CIRM COMPASS (EDUC5) Program

August 30,2022

APP #	TITLE	BUDGET REQ	FUND	SCORE (MEDIAN)	Mean	SD	Low	High	Y	N
EDUC5-13840	The COMPASS Scholars Program – Developing Today's Untapped Talent into Tomorrow's STEM Cell Researchers	$2,908,950	**Y**	**95**	95	1	92	98	15	0
EDUC5-13634	COMPASS Undergraduate Program	$2,909,950	**Y**	**95**	94	2	88	95	15	0
EDUC5-13637	Research Mentorship Program in Regenerative Medicine Careers for a Diverse Undergraduate Student Body	$2,729,900	**Y**	**94**	93	2	90	95	14	0
EDUC5-13665	CIRM COMPASS Training Program (N-COMPASS)	$2,909,700	**Y**	**93**	93	2	90	95	14	0
EDUC5-13817	COMPASS: Accelerating Stem Cell Research by Educating and Empowering New Stem Cell Researchers	$2,910,000	**Y**	**92**	92	3	85	97	13	0
EDUC5-13744	Training and mentorship program in stem cell biology and engineering: A COMPASS for the future	$2,746,000	**Y**	**90**	90	2	88	95	14	0
EDUC5-13636	Research Training and Mentorship Program to Inspire Diverse Undergraduates toward Regenerative Medicine Careers (RAMP)	$2,910,000	**Y**	**90**	89	4	80	95	13	1
EDUC5-13679	Inclusive Pathways for a Stem Cell Scholar (iPSCS) Undergraduate Training Program	$2,894,500	**Y**	**90**	89	2	85	92	13	0
EDUC5-13733	A COMPASS to guide the growth of a diverse regenerative medicine workforce that represents California and benefits the world	$2,887,939	**Y**	**90**	88	3	85	95	13	0
EDUC5-13619	Increase Diversity, Equity, and Advancement in Cell Based Manufacturing Sciences (IDEA-CBMS)	$2,894,500	**Y**	**88**	86	3	80	88	11	2
EDUC5-13667	COMPASS Program for Southern California Hispanic Serving Institution	$2,877,200	**Y**	**88**	85	6	70	90	11	3
EDUC5-13653	Student Pluripotency: Realizing Untapped Undergraduate Potential in Regenerative Medicine	$2,909,853	**Y**	**87**	87	3	85	98	14	0
EDUC5-13647	COMPASS: an inclusive Pipeline for Research and Other Stem cell-based Professions in Regenerative medicine (iPROSPR)	$2,883,440	**Y**	**86**	87	3	85	95	13	0
EDUC5-13686	Training Undergraduates in Stem Cell Engineering and Biology (TUSCEB)	$2,909,999	**Y**	**86**	85	3	80	90	11	3
EDUC5-13853	COMPASS: Guiding Undergraduates to Careers in Regenerative Medicine	$2,899,999	**Y**	**85**	85	2	80	88	14	1
EDUC5-13910	IDEA-CBMS - Increase Diversity, Equity, and Advancement in Cell Based Manufacturing Sciences	$2,894,500	**Y**	**85**	84	3	80	90	10	4
EDUC5-13652	COMPASS Program – A partnership with an emphasis on training undergrads in regenerative medicine from URM & DA backgrounds	$2,909,775	**N**	**80**	79	6	70	87	5	10
EDUC5-13848	The COMPASS Fellows Program	$2,899,950	**N**	**80**	76	10	50	89	2	12
EDUC5-13936	Diversity in Stem Cell Research Networks (DISCERN)	$2,910,000	**N**	**70**	71	2	70	75	0	15
EDUC5-13856	COMPASS Training Program for Undergraduate Students	$2,262,466	**N**	**68**	67	7	50	75	0	15

Application #	EDUC5-13840
Title (as written by the applicant)	The COMPASS Scholars Program – Developing Today's Untapped Talent into Tomorrow's STEM Cell Researchers
Public Abstract (as written by the applicant)	The COMPASS Scholars Program aims to diversify the ranks of stem cell researchers by developing untapped talent as opposed to skimming the so-called 'best' based on standardized test scores and GPAs. The COMPASS Scholars Program combines the research expertise of a leading stem cell research center and the STEM equity expertise of a 30-year-old program with a history of graduating biology majors from low-income, first-to-college, and underrepresented racial/ethnic backgrounds with biology degrees and exit GPAs on par with majors-at-large. These partners will work with students whose untapped research talent may not be appreciated based on their lower entry GPAs and/or SAT scores. The proposed program will be comprehensive, providing regular ongoing structured support for the growth of both trainees and their mentors from 33 stem cell research labs associated with the center. The proposed COMPASS Scholars Program will support 26+ trainees from a pool of 'research ready' undergraduates who demonstrate strong interest in regenerative medicine after participation in one-year of developmental activities (e.g., courses, stem cell themed journal club, research seminars). The primary program will be a two-year commitment. To make the program equitable, a modified one-year program will be offered for transfer students who may need time to use their first year after transferring to become 'research ready.' A majority will conduct research during the two full years (two summers plus two academic years) before graduating. Transfer students may only have one-full year of research before graduating. All will have the support of ongoing professional development, cohort, and science identity building activities. In parallel, post-docs and graduate students that directly mentor the Scholars will meet monthly to discuss students' challenges, successes as mentors, and learn about STEM equity best practices in the research lab within the context of regenerative medicine. Through the proposed COMPASS Scholars Program we aspire to change the DEI focus in the STEM community from 'fixing' the student to institutional change, also known as 'inclusive excellence.' Our goal is to foster research lab environments that are culturally sustaining and affirming for individuals from all backgrounds who have a passion for science. This aligns with the Americans with Disabilities Act that states that all of our institutions (in this case our STEM disciplines) should be accessible to everyone, thereby 'democratizing' student success in STEM by supporting the achievement of 'the many' (from diverse backgrounds) and not just 'the select few' (from traditionally successful backgrounds).
Statement of Benefit to California (as written by the applicant)	The STEM community at this institution has not seen equitable outcomes for its majors from the diversity of backgrounds represented among its undergraduates. Here and elsewhere, STEM culture relies heavily on the quantitative assessment of talent (e.g., GPA, standardized test rankings) and the value of competition and curve grading to sort talent. These practices are grounded in the ideology of an objective meritocracy in which individuals 'deserve what they get and get what they deserve.' These practices reinforce the myth of meritocracy and have focused our attention on the 'failing student' rather than on the institutional practices that have failed them. We must rethink how we think about STEM 'talent' and how we assess who is 'qualified' to succeed in and contribute to science. With limited fiscal resources, we should ask what is STEM 'talent' and how should we invest in it? As part of our due diligence, we need to identify and address the structural failings of our institutions rather than rationalizing success in STEM as the natural outcome of individual differences in skill, talent, or perceived work ethic. Thirty years of evidence from the STEM equity program leading this project suggests that so called less qualified students can succeed in STEM courses at this institution if provided a proper academic environment. The proposed COMPASS Scholars Program tests if this holds true at 'the bench' as well.

	Continuing STEM practices that undervalue and fail to develop untapped talent have clear implications for our failure to meet California's STEM workforce needs. Additionally, as advances are made in stem cell research and its application to precision medicine, so too does the potential of widening disparities in health care. The investment of CIRM funds in the COMPASS Research Training Initiative has the potential to benefit California not only by increasing the number of qualified stem cell researchers, but by giving voice to the diversity of backgrounds, and cultural and community perspectives these scientists represent to address the health care challenges of our diverse state.
Funds Requested	$2,908,950
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	98
Lowest	92
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	15
(1-84): Not recommended for funding	0

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 14	• The program is incredibly well conceived. The proposal includes a convincing description of the plan to use COMPASS to improve mentoring and recruiting practices on campus. The plan to select "research ready" students with an interest in stem cells ensures that trainees will receive maximal benefit from the program which should positively impact their career development and interest in CIRM related fields. • Yes, this program will select COMPASS scholars from a pool of 400 first-generation, low-income, and under-represented ethnic minority students. • The proposed program will have a meaningful and positive impact because the institution's COMPASS program closely works with their Stem Cell Center and provides a lot of courses and trainings to the COMPASS scholars about stem cell research. • This program will select trainees with previous research experience and a strong research interest in stem cells and regenerative medicine. Thus, it will foster a commitment among trainees to CIRM's mission. • The institution has successfully recruited and supported the success of undergraduates from backgrounds historically under-represented in biology. Women, under-represented

	ethnic minorities, and first-to-college intended majors with lower SAT scores and high school GPAs are over-represented at the institution. ● This excellent program will impact the campus and the trainees. ● The stated philosophy of changing "from fixing the student to fixing the institution" is a strength. ● Excellent program - the institution has a history of experience and methods to identify problems and create change. ● Pulling from a twenty-year, established program for a diverse group of underrepresented students interested in biology. ● The program incorporates diverse faculty and numerous courses.
No: 0	*none*
GWG Votes	**Is the program well planned and designed?**

Yes:
14
	● The program is thoughtfully designed and the proposal includes good detail. Strengths include:
	  ● the yearlong pre-program recruitment activities allows ample time for interested students to learn about the program;
	  ● the selection process includes matching with a mentor; and this process that is managed by the program to ensure students have equal access to high quality matches;
	  ● the second track that admits transfer students and students who become interested in research later in college.
	● The mentor recruitment and training plan is excellent, particularly the clear intention to use the COMPASS program to develop mentors as well as trainees. Notable strengths include:
	  ● requiring mentors to commit to ongoing learning about mentorship and issues of culture and identity;
	  ● providing mentees with mentee training;
	  ● brown bag lunch sessions for faculty mentors; and
	  ● a plan to coach mentors on how to develop expectations.
	● The laboratory course will build trainees' sense of efficacy and science identity, as well as bench skills for successful research experiences. The inclusion of academic workshops and career planning workshops will provide trainees with additional tools for success in the program and support for their next career move. The program has existing affiliations with medical and translational research organizations that will help trainees.
	● This program's goal is to identify and select students with the untapped potential to excel as stem cell researchers and to provide them with structured mentored research experiences.
	● They propose to recruit trainees from an ongoing program at the institute that engages students with lower high school GPAs and/or SAT scores, in biology. This program comprises a large percentage of students from under-represented populations. Because COMPASS trainees will all be members of this ongoing program, the applicant will use the program's existing student database to track and record COMPASS trainees' post-graduate degree attainment and employment.
	● It is nice to see that the program plans to tailor an already existing alumni tracking system to the unique goals of the COMPASS program.
	● They also allow for transfer students to participate in the COMPASS program, and thus provide chances for those from community colleges.
	● The mentoring program focused on matching the trainees with a potential stem cell research lab at the institution. The direct research mentor will be a graduate student or a postdoc. The direct mentor will also attend training.
	● The institution will provide solid stem cell courses for COMPASS trainees.
	● This program will provide trainees with lab experiences in stem cell research. I am confident that the institution's strong stem cell research will provide unique opportunities for these COMPASS trainees.
	● COMPASS trainees will have the opportunity to participate in outreach for the institute's outstanding summer research program at a partner hospital. They can also travel to local high schools to educate high school students about stem cells.
	● The outreach plan is outstanding - the collaboration with the communications director is a valuable opportunity to further understand how stem cell research is regarded by the public and to build an important professional skill.
	● Very strong in every aspect.
	● Weakness: The proposal includes no or little information about introducing trainees to diverse career possibilities, such as stem cell manufacturing.

	• The proposal would benefit from including experiences beyond academic labs so that trainees have opportunities to explore the wider array of careers.
No: 0	*none*
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 14	• This is clearly a well-resourced institution, and the program will be led by an exceptionally well qualified team. The institution has a track record of successful training programs. Many scholars on campus are engaged in research relevant to the goals of the COMPASS program. • Outstanding team. The Program Director brings to the COMPASS project 30 years of experience selecting, training, and graduating biology majors from low-income, first-to-college, and under-represented minority (URM) backgrounds. The institution's stem cell center director will provide complementary expertise in stem cell research training. Together they can realize the goal of the COMPASS training initiative and the overall goal of CIRM. • A currently existing program at the institution has effectively used outreach strategies to identify and foster the talent of culturally diverse and socio-economically challenged students. 217 students have graduated from that program, and the applicant has confirmed that 101 (47%) of them have attained degrees. • Well designed; achievable and practical.
No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 14	• This proposal clearly articulates how every element of the applicant's COMPASS program was designed with principles of DEI in mind, and how this design will effectively meet the program's stated goals. The proposal also includes a well conceived plan to include input from diverse voices in the community. • The proposal incorporates an interesting recruitment strategy - enrollment is based on applicants' persistent participation in open stem cell workshops. • I like the coordination among programs so that the high school outreach will be conducted by a team of a postdoctoral fellows, graduate students, and undergraduate students. • This COMPASS model will redefine 'qualified' by developing untapped talent vs. skimming talent. • This COMPASS Program is designed to support trainees' success through comprehensive mentoring and training. • Excellent section. They want to influence the fabric of the institution. Very forward thinking. • Excellent DEI.
No: 0	*none*

Application #	EDUC5-13634
Title (as written by the applicant)	COMPASS Undergraduate Program
Public Abstract (as written by the applicant)	The COMPASS Undergraduate Program will address the pressing need to identify, recruit, retain, and nurture a diverse population of undergraduate students for careers in regenerative medicine that reflects California's demographics, and is sensitive to disparities in research engagement and health care. The program draws on the depth and breadth of resources, infrastructure, personnel, and expertise to ensure a comprehensive program focused on regenerative medicine, including stem cell and gene therapy, and that will capitalize on essential building blocks to kindle interest in a range of careers in the regenerative medicine field. Ten upper division students (juniors and seniors, including transfer students) will participate in the program annually for a two-year training and mentoring experience. Students will be integrated into a range of key programs that focus on outreach to and recruitment and retention of diverse and economically disadvantaged individuals. The program will identify untapped talent and kindle interest in careers in regenerative medicine through an array of engagement and information sharing events for freshmen, sophomores, and incoming transfer students. The COMPASS Undergraduate Program embraces and reflects a vision that meets the needs of a large, diverse, and wide-ranging set of constituents, leveraging successful programs that serve undergraduates from marginalized communities. The COMPASS program will partner with undergraduate diversity programs and integrate comprehensive COMPASS coursework with classes required for undergraduate science majors, ensuring students are well-versed and armed with a unique skill set and competitive for future positions. The curriculum will be comprehensive but not overly burdensome and not increase time to graduation. Centered within an established regenerative medicine program are faculty mentors and facilities essential for training and that support internships in regenerative medicine, stem cell, and gene therapy research; a collaborative environment in which to cultivate diverse students with a multidisciplinary team approach; and community outreach, partnerships, healthcare engagement, and public education. Given extensive experiences in designing and implementing highly effective undergraduate programs with a focus on underrepresented groups, and strengths in regenerative medicine, stem cells, and gene therapy, a firm foundation will ensure mentoring, collaboration, innovation, and core competencies that cut across chosen career paths. The program is poised to meet CIRM's mission by engaging COMPASS Scholars and opening the door to successful undergraduate experiences and future careers in the regenerative medicine field.
Statement of Benefit to California (as written by the applicant)	The COMPASS Undergraduate Program will provide extensive benefits to the state of California and its citizens by helping to close the equity gap in higher education and enabling community members to thrive and reach their full potential in regenerative medicine careers. The program focuses on outreach to and recruitment and retention of diverse and economically disadvantaged individuals in California to achieve the goal of engaging students who identify with an underrepresented group, and to serve as a pipeline for regenerative medicine careers. The objective is to ensure rich educational and training experiences with dedicated mentors/mentoring teams that will nurture skills and cross-cutting competencies for career options in areas such as science policy, research administration, regulatory science, cellular product manufacturing, and ethically conducted clinical trials, in addition to other health related careers. The COMPASS program will benefit California by: • Supporting student communities, particularly to address implicit and explicit bias and structural inequalities. • Building a pipeline that recruits and engages students from diverse backgrounds with a range of career pathways. • Enabling students to effectively communicate with a variety of audiences (e.g., government, regulatory agencies, community) and work with policy makers to advance initiatives to improve healthcare and address health disparities. • Providing rich opportunities for students to engage with faculty that focus on underserved and underrepresented communities.

	• Ensuring participation in longitudinal curriculum with workshops, courses, and activities focused on diversity in science and healthcare. • Committing to training in community-engaged research principles and strategies, including communicating science effectively to the public. • Building public trust by cultivating responsibility and a capacity for public scholarship and engagement in trainees. • Offering a range of accessible resources to foster the skills necessary for working in a multicultural community, and that will contribute to a respectful and inclusive work environment. • Connecting community engagement activities from a diverse coalition of programs that ensures clinical research opportunities are provided to all, particularly those from underrepresented and vulnerable groups. • Engaging a cross-section of stakeholder communities, including community-based organizations and individuals, to provide critical feedback that ensures an effective sustainable program. Well-trained, dedicated personnel within the state of California are needed to eliminate roadblocks to new therapies and that can address health care disparities. The program will ensure well qualified applicants for the regenerative medicine workforce and in health care positions in California, thus highlighting the long-term benefits to the state and its citizens. By engaging students from historically underrepresented groups with equity-centered and inclusive training and mentoring practices, the COMPASS program will increase the diversity of California's regenerative medicine, stem cell, and gene therapy expertise and provide future leaders in the field that will benefit patients and communities.
Funds Requested	$2,909,950
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	94
Median	95
Standard Deviation	2
Highest	95
Lowest	88
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	15
(1-84): Not recommended for funding	0

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 14	• Well-planned program to recruit and support underrepresented students to become part of the many facets of the stem cell work force. • This is a great program, that takes advantage of all the qualities of the applicant institution. • Focused on a hands-on mentored experienced, and designed for the whole workforce, opening opportunities for all. • School year education and summer school. Recruitment plan is strong - the applicants plan to send a personal email to all life science students who self identify in the underrepresented group. Clear methods and operations for recruiting from community as well as from within. • Excellent in all aspects. • Possible improvement: good opportunities for patient interaction, but appears to not be required.
No: 0	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 14	• There are detailed plans for mentors and trainees. The continuity of the mentorship and cohort community from one summer through the next is a strength. • The focus on scientific communication of all sorts is a strength. • Wide umbrella of recruitment by contacting every sophomore with life science major with information of program. • Required bi-monthly meetings of scholars & mentors is strength - should continue scholar meetings through academic year. • A lot of support for mentoring program - mentoring academy. Well-structured for the mentors and matching for the mentees. • Will be a great program. • There are no concerns about the program. It is well designed.
No: 0	*none*
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 14	• Experienced leadership, diverse mentors, long experience in similar programs for STEM. • Great facilities and the proposed courses are novel and interesting. • Well-designed program - achievable and practical.
No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 14	• Strong record of DEI at the applicant institution. • They propose to reach all the underrepresented minorities directly, to invite then to apply. • Annual Community Roundtable of stakeholders to broadcast program and seek advice. • Good DEI plan.
No: 0	*none*

Application #	EDUC5-13637
Title (as written by the applicant)	Research Mentorship Program in Regenerative Medicine Careers for a Diverse Undergraduate Student Body
Public Abstract (as written by the applicant)	Our Research Mentorship Program in Regenerative Medicine Careers for a Diverse Undergraduate Student Body will train 1st generation and under-served students, particularly undeclared majors and/or those are at risk of dropping out of college. COMPASS Scholars will be paired with a faculty mentor in the spring of their Sophomore year. Mentors will have had Implicit Bias and Culturally Aware Mentorship training. All Scholars will enroll in summer enrichment programs (supported by full tuition and a stipend) where they will learn hands-on lab skills, human cell culture, an introduction to good manufacturing procedures, and earn a certificate in Clinical Research Coordination (CRC). Scholars will also enroll for a minimum of 2 units credit in BIO199 (mentored research) over 8 quarters in across two years (~560 hours), culminating in a Capstone Project. The Capstone Project will be: (A) Excellence in Research presentation, (B) Excellence in Research paper, or (C) Presentation of their internship results at an annual conference, in parallel with a CIRM Bridges conference, or via a 1⁄2 day conference hosted at the Stem Cell Research Center. This program will train 25 Scholars over five years. Scholars will be required to enroll in at least one regenerative medicine and/or scientific method undergraduate course, at least one course on public health disparities, and at least one course in sociology, political science, or bioethics of health. Ancillary activities include training in responsible conduct of research, preparation of individual development plans (IDPs), Diversity Equity and Inclusion 101, public speaking skills and elevator pitches, meetings with patients and patient advocates, attendance at monthly Stem Cell Research Center scientific presentations, and helping host the Center's Public Seminar Series. Scholars will host high school students during the seminars and help manage the audience and field questions. Our program has 63 full-time faculty and >60 postdocs. 40 faculty have already agreed to mentor COMPASS Scholars; more mentors will be added in year two. Activities within the Center include basic and translational stem cell research using multidisciplinary approaches, such as cell biology, genomics, computational biology, bioengineering, pre-clinical development, and clinical applications/practice. Faculty are also engaged in understanding the stem cell field in the wider context of health disparities and ethics, fostering the capability of Scholars to act as ambassadors for the field in society at large. Faculty members have taken a bench to bedside path to various stages of preclinical and clinical development. There are training and research opportunities across a wide range of topics including new cell sorting and manufacturing methods, biomaterials to control development, 3D cultures and fused organs, health disparities and bioethics, to research leading trials for retinal repair, brain injury, stroke, ALS, and Huntington's disease.
Statement of Benefit to California (as written by the applicant)	Our experience with first-generation and under-served students across multiple CIRM Bridges programs documents that these students progress to successful careers in regenerative medicine and that the vast majority of Bridges Interns remain in the state of California. So too, we believe our COMPASS Scholar's Program will prepare a diverse cadre of undergraduates for careers in regenerative medicine, targeting untapped talent within populations that are historically under-represented in the biomedical sciences. By teaching general research, networking, and communication skills to at risk undergraduates, and combining these skills with hands-on training in stem cell biology and public outreach, we will be supplying California with a well-trained workforce of COMPASS Scholars ready for successful careers in public health and regenerative medicine. Our program will give Scholars the opportunity to explore a variety of ways in which their research skills can be applied towards improving human health through career paths in both the public and private sectors. A parallel objective is to foster greater awareness and appreciation of diversity, equity and inclusion in trainees, mentors, and other program participants. There are shortages of individuals skilled in stem cell manufacture and good manufacturing procedures; there are shortages of Clinical Research Coordinators who help establish clinical trials and enroll/track

	patients in those trials. The more diverse these individuals are, the better they will connect with a diverse patient population and bring a wider range of patients into the clinical trial pipeline. The COMPASS Program will produce a cadre of well-trained individuals who are ready to contribute to the workforce. Further, there is a graduation "gap" between first generation and under-served undergraduates and their second generation or more socioeconomically stable peers. The institution's accountability office calculated that this graduation rate gap means that students graduating in four years as opposed to six will have $100,000 to $150,000 reduced educational expenses and additional wages. We expect that the vast majority of our COMPASS Scholars will graduate in four years, saving themselves and their families via reduced college costs and loans, and putting tax dollars back into California's economy as they begin careers in high paying jobs. If we reduce the excess time to graduate in half (~$62,5000) for our 25 Scholars, this would return a benefit of $1,562,500 to the State of California over the course of this grant.
Funds Requested	$2,729,900
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: 94

