stakeholders that will be involved in this training.
- All partnerships are appropriately vetted with key leaders to mentor and supervise the students for their mentorship/research.
- From past training, the applicant reports placements in 17 labs, 30 interns placed at one institution, one at another institution, and 15 at biotech firms. Over a decade, the applicant has trained 160 graduate and 270 undergraduate students, with high employment and graduate school placement.
- The leadership seems appropriate. A co-director requirement is in place.
- The PI has the credentials to lead this effort. The PI is already serving as director of the BRIDGES program and spearheaded the creation of a master's program in stem cell biology. As co-director overseeing the COMPASS program, the PI has mentored 8 graduate and 38 undergraduate students.
- All resources are present to meet the goals of the program.
- The institution has a Master of Science in biosciences, concentration in stem cell biology and a new interdisciplinary science building.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- The program leverages state-of-the-art facilities, extensive faculty expertise, and strong partnerships with academic institutions and biotech companies to provide a diverse training environment.
- Described course work and internship content and workshops, etc., provide trainees with awareness of how genetic, environmental, and societal factors influence scientific practices and access of different communities to scientific advances.
- The program describes a strong alumni tracking and engagement plan leveraging the successful tracking of the alumni since 2009. Current data are available for 153 out of 155 alumni who completed the BRIDGES program, making for an impressive response rate.
- While the patient perspective and community engagement aspects were strong in this reviewer's opinion, there is a strong assumption that the recruitment processes the applicant enlists will result in cohorts that reflect the community and therefore lead to population impact. As this reviewer felt the recruitment section was weak compared to some other proposals, this poses a slight risk.
- Applicant institution is genuinely diverse, although there is no breakdown on the specific alumni composition in this section of the proposal (this is minor; Figure 2 is clear).
- This applicant has a robust series of educational and community outreach experiences in communication with patients, obtaining feedback from patients who experience clinical conditions related to regenerative options.
- This reviewer did not see in the application a clear description of outreach to communities underrepresented in STEM.
- There are plans for developing awareness of health disparities and patient perspectives; however, the description is generic.



- This reviewer did not see much in terms of evaluations of the program components of what this applicant has already experienced with the BRIDGES program to comment on the students' success in regenerative medicine as discussed in an earlier section.



Application #	EDUC8-20435
Title (as written by the applicant)	Hands-On Program for Excellence in Cell Therapy Manufacturing Sciences
Public Abstract (as written by the applicant)	Our College's Department of Biotechnology and Biomanufacturing will expand its training initiatives in regenerative medicine with the goal to develop a diverse pool of undergraduates that will successfully transition into biomedical careers in regenerative medicine. This novel training program will offer funded support for historically under-resourced students and include advanced project-based laboratory training as well as a focused mentorship program to provide tailored career and academic guidance to explore future sector opportunities in industry and academia. Integrated with our Biomanufacturing program, this multiple-year program will service multiple student cohorts, carefully emphasizing the importance of the workforce skills needed to be successful in regenerative medicine. The program will continue to implement professional mentorship that navigate students successfully into advanced careers and future graduate education, as well as advocating for accessibility and community inclusion in regenerative medicine. Grant candidates will be selected through a tailored application process in partnership with our laboratory affiliates. Through the proposed dual path program, students will have multi-year lab rotation opportunities through COMPASS training, as well as an opportunity for 12-month, full-time training through the Bridges program. Building on the current success of our CIRM COMPASS program, the proposed EDUC8 dual path program will continue to identify talented student candidates from diverse backgrounds for supported training and professional development. The program will provide, (1) Focused concurrent coursework in advanced cell and gene therapies, regenerative medicine, and commercial biotechnology, all leading towards the completion of the Biomanufacturing Bachelor's program at our college. (2) Research training options for both year-round internships, intensive summer research internships, as well as full time, 12-month Bridges internships in either private sector or academic laboratories focusing on regenerative medicine. (3) Specific guidance for both academic pathways and professional development. (4) Research presentations at multiple sector conferences. (5) Patient advocacy and community outreach activities for regenerative medicine initiatives. (6) Facilitate a pathway for aspiring student scientists to transition into regenerative medicine careers through intern support programs, and professional development and advisory sessions. Through our diverse student program population, committed sector employer network, and regional location will be strongly contributing high impact and high value initiatives that will successfully create a new and innovative talent pipeline for California's regenerative medicine workforce.
Statement of Benefit to California (as written by the applicant)	The scientific initiatives for advancing stem cell and regenerative medicine towards new therapeutics to treat human disease are being led by the state of California. These therapies are critical to society, and the initiatives are driving future innovations in biomedical sciences. As we move forward, there's an unequivocal need for a robust talent development pipeline to train our future professionals that represent California's diverse population in regenerative medicine. We designed our program to answer this call to action and provide opportunities for our diverse college students to receive focused training and education, accelerating their efforts into the advanced skilled technical workforce.



	Our program also encompasses the skills and training needed as a regenerative medicine research professional, that is mindful and comprehends the importance of translational medicine and how their scientific efforts will result in patient therapies. These efforts also include community outreach and patient advocacy to disseminate the importance and benefits of these research initiatives. Our community college population represents the depth and diversity of California, further ensuring equitable recruitment. Our focused California-based laboratory partners in academia and industry are committed to delivering innovative and comprehensive internship experiences for our undergraduates through part-time, year-round, or summer intensive, full-time work-based learning in regenerative medicine. Our student scholars will continue to work on multiple applications in regenerative medicine and cell therapies to treat complex human diseases such as multiple cancers, diabetes, spinal cord injuries, as well as various autoimmune and neurological diseases. The program is designed for students to concurrently work in scientific laboratories while finishing their undergraduate credentials in Biomanufacturing with no schedule disruption. Our students participate in a focused mentor fellowship and work in collaboration with global patient advocacy partners on multiple events to support donor drives and other gift of life activities. These programs and initiatives all contribute to our students moving forward in California's workforce and completing their four-year bachelor's degree education and continuing into advanced graduate programs. Our program will train and support multiple student cohorts and continue to represent the evolving population of our California scientific workforce. Our strategic initiatives for this program are aligned with California's workforce initiatives, supplying a skilled technical workforce to combat the significant labor market gaps in our Life Science sector workforce. Our students have broad and diverse perspectives and understand the importance of regenerative medicine, the community impact of new cell therapeutics, and how their knowledge and efforts will advance regenerative medicine in California.
Funds Requested	\$6,918,000
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG." Patient advocate members unanimously affirmed that "The review was carried out in a fair manner and was free from undue bias."

