



Academic Senate  
for California Community Colleges

**The Stanback-Stroud Diversity Award Application**  
*Please fill out the following rubric. Please limit responses to 200 words per question*

<p><b>Describe your efforts to create an inclusive and supportive campus climate</b></p>	<p>As a mathematics educator, I learned the subject matter from a very traditional/Eurocentric perspective without any focus or consideration to the development of mathematics from a non-Western/non-European perspective. I felt that in serving the most demographically diverse population of students I needed to expand my horizons beyond my usual professional obligations which led me to broaden my educational background. I began to conduct research about teaching and learning mathematics from a multicultural perspective. I faced many obstacles and harsh criticism from colleagues in my field and even from my dean at that time who sarcastically suggested I present my findings on Oprah. These obstacles in addition to ridiculing my work by labeling it as <i>Rain Forest Algebra</i> did not discourage me. I began to make presentations on ethnomathematics to increase awareness about teaching/learning mathematics from a diverse viewpoint while providing historiographical evidence about non-Western/European roots of mathematical thoughts and constructs. What started as an idea to challenge the status quo led me to witness student success in basic skills and beyond. The creation of an inclusively diverse delivery of curriculum from a multicultural perspective encouraged an open dialogue with faculty about the importance of a diverse campus climate.</p>
<p><b>Supplemental Support or Evidence:</b></p>	<p>I am humbled to say that my efforts began to be noticed on numerous college campuses across the state. Soon I received invitations from colleges across the state to talk about ethnomathematics and cultural/ethnic diversity in the curriculum. I was one of the first community college mathematics educators to have designed and created the first ethnomathematics course in the history of community colleges. Unfortunately, due to the lack of open-mindedness from colleagues, the course was not offered through my department and I taught the course as an across-the-curriculum course, through the Department of Anthropology. The course curriculum was then used as a model for the creation of a graduate course in the mathematics education program at the University of Washington at Bothell. I was also contacted by researchers at Rensselaer Polytechnic Institute to assist in the development of the Culturally Situated Design</p>

	<p>Tools Software which is a free software program designed for k-12 students as well as basic skills students to learn mathematics from a multicultural perspective. Since 2000, I have basically impacted the lives of not only community college students but also k-12 students as well as graduate students in terms of bringing diversity to the teaching and learning of the mathematical sciences.</p> <p>Overall Merits: The merits of my work in diversity contributed to the propagation of my work in diversity nationally and internationally including articles featured in journals such as The Chronicle of Higher Education, Diversity Journal (formerly Black Issues in Higher Education), authoring textbooks, and numerous speaking engagements/presentations and keynote addresses across numerous California community colleges, and also community colleges outside California as well as 4-year universities in the US and abroad. I was also honored to have received recognition for my work from the Office of the Governor of California and the California Community College Chancellor's Office for leadership in diversity.</p> <p>Impact: The impact of my work has resulted in creating interest and a climate of curiosity about learning mathematics among both ethnically diverse and traditional students.</p> <p>Outcomes/Commitment to Diversity: The outcomes of my work have been thus far extremely satisfying beyond words and students have an opportunity to view mathematics beyond formulaic approaches to solving problems. My commitment to diversity is still vibrant as evidenced by my continual work in the field in terms of authoring articles and being involved with diversity efforts at the local and state levels such as in the ASCCC, Umoja Program, and the Faculty Association of California Community Colleges.</p>
<p><b>What effective teaching and learning strategies have you implemented?</b></p>	<p>From a general perspective the best strategy that I have found in the teaching and learning of mathematics has been to first provide an historical background from a culture and gender perspective prior to introducing mathematical concepts. For example, I often use ideas from how various cultures (Inca, Maya, Aztec, Africa, China, Arabia) use mathematical constructs to solve everyday problems and how these constructs later became axiomatized through the Greeks. I also demonstrate that Africa contributed to the development of mathematics but was, unfortunately, unacknowledged because the histories of these cultures were canonically written by those who were victorious in wars between these cultures and Europe. I also present</p>