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	94
Standard Deviation	2
Highest	95
Lowest	90
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	14
(1-84): Not recommended for funding	0

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 13	• The focus on careers outside of standard academic research is appreciated. • Excellent resources with exceptional leadership team. • Excellent program. • The large undergraduate campus draws for diverse populations first-generation (49%), low-income (45%) and under-represented (37%) with an upward trend. Institution has also already named a Fulbright and is a Hispanic-Serving Institution. Additional initiatives are geared to increase diversity and diversity among teaching faculty is adequate. • Rich and elaborate research background. Loved the impact of incorporating all underrepresented groups - low income, underrepresented minorities, and first-generation

	students and only have 5-6 students per year. They have details on 4 and 6 yr graduation metrics and how this grant will improve the graduation rate. ● Signature undergraduate courses will be offered to COMPASS Scholars once they are in the program to inform them on STEM research.
No: 0	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 13	● It is a very well-designed program. ● Very well designed - loved the aspect of pulling in the social aspects of science and bridging art into science. ● Love the workshops and courses for elevator pitches, public speaking, meeting with patients and advocates, community outreach. ● Lead Diversity and Outreach Coordinator (DIVOC), will conduct outreach activities to candidate participants with collaborative efforts through referral offices for many already existing programs. ● Excellent outreach activities. ● Student selection will use low friction online application system blinded to admission numbers. ● Mentored research is a crucial core of the program. ● There is assessment of the learner and the mentor with feedback from the mentees. ● Large and diverse mentoring faculty (40 faculty have agreed to serve as host labs for COMPASS scholars) with plans to expand the number of faculty, postdoctoral, and graduate student mentors/co-mentors via targeted recruitment of individuals in the field of regenerative medicine. ● All Mentors will undergo Cultural Aware Mentoring (CAM) training. In addition, 73% of hosting faculty have completed implicit bias training. ● Additional resources are provided through the LGBT Resource Center, Disability Services Center, Student Success Initiatives, Veteran Service Center, and the DREAM Center. ● Training will offer a wide choice of career paths including laboratory technicians, genetic counselors, cell manufacturing, clinical research coordinators, and/or public health advocates, etc... ● Detailed and extensive mentoring plan. ● Alumni will be encouraged to participate in workshops and activities and an annual summer barbecue will allow a meet and greet of Scholars and local program alumni. ● Summer session 2 is reasonable and courses are interesting. ● An evaluation committee will track immediate impact of individual program and participant feedback (satisfaction with and knowledge gained from educational programming), intermediate impact (sense of belonging, academic self-efficacy, satisfaction with quality of mentorship), and long-term cumulative impact of the initiative (time to graduation, post-graduation employment, life satisfaction). Impact on the institution will also be tracked. ● One person is assigned to do all the monitoring and tracking which may be insufficient. ● Data analysis and potential corrective steps are not discussed. For example, how many students need to be not satisfied to change course, are the questions asked ambivalent or targeted...? ● The only concern is the plan to have a techniques and training boot camp. There is research showing that boot camps are not effective. It would be good to rethink this part of the plan. ● The two-week summer session one seems over ambitious and too dense. Students are supposed to receive hands on training on pipetting, animal handling, making dilutions and media, microscopy, immunocytochemistry, and image analysis confocal and multi-photon microscopy and quantitative 3D image analysis, fluorescent activated cell sorting - I find "method teaching" with no specific scientific goal not very useful and inspiring. ● An additional 3-week hands on course in sterile techniques and human stem cell culture will follow to introduce students to techniques used to culture, differentiate, and genetically manipulate hES cells, including methods to generate iPSCs. This is compared with a lecture portion - again very technique driven. ● One concern is the required courses don't seem to be integrated into the degree program. ● Scholar enrichment activities (development of soft skills, patient engagement, community outreach) seem to be optional. ● There seems little time for internships, it is not clear whether Patient and Healthcare Engagement Activities are mandatory and are already in place or are organized on an interest base, which would not be sufficient.
No: 0	*none*

GWG Votes	Is the program proposal practical and achievable?
Yes: 13	• Very practical and achievable, many auxiliary programs are in place. • The program director has been the director on multiple CIRM Bridges grants over the past decade, has been involved in T32 grants, has mentored many students and postdocs while maintaining a thriving lab and achieved a high level of recognition in areas related to teaching and mentoring. Overall outstanding qualifications. • Led by a strong program director with experience in CIRM Bridges Scholars. • Other faculty are equally well positioned and qualified for their prospective roles in this application. • COMPASS Scholar program alumni will be tracked for at least ten years following their graduation from the program, or as long as they continue to serve as mentors within the program using the already in place tracking system to maintain records of CIRM Bridges alumni. Bridges program has excellent outcomes and track record.
No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 13	• Very good DEI plan. • Multiple pipelines to pull students from diverse and underserved populations. • 24% of faculty served as Equity Advisors and/or Diverse Educational Community and Doctoral Experience mentors, or in other DEI specific roles. • Program advisory committee is in place. • Resources mainly include access to information and courses but also include practical help, i.e., $1000 per trainee per year for travel.
No: 0	*none*

Application #	EDUC5-13665
Title (as written by the applicant)	CIRM COMPASS Training Program (N-COMPASS)
Public Abstract (as written by the applicant)	The main focus of the CIRM COMPASS Training Program is heavily weighted on goal-oriented academic and practical laboratory training experiences in stem cell biology and stem cell-based patient therapies. Our program is integrated with educational, ethical, and guidance features for culturally diverse early-career undergraduate students. Our internship-host institutions provide mentors who are world leaders in fundamental stem cell research and therapeutic translational applications. We have both industry and academic partners that will provide hands-on training in embryonic and adult or cell type-specific stem cell biology, gene therapy, and targeted research in human disease, spanning the basic to translational investigative spectrum. Our partnerships achieve all of the major COMPASS Program objectives including 1) training laboratory personnel in current stem cell research techniques, policy, and ethics, 2) introducing community outreach, patient advocacy, and career counseling for future stem cell-based therapies, and 3) facilitating the entry of an ethnically and culturally diverse student population into the emerging world of stem cell biology and regenerative medicine. Our training program will provide CIRM trainees with opportunities to study the latest advances in stem cell biology, present their own work in settings in which they can obtain constructive feedback, interact with their peers in formal and informal forums, to meet leaders in the field, interact with patients, and to develop their career potential through advisement and mentoring. Students in COMPASS will experience three years of cohorted academic support including ten-week summer internships for two consecutive years. Host-internship mentors will undergo DEI and Critical Mentorship training prior to matching them with academically supported and prepared COMPASS trainees. The majority of intern time will be spent on laboratory research. Trainees will learn stem cell and essential analysis techniques such as microscopy, cell sorting, and good laboratory practices in the internship-host lab and affiliated cores. Their projects will be discussed and chosen in partnership with the lab mentor, who will pair trainees with more advanced senior graduate or post-doctoral students working in the area of the trainee's project. These hands-on experiences will be supplemented by academic year participation in career counseling, community outreach, patient advocacy, and by formal and informal mentoring by home and host-institution faculty and peers. A major purpose of our inter-institutional training program is to provide an opportunity for engaged, interested, and successful trainees to gain the necessary skills and qualifications to springboard into careers in stem cell research that spans the spectrum, from basic studies to translational approaches to stem cell-based patient therapies, in academia and industry.
Statement of Benefit to California (as written by the applicant)	With substantial spending in connection with its operations, our institution has immense economic, fiscal, and social impacts far beyond the local community. Our institution has an overall economic impact of nearly $1.9. Economic output generated by our institution-related spending generated nearly $677.6 million in increased wages and earnings, raising labor income across the state. The additional income generated by our institution-related expenditures was primarily spent within the local economy, which, together with the increased demand for labor driven by these expenditures, resulted in a cumulative total of 11,774 jobs supported across all industries in California. In addition, our institution employees provided added value to state and local governments in increased tax revenue at a total of $122.1 million. Our trainees will have tangible health and economic impact on California, its academic institutions, its biotechnology, pharmaceutical, and stem cell companies, and the rest of the nation as California and its people move forward with personalized medicine during the 21st century. Our host institutions are economic powerhouses for the local area and California overall. Our host institutions generated over $11 billion in economic activity and supported more than 100,000 full-time jobs throughout the state during the 2016–17 fiscal year. Our academic host institutions are renowned worldwide for the quality of faculty, students, and trainees and their dedication to the mission of research, teaching, and service. There are approximately 92,000 related jobs in

	the region, with an average earning of $83,000. According to a recent report, those jobs also support almost 191,000 peripheral jobs in the region. The largest benefit to California is the benefit to our students. "The objective of the COMPASS Training Program is to prepare a diverse cadre of undergraduate students for careers in regenerative medicine through the creation of novel recruitment and support mechanisms that identify and foster untapped talent within populations that are historically underrepresented in the biomedical sciences, and by combining hands-on research opportunities with strategic and structured mentorship experiences to enhance the transition of students to successful careers." The COMPASS training program is dedicated and ready for this new mission.
Funds Requested	$2,909,700
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	2
Highest	95
Lowest	90
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	14
(1-84): Not recommended for funding	0

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 13	• The diverse demographics of the institution as both a minority serving institution and Hispanic serving institution (with more than 70% of students from URM populations) will enable the proposal to include students from underserved and socio-economically disadvantaged populations. Indeed, more than 70% of the trainees in the previous CIRM Bridges programs were from these communities. The academic and support components are incredibly strong and coherent. • A strength of the proposed program is integration of training and community building as part of trainees' meetings, where they will participate in workshops, mentoring, and other professional development training. Thus, the "optional" activities of the proposal are embedded into the fabric of the community of trainees so that all trainees will access all program resources rather than only those who make time to participate. • The curricular component, mentoring, lab research and capstone project are designed to likely keep the trainees commitment in the area of stem cell research and regenerative biology.

	• The institution is very diverse with a population of underserved and underrepresented students providing an opportunity to have high impact on trainees and their communities. • The program requires engagement with both the patient and the community through outreach, which supports the mission of CIRM. • There is great depth and breadth to the overall program and a successful track record under the CIRM Bridges program. • Successful track record as evidenced by Bridges program efforts with 45% from URM and another 38% from culturally diverse backgrounds over and above the URM percentage. • The exceptional track record of previous CIRM grants is a strong indicator of the potential for this new program to achieve its goals. • The recruitment program is strong and likely to result in a very diverse pool of trainees. • This application will provide opportunities to 10 traditionally underserved undergraduate students each year. By the description of the program goal, it is unclear if the program is solely intended for underrepresented students or whether the program will meet the CIRM goal of broad diversity that reflects California's population. The program is designed with components that likely will result in a meaningful outcome for the trainees. • Does not add time to graduating and includes exposure to Biotech and academic labs. Train scholars and health care advocacy with manufacturing processes. Do not address if someone drops from the program. • A proposal weakness is that the applicant did not connect the proposed program to the prior Bridges program.
No: 0	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 13	• This proposal will use a model recruitment approach that should serve as the gold standard for other programs. The goal is to identify and recruit 10 students from traditionally underrepresented communities to pursue stem-cell relevant education and careers. A secondary goal is to increase overall awareness of and interest in regenerative medical careers other than advanced academic degrees or medical school. • By focusing on careers that do not require advanced degrees, this program complements the existing Bridges program, which emphasizes preparing students for careers that require advanced degrees. • The recruitment plan is very detailed and descriptive providing confidence in the success of the program. • Clear pattern of URM groups (71%) to draw from and in the other programs plus outside perspective from consultants. • The mentoring plan is exceptionally strong and, again, a worthy model of best practices. It embeds Critical Race Theory into mentor training so that all research mentors will have deeper understanding of the structural/organizational features that underpin racism, bias, and inequities of opportunity in the US. • In parallel, the Scholars will receive training about mentorships during the weekly Scholars meeting and develop an Individual Development Plan (IDP). Scholars will also learn about critical race theory in a Diversity in Science workshop, as part of the weekly Scholars meeting. • There is a strong mentoring program that goes all the way through drawing in and using alumni from other active training programs form NIH and CIRM. There appears to a very strong mentoring training program as well. • The program ensures students encounter different career options by requiring both a biotech and an academic lab research experience. • There is an adequate evaluation plan for mentoring, as well as plans to freely disseminate the mentor training materials. • The mentoring program includes a yet-to-be released asynchronous online training or a synchronous training program. The contents of these training programs are appropriate. Trainees also receive mentee training in a variety of topics spread throughout the training program. • The training program is well designed to include the didactic coursework, research experiences, and development of soft skills. • All the requirements are well integrated into the Bachelor's in cell and molecular biology so that each component does double duty, counting toward the degree and COMPASS requirements. In this way, all the required program components are fully integrated and do not depend on students choosing options and making time to complete them. • Another strength is that these requirements, including the laboratory training, are well distributed across the three-year program to maximize impact. So, the students take the basic stem cell course before their first research experience, which will be in a biotech

	lab, then a more advanced lab course before their more intensive academic lab research internships. ● Soft skills are similarly distributed across the three years and emphasize on career preparation and skill development. Students prepare an eportfolio to document their accomplishments, especially their research experiences. ● The training program includes coursework, hands on training, laboratory internship and a capstone project. ● Strong breadth of class and lab work. ● A strength of the program is that students serve as peer mentors during their undergraduate years, helping them gain skills and a mindset that can help them continue to seek out mentoring opportunities as program alumni. ● The alumni tracking program includes both LinkedIn and requiring the trainees to follow the program via social media. They also plan to send out care-packages to alumni which will help to keep them engaged. ● Scholars will serve as peer mentors. ● Alumni tracking is mainly through LinkedIn or via emails from the program. They have shown that other similar programs have a high return rate from alumni, the proposed activities are adequate. ● Good tracking data and further good involvement from the alumni. ● The program as designed is not innovative. There is nothing that can be identified as specific for this program to stimulate trainee interest in stem cells and regenerative medicine. ● The training program components are pretty generic and it is not clear if there is any component that is specifically designed for this program. ● A missed opportunity is an internship at an external site such as a hospital setting or a biotech company. ● Development of an IDP does not come across as an important activity in the way the mentoring program is designed. ● There are no specific goals for this program and no baseline. Thus, it will be hard to gauge if success has been achieved. ● The proposed training plan would be strengthened by making overt connections that increase economy of scale and impact with the existing Bridges program. ● No attention is paid to trainee withdrawal from the program. How will attrition be addressed or mitigated?
No: 0	*none*
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 13	● The applicant institution has the necessary resources and infrastructure for this program. Combined with other such programs, this program will add to the opportunities for students who have not been exposed to such training previously. ● This program has all the necessary resources and infrastructure with a strong track record. ● The program is very well designed and details how to maximize the strengths of the institution, program, and past success. ● Given the multiple, highly effective CIRM-supported programs that this leadership team has managed over the past 12 years, the proposed program is about a sure a thing as you can get in higher education. The stellar track record, together with implementation and elaboration of effective practices already set in place at this institution, give confidence that this team will likely exceed all the goals it set out in the proposal. ● Two key personnel for the program have excellent credentials to lead this program. One has trained a number of students and has received awards for mentoring. The other brings expertise in the NIH Building Infrastructure Leading to Diversity (BUILD) grant to this project. ● All members of the team are professionally qualified for their positions, and each has a strong track record of success related to their roles. They have assembled a kind of "dream team" for getting this work done. ● Good qualifications across the board and very strong background for the Diversity and Outreach Co-ordinator. ● Collaborations with other partnering institutions are indicated. A long list of faculty mentors are available for this project. ● Two major programs at the applicant institution are the NIH BUILD and CIRM Bridges. The outcomes data from both programs are excellent and indicates the current program is also likely to succeed. ● Exceptional record – you can't do better than 100% graduates with 100% placement into biomedical careers, with more than 70% of alumni from URM communities.

	• Excellent track record. • Superb track record for graduating. • Unique way of keeping alumni engaged with the program. • IDP is listed as a major activity but not a lot of detail.
No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 13	• The needs of URM and first-generation college students are clearly front and center in planning this proposal, and an important goal of the institution. The inclusion/leveraging of the NIH BUILD effort to train mentors in critical race theory is a strength of the proposal and may be singularly effective moving the needle forward on equity, diversity, and inclusion. • In addition to the demonstrated track record, there are outside consultants who can provide a non-institutional view in the context that outside viewpoints are important to keep perspective on internal actions. • Diversity, Equity and Inclusion is included in the program design. • Part of a Diversity Consortium. They have the experience and background to address DEI. • The proposal would be strengthened by inclusion of students and/or alumni on the advisory committee. • An Advisory Committee is noted on page 23, but neither the proposal nor letters of support appear to describe the composition and duties of this committee.
No: 0	*none*

Application #	EDUC5-13817
Title (as written by the applicant)	COMPASS: Accelerating Stem Cell Research by Educating and Empowering New Stem Cell Researchers
Public Abstract (as written by the applicant)	The COMPASS Program is designed to identify new stem cell researchers and promote the very best stem cell science by increasing diversity, equity, and inclusion in the field. It is now well established that early exposure to lab-based research is the best method to recruit and retain students interested in a career in science. Several programs at our institution sponsored by the NIH, HHMI, and the Beckman Foundation have tested and proved that bringing undergraduates into labs for direct research experience has led to dramatically improved retention rates for the students in life science-based majors. This is particularly true for under-served populations with fewer resources or community support. We will extend our proven recruitment and education programs to the new COMPASS program specifically to promote stem cell research and recruit a new cadre of at least seven new freshman and community college transfer students annually and support each of them for up to three years. The program will nurture students to become critical and creative scientists that can professionally present their work; develop a broad network of relationships with leaders in the field; and prepare them for career opportunities translating discoveries from the bench to the bedside. Trainees will be able to choose from a broad menu of stem cell coursework to create a strong foundation for the pursuit of science and the critical analysis of the social, ethical, legal, and economic implications of stem cell research and regenerative medicine. The coursework focuses on building scientific knowledge, examining the hurdles for application of discovery, developing the tools to engage the policies that govern the field, addressing the necessary and important regulatory requirements, and developing tools to effectively communicate cutting-edge science to the public. Each trainee will be matched with an elite stem cell scientist (CIRM and/or NIH awardees) that will provide direct mentoring in the lab. COMPASS Scholars will benefit from the promotion of diversity and the removal of barriers to entry into stem cell research, and their contributions to the lab will enhance the quality and output of the research. In turn, trainees will use the tools developed in COMPASS to engage with patients and participate in community outreach in order to increase awareness of discoveries and potential treatments. Such outreach and education will serve to normalize the implementation of stem cell therapeutics. Our COMPASS program will leverage existing resources from our world-renowned stem cell researchers, academic departments, and successful outreach and recruitment programs to create the premier training environment for undergraduate researchers. The support provided by the COMPASS grant to each trainee will promote retention by removing any financial barriers and providing ANY deserving student a chance to thrive as a stem cell researcher.
Statement of Benefit to California (as written by the applicant)	The COMPASS Program will provide scholars with opportunities to study the latest advances in stem cell biology, development and disease modeling, present their own work in a setting in which they can obtain constructive criticism, interact with their peers and training faculty in formal and informal forums, and meet leaders in the field. Our goal is to produce scientists at the undergraduate and transfer student levels so they are prepared to be fully versed in their primary scientific discipline and fluent in the whole panoply of issues that arise in the study of stem cell biology. We expect our scholars to become leaders in the field of stem cell biology that are well-versed in stem cell ethics and entrepreneurship, and communicate effectively about their work. As a result, we have every expectation that our scholars will be able to fully translate stem cell discovery into stem cell therapy. Data suggests that the majority of our scholars stay in California to continue their careers. As a result, this program will contribute to the enrichment of the scientific community in California, and create a cadre of scientists well-versed in issues particular to stem cell biology such as disease modeling, ethical use of stem cells, and clinical translation of stem cell technology. As California becomes a hub for stem cell biology, the COMPASS Program will serve to promote the latest technologies and advances to create viable clinical therapies while doing so in an equitable and ethical manner.