SCORING DATA

Final Score: 85

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	85
Median	85
Standard Deviation	1
Highest	87



Lowest	84
Count	13
(85-100): Exceptional merit and warrants funding, if funds are available	10
(1-84): Not recommended for funding	3

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses
• This is a dual program that provides training to develop a career in industry or academia. Great mentoring. • The goal is to develop a diverse pool of undergraduates, offering funded support for historically under-resourced students. • Strong program led by an experienced team; strong mentoring and outreach plans. Recruitment and selection processes are also strong. The evaluation plan is perhaps a little underdeveloped. • There is a lack of integration of the courses into the program. Description without details of several of the programs of training. • The proposal could have been stronger, yet there are no doubts the applicant will succeed.
Value Proposition - Evaluate the program's value and potential for impact.
• This dual pathway program is focused on college students and aimed at increasing diversity, industry readiness, and academic pathways in California. The aims are appropriate for the scope of the program and aligned with the training program and the evaluation plan. The program is integrated with the college's biomanufacturing bachelor's degree that emphasizes workforce skills, mentorship, patient advocacy, and community outreach. • Students will be identified from diverse backgrounds for sector-specific training along with concurrent coursework, internships, capstone projects, and outreach activities. • Overall, the description shows a strong value proposition for this dual pathway program and has the potential to raise awareness of and increase academic pathways in California. The evaluation plan focuses on tracking alumni and their placement. The evaluation plan is perhaps a little underdeveloped. The plan is to track alumni outcomes through surveys, LinkedIn, and college databases. • The program will maintain a robust alumni network to support career development and community building. • Potential is high; the institution has long-time experience on similar programs. Great leadership. • Strong value proposition and given the applicant has been running the program since 2022 and will be integrating into the existing bachelor's program, there is a strong likelihood of success in providing a



pipeline of trainees. However, the letters of support were notably generic and lacked specificity compared to other proposals.

- The program navigates students successfully into advanced careers. This reviewer loved the patient advocacy and community outreach activities.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- There is a strong outreach program described. With outreach to regional organizations, high schools, and at community events, the applicant proposed to expand partnerships with the NMDP and other industry partners. K-12 students will be engaged through dual enrollment programs and outreach.
- The program represents the evolving California population.
- The outreach and assessment aspects seem appropriate.
- While there is a considerable amount written in the proposal about outreach and recruitment, much of it feels a little generic. It is not clear that the "use of holistic approaches and/or non-traditional metrics" in assessing outreach or tracking over time was evident. That said, there is no doubt the applicant would recruit a well-rounded cohort.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- The program emphasizes community education and regenerative medicine and cell therapies through industry and community-based partnerships. These are well-described.
- The program views mentorship as central to student success and as such, mentors will be recruited from both academia and industry, including principal investigators and executives.
- The mentors will receive training on effective mentoring, common goal setting, mock interviews, resume reviews, and professional skills. For students, the program is meant to foster career exploration, technical skill development, and professional confidence. The applicant proposes regular sharing of best practices among mentors and other stakeholders.
- Given that the program is well integrated into the already successful bachelor's program, the trainee experience will be robust. While some of the descriptions of curricula, specialized coursework, and related content were a bit superficial, the applicant is covering a tremendous amount of content. In addition, the applicant has a strong network outside of the institution to support delivering training and experiences to the students.
- Because most of the courses are just listed, the impact is not clear.
- The program focuses on concurrently working in scientific labs while finishing undergraduate credentials.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- The program has very strong leadership with two program directors who have significant experience with training programs and mentoring. The applicant also has prior CIRM program involvement. The applicant plans regular operational updates and progress reports, collaboration with institutional stakeholders, external advisors, and program officers with the focus on future growth, resource sharing, and maintaining high standards.



- The program commits to serving 10 students under BRIDGES and 10 under COMPASS per year. For the BRIDGES program, a 12-month experience is proposed. Applicant is also proposing to continue the CIRM COMPASS 2-year training and support program which will continue to develop crucial workforce skills aimed at a successful career in regenerative medicine and mentorship to navigate students successfully into advanced careers and graduate education.
- In past programs the applicant has an over 92% employment rate for graduates with 38% pursuing master's programs.
- The team is strong and well-regarded in the broader national community, having worked together for a number of years. There is no doubt the applicant will be successful.
- The program provides good academic guidance and mentorship.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- There is a good plan described to promote awareness of transplant sciences and regenerative medicine with other organizations. Some examples are conducting marrow donor registry events and advocacy activities.
- There is a strong outreach program described.
- High impact. There is a focus on attracting underrepresented populations in the field of STEM.
- Based on the proposal, the applicant definitely has strong plans to recruit from broader communities of underrepresented populations, which is great. There are a tremendous number of resources baked into the curricula that will help the applicant along the way including coursework in scientific communication and a lot of soft skills support.
- Advocacy is a big part of the applicant's 6-pillar focus.