	<p>challenges to the concept of the Dark Ages in Europe and point out that at that time there was a period of enlightenment in other parts of the world. Students as a result of these preliminary presentations of the mathematical content they are to learn become engaged, inspired, and motivated to want to learn and identify themselves with the subject matter from a humanistic point of view, eventually resulting in student success and interest in the mathematical sciences and STEM<sup>2</sup> subject areas.</p>
<p>Supplemental Support or Evidence:</p>	<p>In teaching an intermediate algebra class I conducted a quasi-experimental research study (statistical design) to compare performance and success between students taught from a multicultural perspective (ethnomathematics) and those students taught from a traditional perspective. The results of my research were statistically significant with a p-value of less than 0.05 and the paper was later published in a journal. Ever since its publication, the findings of my research have been quoted and referenced by researchers as well as doctoral students in their dissertations. I have also conducted qualitative research, designs using phenomenology, case studies, and focus groups resulting in qualitative evidence in support of the hypothesis that teaching mathematics from a multicultural perspective does improve student success and retention.</p> <p><u>Overall Merits:</u> The merits of my work have led me to share my knowledge and be actively involved in the community as an expert in sharing about multicultural teaching at elementary and high school levels using culturally sensitive software tools such as the one previously mentioned in the preceding question (i.e., Culturally Situated Design Tools developed at Rensselaer Polytechnic Institute). Students attending schools in underprivileged communities as well as those students in K-12 who are at risk have had the opportunity to be exposed to the ideas of mathematics in graffiti, music, and the mathematics of non-Western Cultures. I feel that my work has also benefitted those students who in the future are likely to attend our classrooms and who are economically and socially disadvantaged.</p> <p><u>Impact:</u> The national success rate in mathematics is around 50% (Chronicle of Higher Education) and the success rate using my methods in mathematics is close to 82% with a small margin of error (based on my own statistics). I teach the same content and with the same rigor as my colleagues.</p> <p><u>Outcomes/Commitment to Diversity:</u> My commitment to diversity continues on and is evident by the fact that I am involved in professional organizations that focus on serving ethnically diverse students and women. My commitment to diversity also led</p>

	<p>me to write a resolution recommending alternative approaches to teaching from a multicultural perspective in the late 1990s at an ASCCC Plenary Session.</p>
<p><b>Describe activities that have facilitated student access, retention, and success.</b></p>	<p>Some activities I have included as andragogical/instructional tools include using (a) mathematics autobiography, (b) short writing assignments, and (c) multicultural approaches to solving problems. In writing mathematics autobiographies students are able to put their feelings, fears, successes, and concerns about mathematics in writing and deal with those issues personally and begin to gain confidence. Writing is an excellent cathartic way to identify problems. I usually wait two or three weeks before doing this to allow students to settle in and feel safe in the classroom. Short writing assignments allow students to explore ideas beyond traditional European constructs and discover non-Western/diverse cultural contributions to the body of mathematical knowledge. Students are encouraged to research biographies of culturally diverse eminent mathematicians thus enabling them to relate to the subject matter as people of color/persons of culturally/ethnically diverse backgrounds. Some of these assignments include research on mathematicians such as Evelyn Boyd-Granville, David Blackwell, and Benjamin Banneker in addition to learning about number patterns in ancient archeological artifacts (Ishango Bone). In completing activities or assignments about multicultural approaches to solving problems students are exposed to a gamut of strategies ranging from narrative analysis to translation of such narratives to formulaic approaches and applications.</p>
<p><b>Supplemental Support or Evidence:</b></p>	<p>The writing assignments have been successful in terms of writing across the curriculum and students are able to transfer mathematical knowledge to other courses such as English and social/behavioral sciences (sociology and anthropology).  <b>Overall Merits:</b> The merits of activities that have facilitated student access, retention, and success have resulted in student success and retention in other academic areas as reported to me by colleagues as well as my follow-ups with students.  <b>Impact:</b> Students have the opportunity to view mathematics as a humanistic endeavor which is important in their journey to understand society and the world around them. Students learn mathematical concepts but they are also able to develop quantitative literacy skills to interpret information and use quantitative thinking skills to address personal and professional concerns.  <b>Outcomes/Commitment to Diversity:</b> My commitment to diversity in terms of the facilitation of student access, retention, and success have resulted in measurable</p>