Funds Requested	$2,910,000
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	3
Highest	97
Lowest	85
Count	13
(85-100): Exceptional merit and warrants funding, if funds are available	13
(1-84): Not recommended for funding	0

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 11	• The institution is well-resourced and the program is very well conceived. This program will reach talented students from underserved communities, including transfer students who often have less access to quality research experiences. The training plan combines high quality research training with exposure to stem cell/regenerative medicine as a career option. • This is a well designed program and very inclusive of a diverse population. • Yes, excellent program. • Outstanding program, mentors, and plans for evaluating mentors. • Well-defined courses and structure; led by an impressive faculty. • They are recruiting students from community college, and admission is flexible on GPA and other requirements. • This is a three to four year program.
No: 2	• My main concern is whether the selection process will be unintentionally exclusive to underserved groups. • The recruitment strategy includes assessment of scores and is therefore not useful for enrolling underserved students.
GWG Votes	**Is the program well planned and designed?**

Yes:
13
	• The outreach and recruitment strategy is well conceived; coordinating the admissions office to identify potential candidates for the program is a novel way to recruit for such a program.
	• The second admissions track - for transfer students - reaches another important population.
	• However, the student application described in the proposal is potentially problematic.
	  ◦ The application process is intense and could be a barrier to students with lower self-efficacy.
	  ◦ The application includes three GPA questions, a transcript requirement, a request for previous awards and research experience, and two letters of

	recommendation. This reads like a program seeking super talented, experienced students. ● It may be hard for some promising students to believe the program is interested in recruiting them. ● The program should strongly consider employing strategies to mitigate these concerns, such as: (1) holding application workshops to help students understand the process, (2) inviting applicants to give context for their past performance and share successes they think are relevant, and (3) explicit training in holistic admissions for the selection committee. ● Overall, yes, but I have concerns about the holistic approach used to recruit students. I suggest the applicant avoid asking about GPA and honors, and focus more on students' commitment to science. ● The mentor recruitment plan is intentional and well-conceived. Notable strengths include: ● Requiring faculty mentors have a track record of commitment and success in mentoring diverse students; ● Selecting Teaching Assistants (TAs) with a demonstrated interest in mentorship; ● Formal mentorship training for TAs; and ● Explicit inclusion of an option for COMPASS trainees to switch labs. ● The plan to supervise mentor / mentee matching is crucial to setting mentees up for success. ● Requiring mentors to pre-identify a 'bench mentor' for the COMPASS trainee will ensure mentees get access to effective hands-on training. ● However, the plan for training faculty on effective mentorship has weaknesses. Even experienced mentors or those who have received formal training require further development. All COMPASS mentors should have access to resources and support to help them grow through their participation in the program. ● The academic curriculum and other training activities outlined in the program will provide a good foundational knowledge base. ● The plan to provide skills development and scientific identity training to trainees is excellent. Exposing trainees to research early positions them well to optimize their research experience. ● The summer lecture series connecting science to social justice issues is a strong addition to the patient outreach/community engagement programming that will help students connect their research to human health. ● The ongoing Diversity in Science series will provide much needed psychosocial support to the trainees. ● Post-COMPASS tracking plans are a relative weakness; these need development. ● Very well designed and planned.
No: 0	*none*
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 13	● This is clearly a well-resourced institution, and the program will be led by an exceptionally well qualified team. ● The institution has a track record of successful training programs. Many scholars on campus are engaged in research relevant to the goals of the COMPASS program. ● This proposal is very practical and achievable. ● Yes; this is a great institution, and the program has an outstanding group of mentors. ● Overall, yes, but going forward the applicant should reconsider the trainee application process. They should not be using a GPA criteria or cut-off.
No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 12	● The diverse perspectives on the leadership team are a strength. ● Requiring all program leaders and advisors to attend bias training ensures that the planning and implementation of the program will include important DEI principles. ● Overall, yes, but the description of the holistic review process is not convincing. While the program will not ask for standardized test information, they do plan to ask for a lot of quantitative data that are very hard to ignore when one is reviewing large numbers of applications with limited time. It is clear the program intends to consider these data in the context of obstacles the student applicants have faced, but there is no question on the application that explicitly asks about this. ● Yes; but the application process may be a barrier to diversity. ● Yes. Recruitment within community collage programs is a major strength.

No: 1	• There are serious concerns in the student application - why ask for GPA if it isn't going to be used? The application should be revised to incorporate best practices in recruiting untapped talent – the existing document is more traditional and exclusionary for students with lower grades and less experience. The proposal misses its potential to really do something great in terms of broadening participation - CIRM should work with the Program Director to improve this process!

Application #	EDUC5-13744
Title (as written by the applicant)	Training and mentorship program in stem cell biology and engineering: A COMPASS for the future
Public Abstract (as written by the applicant)	We propose a robust, integrated program for training and mentorship of undergraduate scholars engaged in stem cell biology and engineering, with the goal of recruiting, mentoring and preparing the next generation of diverse leaders in regenerative medicine. Our institution has a distinguished track record in engaging undergraduates in meaningful research activities, and this COMPASS program will build on these strengths, with a dedicated focus on recruitment and retention of a diverse cohort of undergraduate scholars. Our program will support 25 trainees in two-year appointments (two academic years and two summers) during their junior and senior years.
Statement of Benefit to California (as written by the applicant)	The program will train tomorrow's leaders in the fields of stem cell biology, gene therapy and regenerative medicine. COMPASS scholars recruited from diverse backgrounds will receive state of the art training in these exciting disciplines, which have the potential to address unmet medical needs in the state of California. Current efforts are underway to used stem cells to treat neurodegenerative diseases such as Alzheimer's Disease, Retinitis Pigmentosa, and Age-related Macular Degeneration.
Funds Requested	$2,746,000
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: 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	2
Highest	95
Lowest	88
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	14
(1-84): Not recommended for funding	0

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 13	• The program is designed according to research on mentorship and development of students from diverse backgrounds, which increases its likelihood of impact and student success.

	• The program is a coherent experience that integrates foundational coursework, research training, multiple mentorship opportunities, career exploration, and professional development on writing and speaking.
	• The coursework and research experiences are well aligned with CIRM's mission.
	• The patient advocacy activities will demonstrate the value of the research, which is likely to foster trainees' commitment.
	• The program will make use of recruitment and selection strategies likely to attract a diversity of trainees. The institution will introduce prospective trainees to the program, stem cell research, and biomedical research in general from the first semester that students are on campus.
	• Other highlights of the recruitment strategy include
	  ◦ involvement of advanced scholars,
	  ◦ integration of recruitment into new versions of required seminar courses (for which students earn credit),
	  ◦ recruitment through administrative units focused on nurturing and retaining diverse STEM undergraduates,
	  ◦ outreach to student groups and clubs that represent under-represented pools of untapped talent.
	• The recruitment plan will be evaluated and refined over time. The program team will seek input from experts, mentors & advanced scholars, apply findings from research, and evaluate DEI-oriented program outcomes.
	• Overall, yes, but the proposal is somewhat limited by lack of opportunities for research in external, industry labs.
	• The applicant has a strong connection with the Hispanic community. They are looking to recruit diverse, motivated and high-potential undergrads, and they are incorporating this COMPASS program with their CIRM Bridges program.
	• Yes, but I note that they state 'under-represented groups' but do not mention specifics groups such as low income, under-resourced, women, people with disabilities, and/or under-represented minorities.

No: 0	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 13	• Program representatives will participate in campus orientation programs to introduce new students to the possibilities of participation in COMPASS, and biomedical research generally. • The program will make use of holistic evaluation to select applicants, avoiding reliance on grades and test scores. The criteria for making these evaluations are clear and thoughtful (e.g., interest, persistence, resilience, curiosity, potential for benefit). • It is not clear if the program will make use of structures that have been shown to increase equity and inclusion during recruitment, selection, and hiring. For instance, it is not clear how students will be supported in assembling competitive applications if they don't have access to mentors or family with experience. It is not clear if mentors will be expected to use structured interviews to ensure equity in the interview process. • The results from prior or similar training programs indicate the effectiveness of smaller course sizes, active learning, and increased structure. It is not clear whether or how these design elements will be incorporated in the program's required coursework. • The program is designed based on research on effective and inclusive mentoring. Highlights include making use of a multiple mentoring model, requiring mentors to participate in mentoring professional development, engaging mentors who are diverse in their identities and backgrounds, and preparing mentors to work effectively and inclusively with scholars. • The well-reasoned and comprehensive mentoring professional development plan was particularly noteworthy, along with the carefully planned checkpoints and milestones that will serve as touch points for mentoring interactions. • The program will provide two mentors to each trainee - an "Internship Mentor" (one) as well as additional "Supporting Mentors" (two). A team of "Supporting Mentors" from diverse backgrounds will serve as role models for the COMPASS trainees. • The program will afford multiple, diverse opportunities for trainees to develop their communication skills (e.g., quarterly meetings). • The program will facilitate trainee exploration of diverse career paths in stem cell biology, gene therapy, and regenerative medicine in multiple ways (e.g., career fairs, discussions with alumnae). • Required coursework will address concepts in stem cell biology, gene therapy, and regenerative medicine along with responsible conduct of research, sociocultural issues,

	legal and regulatory issues, FAIR data sharing, "big data," and the like. These topics have been thoughtfully chosen to be both comprehensive and realistic. ● The program will partner with Americans for Cures to provide appropriate patient engagement activities. This partnership will help ensure the program has access to sufficient knowledge and expertise to help trainees learn about patient advocacy, understand the role of stem cells in patient treatment and care, and learn about clinical trials from multiple perspectives (research, clinical, patient). ● The time commitments, timelines, and expectations are clear for all aspects of the program and each activity within the program. ● The community outreach and engagement activities are well thought out. Highlights include providing a diversity of options, partnering trainees with experienced mentors, the recognition that not all community groups are the same, the allocation of time to thoughtfully planning these activities, the feasibility of the workload and time involved, and the plans for trainees to share and assess their experiences. ● The program will involve an experienced evaluator and the evaluation plan addresses multiple, important facets of the program operations and effectiveness and of the research training and professional development experiences of trainees. ● Program leadership aspire to publish outcomes of the program evaluation, which has the potential to support transfer of lessons learned from the program. Program leadership has experience publishing educational studies, which engenders confidence that they will be able to achieve this goal. ● Plans are in place to track alumni through LinkedIn and the program alumni list that includes tracking functionality. Furthermore, alumni progress and success for the COMPASS program will be compared to metrics of similar programs. ● The proposal includes intentional synergies with CIRM Bridges graduate/postdoctoral program. ● Yes, but I wonder if 25 trainees may be too many. Would it be better to have fewer students, with more focused resources and effort per trainee? ● The mentoring team will have multiple training sessions and will be reevaluated every 12 months. ● I like that one of the four criteria for evaluating student applicants is the potential impact COMPASS may have on their professionalism. They do not set criteria around GPA, nor income.
No: 0	*none*
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 13	● The proposal ensures that sufficient resources and expertise are available to design, implement, evaluate, and refine all aspects of the program. ● This program can provide strong stem cell related courses and strong stem cell research lab experiences. ● The Program Director is experienced leading training programs, mentoring a diversity of students, and directed a stem cell related research program, all of which make the program director highly equipped to lead the proposed program. ● The Program Director will be advised by an Oversight Committee composed of molecular biologists with basic stem cell research interests, and bioengineers. ● The qualifications of the rest of the leadership team and research mentors are ideally suited to carry out, evaluate, and refine the program. The team and its partners include experts in effective and inclusive teaching, DEI, scholarship of teaching and learning, mentorship, stem cell biology and regenerative medicine, community outreach, and patient advocacy. ● The program does not appear to have outcomes reported for prior efforts, although the program seems well positioned to track alumnae and evaluate program outcomes moving forward. ● The program leadership and mentors have track records of mentoring early career researchers. The diversity and career pursuits of their mentees are more difficult to discern. ● The applicant has put in place a strong connection between their COMPASS proposal and their ongoing CIRM Bridges program. ● They have a diverse and active population although they do not mention some of the specifics around how they will engage with students (they list outreach and organizations but are not specific). ● This is a practical and achievable program. ● Weakness: Not much information about where are the trainees go after these programs.
No:	*none*

0	
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 13	• This proposed COMPASS program will be guided by a DEI Advisory Committee to reach out to diverse groups, and provide high quality mentoring to make sure trainees are successful in attaining their goals. • The program is designed based on research on DEI, including establishing structures to promote equity and inclusion and employing a multiple mentorship model. • The program will have a dedicated DEI advisory committee who will provide feedback to program leadership on all aspects of the program. • An especially impressive element of the proposed program is that it sets expectations that all personnel will contribute to its DEI mission, thereby distributing the important work of advancing DEI goals. • The applicant has an innovative recruitment strategy, implemented via first and second year seminars. • The proposal includes a strong multi-level mentoring plan with role models.
No: 0	*none*

Application #	EDUC5-13636
Title (as written by the applicant)	Research Training and Mentorship Program to Inspire Diverse Undergraduates toward Regenerative Medicine Careers (RAMP)
Public Abstract (as written by the applicant)	RAMP will train 18 students in the fundamentals of stem cell research: this program will include three cohorts of six trainees each. In the required stem cell science courses, undergraduate trainees will gain the lab skills required to work on guided research projects in host labs. RAMP builds on our well-established stem-cell infrastructure and its rigorous approach to training. All research labs are in new or renovated buildings and are fully equipped with modern instruments. Our stem cell faculty's labs are extramurally funded, most by NIH or NSF. We aim to make this research area more accessible and inclusive by focusing on the acquisition of tacit knowledge. For undergraduates with minimal experience in a lab, the difficulty of acquiring such knowledge can be especially acute. Thus, rather than leave trainees to wonder about science scholarship's implicit expectations, RAMP's mentorship system prompts them to actively engage those parts of the learning process that remain confusing or impede comprehension. This system has been developed to catalyze tacit knowledge acquisition—beyond asking students to identify skills that are difficult to articulate or formalize, RAMP also provides trainees with ample opportunities to practice their skills (in the lab, through outreach, and in their writing). In-lab mentors help trainees on-on-one and mentor-liaisons connect them to RAMP's leadership team. Trainees are also required to develop rhetorical skills, an effort in which they will be supported by the program's four science communications courses. This sequence includes public science & ethics, a science policy course, scholarly communications, and a capstone course. The latter is a culmination, not just of the communications sequence, but also of their time in RAMP. Trainees will revisit and revise their work from their prior courses and will write a reflective text that explores the relations among the items they include in their portfolios. These items will include lab notes, op-eds, policy pitches, presentations, and a scholarly paper. By working in this range of genres, trainees will refine their understandings of the broader impacts of their own scientific work, which will be a boon to RAMP's outreach efforts. By connecting scientific practices to real-world policy issues, trainees will have a better sense of the contexts relevant to the patients and healthcare workers with whom they interact. Our trainees will be recruited from majors relevant to stem cell research. To integrate RAMP coursework with the graduation requirements of a range of degree programs, trainees from different majors will be allowed to use the foundational courses either as special electives or independent study credits towards their degree requirements. RAMP grafts fundamental science education onto a skill-acquisition framework that enables students to learn methods that, though often ambiguous, are also among the most fundamental practices of scientific scholarship.
Statement of Benefit to California (as written by the applicant)	RAMP belongs to a university that is situated in a medically-underserved region of California. And while this region also lags behind most of California in terms of economic opportunities, it is also demographically diverse. Given the local needs, our university strives to put special value on those student accomplishments that provide value for communities. RAMP has been designed with this spirit in mind. That is, as long as students' home communities continue to face issues like medical hardship, student success will remain incomplete (as will the success of university that educated them). With this dynamic in mind, CIRM's COMPASS grant is a rare opportunity to align the interests of individual students with those of their communities. In fact, RAMP highlights the responsibilities of our university and our state. The citizens of our area face medical hardships—both as a result of an impoverished healthcare infrastructure and from diseases that are currently difficult to treat. It is our responsibility to use programs like COMPASS to attack the two sides of this problem. RAMP is well situated to do that: our university's demographics give us a strong pool of diverse applicants to draw from and our stem-cell research program is on the cutting edge of medical research. Moreover, RAMP undergraduates who graduate into healthcare, academic, or policy careers will contribute to the diversification of those industries. Of those three, healthcare is the most obvious industry that would have meaningful impact on our region. If our university develops healthcare treatments and graduates more doctors who stay local, that's a success. But if a substantial portion of those doctors already call this

	area home, that's another kind of success. Patients often lack culturally responsive healthcare. Although that phenomenon is not always easy to quantify or measure, it is yet another barrier to an already underserved population. It will take years, if not decades for RAMP's capacity to affect this problem to be fully actualized. However, there are smaller ways that we contribute to building the pathways towards that future: e.g., our university's program that supports medical school applicants has promised to include any RAMP students interested in that path; our patient outreach events put students out in those communities now, not in some hoped for future. RAMP will thus have meaningful effects on its California region now and in the future. And while we develop this program's interventions, we will actively seek the community's input and feedback: for instance, in the third year of the program, we plan a public workshop to assess RAMP effectiveness. This workshop will enable us to strategize how to continue to develop, and expand on, this type of work going forward. It will also be an occasion for RAMP to offer a public account of its work, which is especially important for those local communities that have a stake in it.
Funds Requested	$2,910,000
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: 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	89
Median	90
Standard Deviation	4
Highest	95
Lowest	80
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	13
(1-84): Not recommended for funding	1

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 14	• The program will prepare the students well for whatever path they take after graduation with strong course work in stem cells, with varied career options (academic, industry, policy) and strong science communication skills. • The program called 'Research Training and Mentorship Program (RAMP) is three years long and will provide students with plenty of exposure to a variety of training methods. • This training program will impact trainees from a diverse population of the applicant institution, in particular, those individuals who have little to no access to resources other peers may have in better funded high school programs. • Utilizing their existing grants to pull in the potential mentors and students. • Application includes an essay component for applicants to share a scientific experience that helped or hindered them.

	• Will be teaching the students various different ways to interpret different genres and communicate (emails, visual, protocols). • Well-structured and well-defined program. • Have all the required components to be impactful. • For the 'trainee selection' the requirements are that students must have declared a major in a field relevant to stem-cell research and that students have reached at least the beginning of the second year of university. It is possible that underrepresented students will be recruited into the program but is not clearly stated. One had to assume that the steering committee in charge of student selections make informed decisions based on a student essay.
No: 0	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 14	• Well-planned in all aspects. • They will take advantage of a pre-existing program they are running to help with the self-assessment. Reflective writing is a powerful tool to help students evaluate where they are and what their goals are. The alternative approach to identifying students is based on interviews. • 18 students - good course load mixed with summer labs. Tactic knowledge based courses which are teaching public policy, social ethics of STEM, etc. • A focus on writing/communication may be a strength. • Staggered student cohorts that in the second year they give back to the first cohort. • Good training program but weak on the mentor training. • There is a weakness in the grant that there is no mention of how the mentors are being trained and selected. Will these mentors be measured in their effectiveness and impact, training on DEI mentoring and being open to further learning and expansion? • The main concern is the lack of clarity regarding how mentors will be supported in developing their mentoring skills. • This program does not have a plan to train faculty mentors in effective mentorship skills.
No: 0	*none*
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 14	• It is practical and achievable with an early start in sophomore year and some engagement with mentors lab from the beginning all the way through to Capstone. • Multifaceted aspect for the students - social policy, industry, or academia. • Mentors are 20 faculty, 15 internal, and 5 more from partnering institutions. The group is diverse. Mentors liaisons are also contemplated to interact with the in-lab mentors and mentorship facilitators. • Mentors, leadership team and steering committee will be trained in best DEI practices. The question is how the mentors from the partnering institutions will be trained. • On the engagement and community outreach, some of these activities seem 'passive' for the trainee, i.e., attending events and seminar series rather than active participation.
No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 14	• Well-described with 3 components: programmatic training developed with DEI office, solicitation for advice from local community and steering committee and public discussion and analysis of this and other 2 CIRM education programs in year 3. • Has a strong DEI plan that utilizes the current grants. • The DEI strategies are well-described. The involvement of the community in their DEI efforts is commendable. • Application process should be reevaluated - emphasizes traditional metrics; needs to include mentor training.
No: 0	*none*

Application #	EDUC5-13679
Title (as written by the applicant)	Inclusive Pathways for a Stem Cell Scholar (iPSCS) Undergraduate Training Program
Public Abstract (as written by the applicant)	The COMPASS-iSPCS program (Creating Opportunities Through Mentorship and Partnership Across Stem Cell Science - Inclusive Pathways for Stem Cell Scholars Undergraduate Training Program) will capitalize on our university's distinguished record in training students for success in STEM fields; our well-established network of university and industry partners; our location in a well-known bio-innovation hub and our proven record in training a diverse cadre of students for success in today's changing biomedical workplace. The program is designed to increase diversity in the California's regenerative medicine workforce by increasing the participation of students from disadvantaged backgrounds and to prepare all participants for success in an increasingly diverse workplace. Over a five-year period, the program will provide stem cell training for 25 trainees who are open to and most interested in alternative career paths in regenerative medicine. Trainees will be appointed a two-year CIRM fellowship during their junior and senior years. They will be immersed in student-centered curricula that are augmented by inclusive mentoring experiences, course-based project experiences and a hands-on research internship. It is expected that the trainees will emerge from the program with deep content knowledge, and an appreciation for diversity, equity, inclusion and justice, which aligns with our core values of community, equity, resilience of the mind, and courage. Long-term, the program will contribute to the diversification of the research profession and the scientific workforce.
Statement of Benefit to California (as written by the applicant)	The program will benefit the State of California by developing a comprehensive program focused on stem cell and regenerative medicine training to prepare a broadly inclusive, well-trained science and engineering workforce. It focuses on developing interdisciplinary and diverse career paths through instruction in principles of molecular biology, cell and developmental biology, data science, and supplemental training in entrepreneurship and leadership while addressing the ethics of scientific and professional conduct. The program is expected to increase the number and diversity of well-educated scholars who will excel in stem cell biology, regenerative medicine, and allied fields thereby mentoring the next generation of leaders with the knowledge to master future challenges in translational work in regenerative biomedical science and medicine.
Funds Requested	$2,894,500
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	89
Median	90
Standard Deviation	2
Highest	92
Lowest	85
Count	13
(85-100): Exceptional merit and warrants funding, if funds are available	13
(1-84): Not recommended for funding	0

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 12	• This is an outstanding program that will provide students the opportunity to further the needs of CA and the CIRM mission. • Strong program with good training plan that will have a good impact on the students. • The program will employ strategies that will attract and select a diversity of students from underserved and disadvantaged backgrounds. • Through a combination of science and professional development coursework and activities, multiple forms of research experience, and community and patient engagement activities, the program has a strong likelihood of having meaningful, positive impacts on trainees' career pursuits. • The proposed recruitment and mentoring practices are strong and evidenced by research on DEI and mentorship. The most novel and potentially impactful practice is the use of small area analysis to identify students' strengths and areas for improvement. If this proves effective, it would likely be of interest to other programs. • Although the program will offer a variety of options for scholars to develop their patient and community engagement knowledge and skills, including bedside manners training, stem cell awareness day, vaccination events, and walks, the connection between these activities and CIRM's mission is a bit loose. • The program would benefit from engaging scholars in thinking more deeply about the connection between stem cell research and patient needs, care, and treatment, and then applying this knowledge or exploring this relationship through the community engagement and volunteer activities.
No: 0	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 12	• Outstanding plan in place to train students that may not have thought of regenerative medicine as a career. • Will recruit undergraduates who are considering alternatives to traditional academic and medical school career paths. • The program will recruit scholars by advertising in diverse venues and directly engaging with transfer students during their orientation. The program will also engage with potential applicants in online open house sessions, which will help to maximize inclusion in recruitment. • The selection process will attend to applicant strengths, interests, goals, determination/perseverance, and other factors that are important for success in research. The program will not rely on test scores, rank, or pedigree in making selections. • The program will make use of a novel approach, small area analysis, to identify students' strengths and areas for improvement. If this proves effective, it would likely be of interest to other programs. • Thirteen faculty laboratories from the Department of Biology and faculty from other neighboring institutions will serve as host laboratories or as partnering institutions (total of 18 labs). • Monthly held virtual open house events will allow participation of a larger non-mobile population. • Holistic application criteria "My flower" form together with academic record and ongoing student assessment. • The program will draw from a pool of experienced, trained mentors carrying out relevant research. Mentors will participate in additional development activities to advance their culturally aware mentoring skills. • The program will engage scholars in mentoring up professional development, which will empower scholars to make the most of their mentoring relationships. • The program will involve a diversity of mentors, including near peers and alums who have pursued diverse career paths and an individual mentoring team. Scholars will meet monthly, which will help build a sense of community in the cohort. • There are plans in place to evaluate multiple aspects of the program and make improvements over time. The evaluation plans will be informed by guidance and advice from an education scholar.