Application #	EDUC8-20314
Title (as written by the applicant)	Building an Inclusive Regenerative Medicine Workforce: A Dual-Path EDUC8 Training Program in Biomedical Sciences
Public Abstract (as written by the applicant)	Advancing regenerative medicine requires a skilled, diverse workforce capable of translating stem cell discoveries into clinical and biotechnology applications. This training program establishes an integrated pipeline that prepares undergraduate and master's-level trainees for careers in regenerative medicine, biotechnology, clinical research, and advanced study in translational biomedical sciences. The program combines structured coursework with paid, mentored research experiences in stem cell biology and translational science. Trainees gain exposure to the full research-to-application pipeline through laboratory training, clinical and industry perspectives, scientific conferences, and biotechnology site visits. Additional instruction in responsible conduct of research, regulatory science, and scientific communication ensures trainees are well prepared for evolving workforce demands. A central component of the program is its commitment to inclusivity, community engagement, and equitable workforce development. Through sustained partnerships with schools, community-based organizations, and local stakeholders, the program delivers culturally responsive outreach activities, including classroom visits, workshops, and community presentations. These interactive, dialogue-based experiences allow trainees to share their research, engage diverse audiences, and strengthen their science communication skills. Trainees and program alumni will serve as near-peer mentors, helping build trust and relevance within communities. Outreach efforts emphasize how genetic, environmental, and societal factors influence health outcomes, research participation, and access to regenerative medicine therapies. Educational content is designed to be accessible, culturally relevant, and responsive to community needs, with materials distributed in multiple formats to reduce barriers to participation. The program also supports educators through resources that promote inclusive teaching of regenerative medicine, including discussions of ethics, equity, and representation in science. Ongoing feedback from community partners informs continuous program improvement, while dissemination of materials and strategies supports broader collaboration across workforce development initiatives. By integrating rigorous scientific training with community engagement and equity-focused education, this program contributes directly to developing a workforce equipped to advance regenerative medicine and expand access to its benefits across diverse populations.
Statement of Benefit to California (as written by the applicant)	This program will benefit the state of California by developing a diverse, highly trained workforce in regenerative medicine, directly supporting the state's leadership in stem cell research and accelerating the translation of scientific discoveries into treatments and cures. By prioritizing individuals from historically underrepresented and underserved communities, the program expands access to high-quality training and creates pathways into high-demand careers in California's biomedical and life sciences sectors. The program will support research training focused on diseases and conditions that disproportionately impact California's diverse populations, including diabetes, cardiovascular disease, cancer disparities, neurodegenerative diseases such as Alzheimer's, and blood disorders such as sickle cell disease. Addressing these conditions is essential to improving health outcomes and reducing disparities across the state.



	Consistent with CIRM's mission to advance world-class science with broad public benefit, the program integrates patient engagement and community outreach to ensure that regenerative medicine research is inclusive, ethically grounded, and responsive to community needs. The program is also strategically positioned to support and help drive ongoing efforts to establish the greater Los Angeles area as a leading biotechnology hub. By training a highly skilled, locally rooted workforce in regenerative medicine, the program will contribute directly to regional economic growth and innovation, with graduates prepared to enter, strengthen, and remain within the Los Angeles life sciences ecosystem. By preparing a workforce that reflects California's diversity and is equipped with scientific, ethical, and communication skills, the program strengthens the state's innovation economy, advances the development of the Los Angeles biotechnology sector, and enhances the long-term impact of regenerative medicine for all Californians.
Funds Requested	\$6,917,500
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG." Patient advocate members unanimously affirmed that "The review was carried out in a fair manner and was free from undue bias."

SCORING DATA

Final Score: 85

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	84
Median	85
Standard Deviation	5
Highest	90
Lowest	75
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	9
(1-84): Not recommended for funding	5

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.



Key Strengths and Weaknesses

- The proposed dual-path program is led by the applicant institution in partnership with The Lundquist Institute and represents an opportunity to support CIRM trainees at an historically minority serving institution.
- High potential, especially in workforce diversity and translational training.
- Integration, partnerships, DEI focus, experiential training.
- Population Impact is arguably the strongest part of this proposal.
- Strengths: location of institution and students that could be impacted.
- The recruitment plan focuses on students already enrolled in the BSc in Biomedical Sciences program (for COMPASS trainees) or in the Master of Science in Biomedical Sciences program (for Bridges trainees) - this focus may limit the impact of the program and its ability to support a sustainable pipeline of trainees.
- Reliance on a single collaborating institution to place the trainees (TLI) concentrates the risk.
- Not clear how the proposed program significantly advances the curriculum and opportunities already available to students enrolled in programs at the institution, which will be the focus of recruitment to the CIRM program.

Value Proposition - Evaluate the program's value and potential for impact.

- The Building an Inclusive Regenerative Medicine Workforce (BIRM) program is a dual-path EDUC8 program led by the applicant institution in partnership with The Lundquist Institute. The goal is to recruit 18 trainees each year, 7-8 undergraduates (sophomore/junior level) into the COMPASS path, and 10 master's students into the Bridges path.
- The program presents a clear, well-articulated dual-path model (COMPASS + BRIDGES) that creates a vertically integrated BS-MS training pipeline, which is strongly aligned with workforce development goals in regenerative medicine.
- Strong emphasis on diversity, equity, and inclusion, with explicit recruitment targets (e.g., ≥80% underrepresented trainees) and financial support mechanisms designed to reduce barriers to participation.
- Institutional commitment and sustainability are convincingly demonstrated through integration into existing BSBMS/MSBMS programs and long-term institutional support.
- This is a new Bridges-COMPASS program built around healthy equity. Vertically integrated bachelor's and master's programs.
- Generally, the learner population served by an HBCU has been under-engaged and underserved by STEMM in California, and this program presents a unique opportunity to reach this population.
- While this program has a relatively smaller cadre of industry/non-academic partners, the Lundquist Institute focuses on conditions most relevant to the nearby geographic area. With a narrower focus than some other partnerships, this dynamic has the potential for dual and potentially multiplicative benefit to individual program participants as well as the intended patient populations with reciprocal benefit to younger generations, families and community, patients affected by specific conditions,
- The recruitment plan focuses on students already enrolled in the BSc in Biomedical Sciences (BSBMS) for the COMPASS path and on students enrolled in the Master of Science in Biomedical Sciences



(MSBMS) program for the Bridges path - this focus may limit the impact of the program and its ability to support a sustainable pipeline of trainees.