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	<p>outcomes such as viewing problems and situations requiring high cognitive levels from a quantitative and qualitative perspective.</p>
<p><b>Describe activities that have fostered student engagement in campus life.</b></p>	<p>I have created opportunities for students to become active learners seeking knowledge and information in terms of providing opportunities to participate in campus activities such as advising clubs (mathematics competitions at the college for high school students opting to attend the college). I also volunteer and I am sought after by colleagues to speak in their classrooms on a number of topics that can be addressed from a mathematical perspective. For example, discussion about the politics of mathematics in terms of social responsibilities of corporations using mathematical approaches to create products and devices to address social concerns. I also present how mathematics can be used for the improvement of life or its detriment as evidenced in the use of statistics for the purposes of public health concerns or for the purposes of creating artifacts for war and oppression.</p>
<p><b>Supplemental Support or Evidence:</b></p>	<p>Activities designed to foster student engagement in campus life have been effective in terms of learning issues outside of mathematics. I have often used extra credit assignments that would not affect nor deter greatly the integrity of the curriculum for students to attend speaking engagements led by visiting scholars to the college campus. For example, a recent scholar was invited to the college to speak on the Mayan Calendar, which from a mathematical perspective deals with the particulars of calendar calculations and modular arithmetic principles to forecast dates by Mayan high priests. Students, in these extra credit activities, were exposed to the particulars of ancient Mesopotamian society, culture, and customs and also learned about the invasion from the Kingdom of Spain during the time of conquest and colonization. I have also encouraged and attended various campus committee meetings with students where decisions affecting the college and their education are being debated so that they can learn how to present logical arguments and collegially debate ideas from a student perspective.</p> <p><b>Overall Merits:</b> The merits of these activities have encouraged and influenced students to become involved in student government and in the student senate and other student organizations.</p> <p><b>Impact:</b> Students have the opportunity to explore areas that they may have not previously thought about in terms of interests in pursuing work experience or careers in public service.</p>

	<p><b>Outcomes/Commitment to Diversity:</b> My commitment to diversity in terms of these activities have included my working with students to meet members of the legislature and faculty leaders of diverse backgrounds so that they can identify with those persons who are successful and ultimately connect with those persons to develop mentoring relationships and a comprehensive network of associations and connections to key decision makers. One such student was so successful and innovative that she was able to transfer to Stanford University and has since met great scholars in her area and as a result of the experience the student was able to complete an internship at Oxford University. Another student that I had in my statistics class is now a University of California student who completed an internship at John Hopkins University and the network experience gained has positively and profoundly affected her current status as a transfer student to a prestigious medical school.</p>
<b>Nomination Documents</b>	

### Statement from the Nominator

Where can I begin to present this nominee's outstanding contributions to academic diversity and learning? A difficult question, as the nominee is the quintessential candidate, embracing diversity in the heart, mind, and intellect, and so much so, that the candidate has been and continues to be an outstanding leader in diversity and academia. The nominee embraces the richness and value of California's wealth of diversity, in our classrooms, campuses, and state, and s/he is multilingual and multicultural in every professional aspect and demeanor. The nominee celebrates, models, and encourages curricular, campus, and intellectual diversity, but let me focus specifically on four of the ways the nominee is the exemplary candidate for the Stanback-Stroud Diversity Award and would represent the ASCCC perfectly.

**S/He Creates an Inclusive and Supportive Campus Environment in the Past, the Present, and the Future:** The nominee has, I believe, a gift in the ability to create an environment that is supportive and encouraging, modeling and creating inclusion at all levels. Early in my colleague's academic career there was an intellectual epiphany concerning students' needs to learn beyond traditional Western ways and modes, that mathematical, English, and scientific concepts taught in non-traditional ways create engagement, connection, and investment. This insight was the impetus to higher knowledge in this arena: mathematics and learning must be alive and relatable, the study of numbers must move beyond rote numerics into a living, diverse world. Imagine the curiosity and enthusiasm of students who discover that the very earliest origins of mathematics point to non-Western cultures and those origins were inclusive of women, especially as this insight opens the possibilities for female students who have felt exclusion. The nominee worked with diverse colleagues, as well, collaborating with a group of social science professors in envisioning a new course that embraced multiculturalism from the blending of mathematics and social studies, creating this course in ethnomathematics, and taught *outside* of the math department *but by a mathematician*. Inviting students in to learn about the global relationship between anthropology and mathematics created new avenues for students and encouraged their involvement in mathematical ideas from a global perspective. With that cross-disciplinary approach came campus and student success at the home campus, then the nominee took these ideas and presented them at several national speaking engagements, and these were followed by a letter of congratulations from our college president and a commendation by our Senate—two rare occurrences. Following that, the nominee wrote and published a peer-reviewed, journal article on personal research data that significantly suggested the link between ethnomathematics and student success, entitled "Comparison of the Final Grades of Students in Intermediate Algebra Taught with and without an Ethnomathematical Pedagogy," identifying a higher level of student success in Intermediate Algebra when incorporating ethnomathematics into the curriculum. This work was acknowledged, cited, and built upon by other ethnomathematics scholars—and used on their campuses. Even beyond these successes, the nominee continues to work inclusively on our campus and beyond: in the campus UMOJA Program, in ASCCC, and in FACCC, broadening perspectives in multiculturalism and diversity both campus wide and statewide.