	• Mentors will be encouraged to assess their cultural awareness mentoring skills through a series of online and in-person activities but there is no formal mandatory training. • Adoption of the mentoring practice of an existing inclusivity program that establishes regularly scheduled peer mentor training to improve the mentor-mentee relationships and learning experiences is a strength. • The program will engage scholars in both intramural and extramural research in stem cell biology and related fields. Intramural research will enable scholars to develop their knowledge, skills, abilities, and interests with strong, experienced mentors. Extramural research will enable scholars to expand their research horizons and networks at research-intensive universities and in industry. • The program includes a variety of activities and resources that will enable scholars to develop as professionals, including presenting to scientific and general audiences, exploring diverse career paths, interviewing successfully, building their resumes, and attending regional conferences. • The program includes coursework and research experiences that will support scholars in advancing in their expertise related to stem cell biology, regenerative medicine, and related fields. • A plan is in place for annually surveying scholars on their employment and professional achievements. This plan includes gathering information from alumni about their continued participation, which will help inform how the program can tap its alumni pool for inspiration and support for future cohorts. • CIRM Bridges alumni panels will be hosted where alumni will discuss medically related and industry careers. • Establishment of diversity-rich alumni advisory committee that consists of six CIRM Bridges alumni (and later include two COMPASS alumni) working in different professional fields to provide their perspectives from communities that are systematically underrepresented in STEM. • The recruitment plan is generic. Recruitment will occur via outreach and is targeted to biology juniors, new transfer students from California community colleges, first generation immigrants and applicants encountering certain immigration hardships, including the Deferred Action for Childhood Arrivals (DACA) or refugee immigrants. • The program will collect data to assess the quality of students' research experiences using the Classroom Undergraduate Research Experience (CURE) and Survey of Undergraduate Research Experiences (SURE) surveys. Although the plan to collect and use data to improve the program and test its effectiveness is a strength, there is concern about shortcomings in these surveys. Using measures that have robust validity and reliability evidence would be better (e.g., the Undergraduate Research Student Self-Assessment, or URSSA). • The program will make use of a variety of tools to plan and support scholars' development throughout their experience, including IDPs, skills assessments, goal articulation, and mentoring agreements. The strength of using these tools is that they will provide structure to ensure scholars stay on track and have individualized experiences. The potential drawback of using so many tools and approaches is that they become overwhelming and some may be more useful especially at certain timepoints. • Opportunity of taking part in a science coding immersion experience is a strength but timing is not clear. • Opportunities for patient interaction and outreach are provided but not formalized. • There is some concern that there is less than optimal emphasis on stem cells/regenerative medicine.
No: 0	*none*
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 12	• The proposed program will provide stem cell specific training for students from diverse and disadvantaged backgrounds, which will complement the existing master's program in stem cell science. • The program aims to address issues identified from a recent senior exit survey - specifically that students don't have sufficient access to needed advising and capstone experiences. • The program will capitalize on a suite of existing career counseling resources, partnerships with other universities and industry, and local experts. • A lot of the mentoring activities will leverage what was developed for the CIRM Bridges program. • Excellent career counseling. Will expose students to jobs in industry and prepare them for these jobs. CIRM Bridges alumni will participate in this program.

	• The proposed program will leverage prior successes, including integrating relevant coursework and tapping alums. • Program is practical and achievable. • The program director is well qualified to manage and lead the program; she is a stem cell expert and has a strong record of program leadership, curriculum development, and mentorship. • The other program leadership includes experts in mentorship, diversity, education programming, community college and transfer student experiences, cell biology techniques, and research training. • The program has partnerships and resources in place to carry out the program as proposed. Local resources and relationships are well leveraged to benefit students and support their professional growth and success. • Highly experienced Program Director who is currently the CIRM Bridges Science Master's Program Director who administers all program activities, including the training component. Is directly involved in teaching the CIRM curricula. • Outstanding track record with a prior and current Bridges program. • The applicant institution has a long and strong track record of success with their prior CIRM-funded initiatives, which gives confidence that the proposed initiative will be successful and that the program leadership is well positioned to track outcomes of the current program. • The previous CIRM Bridges program was a master program with 97% of the survey participants reporting extreme satisfaction. • The track record would be strengthened with statistics regarding the diversity of identities of program participants (gender, race/ethnicity, ability status, first generation college status, socioeconomic status, etc.). • The track record section is very scant and generic. Previous Bridges trainees will be involved in peer mentoring and feedback is limited to questionnaires. There is no other tracking or analyses of feedback and no metrics are provided that would state when the program is deemed successful. • Diversity and Outreach Coordinator has no formal or specific training on outreach and diversity. • Program team has no demonstrated research experience in stem cell biology apart for a stem cell course taught by the program director.
No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 12	• The applicant institution provides a robust environment for promoting diversity, equity, and inclusion within the proposed program. The student population is diverse in many dimensions and resources and initiatives are in place to advance equity and inclusion in a way that maximizes and celebrates diversity. • The program leadership is diverse and has extensive experience thinking about and working toward DEI. • Good DEI plan in place through most aspects of the program. • Good DEI plan. • Generic university wide diversity and inclusion plan.
No: 0	*none*

Application #	EDUC5-13733
Title (as written by the applicant)	A COMPASS to guide the growth of a diverse regenerative medicine workforce that represents California and benefits the world
Public Abstract (as written by the applicant)	We are in a regenerative medicine revolution - cell and gene therapies are curing previously incurable diseases. Enabling the universal implementation of regenerative medicines requires 1) an interdisciplinary talent pipeline that doesn't exist, and 2) diverse perspectives that make up our great state, to ensure everyone benefits from regenerative medicine treatments. The goal of our COMPASS program is to contribute to both requirements by developing a novel interdisciplinary undergraduate training program that supports and serves students representing the diversity of California. Our program will provide novel coursework, paid summer internships, and a capstone research project with holistic mentoring and opportunities for patient engagement throughout. We will use program funds to recruit and support community college students and internal undergraduate students from diverse and underrepresented backgrounds. Students will join our interdisciplinary program from majors including biomedical engineering, biology, biochemistry, or related fields, and will participate as COMPASS Scholars during their junior and senior years. During the junior year, Scholars will take two lecture/lab courses in cell therapy that will prepare them for their internships. The lecture portions of the courses will focus on engineered immune cells to treat cancer, principles of cell manufacturing, and emerging cell therapies for neural, cardiovascular, and metabolic diseases. In the laboratory portions, students will learn to isolate and culture cells, grow cells at large scale, purify cells, and assess cell quality. In addition to these technical courses, all Scholars will complete a general education course on the impact of race, gender, and community on science & technology to develop their understanding of healthcare disparities, while also participating in patient engagement and outreach activities. After their junior year, Scholars will embark on a paid summer internship or summer-fall 'co-op' with one of our industry partners, working at the forefront of translating regenerative medicines into clinical practice. Our biotech industry partners are using immune cells for cancer, engineered stem cells for blood-based genetic diseases, cell therapies for cardiovascular, neural, and metabolic diseases, gene therapies for neural diseases, and more. We also have industry partners building the instruments for cell processing/evaluation. In their senior year, Scholars will return to campus to complete major coursework and a capstone project in the research lab of their faculty mentor. The capstone project will provide an opportunity to further advance Scholars' lab skills and their ability to design, execute, and analyze a research study. The combination of novel coursework, cutting edge industry internships, undergraduate research, and holistic mentoring will provide Scholars with the skills and abilities needed for a successful career in regenerative medicine.
Statement of Benefit to California (as written by the applicant)	Our COMPASS Scholars Program will provide numerous benefits to the state of California and its citizens. First, approximately 25 Scholars, who may not have otherwise had the resources or "cultural capital" to attend or thrive at our university, will receive the finances and support necessary to enroll in our program, where they will complete courses, industry internships, and research projects with the support of a comprehensive mentoring program that will launch them into successful careers in regenerative medicine. This will increase opportunities for talented students from our state who come from underrepresented populations, and/or who have historically faced barriers to inclusion. Second, hundreds of other students will benefit from the recruitment procedures, outreach, mentoring processes, coursework, and/or industry partnerships that we develop for the COMPASS Scholars Program, as we intend to broadly implement our best practices where appropriate. If other institutions choose to implement our best practices, based on the journal articles that we publish on those practices, then

	the beneficiaries of our approach could extend into the thousands of students each year. Third, biotech companies will see their products advance more efficiently toward commercial implementation through the efforts of uniquely trained COMPASS Scholars and their classmates, as our graduates leverage our novel training program to make immediate impacts in their professional careers. These companies will also benefit from having more diverse perspectives and backgrounds within their workforce. Fourth, all Californians will benefit from the availability of regenerative medicines that our COMPASS Scholars will help deliver sooner and more universally than they otherwise would be.
Funds Requested	$2,887,939
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	88
Median	90
Standard Deviation	3
Highest	95
Lowest	85
Count	13
(85-100): Exceptional merit and warrants funding, if funds are available	13
(1-84): Not recommended for funding	0

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 13	• The program expects to recruit students with career goals to work at the technician level in companies that develop and produce stem cell, gene therapy, and regenerative medicine tools and reagents. Thus, the proposal targets a non-academic job sector, which is a strength in the CIRM portfolio. • Yes. The program will recruit students from the institution, community colleges, and high schools. This will help to reach populations of underserved and disadvantaged populations, and will likely have a positive impact on the trainees' careers in the field. • Probably. The interview and selection plan are robust and will intentionally seek to admit students who are highly capable, but with academic metrics that do not reveal that talent. Provided the program can obtain a sufficiently large applicant pool, they can probably graduate students who are broadly representative of California's demographic diversity.

	• Yes, the program is likely to have an impact on underrepresented students due to well-conceived recruitment efforts. The program team will monitor this diversity to ensure that their numbers are higher than the percentage of these students on their campus. • The program has a curriculum and internship component with industry that will help to integrate the trainees in the field. This may increase the likelihood that trainees will embrace the CIRM's mission. • Yes, the proposed program is well designed and has developed new curriculum to enhance the student's training. They have also identified strong mentors in the biotechnology sector. This program should have a positive impact on the trainees in their training in regenerative medicine, stem cell science, gene therapy and/or related fields. • Yes. The proposed training activities appear adequate, but the program would be strengthened by earlier, more direct experiences between students and patients and/or patient advocates. • The trainees will also take an ethics courses that will help to shore up the mission of CIRM. • Yes, but the applicant needs a better metric for achievement of their goals. • Overall, yes, but I am concerned that the research experience is too brief. • Yes, but I have some concerns whether the eligible population is sufficiently large to enable the program to meet its recruitment goals. • Students who participate should be well prepared for CIRM-relevant careers.
No: 0	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 13	• Yes, the Adaptive Outreach Recruitment Plan (AORP) process is well conceived, and will assess outcomes and adapt accordingly. The program team will target High Schools that serve a majority of first-generation and economically disadvantaged students. They have recruited the support of campus organizations that serve students in under-served populations. • The Adaptive Outreach Recruitment Plan (AORP) process aims to target and recruit both high school and community college transfer students, and uses an interview process rather than relying on class rank. • They will advertise the COMPASS opportunity in all the right places. • The program team will also leverage their AORP outreach to raise awareness community of the regenerative medicine field. • The applicant will partner with programs such as TRIO (a suite of US federal programs to increase access to higher education for economically disadvantaged students), student clubs, community colleges, and local community groups to recruit students. These efforts will help to cast a wider net to recruit students who may not be aware of the field, but who are open to the possibilities. • They will recruit students that are interested in alternative careers in regenerative medicine. They describe alternative approaches to identify talent without relying heavily on GPA and SAT scores. • Candidate evaluation is well described and uses a low-stress application and interview process to identify untapped talent that would benefit the most from the experience and who may not have other opportunities. • Mentor recruitment will include professional contacts with industry and academia professionals as well as collaborating with California's regional trade organizations. The background and qualifications of potential mentors will be evaluated to ensure the mentoring match is effective. • Mentors will include leaders in industry, principal investigators, project managers, subject matter expert consultants, and all other highly qualified candidates who have demonstrated a successful career in life science. • The program will use the Entering Mentoring training program created by the Center for the Improvement of Mentored Experiences in Research (CIMER). • The Mentorship Facilitator is Principal Investigator (PI) and co-PI on two NSF programs that will facilitate the training of mentors to focus on culturally-informed strengths rather than deficits. However, there was no DEI-specific training described. • The mentoring program is very detailed and woven throughout all components of the program. The mentors will receive facilitated training through a "Culturally-Informed Strengths" approach. • The trainees will work on their goals and discuss them with the Program Director (PD) and Mentoring Facilitator. They will also have group cohort activities including journal clubs, patient engagement activities, advisory board dinners, and outreach events. • The applicant has developed two new regenerative medicine courses that provide trainees with a strong foundation in stem cell/regenerative medicine and will integrate

	FAIR data principles into each course. They will also provide hands-on labs specifically focused on cell therapies. ● The proposal describes relatively limited experiences that trainees may have with patient engagement and community outreach. For example, students will watch a webinar from the FDA's RegenMedEd series and discuss it. There will be an opportunity to meet patients/patient advocates at an annual dinner that will feature a patient panel. The proposed engagement activities are passive in nature and may occur too late in the program to be influential. ● Every scholar must participate in one community outreach activity per year. Community outreach activities will range from elementary, to high school, to community college, to within-institution events. ● Some group activities are included, but most appear to be optional. ● The alumni tracking plan is very thorough. For alumnae tracking, they will use a LinkedIn group that will allow them to view employment updates. The program will also distribute a monthly newsletter and maintain social media outlets (Instagram and TikTok) where trainees can upload images and videos. Plans also include networking dinners and an Alumni mentoring program. ● The program is very comprehensive and will evaluate mentoring and trainee success using the Entering Research Learning Assessment (ERLA). Successful practices will be shared. ● Results will be shared with other program directors, deans, and chairs. They will also engage and share results with their sister institutions via online institutional networks. They intend to present program outcomes at national conferences such as SACNAS and NIST. ● Yes, but while the institution has years of CIRM funding for Bridges, the applicant does not present a track record of prior success. ● The proposal would be improved by overt synergies between the COMPASS and Bridges programs. These programs should collaborate closely in recruitment and associated programming. Such collaboration is not described in the proposal.
No: 0	*none*
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 13	● Yes, the institution has over 21,000 undergraduates and already has several training programs (CIRM Bridges and others) that will allow interactions that will lead to enhanced recruitment of underrepresented students to the program. Given the size of the institution, the number of trainees (25) is relatively small and definitely manageable. ● The program is practical and achievable. There is a large pool of students to recruit from, and the institution has training programs that will be used to raise awareness and recruit trainees. There is very strong institutional commitment, and through its courses the program will address knowledge deficiencies that some students may have. ● The applicant has a good track record in implementing and running training programs. However, the success of these programs is poorly described. One major criticism is that they did not provide any outcome information from their CIRM-funded Bridges program. ● Yes, the letter of institutional commitment from the provost is very strong and indicates substantial financial support for the proposed program. Regarding facilities and lab space, the provost mentions that they already allocated new space for a cell therapy manufacturing lab that is currently under construction and will be completed early in the award period. This lab space will house the two undergraduate core course labs. The institution also provided funds for new equipment for these labs. ● They also mention that the Admissions and Financial Aid offices will assist the COMPASS faculty team in outreach and recruiting efforts with local community colleges and other partners. ● The Program Director is well prepared to run the program. He/she is a Professor of Biomedical Engineering and has been Key Personnel on the CIRM Bridges MS program since its inception in 2009. His/her role was to establish and implement the regenerative medicine curriculum, train students in lab techniques, and many other related activities. He/she has an active regenerative medicine laboratory and has been recognized with an Outstanding Faculty Advisor Award. ● The Mentorship Facilitator is the founding director of the Office of Student Research and teaches courses focused on DEI in STEM. He/she is also a certified facilitator of the Entering Research and Entering Mentoring curricula developed by CIMER and is Principal Investigator of an NSF award focused on transfer pathways in engineering and computer science with two local community colleges. ● The program team is very strong and experienced. They are highly qualified and have a history of success mentoring and training students.

	● The Program Director has served as senior personnel on the CIRM Bridges Master's program and has significant relevant research and administrative experience. ● The Mentorship Facilitator is an expert in mentor training with regard to diversity, equity, and inclusion. ● The Diversity and Outreach Coordinator has leadership experience in DEI efforts at the institution. ● The applicant has a very strong track record, and the program team has experience implementing and sustaining this type of program. They have a wide range of programs to partner with and recruit from as well. ● Overall, yes, but the program will require development of two new courses. ● Overall, yes, but it wasn't clear to me how the program team will determine whether a student will finish the 2-year versus the 3-year program.
No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 13	● Significant strategies have been proposed to support DEI. These include coursework dedicated to DEI issues in STEM, and modules within the cell therapy courses. Another new course will include discussion of racial inequities and will utilize NIMHD resources to discuss disparities in healthcare. ● They intend to establish a COMPASS Community Advisory Board with representatives from campus and local community groups in conjunction with an Industry Advisory Board that will include industry internship hosts. The full Advisory Board will meet once per year and the Community Advisory Board will meet more often to improve the program. ● The DEI program is well designed and detailed. They reference the institution's strategic plan and commitment to DEI. The institution has also been approved as an eligible Asian American and Native American Pacific Islander-Serving Institution for FY2020-2022 under Title III of the Higher Education Act of 1965. ● Yes. The diversity and outreach coordinator has scientific expertise in DEI. The program includes a requirement that Scholars complete a DEI in STEM course. In addition, the mentor training includes strengths-based mentoring approaches. ● A Community Advisory Committee will be developed but was not involved in preparation of this proposal. The lack of detail in who would participate and what the group will do is a troubling weakness of the proposal. ● There's a long list of university groups with DEI interests, as well as some groups outside the university. How these groups will be leveraged, other than as recruitment targets, is not described.
No: 0	*none*

Application #	EDUC5-13619
Title (as written by the applicant)	Increase Diversity, Equity, and Advancement in Cell Based Manufacturing Sciences (IDEA-CBMS)
Public Abstract (as written by the applicant)	Our College's Department of Biotechnology 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-represented 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 the Biomanufacturing Bachelor's training, this two-year funded training program will service three cohorts of student scholars, carefully emphasize the importance of the workforce skills needed to be successful in regenerative medicine, mentorships that navigate students successfully into advanced careers and future graduate education, as well as directly advocate for the expansion of diversity, equity, and inclusion in Life Sciences. Grant candidates will be selected through an application and interview process with both academic departments as well as with our host internship laboratory partners. Students will have options to complete year-round or summer research internship experiences at our partnering host training sites. During this time, the students will maintain full-time enrollment in the bachelor's program and participate in regular professional mentoring sessions, patient advocacy events, and community outreach days to further ensure a broad and insightful perspective that encompasses translational science and the working at the patient interface. This CIRM COMPASS program at our college will 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 as well as intensive summer research 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 diversity of California and further ensures equitable recruitment. Our focused 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 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 4-year Bachelor's degree education. Our program will train and support at least 25 individuals that represent the diverse population of California and will continue to represent the evolving population of our 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	$2,894,500
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	86
Median	88
Standard Deviation	3
Highest	88
Lowest	80
Count	13
(85-100): Exceptional merit and warrants funding, if funds are available	11
(1-84): Not recommended for funding	2