- Some concerns about the overall package of the training programs, which, for being embedded in a relatively focused and very underserved population in California (patients) and STEM (learners) feels a bit underdeveloped and lacks a lot of specificity. There are many strengths, but on the whole, the concerns about feasibility and rigor that aren't adequately addressed in the proposal overshadow these strengths.
- Overall, a lot of the sections are fairly generic with regards to this specific program, strategies that will be used, resources and tools, events, external partners, etc. which prevents a critical assessment of the potential for success.
- The sustainable-pipeline claim rests on adjacent programs rather than direct evidence.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- Use of holistic review criteria (academic performance, potential, diversity contribution, motivation) supports inclusive trainee selection.
- The Adaptive Outreach and Recruitment Plan (AORP) is comprehensive and multi-tiered, incorporating internal pipelines, community college partnerships, and structured awareness activities.
- Detailed number of trainees (18), 7-8 undergraduate and 10 graduate. Academic advisors select ~20 candidates for COMPASS. Clear rubric for selection. Aims at 80% from URM and at least 50% first-generation college students. Detailed coursework and hands-on experience
- The MSBMS is a one-year accelerated program admitting 40/year, which compresses the BRIDGES timeline.
- The AORP aims to recruit trainees from underrepresented backgrounds – the focus on students already enrolled in the BSBMS and MSBMS programs; for the Bridges path, info sessions will coincide with MsBMS recruitment – this program accepts 40 students each year; not clear how many students enrolled each year in BSBMS program, but 20 students will be identified and considered for the COMPASS program by advisers and faculty.
- Outreach will also include info sessions with feeder institutions - how many students are anticipated from this path is not clear.
- Application review process standard - an interview process would be useful here, to identify students likely to succeed and having a clear interest in regenerative medicine.
- The selection process is both quantitative and standardized as well as holistic and with a focus on potential rather than prior performance.
- There are specific benchmarks about post-program activities and numerous strategies for quantitative data about graduates will be used.
- The COMPASS to BRIDGES transition and selection processes are not well described.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.



- Strong hands-on training opportunities, including internships in academic labs, industry, and clinical settings, and access to advanced techniques (e.g., iPSC culture, CRISPR).
- The inclusion of patient engagement, community outreach, and science communication training provides a well-rounded experience that integrates scientific and societal perspectives.
- Maximum of 2 trainees per mentor, IDP and monthly check-ins.
- The BRIDGES path is only a 10-month internship inside a 1-year master's, which is a compressed window for thesis-level work.
- Participants will complete existing and well-developed courses across the breadth of topics related to regenerative medicine. This includes scientific foundational content as well as RCR, communication, social justice, and community health.
- Extensive description of course-work does not clearly delineate which (if any) classroom courses will be new and dedicated to EDUC8 trainees.
- COMPASS trainees will complete a capstone project - this will involve written report, presentation at research day etc...
- Overall, it is not entirely clear that this program significantly advances the course work/opportunities already available to BSc and MSc students at the institution.
- Clinical translation, health policy, health economics, and beyond introductory knowledge about manufacturing are missing from the curriculum.
- The plan for mentoring is underdeveloped. There is a lack of specificity about resources that will be used for mentor training, to assess mentee satisfaction and progression, and overall structure of mentor/mentee activities.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- The Program Director and Co-Director demonstrate extensive experience in training, mentoring, and regenerative medicine research leadership.
- The program leverages exceptionally strong institutional and partner resources, including the applicant institution and the Lundquist Institute, with access to advanced core facilities and translational research environments.
- The program director has extensive experience training undergraduate, master's and medical students. The co-director has mentored more than 50 trainees.
- Experienced team, partnerships largely in place.
- There are established BS and MS programs that will provide a recruitment pipeline for both COMPASS and BRIDGES and creates the possibility of a continuous training program across degree levels as well as established relationships with external programs that have a high proportion of students underrepresented in STEM.
- It is a strength that the program will have support from steering and advisory committees.
- Overall, the applicant institution and TLI likely have the resources to support the programs.



- The experience of the co-Director seems more appropriate for overall program oversight given their experience with mentorship and career development. The named PD largely has experience as a scientist, which does not necessarily translate to success in fostering career development.
- There is a moderate track record of prior career development programs with low-moderate success rates, which is a concern given some of the other aspects of the proposal that generally lack specificity to support feasibility.
- The applicant institution and TLI have other related programs - most relevant is a Biomedical Science Enrichment program funded by the CZI - here, stated that 45% of trainees transitioned into biomedical workforce while 26% continued in stem fields - this is an okay track record - how will this be substantially improved with the CIRM funding?
- As a new program the team has no direct EDUC track record to evaluate for recruitment/retention/progression, and reliance on a single primary collaborating institution (TLI) concentrates risk.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- Strong focus on serving underserved communities in South Los Angeles, with explicit integration of health disparities and community-based engagement.
- The program includes community outreach, patient engagement, and culturally responsive training, providing meaningful exposure to population-level factors influencing regenerative medicine access.
- Educational and outreach activities explicitly address genetic, environmental, and societal determinants of health, strengthening population relevance.
- This is the strongest section in the proposal.
- This program is uniquely embedded in a relatively narrow community and theoretically has the potential for compounded benefits to trainees, patients, future learners, families, and the community. However, plans for development of this rich possibility are underdeveloped.
- Reasonable plans for supporting trainees and providing access to resources are provided.
- The patient/healthcare engagement activities are fairly minimal and offer only superficial exposure/learning.
- There is no plan to foster continued engagement, networking, and community development among program participants and affiliated institutions and organizations.



Application #	EDUC8-20370
Title (as written by the applicant)	Building Bridges to Regenerative Medicine: Certificate Training, Mentoring, and Internship Pathways for a Diverse Translational Workforce
Public Abstract (as written by the applicant)	This proposed training program will prepare graduate-level trainees for careers across the regenerative medicine ecosystem by combining interdisciplinary coursework, hands-on laboratory training, professional development, public communication, mentoring, and internship-based experiential learning. Trainees will build foundational knowledge in stem cell science, bioprocessing, therapeutic development and regulation, data science, and research ethics, while also gaining practical experience in laboratory methods, scientific communication, and community engagement. The program will contribute to workforce development by preparing participants for roles not only in research, but also in manufacturing, quality systems, regulatory affairs, clinical operations, translational development, and patient-centered innovation. Through integrated academic and applied training, the program is designed to help develop a workforce that is technically skilled, adaptable, and able to respond to the evolving scientific, manufacturing, clinical, and societal demands of the regenerative medicine field.
Statement of Benefit to California (as written by the applicant)	The proposed program will benefit California by helping build a highly trained workforce prepared to support the state's continued leadership in regenerative medicine, biotechnology, and advanced biomanufacturing. By preparing trainees for roles across research, manufacturing, regulation, clinical translation, and patient-centered implementation, the program will strengthen the talent pipeline needed to move new therapies from discovery to delivery. The program will also benefit California citizens by promoting broader access to education and career pathways in a high-growth field, while supporting the development of therapies and care models that may improve health outcomes for patients. Through community engagement and public communication activities, the program will further help increase public understanding of regenerative medicine and its potential impact on individuals, families, and communities across the state.
Funds Requested	\$4,313,955
GWG Recommendation	(85-100): Exceptional merit and warrants funding, if funds are available
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG." Patient advocate members unanimously affirmed that "The review was carried out in a fair manner and was free from undue bias."