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 12	• Institution is highly diverse and has a student body that represents the population of the state. The proposed program has a strong biotechnology curriculum and has identified many mentors in the biotechnology sector. This program will likely have a positive impact on the trainees in their training in stem cell science, gene therapy and/or regenerative medicine related fields. • Builds on a successful 2-year program in biotechnology and an existing 4-year bachelor's program in biomanufacturing. • The program is likely to to build a diverse pipeline in the regenerative medicine workforce. • Given the strong course work in the Biotechnology BS program and the laboratory training activities and summer internships, it is likely that the participants will be committed to continue with the CIRM mission. • Great recruiting strategies, strong outreach, diverse community to draw on. • Strong industry involvement in developing what is needed in the work force. • Strong focus on biotechnology with industry links. • Strong links with local K12 schools, plan to offer a college course within high school. • The patient and healthcare engagement component includes a bone marrow donor program and trade sector organizations.
No: 0	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 12	• The program director of this new COMPASS program has many years of experience working with the CIRM Bridges program and has designed a solid program based on their prior experience. The program has strong components for teaching biotechnology-focused courses but has weaknesses in mentoring, program evaluation, trainee tracking and DEI activities. • The program will work with their Office of Research, Planning & Institutional Effectiveness, and assess the Adaptive Outreach and Recruitment process with feedback from program stakeholders including faculty, counselors, deans, and students. They also plan to monitor the program and the various activities the students will be participating in. This will include regular progress updates with program administrators to ensure the success of the students and identify any modifications the program needs to implement. • The college has developed a strong program that will result in a BS degree. This program has integrated the FAIR data principles and good practices into each course of the program's curriculum. Due to this focus, the course work is particularly relevant to those that will gain employment in the biotech sector which includes stem cell research and regenerative medicine. • The program will utilize a Student Success Specialist, who will monitor the trainee's academic progress closely. The specialist will meet with each student to understand their goals and challenges, which has led to high retention and success rates in the biomanufacturing program (97.4% and 97.5%, respectively since program launch in Fall 2017). • While there is little stated about training and evaluation of mentors, the mentors are active in both industry and academic biomanufacturing and will provide real life lab experience. • The applicant has partnerships with trade organizations, high schools in the local community are engaged with a pilot program, and there are links with other community colleges and K12. • There is a mentor education program and a mentor practice sharing program/regular meetings of mentors. • Modest list of 10 mentors but all highly qualified with extensive experience/academics and biotech professionals. • Very strong biotechnology program with depth and breadth, including regulatory and business affairs. • Diverse selection of relevant courses - includes biomanufacturing and bioprocessing, practically oriented, technical writing, QA, etc... including a training course on improving diversity of representation in science. • Great set of partners offering internships. • There is an alumni ecosystem and alumni network program. • Applicant reports >90% employment for graduates. • Not great, but adequate.
No:	*none*

0	
GWG Votes	**Is the program proposal practical and achievable?**

Yes:
12
	• This college has developed a large teaching laboratory space that can accommodate 30 students and contains traditional laboratory classroom, a reagent weighing room, a bioprocessing suite, and a bioprocess support area. They are slated to finish construction on a new biotechnology facility at the main campus.
	• The letter of institutional commitment from the college president is strong and indicates that they have been supportive of the biotechnology program for over 30 years and fully committed to supporting the COMPASS objectives. In addition, the VP for Instructional Services will provide in kind contribution of 10% effort for the director of the program that will amount to ~$170,000 over the 5 years of the program.
	• The COMPASS will fill an unmet need, as it will support students that are not explicitly bound to post-graduate programs but likely to pursue biotechnology industry careers with a bachelor's degree.
	• Program support for students include:
	  ◦ NIGMS funded Bridges to baccalaureate program
	  ◦ Partner in CIRM Bridges to Stem cell research
	  ◦ Well equipped laboratories with bioprocessing suite
	  ◦ New biotechnology facility under development
	• For over 15 years, the applicant institution has partnered with another institution to implement the NIGMS funded Bridges to the Baccalaureate Program. The program is designed for students who attend the applicant institution to transfer to 4-year institutions to continue their research interests. A total of 44 scholars have been supported by this program, with 81% of Bridges students transferring to multiple 4-year institutions with one student transitioning into the CIRM Bridges in last 5 years.
	• The applicant institution has partnered on the CIRM Bridges program with another institution since 2009. They have been able to identify students from its own bachelor's degree program to participate in the highly competitive pool of applicants each year. The applicant institution has consistently placed about one-third of the students selected for the year-long internship through this program. It is disappointing that no tracking data (# of trainees, how many disadvantaged , etc.,) is provided.
	• Program leaders come from the biotech sector, and are well experienced in educational sector.
	• Applicant Program Director (PD) was an engineer at a bioengineering firm using cutting edge regenerative medicine. The PD is currently in a leadership position at the applicant institution and has managed several grants including a CIRM grant. The PD therefore has the skills and experience to lead the training program.
	• Other named key personnel are leaders in the Bioscience Workforce Development Hub and will be the Diversity & Outreach Coordinator and mentor facilitator. Although the proposed diversity coordinator has many years of experience in the biotechnology sector, they do not appear to have much experience in recruitment and did not provide evidence that they can deliver an innovative and effective Adaptive Outreach and Recruitment Plan. The proposed mentor facilitator has excellent administrative and scientific credentials, however there is almost no description of skills and experience relevant to delivering a quality mentoring program and how mentorship best practices will be disseminated.

No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 11	• While little is given on the demographics of the students whether biotechnology or biomanufacturing students, the overall student population is diverse both in age, ethnicity and race and the school is very well organized to support them. • There are multiple diversity initiatives across the institution and a course dealing with local workforce in biotech and impact on demographics. • The DEI plan is weak. The program mentions a DEI advisory board on page 10 of the proposal but there is no description of this board anywhere else. In addition, there is no one identified as being in charge of DEI training activities. • A formal COMPASS advisory committee is not described but there is mention that "… strategic initiatives will be discussed and formulated in regular advisory committee meetings that will include statewide representatives from our sector-focused trade organizations, faculty members (including faculty of color), industry leaders, and other community based groups that are committed to increasing diversity in the STEM workforce..." This advisory committee should be Compass specific.

No:	
1	• There really isn't a plan, more of a potential.

Application #	EDUC5-13667
Title (as written by the applicant)	COMPASS Program for Southern California Hispanic Serving Institution
Public Abstract (as written by the applicant)	The COMPASS Program on our campus is a comprehensive program to recruit local high school students and train them on our campus in stem cells and life sciences, culminating in a summer capstone experience on campus. Our campus is regionally poised to support our robust program as the "home" institution. We are designated Hispanic-Serving Institution (HSI, 47.1%), which serves primarily undergraduate students (89.8%); many of which are first-generation (31.1%) and are Federal Pell Grant recipients (48.5%). This proposal will support 30 COMPASS interns for two years of training. There will be three cohorts of COMPASS interns: cohort I, cohort II and cohort III. We will recruit local high school students to campus as well as first year Biotechnology majors. During the first year on campus, we will conduct application writing workshops and after the Spring semester, applications will be due. Sophomore Biotechnology majors who are selected to the program will have the option to work in several different laboratories on campus that focus on immunology, virology, stem cells and bioengineering for two full years which will be followed by a summer capstone experience. During the two years, the COMPASS interns will take courses in the Biotechnology major that includes FAIR principles of data sharing, good research habits, principles of translational research, bioengineering, statistics and bioinformatics. Interns will participate in formal and informal mentoring sessions. All individuals involved, including the mentors and the interns, will receive diversity, equity and inclusion training. The interns will also participate in community engagement and patient advocacy activities.
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 diverse pool of stem cell scientists. Our program is designed to meet this need by providing an op diverse 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 three local high schools. We deliver a robust and comprehensive internship program for undergraduates in an intensive two-year long research experience on our campus in the areas of stem cells, bioengineering, immunology and virology. 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. We will train 10 trainees each year, who are representative of our diverse region and often remain in the area to join the scientific workforce. Therefore, California will benefit from this additional pool of well-prepared stem cell/life scientists from diverse backgrounds that have a broad understanding of the benefits of stem cell research and life science application who can continue to advocate and accelerate California's commitment to advancing stem cell research, treatments and therapies for human diseases.
Funds Requested	$2,877,200
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	85
Median	88
Standard Deviation	6
Highest	90
Lowest	70
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	11
(1-84): Not recommended for funding	3

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 12	• Based on the demographics of the host institution, this program will have a great impact on underrepresented minority students. • Well-planned program will have a strong impact on trainees. • The potential impact is very high. Important that there is a plan to recruit students from local high schools. • Interview with each candidate is seen as a strength. • The proposed program certainly has the potential to make a big difference for the students the institution serves: it will reach a broad diverse group of trainees and will expose them to stem cell/regenerative medicine in their career development. However, the proposal lacks sufficient detail in key areas making it difficult to assess the likelihood of success. • The program will serve an important underserved population, but the students will have little stem cell/regenerative medicine experience. It's more of a general laboratory experience. • Modest impact on stem cell/reg medicine field due to the limited exposure of hands-on training in laboratories that are not dedicated to such fields. • Only two labs out of five are working on stem cells.
No: 1	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 11	• Well planned and designed. • They have a great program. • Outstanding planning. • Excellent consideration to the training of mentors. • The basic outline of the plan is one that will provide needed opportunities to underserved students. • Strengths include very well considered IDP development + related activities for trainees - especially the structured feedback sessions to help mentees make real-time adjustments • The coursework is unique in that it will provide a good foundation for students interested in industry; Site visits will give important additional exposure to non-academic careers. • Trainees will have access to relevant skill development opportunities that should enhance their transition to a career or further training. • Individual Development Plan is well designed.

	● The inclusion of cultured validated activities is notable. ● Foundational coursework is well thought out. The exception is the financial/accounting courses. ● The proposal does not address how mentorship training will be delivered, if it will be required, if it will include mentoring across different identities. These are essential for a solid mentorship training plan. It is also unclear whether mentors and mentees will attend some training sessions together (at the same time). These types of trainings can be wonderful, but also carry risk and must be carefully considered to minimize the power imbalance in the room. ● The mentee selection process is vague and raises some concerns. There is no discussion of how scores will be deemphasized during the application review/trainee selection phase. The group interview raises concerns about how the process itself could negatively impact applicant performance (by activating stereotype threat or unintended effects from intergroup dynamics). The program should look to the literature for guidance on how to ensure these interviews are conducted equitably. ● There is potential for the seminar series described on p.15 to place too great of a burden on students. It can be hard to find speakers, get them to respond, and organize a campus visit - and these don't build relevant skills for trainees at this stage. The program should handle this part and focus on giving trainees direct access to the speaker (lunch, dinner, group Q&A, walk speaker between meetings, introduce the speaker, etc) which will benefit them enormously.
No: 2	● Many details are missing or poorly developed. Key partnerships have not yet been established, including external laboratory options.
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 13	● The institution seems to have a wide range of resources available to program personnel and trainees; There are several similar programs on campus which have been successful and could provide good models for this program as it is being further developed. The program team is composed of well qualified individuals who have the experience and access to resources necessary to effectively run the program. ● A two-year plan is well paced. ● Having one summer internship in the host institution and another one outside is great. ● There is a moderate concern about the number of students in the program and the number of labs available for the rotations. It will be important to monitor the academic growth of the students. ● One potential concern, however, is that there are only five labs available to trainees. This does not provide a lot of choice with respect to research interests and means each lab will have to take several trainees from each cohort. Given that these labs likely also host students in the many other STEM related training programs on campus, trainees in the COMPASS may not receive adequate access to their mentor. ● There are only five labs available. It may not be possible to serve 30 students over the five year award.
No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 12	● Outstanding institutional record supporting minorities in science. ● The fact that the faculty have already taken intensive DEI training is recognized as a strength. ● The plan to recruit in coordination with affinity centers on campus is a really good one. The program team has received a lot of DEI training which is critical to their ability to successfully lead such a program. The DEI training for trainees is still under development but seems to include the right people and the stated goals are excellent. ● The lack of specific attention to training mentors on the ways identity impacts mentoring relationships is a shortcoming that needs to be addressed.
No: 1	● The proposal depends on its existing student population. Related aspects of the DEI program are incompletely described.

Application #	EDUC5-13653
Title (as written by the applicant)	Student Pluripotency: Realizing Untapped Undergraduate Potential in Regenerative Medicine
Public Abstract (as written by the applicant)	The COMPASS training program (Student Pluripotency: Realizing Untapped Undergraduate Potential in Regenerative Medicine) will identify, engage, and recruit early-stage undergraduates who aspire to science careers in regenerative medicine and related fields, including students of backgrounds and circumstances who are often denied access to research training and mentorship. Trainees will complete a two-year internship program that will guide them in learning needs and challenges in healthcare and diverse communities, and exploring how their scientific and professional interests can make impactful contributions. Through a curriculum of lecture and laboratory coursework and a series of structured research internships, students will build project experience, technical foundations in lab skills essential to biotechnology and regenerative medicine, and networks of mentors and professional connections. Students will finish the program prepared to launch careers in medicine, research, biotechnology, industry, and science and healthcare policy. The five-year program will train 32 students. Specific program activities include: 1. Coursework tailored to prepare students for research internships, including foundational lectures and labs in cell biology, stem cells, tissue culture, and developmental biology. Trainees will also engage in structured research project classes to prepare them for greater independence in laboratory and project settings. 2. Courses, workshops and activities to develop student awareness and appreciation of issues of equity and diversity in scientific and medical communities, and how they can contribute to building more inclusive communities. 3. Volunteer and outreach activities to engage patient and community groups, including symposia and seminar series, workshops for high school students hosted on our campus, and guest appearances in local schools. These opportunities serve the dual purpose of raising awareness of regenerative medicine and its potential in the greater public while also raising awareness in our students of the needs of patient groups and healthcare challenges faced in different communities. 4. Laboratory research internships conducted both at our campus and at our partner institutions, emphasizing sustained project experience, mastery of technical and scientific skills, and understanding of cultural aspects of research and academia. 5. Career development mentoring and workshops to build awareness of the many available career paths in the scope of regenerative medicine, help students discover their interest, and build readiness to make strong first career moves upon graduation. Trainees will benefit from extensive professional networking through program activities and internships.
Statement of Benefit to California (as written by the applicant)	This program aims to identify, engage, recruit, educate, mentor, and comprehensively train a diverse group of 32 undergraduate students with the goal to develop scientific research affinity and readiness join career tracks in biotechnology, gene therapy, and regenerative medicine. Concurrently with the above planned activities, the training program will provide students with a variety of community outreach and volunteer opportunities, including patient engagement. Because of our strong and diverse base of underrepresented students in STEM, our COMPASS program will provide appropriately trained and highly qualified graduates that also contribute to the ongoing goal of diversifying California's regenerative medicine workforce. Our program will have the following components: 1. Early identification of potential awardees by an innovative use of CURES for recruitment. 2. Laboratory research internships, starting with projects mentored by our faculty to build foundational skillsets and project experience, followed by off-campus internships in regenerative medicine-focused labs at partner institutions.

	3. An effective pipeline of courses and sustained mentorship that will enrich the education of the pool of 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 (an already existing program). Highlighted courses include stem cell biology, developmental biology, animal tissue culture, genomics and bioethics. A number of workshops offered will include health disparities, bioprocessing, entrepreneurship. 5. Patient and healthcare engagement by volunteering in support groups, non-profits, providing community education and become aware of the challenges that are particularly pervasive in their local community. 6. Educational outreach components that will include local campus seminars, regional Stem Cell Symposia, delivering lectures at local middle and high schools, attending regional conferences that are patient centric, and events organized through the Student Society for Stem Cell Research. COMPASS trainees will also host and contribute to 'stem cell bootcamp' workshops for local high school students. 7. Over the five-year period of the grant, we will train 32 undergraduate students. Our distinct goal is to prepare these students to be able to enter the workforce and contribute their perspective, 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 a stem cell or gene therapy physician. We see ourselves and our students as part of the mission of improving the health and quality of life for the millions of people for whom no therapies are currently available for their chronic diseases or injuries.
Funds Requested	$2,909,853
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: 87

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	87
Standard Deviation	3
Highest	98
Lowest	85
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	14
(1-84): Not recommended for funding	0

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 13	• This is very good proposal from an experienced team. The activities are very well designed and will utilize curriculum developed for the CIRM Bridges program and incorporate new undergraduate research experience courses to increase the pool of potential trainees. They have also identified mentors at regional campuses that have also served as CIRM Bridges mentors and thus have experience with similar students. This program will have a positive impact on the trainees in their training in regenerative medicine and related fields. • Yes. Comprehensive program of both classroom and laboratory work structured in a well-defined manner. • The student body is very diverse, across many dimensions, so the pool of students from which this program will draw is likewise diverse. The intent to select for students based on aptitude and interest at a very early stage in their training will further increase diversity by capturing students who might otherwise not choose a STEM major. The institution seems to have well established partnerships which will give trainees crucial experiences that enrich their understanding of and aptitude in STEM. • The recruitment plan is novel, will enhance the program's success, and could be translated beyond program. The program design, especially the plan to immerse trainees in off campus experiences, is very likely to increase trainee commitment to a career in regenerative medicine. • A 2 year program but they may have limited research labs at this institution. There is a collaboration with other cell biology institutions. • Great track record.
No: 0	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 13	• The recruitment plan is well designed and will utilize both formative and summative evaluations of candidate recruitment and selection, training program, and outcomes. It will assess outcomes and adapt accordingly. They will identify potential trainees though the use of course-based research experience classes and laboratories and will use a holistic approach that does not depend on SAT or GPA scores. • The campus is a Minority Serving Institution with a very diverse student body. The students in the departments that will host the COMPASS program also reflect this diversity. The majority of the undergraduates are first generation college students and economically disadvantaged. The success of the CIRM Bridges program in recruiting from URM populations indicates that the new program will likely also succeed in attracting these students. • The program has experience and terrific success related to CIRM Bridges program where 90% of participants have advanced in life science education and careers. • The recruitment plan is a novel and promising approach to identifying talent and very clearly relies on performance/aptitude over quantitative metrics; identifying students very early will bring in trainees open to a variety of career types. • Student driven outreach has the potential to find interested students. Teaching assistants will be scouting potential applicants and students. Open application as well as an invited students. • Well designed, focused on research experience that is relevant for the students and their field of interest. • Laddered research experiences ensure students are well prepared, starting from no experience to working research lab outside the university. • They have already developed core lecture and lab curricula on topics of regenerative medicine as part of their CIRM Bridges curriculum. They will also develop course-based undergraduate research experiences that will be used for recruitment and candidate evaluation as well as other that will focus on laboratory topics that will include discussion on FAIR data sharing. • The trainees will have sustained laboratory research projects with a research mentor that will last most of two academic years that will be followed by a three-month immersive research internship with a mentor at a partner institution in fields that are relevant to the CIRM mission. • Emphasis on cohort development & support is a strength. • The intentional scaffolding of research skill development is grounded in research on self-efficacy. The mentor matching plan is supervised which is an important and often overlooked element of research training programs. The built-in off campus internship

	provides both valuable experience in other career options and a source for a solid second letter of recommendation which is often required for securing employment or pursing additional training. ● The program will provide mentors with workshops/webinars offered at the institutional level that address both best practices and DEI perspectives. The trainees will have monthly group meetings in person, led by the mentorship facilitator. Mentorship facilitator is also the program director of the CIRM Bridges program and has 12+ years of experience in these mentorship activities. ● The program includes peer mentoring with more senior participants and will include embedded exercises and presentations. ● Trainees will work on their IDPs and mentors will also be trained on IDP preparation. They will also have several group cohort activities, patient engagement activities, and community outreach events that will enhance the trainee's personal and professional growth. ● The trainees are likely to receive good mentorship through participation in cohorts, connection to peer mentors, and having regular access to the Mentorship Coordinator; The dissemination plan is really cool - presenting at regional and national meetings will reach a broad audience. ● Some weakness in the mentoring training program. No mention how the lab mentors will be trained across facilities. Peer to peer mentoring did not have any specifics and/or training program. ● The mentor training plan is lacking in detail: training modules are listed, but it is unclear when and how these modules will be delivered, who will lead these trainings, whether training is required for all mentors or only those newly appointed to the program. ● A solid mentorship training plan would include (1) an evidence based training program introducing mentors to competencies needed to mentor effectively - ideally with some customizations related to the COMPASS program's goals (2) require all mentors to participate in this training at least once (even if they have received similar training before), (3) ongoing support/education for mentors including the chance to discuss mentoring challenges or learn about new findings on effective mentorship. ● The engagement activities are a bit weak. They will have a class and a workshop and explore health equity through case presentations. They will also participate in curriculum developed by an organization has expertise in patient advocacy and community outreach & education. The trainees will participate in several community outreach activities. ● The recruitment assessment plan does not include enough detail on implementation. How will this program ensure diverse voices and perspectives are heard? Who will conduct these surveys and interviews? Will the team consult an evaluation expert to design the assessment, conduct interviews, or analyze data? These are important elements to consider to ensure the assessment process is fair and effective. ● Very strong proposal with an accompanying track record of success with previous CIRM awards; only negative is that this proposal seems to be standalone - could connect better to Bridges program. ● Limited number of labs.
No: 0	*none*
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 13	● Strong mentoring program with already recruited mentors who are also already training. In addition, there is a more novel program for peer-to-peer mentoring. The mentoring is just a subset of the indicators of a strong program. ● The partnerships with external institutions are pre-existing and seem to be working well; The inclusion of additional key personnel increases the likelihood this program will be carried out successfully; The proposal does a nice job outlining how the COMPASS program addresses a current inequity in STEM students' ability to participate in research. ● The program team has a lot of experience running similar programs, knowledge of the unique challenges facing students that come to their institution, and have engaged in scholarship on undergraduate STEM education. Likewise, the institution seems to have a number of related training programs with good track records. ● Yes the program is practical and achievable since members of the leadership team have many years of experience with the CIRM Bridges program. The institution is a minority serving institution and the Biology/Chemistry programs have the resources and infrastructure to run the program. They have also had several other training programs and the success of those programs indicates that the COMPASS program is also likely to be successful. ● The program director is well prepared to run the program. The director has campus and national awards for student mentoring and teaches foundational lectures and labs for the