SCORING DATA

Final Score: 85

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	83
Median	85
Standard Deviation	4
Highest	87
Lowest	70



Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	11
(1-84): Not recommended for funding	3

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses
• Strength: • This proposal aims to create a master's-level Certificate in Regenerative Medicine, including a one-year certificate program for master's students in physician assistant or genetic counseling majors; and a standalone two-year program with one year of coursework followed by a one-year internship. This effort will establish a master's-level pipeline into regenerative medicine. • All required courses already exist, so the effort can focus on the trainee-only components of the proposed program of study. • Trainees will be able to complete internships at prestigious institutions and successful companies, thus enhancing the impact of their training and potentially connecting them with future CIRM-relevant careers. • The effort will be led by an experienced senior administrator and an active stem cell researcher. • Trainee experience key strengths: • There are several internship options. The organization of placement (matching, screening of the host-site/mentors, and trainee interviews by host-site/mentors) seems well constructed. The monthly check-ins by the applicant institution while the trainee is away on internship are a strength. The multiple mentor approach (internal, host-site for internship, and external in industry/clinic/alumni) will benefit the trainees during all stages of their time in the program. Cohort-wide mentoring activities are well organized, covering the full scope of the career path (including employment after the internship, which is a strength). • The applicant institution has a strong network of external partners for the internships. The proposal describes a track record of success for student career advancement and job placement. • The applicant institution is relatively new to the world of stem cell training, but the proposed Bridges program would create a Regenerative Medicine Certificate that would function in two ways: as an overlay credential to enhance a master's degree or as a stand-alone certificate for those looking for employment in the regenerative medicine field. • Strength: Strong established master's program including bioengineering ensures high impact on trainee development. • Weaknesses:



- It is unclear how the Bridges program adds to professional development beyond what the applicant institute already has in place through its master's programs.
- The recruitment strategy beyond the current applicant institution trainee talent pool is not robust.
- Key weakness:
 - The proposal does not articulate clear or concrete processes on how the applicant will achieve recruiting trainees that would broaden perspectives and have the competencies to impact communities (including patients) that are systematically underrepresented in STEM.
 - Selection criteria are vaguely referenced: "discussions will explicitly avoid over-reliance on pedigree-based signals and instead emphasize growth, preparation, curiosity, and the applicant's likelihood of benefiting from a mentored immersive internship," though it is not clear how the applicant will assess these more holistic qualities of interest based on the application materials required.
 - Several aspects of mentor training were mentioned ("inclusive mentoring guidance, conflict-escalation pathways, culturally responsive mentoring") but no clear strategy for delivery of this content or where these materials will come from.
 - The information is incomplete, as most key personnel are not named, making it difficult to evaluate their backgrounds in relation to the needs of the program. Letters of support to confirm collaborative efforts are also missing (e.g., OAE and faculty named in the program leadership and administration section helping with curriculum).
- Serious Concern: It is unclear whether the leadership team will have the necessary bandwidth to manage all aspects of the program. The proposal does not adequately describe how the applicant will manage the day-to-day work needed to enact a successful program. This concern about the capacity of the proposed leadership greatly tempers enthusiasm for an otherwise excellent proposal.

Value Proposition - Evaluate the program's value and potential for impact.

- Strength:
 - This program serves a unique, unmet need for master's-level positions in regenerative medicine and biotechnology.
 - The program will include a cohort of interested students who are not selected for funding. Thus, the program will have an increased impact on broadening participation in regenerative medicine.
 - The program will invest significant effort in creating and supporting a successful cohort of trainees who engage in common courses and experiences. The attention to building a community increases the likelihood that all trainees will successfully complete the program of study and attain their master's degree.
 - The proposed training plan has a good mix of required coursework and flexibility to accommodate trainees' specific interests. This flexibility is likely to enhance student retention and graduation.
 - Prior to starting courses, trainees will map the complete set of courses and activities they will take to complete their degree. As a result, students will have a solid plan of how to be successful in obtaining their degree.
 - All required coursework is already available, so little additional effort will be required to develop and obtain approval for new courses. The program builds on an already rich collection of regenerative medicine-relevant coursework.



- High potential impact but added value beyond current existing programs is unclear.
- The training program provides an opportunity for advanced training in regenerative medicine for master's students and doctoral students leveraging existing graduate programs that combine several aspects of the BRIDGES foundational training (e.g., translational science, bioprocessing, regulatory affairs, data analytics, and patient-centered healthcare training).
- In alignment with the goals of BRIDGES to broaden participation and perspectives in the workforce, the PD aims to recruit Californians who would otherwise be overlooked by traditional recruitment methods.
- A weakness of the proposal is that it does not articulate clear or concrete processes on how the applicant will achieve recruiting trainees that would broaden perspectives and have the competencies to impact communities (including patients) that are systematically underrepresented in STEM.
- The initial cohorts (ten students) are small, but new programs usually must start small and an incremental increase would still seem valuable.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- The plan to track outcomes is one of the strongest parts of this proposal, built as it is on already existing tracking and engagement plans used in their current master's programs. These are very robust including the usual LinkedIn groups, but also 6-month, 12-month, and annual follow-up interviews. Graduates will be engaged in a variety of outreach and community activities including near peer.
- Strengths:
 - The recruitment plan is likely to broaden participation in master's-level training relevant to regenerative medicine by a) recruiting new students into the program, rather than relying on students already enrolled in master's programs; b) emphasizing graduates who are first generation, veterans, adult learners, and from low-income backgrounds; and c) implementing recruitment channels that include CSU and UC campuses, MSIs, and community colleges.
 - The plan to maintain a community of all interested students will increase the program's reach into different student populations and support replacement of any trainees who are unable to complete the program. This strategy essentially guarantees success.
- Weakness:
 - Although a holistic review process is a positive approach that is likely to uncover untapped potential, the proposal does not adequately describe the selection process. For example, it is unclear what evidence, and rubrics will be used to evaluate academic readiness, adaptability, persistence, teamwork, and communication.
 - Weakness: Relevant to the concern above, there is no evidence that the applicant institute is aware of research that is relevant to inclusive selection criteria and rubrics.
- The recruitment plan is fairly standard – event/digital outreach, linking with admissions. A positive aspect is the active recruitment at CSUs, CCs, MSIs, and postbaccalaureate programs.
- Trainee tracking will rely on the Office of Alumni Engagement (OAE), annual surveys, and LinkedIn updates over regular intervals. This reviewer is glad to see that the AORP captures information about student retention and completion rate benchmarks. Specific metrics for alumni engagement are appreciated.