	COMPASS curriculum and has designed courses and seminars to guide students to careers in biotech. ● Another key person has served as the program director for the CIRM Bridges grant that was awarded many years ago and recently renewed. They have mentored more than 250 students. ● Will develop lower level classes in regenerative medicine for early entry students - when they graduate they get a certificate in Biotechnology; opens up opportunity. ● They have a good track record in implementing and running training programs. They have had many years of funding from the NIH to train URM students that will be expected to go to graduate biomedical careers. They have also had 13 years of CIRM funding for the Bridges program with over 100 interns (80% URM). Over 90% of these trainees have gone into the regenerative medicine pipeline. ● The number of available faculty mentors seems small relative to the number of trainees, especially in the later years of the grant period when there are multiple cohorts in labs at the same time. These 12 labs are committed to take in 8 total COMPASS students each year, along with presumably CIRM Bridges trainees and other undergraduates at the institution who also will want to work in these labs. Will this lead to COMPASS trainees having reduced access to their mentor?
No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 13	● Significant strategies have been proposed to support DEI. They propose 3 main goals: (1) Establish a diverse and inclusive Advisory Board for the program, (2) Create a program with a strong identity and sense of belonging for all participants,(3) Provide active advising to COMPASS trainees to connect them to DEI resources. Their advisory board will include key stakeholders and administrators and as well as current trainees and CIRM Bridges alumni. ● The plan to include undergraduates, partners from the community, and alumni on the advisory board will effectively bring diverse viewpoints to bear on the program's progress. ● Great recruitment strategy - casts a big net to find untapped talent. ● There is a track record with Bridges for DEI with 80% from URM as well as the ability to draw from a diverse population. In addition, they intend to set up an Advisory Board to help cross-correlate progress and help identify where improvements may be necessary. ● Very strong DEI program and initiative. ● The proposal does not address culturally responsive mentorship training. This type of training is distinct from inclusive pedagogy and from effective mentorship training. To build an inclusive program that fosters talent from a variety of backgrounds, mentors need to understand how culture and identity impact mentoring relationships.
No: 0	*none*

	events. Historically, over 70% of students from this campus remain in California, which means much of the workforce talent will be retained locally. Having qualified employees will increase innovation and productivity in California's stem cell-based companies. In time, this will likely lead to the translation of discoveries into new therapeutics and diagnostics, benefiting Californians as well as people around the world. Successful stem cell-based companies, staffed by highly qualified scientists and technicians, will also contribute significant tax revenue to the state and enrich California's economy. Moreover, selecting diverse students interested in regenerative medicine will allow underrepresented populations to find employment in one of the fastest-growing sectors of our economy. Their participation is one approach by which communities that have been excluded from high-tech jobs may engage in the future of medicine. This is of enormous benefit to our state because these researchers will be able to bring diverse thoughts, perspectives, and problem-solving skills to the rapidly growing stem cell research enterprise and share knowledge about regenerative medicine with their (sometimes wary) communities. Our community outreach approaches will also engage elementary, middle, and high school students with college students and members of the community to learn about advances in stem cell biology, which will help develop an informed citizenry within California.
Funds Requested	$2,883,440
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	87
Median	86
Standard Deviation	3
Highest	95
Lowest	85
Count	13
(85-100): Exceptional merit and warrants funding, if funds are available	13
(1-84): Not recommended for funding	0

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 13	• The program is designed to provided sustained training over a two-year period that includes coursework, laboratory internship, a capstone project and community

	engagement. Thus, the program is likely to result in retention and success of trainees in the CIRM mission. ● The applicant institution has a very diverse student body where no particular ethnic group is a majority. Thus, there is a diverse pool of applicants for this program. The goal of this program is to provide opportunities for students who have not had exposure or opportunities to participate in a sustained program as proposed here. In view of this, this program is likely to have a significant impact on building a sustained regenerative medicine workforce. ● The applicant institution has developed a two-year program with two summer internships at neighboring academic and industry institutions. They will train 28 students over the five years. The applicant institution has experienced that negative self-selection is the major obstacle that keeps talented students from applying. ● The description of the 'goals' for recruitment are a clear demonstration that they want talented students from underrepresented and diverse groups. The nearby schools associated with the institution will provide enough students to keep the program running. ● They have a successful record with the Bridges program. ● There is a strong mentorship plan in place that includes peer mentors and training of research mentors. Several workshops have been proposed that are based on the success of their Bridges program.
No: 0	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 12	● The proposed goals are highly ambitious, but achievable. The recruitment plan is well designed with multiple outreach events and leveraging existing programs. The selection criteria encourages students who have not had prior research experience to participate. Each candidate will be provided an interview and selection is based on application and interview process. ● Very well planned and designed. ● Recruitment assessment and adaptation are clearly stated. In addition, candidates will be interviewed by three members of the leadership team. There Is no mention of SAT, but they do contemplate recruiting students that may have had a poor semester of performance as long as they are in good standing. ● The recruitment is well designed to ensure success of the program. ● There are no pre-requisites for inclusion in the program that depend on class rank, GPA or SAT scores. Based on over a decade of recruitment for the current CIRM-funded Bridges program, they already know that there is a strong pool of students who will be eligible for that program and that they will be able to recruit 28 COMPASS scholars. ● The Diversity and Outreach Coordinator will head the recruitment program and visit the nine community colleges to raise awareness of the COMPASS program. The coordinator will also use multiple methods to advertise the program to students in other programs, biology and biochemistry majors, and targeted first-generation student groups. ● The mentoring program includes laboratory mentors, alumni peer mentors as well as mentees (trainees). Peer mentors, laboratory mentors and internship mentors will receive DEI training offered by the Office of Diversity and includes DEI fundamentals, racial equity and allyship to peer mentors. ● Based on their prior success with tracking CIRM Bridges trainees, Scholars will be required to create and maintain a LinkedIn profile. LinkedIn and twice-a-year e-newsletters will be used to engage and track alumni, providing two methods to maintain contact and keep the program's outcomes up-to-date. ● Alumni will also be invited each year to attend the annual capstone showcase event and alumni will be recruited to participate as mentors and advisory committee members. Additional alumni will be recruited from the 100 Bridges alumni. The peer mentors identified from alumni in biotechnology will be introduced to the scholars who will share their stories and career trajectories. ● Alumni tracking is acceptable, but lacks the active involvement of alumni in connecting with the program. LinkedIn group will help in creating a community. ● While the mentoring training program is good, there is a weakness in not including a culturally-responsive mentor training component. ● Mentee training includes IDP, DEI workshop and mental wellness. These are adequate. However, there are mentee aspects of how to align expectations with their laboratory mentor, preparation for a laboratory internship, etc. that is not included.

Application #	EDUC5-13647
Title (as written by the applicant)	COMPASS: an inclusive Pipeline for Research and Other Stem cell-based Professions in Regenerative medicine (iPROSPR)
Public Abstract (as written by the applicant)	Designed specifically for a highly diverse student population, this COMPASS program focuses on selecting students who show genuine interest in joining the field of regenerative medicine and providing them with high-impact practices such as hands-on research training, product-oriented coursework, one-on-one mentoring, soft skills development, personal and mental health support, community outreach programs that allow them to "pay it forward" to their own communities, and personalized patient engagement activities. The recruitment plan will reach a thousand or more underrepresented students in STEM in the local area, and the activities will provide exposure to biotechnology careers, lab skills, and academic advising to prepare interested students for COMPASS applications. The program has been configured with inclusive practices that lower the barriers to participation: there is no minimum GPA, and previous research experience is not required. Seven biology or biochemistry majors will be selected as scholars annually for four years to complete a two-year program, for a total of 28 scholars. Accepted students then benefit from the presence of multiple mentors in the training as well as at the internship sites. The program will consist of two years of academic year coursework in stem cell biology, research methods, biomanufacturing, regulatory affairs and bioengineering. Trainees will complete two summer internships at one of eight partnering host institutions that include university and biotechnology sites. All coursework is fully integrated into the bachelor's degree program. In the two academic years, trainees will also receive training in research ethics, diversity, equity, and inclusion challenges, and best practices for data management and FAIR principles. They will develop a capstone project and explore careers in regenerative medicine through guided self-reflections, peer mentors, and field trips to universities and biotechnology companies. They will also receive professional development and scientific communication training, and participate in community outreach and patient engagement activities. The two summer research internships will be full-time for 10 weeks, focused on translational stem cell research or gene therapy under the mentorship of one of over 40 leaders in the field. All internship host institutions have either been awarded CIRM grants or are established biotechnology companies. Through the internships, COMPASS scholars will gain additional project-specific technical skills that will provide foundations for their career path.
Statement of Benefit to California (as written by the applicant)	CIRM's role in advancing stem cell biology has generated scores of opportunities for biotech innovation in California. The state has become a world leader in regenerative medicine, spawning new companies and creating well-paid jobs that require highly qualified Californians to fill them. The traditional biology curriculum does not provide the broad perspectives or sufficient hands-on experiences to prepare undergraduates for entry-level positions in biotech companies run by experienced researchers with Ph.Ds. This COMPASS program will fill the gaps between what an undergraduate student knows and what the biotech companies seek in their new hires. Over the next five years, we will select 28 undergraduate students who are first in their families to go to college and/or Pell Grant-eligible for our COMPASS program (75% will be dual identity). Students will be trained in cell, molecular, and stem cell biology techniques in order to be exceptional interns in the labs of world leaders at our partnering host institutions. Students will also participate in patient engagement and community outreach activities to instill purposeful goals in their selection of career paths. The four program leadership team members will also guide students into thinking creatively about their career paths through mentoring and a customized capstone project. Beyond the 28 COMPASS scholars, we will reach thousands of underrepresented students through inspirational and educational recruitment

	• The trainee experience is well designed. In year 1, the trainees get foundational coursework in stem cell related coursework that includes directed laboratory research. The second year course work is much more hands on. It is unclear how many of the foundational coursework is already existing, and which component is new for this program. • With the goal of recruiting students who may not have prior research experience, is it feasible to load their calendar with additional coursework, asynchronous coursework and research. Would this hinder their progress rather than encourage them? • Patient engagement is a sustained activity of 4 hrs/week over a 18 month period. Again, is this feasible for the program participants given the additional requirements of the program? • A weakness noted is lack of discussion on retention of scholars in this program. What is the expectation of the investigators? Do they consider any dropouts? If so, how will they mitigate the risk? • Concern with expected success rate - no mention of mitigation methods for if students struggle and or drop out of the program. • Maybe over shooting goals - majority of students achieving jobs/ careers within 6 months of graduating? What will they do if this goal is not achieved?
No: 1	*none*
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 13	• Institutional resources are strong. The institution has a number of facilities that will be leveraged in this program. Letters of support have been provided from partners, including many biotechnology companies. • All components are in place. • The program is highly qualified to carryout this program. The program director is highly qualified and capable of leading this program. A good team of faculty mentors and internship providers has been brought in. • Yes, the program has secured partnerships for evaluation and assessment as well as other programs to improve recruitment and assist in other aspects of the proposed project. • Given the size of the institution, the number of trainees (28) is relatively small and definitely manageable as they will be spread in 4 cohorts of 7 trainees. The letter of institutional commitment from the Dean is strong and indicates that they have already provided funding to support the laboratory course that is essential for the training of the COMPASS trainees. • The program director has been a co-director of the CIRM Bridges program for 12 years and therefore very well qualified to run the program. They intend to step down from the Bridges program if the COMPASS grant is awarded to devote their full attention to this program. • The diversity and outreach coordinator is eminently qualified and will lead the Adaptive Outreach and Recruitment Plan and the community outreach activities. • Excellent (large and wide range of specialties) selection of laboratories for internships. • The program director has extensive experience running the Bridges program. They have also been involved in DEI initiatives. The rest of the team is very well qualified. • The track record of the Bridges program is outstanding. The data shown is very encouraging. • They have a history of successful Bridges program - 75% of applicants eligible for grants. • The Bridges program has done a good job at tracking their former trainees as evidenced by the total number of students that have worked in a research lab after the internship (64%) and the number pursuing advanced degrees (22%). • Data from the Bridges program has been provided, however there is no information whether the Bridges program has resulted in increased retention, graduation and career progression. Based on the limited data provided, this program has a reasonable chance of success. • The institution has had 11 years of CIRM funding for the Bridges program that is administered by the director of this proposal. Although the program has been fairly successful in training 100 students that were 58% Pell grant eligible and 44% that were first generation college students, it is unclear how many were from underrepresented minority groups. • It is also unclear how many obtained degrees from the institution since the table provided indicates that 17% were awarded a clinically relevant degree and in the text it indicates that more than half of the Bridges interns graduate at the end of their 12-month internship.

	It is therefore difficult to determine how successful the program has been in graduating its trainees. ● Concern of "overload" of mentees - there may be too many activities.
No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 13	● DEI has been integrated well with the program components. The experience of the program director and the other leadership team members in DEI is a strength of this program. ● Exceptional, innovative selection process; selection process will clearly target those who will most benefit from the experience. ● The advisory committee is diverse. ● The DEI plan is strong with many workshops and activities for both the trainees and mentors. ● The DEI section is well described, and the institution's commitment to it is appreciated. ● Well-developed and outlined DEI plan.
No: 0	*none*

Application #	EDUC5-13686
Title (as written by the applicant)	Training Undergraduates in Stem Cell Engineering and Biology
Public Abstract (as written by the applicant)	The goal of our COMPASS: Training Undergraduates in Stem Cell Engineering and Biology program is to provide diverse students specialized training such that they are equipped with the knowledge, skills and abilities needed to support the industry's hiring needs for growth of the field of stem cell biology and regenerative medicine in the State of California. Our rigorous training plan is designed to focus on sets of core skills and depth in the specific skills needed in regenerative medicine and biotechnology. We will train 40 trainees over five years. The training program for each student will take just under two years to complete, comprising three academic semesters plus two summer sessions. The three academic semesters will require that the trainees enroll in one lecture-based course each semester plus one 1-hour COMPASS meeting per month. These include Developmental Biology, Developmental Biology Lab, Tissue Engineering and an optional course from a list of selected courses identified to enrich the students' training (such as advanced molecular biology lab and data science courses). The foundational Developmental Biology Lab course is designed as a course-based research experience. In addition, each trainee will be matched with a faculty research mentor for in-depth training in research. The student's first Summer will focus on full-time undergraduate research at the institution in the laboratory of one of our stem cell faculty. The Summer program will take advantage of the supplemental training, career development, and networking opportunities provided by our Undergraduate Research Opportunity Center which culminates in an end-of-Summer research symposium. The first summer will also include three hours per week of a lab module for hands-on training in human stem cell culture. The trainees' Fall will include continuing research with a faculty mentor. During the trainee's second Spring, the student will complete their capstone project including an oral defense of their written mini-thesis. The last component of the training program is during the scholars' second Summer in which they will be matched with an industry partner hosting an external summer internship. Ancillary activities include a patient and healthcare engagement experience, monthly COMPASS meetings for mentoring, career development and networking, and community outreach events ranging from high school visits to participation in a local symposium on campus to raise awareness about stem cell and regenerative medicine in our community, an area historically underserved in education and health care.
Statement of Benefit to California (as written by the applicant)	Our proposed training program will benefit the State of California and its citizens at several levels. This program will create the workforce necessary to support stem cell therapies and regenerative medicine. This, in turn, will be the springboard for improvements in health care, increase in tax revenues, and improvements in education for California residents. Our program will benefit the state of California by supporting a state campus and public research institution of higher education, and creating career opportunities for its diverse population. As this program is funded by CIRM, it is highly likely that Californians would be the primary recipients of therapies supported by our trainees. Stem cell research already relies on a number of products and tools manufactured and sold in the state of California. If successful, research will require a scaled-up version of protocols designed for regenerative medicine. This could attract new biotechnology companies in the state, boosting the tax revenue in the state. This in turn, will provide new jobs for California state residents. Establishment of successful stem cell therapeutics in California will encourage institutions of higher education to promote science education to fill the jobs created by stem cell research. This will retain California students in the state that are interested in biomedical research and medical careers. Furthermore, it could attract out-of-state students seeking degrees that will allow them access to careers in stem cell research. It is envisioned that this will trickle down to the K-12 levels and provide funding to promote science education at all levels. Community outreach events will educate the public on the field of stem cell research, emphasizing the innovations to healthcare, as well as, current challenges

	in stem cell therapy. These activities contribute to fostering knowledgeable voters that support California's efforts in stem cell research.
Funds Requested	$2,909,999
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

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Lowest	80
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	11
(1-84): Not recommended for funding	3

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 14	• Based on past success, the program is well positioned to build a diverse and sustainable pipeline of future contributors to the regenerative medicine and related workforce. • The program is a collaboration between the School of Natural Sciences and the School of Engineering and will attract both natural sciences and engineering students to this program. • Candidates will be selected from a California region that has historically been underserved in educational resources, and therefore; I agree that the institution is already perfectly positioned to train historically underrepresented students. • By virtue of its location, the institution attracts rural and underrepresented students. • The training program has paid careful attention to trainees who may not have participated in such opportunities for various reasons. The community engagement strategy and recruitment strategy are designed to provide opportunities to diverse trainees. • The training program appears to be rigorous with a mentoring plan for mentors and mentees alike involving training that is structured, regular, ongoing, and evidence and experience-based. • The training program has been designed with coursework, mentoring, research internship at the institution and external industry internship. Such sustained exposure of trainees is very likely to instill commitment among the trainees to continue in the area of stem cell and regenerative medicine. • A strength of the program is the applicant's previous/ongoing grant-funded work in similar areas to the COMPASS program. • Trainees that complete the program will be well trained and positioned to obtain jobs in the field.

	• Activities will include community outreach events with three distinct components per cohort: an annual symposium advertised to the community, high school talks by COMPASS Scholars on Stem Cell Awareness Day, and a public website. The annual outreach event with high school visitations is one of the strengths of this proposal. • The Proposal includes discussion of the hurdles that students with mental and physical disabilities face in accessing STEM careers. • Well-developed program that will train the next generation of the stem cell/regenerative medicine workforce. • It is very likely that this program will foster a commitment among trainees to CIRM's mission. • Overall, yes, but some needed components are not yet in place (DEI coordinator, connections to university facilities and other related programs). • This is a good program with some weaknesses. • One potential weakness is that the institution has few research labs. On campus, trainees will participate in stem cell culture training. • This program is an excellent fit for the CIRM Mission.
No: 0	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 12	• The goal of this program is to provide diverse students both curricular activities and research skills. Combined with mentoring, career development and industry experiences, this is a well developed program. • The institution is ethnically diverse; the undergraduate students are over half Hispanic, almost one quarter Asian/Pacific Islander, and nearly 5% African American/Black. Nearly three quarters of students are first-generation college students. • This is is a Hispanic Serving Institution (HSI) and an Asian American Native American Pacific Islander Serving Institution (AANAPSI). The program team will recruit from their own student population. • Trainee selection is initially focused on ensuring the pool of applicants reflect the demographics of the institution. Contingency plans are provided to ensure the diversity of the applicant pool. • Applicants will be expected to submit their 1) educational history (courses taken), 2) a personal statement including professional and personal goals, leadership experience/approaches, and a description of what qualities/assets they possess that make them strong candidates for this COMPASS program, and 3) a diversity statement that describes the applicants' experiences with diversity and inclusion. • A good training program is in place, comprising many regenerative medicine and gene therapy courses, two external summer internships, a research ethics/responsibility course, and patient and healthcare engagement activities. • It is unclear whether the number of courses required for this program is in addition to the standard curriculum - will this extend the trainees' time to degree? Also, are there are any courses that are specifically designed for this program? • The overall requirements seem to be an overload for students who may not be fully equipped to handle such course and research workload. • The laboratory course on stem cell culture in the first Summer seems out of place. Having a hands-on course in stem cell culture without any theoretical background seems to be a weakness. • Mentees will receive a needs assessment that will help in designing an Individual Development Plan (IDP). • Mentees will have both Faculty and Peer Mentors. Faculty Mentors receive the implicit bias course offered at the institution. Peer Mentors will receive a mentorship program designed for the HHMI Excellence in Science Education Grant. • This reviewer likes the idea of inviting Principal Investigators from both the School of Natural Sciences and School of Engineering to serve as Faculty Mentors. • The lead of the Mentoring Program has mentored over 35 undergraduates from diverse backgrounds in his/her research lab since the mid-2000s, and has received the institutional award for excellence in faculty mentorship. • External (i.e., non-institutional) mentoring opportunities are mentioned, but details are sparse. • Great institutional setting, but limited mentor training plan. • The external internship is well designed and deemed very useful for the trainees. • The Proposal lists ten industry partners as potential hosts for students. • Trainees that complete the program will be well trained and positioned to obtain jobs in the field.