- The dissemination plan includes several outcomes, tools, and approaches to be shared within the CIRM sites and partner organizations, though some are not defined (e.g., curricular crosswalk for master's-level training).
- Weakness: Selection criteria are vaguely referenced: "discussions will explicitly avoid over-reliance on pedigree-based signals and instead emphasize growth, preparation, curiosity, and the applicant's likelihood of benefiting from a mentored immersive internship," though it is not clear how the applicant will assess these more holistic qualities of interest based on the application materials required.
- A weakness is that standard dissemination possibilities are not mentioned (conferences, publications, etc.).

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- The curriculum covers all the categories of fundamental training required as part of the BRIDGES programming. The organization of some "common" classes to bring the cohort together, combined with the flexibility of several course selections by individual trainees, is a strength.
- The patient engagement plan includes the requirement that each student submit a personal reflection on how patient engagement changes their views on issues like regulatory timelines, trial design, equity and so forth. The community outreach plan will be utilizing PD's NIIMBL eXperience educator program as a platform for community contact. The education to be provided on both patient engagement and community outreach therefore seems quite robust.
- Strength:
 - The proposal has a well-defined training program based on existing courses, together with program-specific seminars and activities that will build community among the trainees. No new courses will be needed, although workshops and seminar series will be added. The applicant can "hit the ground running."
 - Trainees will have access to a well-developed collection of diverse internship locations that include academic and clinical settings, manufacturing and development organizations, and relevant biotechnology companies. As a result, the trainees can pursue their own unique interests, supporting the likelihood that they will persist and earn their certificate.
 - The proposal includes letters of support indicating trainees could be placed with mentors at their location. Sites include an impressive array of research institutes, companies, and universities.
 - The plan to include cohort mentoring will support trainees' knowledge and ability to navigate the complexities of the degree program and a successful internship.
 - Strength/Concern: There is a robust mentorship plan that includes three formal mentors for each trainee: an applicant institute academic mentor, an internship mentor, and a "practical" mentor from industry, clinical operations, patient advocacy, or the alumni and advisory board. Although multiple mentors can benefit student success and feelings of belonging, there is a concern that gaining full advantage of three mentors could take more time than students would have available.
 - Strength: The plan to include cohort mentoring will support trainees' knowledge and ability to navigate the complexities of the degree program and a successful internship.
- There are several internship options. The organization of placement (matching, screening of the host-site/mentors, and trainee interviews by host-site/mentors) seems well-constructed. The monthly check-ins by the applicant institution while the trainee is away on internship are a strength.
- The multiple mentor approach (internal, host-site for internship, and external in industry/clinic/alumni) will benefit the trainees during all stages of their time in the program. Cohort-wide mentoring activities are well



organized covering the full scope of the career path (including employment after the internship, which is great).

- Weakness:
 - The proposal does not appear to have a list of potential mentors, just locations. Recruiting specific mentors is likely to be challenging given the timeline should the proposal be funded.
 - The proposal does not appear to include mentor/mentee training. Thus, it misses an important tool for supporting successful internship experiences for the mentor and mentee.
- Weakness:
 - The patient engagement activities are a bit vague/generic ("Where appropriate, trainees will also participate in observational experiences or volunteer activities in patient-facing settings, including activities connected to Alpha Clinics, community healthcare environments, donation drives, or educational forums led by clinicians and patient advocates"), which makes them feel like an afterthought.
 - This sentence reads like a copy/paste from the funding announcement: "The program will also intentionally bring in mentors and advisors whose backgrounds reflect the breadth of California communities and whose perspectives may not be fully represented within resident faculty alone." More substance is recommended.
 - The community engagement piece feels like an add-on. It mentions networking with local schools and teachers through the applicant's other funded project. No clear connection to trainees' experience in the program. It is a bit disjointed as described though this may be more of a writing issue. The preparation of a 5–10-minute science communication talk through the workshop and coaching sessions sounds good. The trainees will decide when/who they will present to.
 - Several aspects of mentor training were mentioned ("inclusive mentoring guidance, conflict-escalation pathways, culturally responsive mentoring") but no clear strategy for delivery or where these materials will come from. Most commonly mentioned is CIMER training; this reviewer would have liked an evidence-based resource to be identified for this.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- The program leadership, especially PD, having developed a variety of other industry-connected graduate programs, will certainly be able to navigate recruitment, mentoring, and administration. Both the academic and industry partnerships described in this proposal are very impressive. The applicant has many other training programs, but this proposal would close the gap in the applicant's ability to navigate regenerative medicine successfully.
- Strength:
 - The Program Director is a senior administrator and will have access to institutional resources that can support this award.
 - The Co-director is an active stem cell researcher. The Co-director will have the academic expertise needed to lead the academic side of the project.
- The PD has many years of experience in academic leadership. The Co-director is an established PI in regenerative medicine. It appears the Co-director is already leading a CIRM subaward at another institution, so the Co-director has prior experience with the BRIDGES program. Their backgrounds combined make them reasonable administrators of the program.