	• The alumni tracking will utilize the campus-wide tracking program as well as create a program-specific tracking. This section is adequately described. • Alumni tracking appears adequate. It includes a COMPASS Scholar-specific LinkedIn page and requires trainees to register during their first meetings with their Peer and Faculty Mentors. They will also survey the alumni population to collect employment status and/or graduate/professional school achievements. • The Proposal does not describe or leverage the applicant's existing CIRM-funded facility grant. This is a missed opportunity.
No: 2	*none*
GWG Votes	**Is the program proposal practical and achievable?**

Yes:
14
	• The necessary resources, including personnel, key partnerships, and research infrastructure to implement and carry out the proposed training program appear to be in place.
	• This applicant has all the necessary resources for the proposed program.
	• Positives of the Proposal in terms of practicality/achievability include:
	  ◦ Extensive assessment program in place (both summative and formative);
	  ◦ Diverse population of mentors for students to work with; and
	  ◦ Program will also encourage external mentoring through various programs.
	• The Program Director (PD) is Associate and Founding Professor in the School of Engineering at the institution. His/her research is in the field of tissue engineering with a specific focus on stem cell differentiation and tissue assembly.
	• A long list of campus faculty as well as external participants are listed and are sufficient for the training program proposed.This program will also have a diversity and outreach coordinator, a clinical experience coordinator and an assessment coordinator.
	• Yes. According to the applicant, the institution already has an excellent track record of incorporating diverse groups of students in STEM research within their ongoing Summer Undergraduate Research Institute. The applicants' data reflects that between 2015 and 2020, almost 500 students participated in the Summer Undergraduate Research Institute (average of ~80% under-represented minorities, and ~80% first-generation students).
	• The institution has successfully conducted multiple NSF, NIH and HHMI-funded training programs with diverse trainee populations.
	• The applicant provides a track record associated with training grants from NSF and NIH. In the NSF program, they had ~15 participants per year with ~65% identifying as women and under-represented minorities.
	• The institution has a number of other similar training programs, funded by NSF and HHMI. While descriptions of these programs are presented, outcomes are not described.
	• A weakness of this proposal is lack of integration of the training with a facility that was funded by CIRM Major Facilities Grant. It is unclear why the facility is not involved in training the students.
	• The Proposal does not describe any courses that have been established for this program.
	• This Proposal lacks a strong method of trainee follow up.

No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 11	• Diversity, Equity, and Inclusion is included throughout the program in all activities. Thus, this application has paid attention to DEI and leverages the institutional resources and infrastructure. • Students at this institution tend to be from low-income backgrounds, underrepresented (and underserved), and the first in their families to attend college. Also, the institution serves students who are undocumented and some who are battling mental and/or physical health challenges. • The Proposal is intentional in discussing students' lived experiences, acknowledging that often, students face multiple barriers to success. • An advisory committee will be formed and invitations extended to individuals, industry partners, 1-2 faculty on and off campus, community high school teachers and community college administrators and alumni of the institution.
No: 3	• The recruitment plan needs improvement to identify untapped talent - the current plan is traditional and passive. • One acceptance criterion is "enthusiasm for the training program," but the Proposal lacks details on how this should be assessed. • An advisory board will be formed, but there is currently only one committed member (an Assistant Dean for Biological Sciences and Program Director at their sibling campus).

	• The DEI coordinator is not yet hired. • I like their goal to have overlapping trainee cohorts that interact, but I'm not sure how this will benefit alumni tracking/engagement. • It's not clear how successful the campus-wide tracking system is.

Application #	EDUC5-13853
Title (as written by the applicant)	Guiding Undergraduates to Careers in Regenerative Medicine
Public Abstract (as written by the applicant)	Our institution is committed to serving as a leader in both regenerative medicine and in diversity, equity, and inclusion. It is in the spirit of this leadership that we are uniquely positioned and institutionally committed to launching COMPASS: Guiding Undergraduates to Careers in Regenerative Medicine. To prepare students for careers in regenerative medicine, The Department of Stem Cell Biology and Regenerative Medicine, the Keck School of Medicine, the Department of Biomedical Engineering, and the Department of Quantitative and Computational Biology have formed a multidisciplinary partnership to build the COMPASS training program. COMPASS will engage students who are historically underrepresented in the field with culturally-aware mentoring and will leverage the breadth of academic and research opportunities at the institution with the goal of preparing students to pursue regenerative medicine-related careers. COMPASS will engage four cohorts of ten students during their junior and senior years with two-year research internships, academic coursework rooted in regenerative medicine, curated personal and professional development workshops, and financial support. COMPASS Scholars will undertake a program that includes mentoring, ethics training, projects in bioinformatics and bioengineering, workshops on scientific and career topics, community engagement, foundational coursework, and an independent hands-on research project. At the end of the five-year grant period, we expect to have a cadre of knowledgeable, motivated, and successful COMPASS Scholars engaged in multiple areas of regenerative medicine.
Statement of Benefit to California (as written by the applicant)	Having diverse perspectives, providing equitable access, and building inclusive cultures are critical components to preparing a workforce prepared to tackle the clinical challenges of tomorrow. Our institution is committed to serving as a leader in both regenerative medicine and in diversity, equity, and inclusion. COMPASS will be a multidisciplinary training program that engages students with culturally-aware mentoring and leverages the breadth of academic and research opportunities at the institution to prepare students for careers in regenerative medicine. At the end of the five-year grant period, we expect that COMPASS Scholars will be integrated in multiple arenas of regenerative medicine and will bring diverse perspectives, expand equitable access, and create inclusive cultures that are critical components of a workforce prepared to tackle the clinical challenges of tomorrow.
Funds Requested	$2,899,999
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	2
Highest	88
Lowest	80
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	14
(1-84): Not recommended for funding	1

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 14	• The program is well-designed to prepare scholars for meaningful careers in stem-cell relevant fields. • However, given the relatively low percentage of Pell grant eligible students at the institution, it may be difficult for the program to recruit and educate trainees who represent the broad diversity of California's population. • The program appears to rely on its ability to recruit potential underrepresented minority trainees through student groups and organizations. Such a strategy aims to produce a large number of applicants - with the downside of turning away most applicants. Rejected applicants may turn away from STEM at even higher rates. • The holistic review process could enable selection of highly capable students who have less traditional academic backgrounds and success metrics. However, it's unclear how the selection process will work and how much each component will be weighted. • The proposed course work, mentoring, and other support activities are very strong. The institution has unique strengths that the program will leverage to the maximum. Trainees completing the program should be exceptionally well trained in stem cell relevant areas. • A stronger and/or better integrated curriculum of patient/healthcare activities would increase the likelihood of students pursuing careers aligned with CIRM's mission, because it would help trainees better understand the relevance of their work. For example, including a patient advocate experience during the initial bootcamp would be an impactful start to the program. • A high school outreach experience is included in the second year but is too brief to have much impact on the trainees. The recruitment plan is very well designed to take advantage of the substantive existing networks at the institution that support underrepresented minority students. • This proposal includes a robust course list, great facility, and a large pool of minority students. • The program has huge number of committed faculty, with labs spanning three colleges. • Has a good training program that will have a great impact on students. • Overall, yes, but I don't see a specific effort to recruit students with untapped talent. • It seems that the students who will be recruited will be those that are already interested in research. • This program appears to focus more on academic careers, and less on industry careers. • The program's benefits may be limited to students who are already taking advantage of institutional groups and resources.
No: 0	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 13	• The mentoring component of the program is one of the proposal's greatest strengths. It includes a nationally recognized mentor training program, as well as a mentoring model that includes both a research mentor as well as a research advisor (the Principal Investigator of the lab in which the trainees will work.) • Use of the combined 'Entering Mentoring' / 'Entering Research' program is also a strength, as it simultaneously prepares mentors and mentees. Using the Entering Mentoring assessment to track success of the mentoring components is also a strength. • A potential improvement would be to include the student's daily research advisor in mentor training, not just the Principal Investigator. Indeed, the Entering Mentoring program was originally designed for the postdocs and graduate students who work directly and daily with the student at the bench. • The applicant has the commitment of over sixty mentors. • The academic components of the training program are strong in all aspects, including laboratory instruction. • However, the training program does not include a strong patient engagement and community outreach component. Trainees will be provided with opportunities that are apparently optional, such as hospital tours and presentations from patient advocates. • Similarly, trainees will have opportunities to explore the breadth of STEM-cell relevant careers by attending optional workshops and presentations of the external mentors. A

	stronger proposal would have found ways to integrate these experiences into the training program. ● There does not appear to be an ongoing COMPASS trainee group meeting. ● It might be helpful for trainees to have more contact with professionals outside of academia. External 'mentors' from non-academic workplaces will give workshops and fireside chats about their experiences, but attendance is optional. ● The program is poised to complete all the necessary tracking. It maintains a listserv, social networking, and invites alumni to participate in annual meetings and to serve as external mentors to new trainees. There is a good plan to monitor the applicants and selected trainees. Additionally, the program may be able to tap the central institutional research unit for much of this work. ● Beyond the plan to recruit ten trainees per year, the proposal did not articulate clear goals and outcomes about the characteristics of those trainees. It would have been helpful to include the expected number and the demographics of the expected applicants, as well as the expected success/rejection rate of applications. ● The course requirements will partially meet the unit requirements to earn a minor in Stem Cell Biology and Regenerative Medicine, which may aid in recruitment. ● The proposal does not incorporate efforts to reach early-stage students from underrepresented minorities or low-income/first-generation-in-college students. ● The program is not poised to engage or recruit students who aren't already thinking of a career in biomedicine. ● Program does not note how it will identify non-MD/PhD focused students. ● It is disappointing that the program does not appear to leverage the knowledge and experience of the related programs at the institution that aim to increase the success of students who have had fewer opportunities. ● The proposal is weak on patient advocate and community outreach. ● The patient advocacy section is weak.
No: 1	*none*
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 14	● This program should successfully build a diverse and sustainable pipeline of future contributors to regenerative medicine and the scientific workforce. ● The institution is exceptionally well-resourced, and this proposal leverages the breadth of these resources to the advantage of trainees. ● The Program Director has a strong research record and exemplary track record in mentoring students, including individuals from marginalized groups. This expertise will be extremely valuable for the success of this project. His/her past and ongoing roles in other DEI initiatives are also a strength. ● The major concern is whether he/she has the bandwidth to take on this programmatic leadership role. His/her biographical sketch does not include information about experience managing complex projects like this one. ● Unfortunately, while the ppoposal lists seven prior institutional training programs supporting underrepresented students in STEM, it does not incorporate any outcome data from these programs. This track record would have been helpful. ● One concern: It's not clear the program incorporates placement of graduates in industry careers. ● The Program Director has the experience to successfully accomplish the goals of this program. ● The Proposal has a strong letter of support from the Provost.
No: 0	*none*
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 12	● The project clearly leverages the institution's extensive system of student groups and support system. Great people and great institutional resources are available to support the success of this effort. ● Probably. The proposal refers to "culturally responsive mentoring," but does not clearly explain what that means in practice within the proposed activities. However, most individuals in the Program Team have direct experience with working with underrepresented minority students and direct involvement in DEI initiatives. That is a strength. ● There is a strong advisory committee that includes two leaders of other CIRM undergraduate programs. Inclusion of a community/patient and a student representative would improve the breadth of the advisory committee.

	• The mentors include people from marginalized communities. • The applicant has an outstanding DEI advisory board in place. • The campus has large DEI support system in place. • Yes; but only partially - the proposal doesn't achieve its potential.
No: 2	• Unfortunately, the proposal has a weak DEI Plan. • This section does not include many goals or outcomes. • They do have an advisory board - but it has no community members or patient advocates.

Application #	EDUC5-13910
Title (as written by the applicant)	Increase Diversity, Equity, and Advancement in Cell Based Manufacturing Sciences
Public Abstract (as written by the applicant)	Our 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-represented 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 the Biomanufacturing Bachelor's training, this two-year funded training program will service multi-year cohorts for student scholars, carefully emphasize the importance of the workforce skills needed to be successful in regenerative medicine, mentorships that navigate students successfully into advanced careers and future graduate education, as well as directly advocate for the expansion of diversity, equity, and inclusion in Life Sciences. Grant candidates will be selected through an application and interview process with both academic departments as well as with our host internship laboratory partners. Students will have options to complete year-round or summer research internship experiences at our partnering host training sites. During this time, the students will maintain full-time enrollment in the bachelor's program and participate in regular professional mentoring sessions, patient advocacy events, and community outreach days to further ensure a broad and insightful perspective that encompasses translational science and the working at the patient interface. This CIRM COMPASS program at our college will 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 as well as intensive summer research 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 & 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 in regenerative medicine that represent California's diverse population. 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 diversity of California and further ensures equitable recruitment. Our focused 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 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 4-year bachelor's education. Our program will train and support at least 25 individuals that represent the diverse population of California and will continue to represent the evolving population of our 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 scientific 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	$2,894,500
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	3
Highest	90
Lowest	80
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	10
(1-84): Not recommended for funding	4

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 13	• This proposal builds on a now 25-year program at the Institution's Department of Biotechnology and Biomanufacturing that provides industry-driven training for the residents of the county. • The institution partners with local and regional high schools to offer various training certificates, an Associate's degree, and a Bachelor's degree in Biomanufacturing. • The industry aspect is an ongoing partnership with a local biotechnology company with a large multi-use cell culture manufacturing facility. The biotech company was involved in crafting the curriculum for this unique program. This curriculum emphasizes skills and knowledge required for graduates to enter the biotech manufacturing sector. • The program partakes of a 35,000+ square foot biomanufacturing education center. • The ongoing program supports career development within biologics manufacturing more broadly. The proposal will integrate career development within cell and gene therapy manufacturing. • The program builds on an existing educational pathway. • Yes. The applicant pool is diverse and comprises students pursuing training certificate(s) and/or an Associate's or Bachelor's degree. For this reason, the proposal provides career advancement in the life sciences to an underserved group. • The program provides an advancement opportunity in an underserved community and has the potential to diversify the regenerative medicine workforce. • This program focuses on career development in biomanufacturing, QA/QC, etc. - i.e., the focus is outside of the traditional academic path. • This program draws trainees from a diverse, underserved population. • The applicant institution has a good track record of preparing technicians for advanced research. It's not clear how this will translate to stem cell related training. However, given the track record, this program will probably have strong positive impact on its trainees. • The department has an established method of recruiting a unique and diverse cohort of students including, for example, veterans and Native Americans. • The proposal includes a good training program and recruitment plan. • This appears to be a good program for bringing individuals into biotech. • The proposal lacks some details.
No: 1	*none*
GWG Votes	**Is the program well planned and designed?**
Yes: 11	• The ongoing program provides an educational pathway from high school to PhD, with multiple entry and exit points and the option to participate part-time. • The curriculum has recently been expanded to include a training path for a cell and gene therapy certificate that received local, regional, and statewide approval. • The program mentors are leaders from industry and academia. They have already agreed to host trainees in their laboratories. • The program incorporates rigorous lab research and many appropriate lectures and activities. • Strong coursework with practical emphases on biomanufacturing and regulatory affairs. • Active community and patient outreach activities. Involved with organizations and community patient organizations. • Educational areas include stem cell and gene therapy (both course and laboratory studies), and there is a good core of classes specifically focused on biomanufacturing. This biomanufacturing core will help meet California's underlying need for good lab practices and process flows in regenerative medicine. • Overall, yes, but the proposal's descriptions of the program's selection process, measurement and adaptation process, and mechanism for continuous improvement are thin. • Overall, yes, but the proposal would benefit from better delineation of the program goals and plan to achieve these, as the goals and plan provided are fairly general in nature. • More detailed implementation of a mentorship plan is encouraged. • Yes, though the proposal lacks specificity on tracking and measuring outcomes. • Some of the details are light, but the overall program has great potential. • Overall the program is well planned and designed. • Well conceived and designed.
No: 3	• It's not clear that there is capacity to implement a sufficiently stem-cell focused training program. • Many components are not yet in place and/or not fully described. • The proposal lacks an adequate mentor training program. • The proposal has limited description of mentor training.

GWG Votes	Is the program proposal practical and achievable?
Yes: 13	• Yes. The broader program improves economic conditions for the individual scholars and their families. So far 80% of the trainees have earned a bachelor's degree in a STEM. This will greatly increase their chances at gaining employment and becoming financially stable. • The proposal incorporates excellent and active outreach, recruitment, and education for underserved students and provides advancement toward nontraditional (i.e., non-academic) careers in biomedicine. • I support funding this proposal, but I recommend the applicant develop a more inclusive, structured and robust mentoring plan incorporating proven methods. The applicant should also develop better methods for tracking trainees after graduation. • Definitely practical and achievable. • The broader, ongoing program has been successful. • The team comprises experienced educators. • The necessary resources are in place. • There are issues within the mentoring plans. • Overall, yes, but planned efforts to monitor program success and make corrections could be described more specifically. • Some of the details of implementation could be enhanced to ensure success.
No: 1	• I have concerns about some trainees having to commute or travel to complete their internship, as some may not be able to travel because of family responsibilities. The proposal needs more options that are local to trainees homes. • It's not clear how this effort is different from their existing biotech program. It's surprising that they did not consult with industry in designing the stem cell courses, which was their previous practice with the biotech program.
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 14	• Yes. The institution appears to have a great focus and support capabilities for underrepresented minority students. The biotechnology program more specifically has an equity initiative of its own - a comprehensive program with multiple components. • The emphasis on technician training is a strength. • The ongoing program is recruiting from a diverse and poor county in California. • Thoughtful diversity section, • Recruitment efforts will leverage established campus-wide advertising tools to engage student representatives of the Black Student Union, LatinX, Women in STEM, Pacific Islanders, Native Americans, LGBTQ+, disabled students, and transitioning military veterans. • The institutional setting is suitable for recruitment of a very diverse population of students. This program will promote the goals of COMPASS.
No: 0	*none*

Application #	EDUC5-13652
Title (as written by the applicant)	COMPASS Program – A partnership with an emphasis on training undergrads in regenerative medicine from URM & DA backgrounds
Public Abstract (as written by the applicant)	The Joint COMPASS Program will build upon the past success of our ongoing BRIDGES Internship Program by partnering with an institution which has significantly expanded the pool of personnel with the expertise necessary to undertake careers in regenerative medicine. Up to 25 highly competitive trainees over the five year span of the grant will be recruited from the university's diverse student populations, which include individuals from socio-economically disadvantaged communities, to attain essential expertise in regenerative medicine. A highly optimized curriculum for Trainees at the home institution includes a regulatory affairs course providing information about healthcare product regulation and development, a stem cell journal club course, colloquia and community outreach activities designed to provide students with educational and patient engagement opportunities, and participation in a biomedical ethics course. Trainees will complete a comprehensive, externally-provided laboratory training course which includes hands-on maintenance and characterization of induced pluripotent stem cells within a state-of-the-art Training Center designed by noted experts in the field. Trainees will complete a 9-month internship experience if an option for two additional years of funding during the academic year at our research laboratories or at our partnering stem cell research institutions located nearby, or at participating local biotechnology companies specializing in human stem cell research and development. During the internship period, Trainees will attend research seminars, meet and present their scientific progress at monthly colloquia with other trainees and participating host mentors and scientists, and present scientific posters encompassing their data at local and regional scientific meetings. The proposed program will also include a Diversity, Equity and Inclusion Plan to ensure diverse inclusive perspectives and personal experiences during the implementation of the program, and ensure outreach and recruitment of qualified persons for training who are representative of the diverse and different socio-economic backgrounds in the California population. The culmination of the training program will include a written thesis and oral thesis defense, a final Poster Presentation Symposium, and participation at the Annual CIRM Bridges Meeting. The training program will enable students of diverse background to contribute their knowledge and technical skills developed upon completion of the training period to the great promise of stem cell-based treatment therapies for patients.
Statement of Benefit to California (as written by the applicant)	Stem cell-based treatment strategies represent the future of medicine for patients with unmet medical needs. Continued progress in the development and administration of these new therapies not only require ongoing basic and translational research, but also a sustainable approach whereby the next generation of scientists and technicians build upon the initial success of previous scientific accomplishments. The continuation of our ongoing training program will contribute to the generation of knowledgeable and well-trained scientists and technicians by providing hands-on research experiences in combination with rigorous academic curricula. The internship has been carefully crafted to increase the number of young investigators and technicians with varied career goals by recruiting students representing California's diverse population who can contribute to the development of stem cell based therapies and accelerate their eventual delivery to patients benefiting by these powerful new approaches.
Funds Requested	$2,909,775
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: 80

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	79
Median	80
Standard Deviation	6
Highest	87
Lowest	70
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	5
(1-84): Not recommended for funding	10

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 13	• This program proposes 13 trainees per year over 5 years with up to three years training with students from underrepresented groups and disadvantaged backgrounds. There will be engagement of research faculty with students. • Terrific track record of success in analogous CIRM Bridges program as evidenced by 96% graduation rate with a Bachelor's or Master's degree, 30% above the average. Broad exposure, including to patients with bench to bedside, creates awareness of multiple career opportunities. • In their Bridges data set there is a demonstrated track record of careers in life sciences with 34% serving as research assistants and 32% continuing on to graduate school programs. • The selection process is set up to be able to draw from candidates that have a "demonstrated spark" as observed first hand via lab work through courses taken prior to participation on the program. This approach allows for a greater chance of success as opposed to focusing in on GPA or test scores. • Potentially - students will have access to excellent labs, so the potential is there for students to work in some of the best labs in the world. • The students will have a reasonable education but unclear metrics and outcomes. This does still offer an opportunity for these underrepresented and low income students. • Involved in Bridges and Spark programs already - mitigates the aspect that may limit the quality, they have already been vetted and are familiar to CIRM. • The joint program has contemplated the recruitment of diverse students. The impact is seen as moderate considering shortcomings observed in the proposal. Among them is the short duration of the training, i.e., one year. • It has some strengths but also has several issues.
No: 1	• The group has a track record of training individuals from underserved and disadvantaged backgrounds that makes them well positioned to continue to provide a solid training and development environment for future cohorts of students. • The program will be integrated into a suite of other training and professional development programs that collectively provide multiple pathways to pursue further education and careers in biomedical research, including stem cell research. • There is no clear plan in place to ensure program personnel and research mentors learn about culturally aware mentoring and continue to advance their knowledge and skills related to diversity, equity, and inclusion.
GWG Votes	**Is the program well planned and designed?**
Yes: 7	• Very well planned. The experience with CIRM Bridges and with NIH "Bridges to Baccalaureate" show through with broad goals and demonstrated initiatives. • Mentors, lecturers and facilitators are predominantly from under represented groups which has a direct and immediate impact. In addition, the mentorship program is very well

	designed with clear goals that focus on the individual to maximize their development and this unique opportunity. ● Strong group of mentors mostly engaged in basic research. ● Career guidance and student development programs are proposed. ● Training and outreach programs are first class. ● Recruitment is based on faculty recruitment and has academic orientation; research faculty engagement with undergrads encouraged. ● Strong advisory committee. ● Foundational coursework part of BS degree though somewhat limited. Other activities include: experience in writing a grant proposal, internship at partner institution, a stem cell techniques course, presentation of research. Outreach programs mostly institution related/volunteer opportunities at elderly care or a medical student clinic. ● There is an established alumni tracking mechanism that appears to have good data collection capabilities. ● Good record of alumni tracking. Metrics strongly academically oriented. Could be more clear about how the 10 year tracking will be implemented.
No: 7	● The program will leverage the teacher-scholar model in place to identify and recruit students with potential. While the program avoids relying on factors such as rank, pedigree, GPA, or SAT scores, there are few if any specifics of how students with potential will be identified (e.g., what are the criteria that indicate potential? How will the recruitment and selection process protect against bias?). ● They lack a mechanism to fully evaluate the potential students for this program. ● There are concerns about whether there is sufficient support to ensure that a diversity of students will apply, be selected, and be supported in being successful in the program. For instance, the application process is demanding and it is not clear how students will be supported through it. Writing a proposal at the outset of their research is also quite demanding to the point of being unrealistic. ● The first identification of potential candidates is done by faculty during their lab classes. No rubric, more like a 'trust me, I know' approach. This is a red flag, bias will be hard to mitigate. ● Although the program indicates it has a track record of recruiting and training individuals from disadvantaged or marginalized backgrounds, no statistics are reported on the racial, ethnic, socioeconomic, or first-generation college status of trainees. ● It is not clear how mentors, especially those in co-mentoring relationships, will develop their mentoring skills or how these skills will be assessed and improved over time / as needed. It is also not clear how mentors and other program personnel will advance in their understanding of DEI principles and how they will be practiced in the program. ● Although trainees will have multiple opportunities to engage with K-12 students, the general public, and the patient community, it is not clear how they will be prepared to do so, including what they will learn about teaching, learning, and public scientific communication that will help them make the most of these experiences and have the most impact. ● Very limited course work. ● Outstanding group of researchers and staff but the proposal is a bit confusing and poorly constructed. ● It is not well aligned to achieve CIRM goals & outcomes for the COMPASS program.
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 9	● Tremendous access to resources and local companies through the partnership and interaction with other companies in the area. Experience with CIRM and NIH programs are clearly evident and resonate throughout the proposal. ● Stem cell core labs will facilitate training in an excellent environment. ● Grand rounds and bench to bedside activities are viewed as favorable and expand on the pure lab experience. ● Strong program team with relevant experience. ● Program director has extensive experience in stem cell training programs. ● Advisory committee looks strong. ● Participation in successful training programs, the partner institution has run several successful training programs including Bridges. ● Probably - but the issue is whether the program will have the hoped for impact.
No: 5	● The program has access to necessary personnel (e.g., experienced leadership, many mentors doing research in stem cell/regenerative medicine), partnerships (e.g., with industry and other universities), and research infrastructure (e.g., equipment, coursework) to carry out the program.

	• There is no reference to research on research training, effective and inclusive mentorship, inclusive programming, etc. that could inform the design and implementation of the program. For instance, adding structures such as the use of rubrics, professional development requirements for all mentors, and evaluation data collection and analysis to make continuous improvements will help reduce bias and maximize equity and inclusion. • It seems that the program would benefit from expertise in high school and public outreach and communication. The extent to which this expertise is available among program personnel is not clear. • Multiple programs for mentor training are listed, are they mandatory? • There is no mention of individual development plan for trainees.
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 8	• Demonstrated success with 52% women and 53% URM in the pool from their other programs. • Somewhat light, supported by coursework and institutional policies, regular seminars and training opportunities.
No: 6	• The advisory committee is diverse; a strength is the inclusion of early career researchers. The research mentors are also diverse and there are plans in place to connect trainees with diverse role models and alums who represent a diversity of identities. • Training programs on DEI for trainees are present, however, there are no specific requirements for mentors to be trained in DEI issues. • Interesting that the trainees are participating in the DEI training. They seem to be missing the more valuable aspect of training their faculty and instructors in DEI. • The proposed diversity training is designed for teachers, not so much for students - may not be appropriate or relevant for trainees. • There are perplexing design elements related to DEI, such as having the trainees complete professional development on DEI and allyship. This seems more suitable as a requirement for mentors or other program personnel in positions of power. • It is not clear how mentors or other program personnel will advance in their learning about and application of DEI principles and culturally aware mentoring skills. • The program will select students who already have research experience. As a result, the proposal will not broaden participation in research, but rewards students who are already successful in research.

Application #	EDUC5-13848
Title (as written by the applicant)	The COMPASS Fellows Program
Public Abstract (as written by the applicant)	As an Hispanic Serving Institution (HSI), member of the American Association of Universities, and R1 university, our institution is in a unique position to transform undergraduate STEM education through an emphasis on experiential learning, scientific identity and an inclusive research environment. The department of Molecular, Cellular and Developmental Biology is home to more than 2,000 students. Approximately 49% of our students are first generation college students and 31% are Hispanic/Latino. A significant challenge is to provide our students with the opportunity to engage in authentic biomedical research in a laboratory setting. Currently, less than 15% of our students participate in undergraduate research. Here we propose to expand our curricular undergraduate research experiences to stem cell biology and create a COMPASS fellowship program as an approach for recruiting and retaining students from diverse backgrounds to fields aligned with regenerative medicine. The plan has two components. The first is to launch at least two faculty-led undergraduate research labs capable of engaging 40-50 undergraduates in stem cell biology research through our standing undergraduate research experience program. Because of the low barrier to access opportunities for research, this standing program will serve as a recruiting pipeline for the COMPASS fellowship program. This program bridges research and education and provides an opportunity for undergraduate students to work with faculty and graduate students on authentic research projects. This program enables students to work within the research community thereby promoting inclusivity and retention. Finally, the courses fulfill curricular requirements in our majors, enabling students to advance towards their degree while engaging in authentic, faculty-led research. The second part of this project is to identify up to 16 COMPASS fellows that will be financially and professionally supported throughout a capstone research project in a faculty member's lab. Opportunities for internships will also be explored whenever possible. We will build partnerships with local biotech companies to provide internships for undergraduate students. These partnerships could increase our capacity for providing research experiences for undergraduates as well as provide our students with important networking opportunities for careers post-graduation.
Statement of Benefit to California (as written by the applicant)	Universities are not level playing fields where all students have an equal opportunity to participate and succeed. Underrepresented minority students and first-generation college students face many structural impediments in higher education. They often lack support networks and have difficulty transitioning to college life since they are often nontraditional students and are unaware of various opportunities for advancement. We expect that our COMPASS Program will lower the bar for participation in stem cell research. This will enhance retention of underrepresented minority and first generation students, increase scientific identity and promote student success.
Funds Requested	$2,899,950
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: 80

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	76
Median	80
Standard Deviation	10
Highest	89
Lowest	50
Count	14
(85-100): Exceptional merit and warrants funding, if funds are available	2
(1-84): Not recommended for funding	12

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 7	• The proposed program will provide research experiences built into the undergraduate curriculum coupled with internships to promote trainee career development. The curricular undergraduate courses will be built around the stem cell-oriented courses. There is heavy emphasis on recruiting underrepresented students. In this respect, it addresses the goals of the program However, the application may not fully address the broad diversity of California's population. • The design of the program is research built into the curriculum, a COMPASS program and then an industry internship. Such intensive experience is expected to generate continued interest in stem cell related fields and meet the mission of the CIRM program. • The need for this program is well-justified. Including a hands-on laboratory component has been documented to result in successful academic performance of diverse students and female students. • A well-developed mentoring program has been designed that includes faculty mentor training as well as peer-mentoring. • Yes, but the proposal needs work.
No: 7	• Unfortunately, the program is not ready to launch. (i) New courses will be required - these are not already in place. (ii) The proposal does not fully describe how scholars will enter the program or what they will do. (iii) Research mentors are not in place. • Throughout the proposal the text refers to "this cohort" - but the definition of the cohort is unclear. A target male/female ratio? First generation in college? Other? • I'm not convinced of the proposal's premise - that increasing the number of students that take lab courses will decrease demographic disparities in grades. • This proposal is mostly focused on the institution's current research program for undergraduates, and not on integrating COMPASS priorities. • This proposal may not be CIRM-aligned - it does not adequately focus on stem cells or regenerative medicine. • It's not clear how students will be exposed to diverse career possibilities. • It's not clear what is being offered beyond lab exposure. • Outreach appears to be minimal.
GWG Votes	**Is the program well planned and designed?**
Yes: 5	• The goal of the program is to overcome barriers to recruitment of individuals to STEM programs, involve multiple stakeholders in providing information on the COMPASS opportunity, and conducting a holistic review of applications for trainee selection. Assessment and adaptation is adequate. • The mentoring program includes faculty mentoring by a trained facilitator in mentor training. Providing near-peer mentors to the participants and mentored trainee activities. • The overall design of the program is very good. Activities include creating an IDP, exposure to scientific communications, RCR, and application preparation to graduate/professional schools. These are well designed. • The program consists of foundational coursework that includes stem cell related courses integrated with research experiences, laboratory internships and a capstone project. These are all well designed. • A large number of faculty mentors are listed with their research expertise. • Trainees agree to participate in tracking at the time they join the program.

	• Overall, yes, but the patient and healthcare engagement section is not very well developed. The applicants should come up with specific plans and activities for this engagement. • There is no discussion of retention of trainees in this program. • Patient engagement activities are too limited. • The Alumni tracking will mirror a NHGRI-funded program. However, the tracking is mostly self-reported and there is not data to show that the tracking system proposed has been successful. As proposed, the alumni tracking is a weakness of this application.
No: 9	• The proposed activities are not aligned with the CIRM goals. The program is not ready to recruit trainees. The number of trainees, what the trainees will do, how they will be selected, etc., are not sufficiently described. • This proposal doesn't meet the requirements for COMPASS. • The program does not appear to provide mentorship training. • I feel the proposal needs better structure and more complete plans for program execution.
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 10	• The institution is an R1 university and has a number of funded training programs as well as institutional resources that will be leveraged in this program. The commitment of the institution is apparent, and the program is expected to be successful. • The program team has excellent credentials to conduct this program. • The institution has at least five related training programs. Unfortunately, the applicants failed to provide any outcomes from these programs to make a reasonable estimation on the success of the proposed program. • The proposal includes plans to distribute information to R2 universities and community college system (local). The applicant will also share outcome data through the CURENet consortium. • Yes, but perhaps only based on the reputation of the institution.
No: 4	• Unfortunately the program goals, and approaches to achieve them, are not adequately described. We can't judge the potential for success of this proposal. • The proposal does not adequately establish that the program is practical or achievable.
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 9	• This area is the strength of this proposal. A detailed DEI plan for recruitment as well as for community engagement and dissemination has been provided. • The plan is built around well-established DEI programs and strategies. This brings DEI resources within the institution to program participants.
No: 5	• The programmatic focus appears to be on preparation for graduate school. Trainees may not be exposed to other career pathways. • The proposal relies on leveraging partnerships, without providing project-specific plans. • Appears that the applicant is mostly relying on the fact that the institution is an R1 Hispanic Serving Institution (HSI).

Application #	EDUC5-13936
Title (as written by the applicant)	Diversity in Stem Cell Research Networks (DISCERN)
Public Abstract (as written by the applicant)	The COMPASS Program is designed to enrich the diversity of applicants and entrants to the biomedical workforce, specifically in their formative undergraduate training. Fellows will be paired with top stem cell faculty, where they will be integrated into the labs over two summer internships and contribute to the cutting edge research being undertaken around California. Two cohorts of ten mentees will enter the program over five years and will be open to students who have completed their freshman semester. The internships will also include meetings with patient advocates, targeted coursework and culminate in a Capstone project resulting from their experience in the lab.
Statement of Benefit to California (as written by the applicant)	The COMPASS Program is designed to identify students from backgrounds that are underrepresented in the biomedical sciences and develop their careers in regenerative medicine. There are many students who are extremely promising, however have never been exposed to laboratory research or believe that it could be an option for them. Leveraging the fascinating work being done by California faculty, the students will be encouraged to develop their own research projects and lab skills that will put them on a trajectory to graduate programs and even eventual careers in academia.
Funds Requested	$2,910,000
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	71
Median	70
Standard Deviation	2
Highest	75
Lowest	70
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	0
(1-84): Not recommended for funding	15

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 6	• The institution will provide an exceptional training environment - it is likely that the enrolled students will be well trained. • This program has potential to have an impact, but it also has flaws.

No: 8	• This is an excellent center with a lot of great mentors. • The proposal lacks clear emphasis on stem cells or regeneration. Trainee placement is within stem cell laboratories, but trainees are not required to take stem cell oriented coursework. • The program does not include instruction outside the strict sciences - no scientific writing or other communication skills training, no industry preparation, no introduction to GMP/GLP, no introduction to manufacturing and processes, etc. • The program has little emphasis on required coursework and little focus on regenerative medicine. • The program lacks continuity through the summers, and appears to focus on undergraduates planning to enroll in MD or MD PhD programs. • The program does not provide for continuity of mentorship between the first and second summer internship. • It's unlikely that this program will enhance trainees' chances of acceptance into an MD, PhD or MD/PhD program (the proposal's stated goal). Two summers of research experience is not adequate. • This program will not get students into MD/PhD programs. • The proposal appears biased towards training aspiring MD/PhD students.
GWG Votes	**Is the program well planned and designed?**
Yes: 4	• The required courses do not appear to be in stem cell biology or regenerative medicine.
No: 10	• The institution is clearly an exceptional place with exceptional resources for regenerative medicine related research. However, the proposal does not describe a coherent program in which trainees in a cohort interact and support one another. Instead, there is a singular focus on preparation for postgraduate studies. • While plans for ensuring quality mentorship are well developed, the program is very narrow in focus. Trainee selection is for those already interested in attending graduate school, and activities are focused on getting students into MD, PhD or MD/PhD programs (and not necessarily in stem cell research). • The proposal includes good plans for outreach to underrepresented minority students, but then the activities are focused only on pursuing postgraduate studies in science. This is too narrow. • I'm not convinced that the named mentorship facilitator has the background or experience to mentor or coach mentors. • The foundational courses do not include stem cell biology. • Why is research limited to two summers? • The proposal lacks clear information about what happens between the two summers. • The proposal is unclear about which program elements are required versus available. • The rationale for some programmatic components is weak. • The mentorship training should incorporate inclusivity.
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 9	• This is achievable. • No concerns.
No: 5	• The program is not well described. • There are too many weaknesses. • Training students only for a MD or MD/PhD track is too limited.
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 6	• The institution's Office of Equity, Diversity, & Inclusion and Undergraduate Research Hub both have considerable experience targeting support for underrepresented students. • The proposal has an adequate plan for DEI, but has programmatic flaws.
No: 8	• The selection process seems unusual. Early steps may not be sensitive to DEI issues - for example, applicants to the program will be asked about their parent's education at the beginning of the process. • Why actively seek for high selectivity? What will happen to the two thirds of student applicants who aren't selected? Why not have a recruitment process that is staged from open participation to paid research internships? • Unfortunately, the riches of this institution are poorly leveraged to include a broader diversity of students and the proposal maintains a traditional focus on preparing scholars for graduate school entry. • It's unlikely that first-in-college or other underserved students will have prior research experience when they apply to the COMPASS program. Nonetheless, this is apparently asked of prospective trainees.

Application #	EDUC5-13856
Title (as written by the applicant)	COMPASS Training Program for Undergraduate Students
Public Abstract (as written by the applicant)	This five-year COMPASS program aims to recruit a total of twenty-five trainees, four in the first year and seven in each of the subsequent three years, and help them achieve career paths in stem cell science, gene therapy and regenerative medicine related fields. Each trainee will be supported by the program for two years, during which they will receive continuous training in stem cell biology, research readiness, professional development, and career development through online learning modules and live workshops. The first year of training will focus on research readiness and diversity in science while the second year will focus on professional and career development. Trainees will also be paired with mentors representing the targeted student groups who will serve as role models, provide support and guidance in career development, and help trainees with their capstone project. In addition, trainees will be required to participate in a minimum of seventy hours of patient and healthcare engagement activities and also help with community outreach and educational activities to increase awareness of diversity in science and regenerative medicine. Lastly, each trainee will be encouraged to complete two internships that can include two summers (full time) or twelve months spanning across two years (part time), with the option to choose only one internship that includes either one summer (full time) or six months within the same year (part time) based on individual's special circumstance. The program has established internship host-lab arrangements with two research programs at two different host institutions, as well as with thirteen individual host labs at research institutions or biotech company. All mentors and research advisors will be provided with access to diversity, equity and inclusion training resources to foster greater awareness and appreciation of diversity in science. Annual program assessment results will be reviewed by an advisory committee, with the goal of informing and improving program recruitment and outreach strategy, mentoring activities and internship placement.
Statement of Benefit to California (as written by the applicant)	The proposed project will provide opportunities through mentoring and partnership for a diverse group of students to be engaged in stem cell research. It will increase the number of participants from a community that is historically underrepresented in STEM to choose career paths in stem cell science, gene therapy and regenerative medicine, and help increase diversity in science. It will also further promote community eduction about stem cells, gene therapy and regenerative medicine.
Funds Requested	$2,262,466
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: 68

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	67
Median	68
Standard Deviation	7
Highest	75

Lowest	50
Count	15
(85-100): Exceptional merit and warrants funding, if funds are available	0
(1-84): Not recommended for funding	15

KEY QUESTIONS AND 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.

GWG Votes	Does the proposed program hold the necessary significance and potential for impact?
Yes: 5	• The applicant has access to underserved students. The ingredients are in place but the process and the structure are missing - how will the applicant operationalize the program, impact trainees' careers, and measure that impact? • This proposed project will likely benefit some students. However, the applicant does not have a clear approach or metrics for programmatic success.
No: 9	• The program involves many laudable elements but lacks the coherence and intentional design that would allow for greater impact. • The institute enrolls a diverse student population including students from underserved and disadvantaged backgrounds. • The Program Director has experience mentoring students including underrepresented minorities in stem cell research. • It isn't clear that this program will foster commitment from the trainees to the mission of CIRM. For example, the program selects trainees based on their prior interests - however, students from underserved groups may not have the exposure they need to identify this interest. • The recruitment strategy is passive, so it may be able to recruit trainees who represent the institution's breadth of diversity. However, the description of the selection process, which includes GPA and lab experience as measures, suggests it may have difficulty reaching even that goal. • A clear program of patient or community engagement is not proposed. Since connections between research and public good are often the most powerful routes to solidifying research career goals, the proposed activities are unlikely to advance Scholar's commitment to the CIRM mission. • It is not clear how the outreach and engagement activities are designed to foster trainees' commitment to accelerating stem cell treatments to patients with unmet medical needs. • The patient engagement is not clearly integrated and there do not appear to be opportunities for trainees to engage in career exploration and reflection related to the mission. • There is great potential here, but unfortunately the proposal does not present well-organized and evidence-based activities needed for a successful COMPASS program. • The proposal mentions that the applicant will encourage trainees to participate in two internships but allow the flexibility for just one, based on personal circumstances. A more structured program would better sustain trainee participation. • The proposed activities will not sufficiently prepare trainees for stem-cell relevant careers.
GWG Votes	**Is the program well planned and designed?**
Yes: 3	*none*
No: 11	• Anyone who has completed first and second year requirements will be encouraged to apply. Only passive recruitment efforts are described (e.g., pamphlets, website). No assistance in applying is offered. The description of the selection process suggests that grades will be an important factor in selecting students. • Program alumni tracking and engagement should be further developed. They mention having alumni participate in LinkedIn Learning courses, but there is no evidence that this is an effective method of alumni tracking. They also plan to deploy surveys, but it's not clear how they will ensure a high alumni response rate. • The proposal has not yet recruited mentors. The applicant plans to recruit mentors from alumni and faculty who are members of underserved populations. We don't know the number of potential mentors who meet the target demographic criteria.

	• The mentorship aspect of this program is decent and has the possibility of recruiting team of mentors including alumni. • The Program Director intends to target former students from their research lab, but this is a highly limited pool. • The applicant will rely on surveys and monitoring of students' LinkedIn accounts. The expected outcomes are not described. The proposal describes recruiting alumni as mentors, but such efforts won't have any benefit for at least a couple of years following initiation of the proposed activities. • Individual components are described, but not put together to describe a successful program. • This proposal is underdeveloped; the applicant needs to bring in more expertise.
GWG Votes	**Is the program proposal practical and achievable?**
Yes: 3	*none*
No: 11	• The Program Director is commendable for developing a successful research career within the context of an undergraduate institution. However, the Program Director lacks experience managing a complex project that involves multiple institutions, monitoring many individuals (including other faculty), building student communities, etc. A team including individuals with more management experience would strengthen the proposal. • The mentorship facilitator lacks the necessary depth of experience needed to train research mentors regarding issues of DEI. His/Her impact will be likely limited to logistical managing support. • All of the critical resources needed for stem cell research training appear to be within the Program Director's laboratory. This collection is very limited and does not represent the breadth of current stem cell tools and approaches. • The team has experience in training students in the lab, but may not have the necessary programmatic experience. • There does not appear to be a track record of success in similar programs. • This proposal needs clear plans for teaching methods, trainee logistics, goals for trainees, and post-program tracking of trainees.
GWG Votes	**Does the program thoughtfully incorporate strategies to support Diversity, Equity and Inclusion?**
Yes: 4	• Potentially yes, as the institution is located in an important under-represented region of the state.
No: 10	• The institution places high value on DEI and has a diverse student population. Initiatives are in place to advance DEI further, including campus climate surveys, faculty development, listening sessions, etc. How these initiatives will be leveraged by the program is less clear. • The potential for impact and the need is tremendous. A COMPASS program at this institution would be a wonderful addition to CIRM's portfolio. • Because of the diverse population of students, there is great opportunity to promote DEI. However, the program's efforts are insufficiently defined.