- The applicant institution has a strong network of external partners for the internships.
- The proposal describes a track record of success within the applicant institution for student career advancement and job placement.
- The budget includes consultant fees for the External Advisory Board at \$5,000 per year (\$25,000 for five years). It is unclear how frequently these advisors meet with leadership and are involved in organizing the program activities. Approximate FTE would be helpful to justify this expense.
- A weakness is that most key personnel are not named, making it difficult to evaluate their backgrounds in relation to the needs of the program. The roles are defined as required by the funding announcement.
- A weakness is that there are no letters of support from applicant institution collaborators and faculty named in the program leadership and administration section who are helping with curriculum.
- Concern:
 - Given the PD's administrative role, it is unclear whether the PD will have the bandwidth to provide hands-on leadership for the program. It is unclear how much bandwidth the PD has for this program.
 - The success of the Co-PD in mentoring master's-level students is not described. Coupled with concerns about the mentor training component, there is concern about how mentors and students will be matched and what will happen if the matching is not successful.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- Strength: The program is well designed to support certificate completion of the selected trainees. Given the diversity of applicant institute students, it is likely that the successful trainees will reflect the breadth of the California population.
- The applicant institution, having had success in a variety of other training programs, has a very strong plan to provide trainees with mentors, activities, and coursework that will support their identification with and success in the field of regenerative medicine.
- The proposal aims to broaden participation of Californians as members of a highly trained workforce by leveraging the institutional context, stating the applicant institute "has maintained a diverse student body, well above national norms for the science workforce." However, the aforementioned data refers to student enrollment across different program areas like pharmacy, applied science, health science.
- The population impact statement is focused on student retention and is missing any mention of patient/community impact.
- Weakness: The proposal does not systematically describe its expected impact on the population of California. It does not describe efforts to seek out or address needs of students from different communities and backgrounds. The proposal appears to lack authentic connection to the communities it plans to include and serve.



Application #	EDUC8-20282
Title (as written by the applicant)	Advancing Stem Cell Education and Career Navigation and Development (ASCEND)
Public Abstract (as written by the applicant)	The COMPASS program is a 2-year undergraduate training initiative designed to prepare a diverse cohort of students for careers in stem cell biology and regenerative medicine. The program enrolls 7–10 trainees annually and is built on the principle that scientific talent is widely distributed but often under-recognized due to barriers in traditional training pathways. By de-emphasizing conventional metrics of evaluation (GPA thresholds, test scores, prior research experience), COMPASS expands access to high-impact scientific training while maintaining rigorous academic standards. The program integrates coursework, research, mentorship, and industry engagement to provide comprehensive preparation for the regenerative medicine workforce. Trainees complete specialized courses in stem cell biology, ethics, and translational science, alongside training in experimental design, data management, and regulatory frameworks. A newly developed course introduces core principles of biomedical research, including responsible conduct, science communication, and pathways for translating discoveries into therapies. Experiential learning is a central component of the program. Each trainee completes two 3-month summer internships, one in an academic and one in an industry setting. Academic placements provide hands-on experience in a broad spectrum of topics, using both computational and laboratory-based approaches. Industry internships expose trainees to real-world practices, including Good Laboratory Practice (GLP), Good Manufacturing Practice (GMP) and regulatory processes. The program also emphasizes professional development through mentorship, workshops, and networking opportunities. A structured mentoring model connects trainees with faculty, industry professionals, peers, and alumni, while career development programming supports job readiness and career exploration. Trainees participate in symposia, site visits, and a career fellowship program that provides individualized coaching and industry exposure. To ensure that trainees understand the broader impact of regenerative medicine, the program incorporates patient and community engagement activities. These include interactions with patient advocates, exposure to clinical and translational settings, and training in public science communication. Trainees also engage in outreach activities to inspire interest in STEM among K–12 students and underserved communities. By combining rigorous scientific education with practical experience and inclusive recruitment strategies, COMPASS directly contributes to the development of a skilled, adaptable, and diverse workforce. Graduates are equipped with the interdisciplinary knowledge, technical expertise, and professional competencies needed to advance regenerative medicine, including the development, regulation, and delivery of novel therapies. This approach not only addresses current workforce needs but also strengthens the long-term capacity of the field.
Statement of Benefit to California (as written by the applicant)	California is home to the most diverse population in the nation, yet the communities most affected by the diseases targeted by regenerative medicine research, including blood cancers, chronic wounds, neurodegenerative diseases, and inherited genetic disorders, remain dramatically underrepresented in the scientific workforce developing treatments for those diseases. This program addresses that gap by creating a structured, equity-centered training pathway into stem cell and



	regenerative medicine careers for students from community colleges, underrepresented communities, and first-generation college backgrounds across California. Trainees who complete the program will enter the regenerative medicine workforce equipped not only with scientific skills but with a deep understanding of the populations their research serves, producing scientists who are more effective, more representative, and more responsive to California's most underserved communities.
Funds Requested	\$3,226,320
GWG Recommendation	(1-84): Not recommended for funding
Process Vote	All GWG members unanimously affirmed that "The review was scientifically rigorous, there was sufficient time for all viewpoints to be heard, and the scores reflect the recommendation of the GWG." Patient advocate members unanimously affirmed that "The review was carried out in a fair manner and was free from undue bias."

SCORING DATA

Final Score: 70

Up to 15 scientific members of the GWG score each application. The final score for an application is the median of the individual member scores. Additional parameters related to the score are shown below.

Mean	72
Median	70
Standard Deviation	3
Highest	80
Lowest	70
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	0
(1-84): Not recommended for funding	15

FINAL COMMENTS

Proposals were evaluated and scored based on the key questions shown below, which are also described in the PA/RFA. Following the panel's discussion and scoring of the application, the members of the GWG were asked to indicate whether the application addressed the key question and provide brief comments assessing the application in the context of each key question. The responses were provided by multiple reviewers and compiled and edited by CIRM for clarity.

Key Strengths and Weaknesses
• The reach of the program is a strength, with upwards of 40 potential students over the course of 5 years. • Prominent exposure to both academia and industry (year 2). • Strength: Outreach metrics were included. • The proposal is for a new COMPASS-path program led by program director and housed in the host university and includes a partner to facilitate industry placements for trainees.



- A significant strength of the program is the internship/research opportunities. An outstanding roster of 22 faculty members with active research programs in a wide spectrum of stem cell research topics will host trainees. Internship placement will involve meeting the experts workshop series in year 1 and a mentorship program developed by industry partner for COMPASS trainees in year 2.
- Industry partner is noted to have access to >1,700 companies, but this reviewer assumes these are not all local. It is unclear how students' housing/travel will be handled.
- Weakness: The program director should not also be the program evaluator. Feasibility of internships is not clear, low completion rate. It is unclear where alumni come from; the program is new.
- PD cannot also be program evaluator; PD does not have necessary experience. The new program does not have previous trainees as mentees.
- The program director is also listed as the Program Evaluator, which is a significant weakness - PD appears to have no experience in evaluating this type of program.
- This reviewer appreciated reviewer comments about conflict between program director also serving as evaluator.
- Some strengths; significant conflicts on evaluations are not explained well, and alumni tracking.
- The goal seems to be to get a new undergraduate major in stem cell biology and regenerative medicine. The goal does not seem to be to train students.
- Aspects of the curriculum are underdeveloped, e.g., writing reports/experimental plans, etc.

Value Proposition - Evaluate the program's value and potential for impact.

- The reach of the program is a strength, with upwards of 40 potential students over the course of 5 years.
- The plan to leverage the curriculum development and recruitment strategies developed through the ASCEND program to launch a formal undergraduate major in stem cell biology and regenerative medicine means the program is highly likely to have a long-term impact on CIRM's mission and on the development of a robust pipeline of regenerative medicine specialists.
- This is a well-established and academically rigorous institution with a long history of providing high-quality education in STEM generally. There is attention to topics relevant to regenerative medicine across the pipeline, from development to manufacturing to regulation to population outreach. Trainees have the potential to be fully immersed in the professional setting across training levels and stakeholder settings.
- 85%+ program completion rate seems low.
- 75% employed in STEM or enrolled in graduate programs within 12 months seems low. It is unclear whether 25% will no longer be in STEM/grad school.

Outreach and Assessment: Evaluate the strategy for identifying talent and measuring success.

- There is a rigorous plan for outreach, recruitment, and trainee selection that will decrease potential bias in trainee demographics.
- Mix of passive and active recruitment methods.
- The program proposes an AORD that aligns with the CIRM COMPASS program goals. The goals are ambitious but reasonable, given the outlined selection process and pool of talent in the San Diego area –



40% of trainees will be identified using proactive outreach, with minimally 40% being first-generation college students.

- There is a specific plan for tracking metrics related to engagement.
- Graduates will have had significant exposure to opportunities for networking and departments, institutes, biotech companies, and other settings to support success in obtaining future employment.
- There is a structured system in place to track alumni for up to five years and quantitative benchmarks for success in engaging graduates in the regenerative medicine workforce.
- It is unclear what the "formal review" is that will be triggered if results fall below the benchmarks.
- Strength is the quantifiable metrics for recruitment so that success can be measured. However, from a practical standpoint, it is not clear that the recruitment funnel is big enough with all of the recruitment restrictions.
- Benchmarks are confusing; for example, the 50% "alumni from community college or underrepresented backgrounds placed in roles or programs consistent with regenerative medicine or adjacent life science fields." A 60% annual survey response rate is also low.

Trainee Experience: Evaluate the quality of the educational and support framework to ensure successful trainee outcomes.

- Major weakness is the lack of experiential, practical learning such as writing mini reports or experimental summaries, demonstrating effective communication, presenting effectively, writing effective emails to leadership, etc.
- Outstanding educational support with more than 20 faculty pledging letters of support for the program.
- Training includes all relevant scientific topics as well as RCR, communications and community engagement, and policy, regulatory, and economic considerations.
- Courses are already developed and with named faculty participants.
- Participants will receive foundational training in an academic setting during YR01-YR02 and then more applied training in industry settings during the second-year summer internship.
- There will be a four-pronged approach to mentoring: science/academic/career, near-peer, industry, and COMPASS alumni, offering rigorous breadth of support for trainees.
- The lead for the mentorship aspect of the program is very experienced in workforce development and there is a clear commitment to equity in recruitment and throughout the learning and professional development experience.
- The overall career development plans are appropriate and aspirational but read a little general; there is some lack of more nuanced aspects of barriers to success like hidden curriculum, scientific self-efficacy, specific types of supports to ensure success of individuals who are underrepresented in STEM fields that are empirically based, and the critical importance of developing persistence to be successful in STEM across all learners but a particular focus for underrepresented groups.
- The proposal includes for trainees a faculty research mentor, industry mentor, near-peer cohort mentor, and COMPASS alumni mentor. It is not clear who the alumni mentors will be as this is a new program.
- The lab work listed seems to be more like an undergraduate lab than a project that can be owned by the learner.



- The exposure can seem superficial at times vs. real-world, lived experiences.
- Very little detail about what's expected in the internships.

Program Team and Resources: Evaluate the expertise and resources proposed to achieve the training program objectives.

- The applicant organization is committing \$60K per year to the effort.
- Numerous existing partnerships with community colleges and other educational programs to support outreach to communities who require greater representation in the field.
- This is a highly experienced team with a proven track record and complementary expertise in science, community engagement, and workforce development.
- Applicant institution has long term plans to establish a BS degree in stem cell and related science, which is critical for sustainability for the trainee pipeline in this field, and the COMPASS program serves as the foundational model.
- While not former recipients of the COMPASS mechanism, the applicant institution has successfully run numerous career development programs across disciplines, including through external funding with oversight.
- This is a well-established and academically rigorous institution with a long history of providing high-quality education in STEM generally.
- A significant issue is having the listed PD serve as both program director and evaluator.
- The program director has no experience in program evaluation.
- The program director and program evaluator are the same person. This is not acceptable.
- Strong concerns that the program director and evaluator are the same person.
- Trainees are enrolled in the COMPASS Alumni Network. It is not clear how they will be tracked.
- The institution contributes separate support of \$60,000 – it is not clear if this is annual or over the course of five years – for infrastructure.

Population Impact: Evaluate the extent to which the program considers the potential impact of the proposed training across broad segments of the population.

- Knowledge-sharing plans are solid and will include participation in a CIRM event, a resource library with information about the curriculum, recruitment practices, training materials, publications in education journals, and an annual symposium.
- There is attention to topics relevant to regenerative medicine across the pipeline, from development to manufacturing to regulation to population outreach.
- Has the potential to impact a maximum of 40 undergraduates in a way that provides broad exposure to academia and industry.
- Trainees have the potential to be fully immersed in the professional setting across training levels and stakeholder settings.



- Will have a positive impact on training.