**S/He Implements Innovative and Inclusive Teaching and Learning Strategies:** As described in the prior segment on campus climate, the nominee puts this research into practical use through highly effective, successful teaching and learning strategies. Initially as s/he created a cross-disciplinary course on ethnomathematics taught through the Anthropology Department, this attracted a new and diverse student cohort. This cohort was taught by the nominee with innovative teaching methods, and students who were disenfranchised had a new world opened to them, their understanding of math concepts was broadened, and their personal options opened as they learned about the historical values of ancient non-Western cultures. Further, to inspire and create critical thinking, the instructor brought and brings in atypical non-Western math lessons: mathematical contributions from Incan, Mayan, Aztec, African, Chinese, and Arabian cultures and connects them to the Greeks and to today; counters widespread beliefs that the Dark Ages were indeed "dark" for all cultures by instilling knowledge that there were periods of enlightenment in the non-Western world. Outside of the classroom as well, the nominee serves at-risk students by going to elementary and high schools, reaching out to these at-risk students with unique and

diverse teaching and learning strategies: incorporating culturally sensitive software tools; showing that graffiti, music, and hair weaving evidence the math all around them; and making students more aware. As part of the nominee's political advocacy, s/he wrote and presented a resolution at an ASCCC Plenary Session on the teaching and innovation of ethnomathematics as an alternative approach to teaching from a multicultural perspective.

**S/He Facilitates Student Access, Retention, and Success through Diversity and Service:** From the statewide diversity issue back to the classroom, the nominee implements diverse, innovative techniques to facilitate student success and retention in order to enhance students' knowledge of the multicultural connections between mathematics and humanities. These methods facilitate student success and retention. When students are asked to reflect on how mathematics affect them personally, the personal stakes in learning math rise as the subject becomes more individualized and real. The nominee incorporates written research assignments, while not uncommon in a humanities classroom, but weaves them into a traditional math curriculum, making the experience of learning diversity both mathematic and human. Furthermore, the nominee has conducted quantitative research and had these statistics published in a peer-reviewed journal, research which significantly suggests the higher success rates of his students, nearing 30% above the national average, and without compromising the rigorous study of the curriculum, but rather enhancing it with ethnomathematics. Encouraging access for more excluded students, the nominee has visited and worked with both high school and elementary students who are at risk, worked with the UMOJA Program on our campus, and conducted mathematics competitions with local high school students on our college campus to allow these students to be included, and see that college, and access to it, is indeed in their future.

**S/He Fosters Continuing Student Engagement in Campus Life through Activism and Connection:** Fostering success and moving towards more inclusion, the nominee is deeply involved in promoting student engagement in campus life. As mentioned in the prior section, s/he was involved in mathematics competitions for high school students who hoped to matriculate later, and s/he has been and continues to be a vital guest speaker in campus classrooms, discussing the issues of mathematics and diversity, the connections between ethics and mathematics, and linking them to relevant social and cultural issues. The nominee speaks on statistics, as well, and shows how they can be used and misused in the name of social relevance and public policy, helping or harming vital decisions on health, war, and oppression. S/He has encouraged students to attend and participate in our campus's visiting scholars programs, learning about issues that are often on diverse subjects (such as the Mayan calendar). The nominee has fostered the seeds of beginning political and social activism in students by introducing them to state legislators and faculty leaders who come from diverse backgrounds. Individually, s/he has mentored a student from a multicultural background who eventually transferred to Stanford then interned at Oxford, and mentored another student who recently completed an internship at John Hopkins University.

Ultimately, the nominee's contributions to diversity do not stop at these roadways. Beyond these four pathways of contributions, there is a rich history of diversity work in the nominee's past, present, and future at both the cultural and gender levels. Beyond the academic publications, beyond the commendations, and well beyond the campus and students, the nominee is a tireless advocate for statewide and global diversity in knowledge and teaching. S/He was recently inaugurated as the leader/president of a culturally-sensitive group that advocates and promotes success for young at-risk ethnic women. S/He was recently honored with a very competitive diversity award for teaching; s/he was one of five keynote speakers (one was Condoleezza Rice) at a national conference on the interrelated subjects of diversity in teaching and learning in higher education; s/he has had articles written about this work in county-wide newspapers as well as in *Black Issues in Higher Education*; s/he has spoken across the country on campuses and in conferences; and s/he has had an ethnomathematics course created in a northwestern university based on the nominee's work.

There can be no other choice for the Stanback-Stroud Award for Diversity. The nominee has been preparing for this throughout the academic career and is still innovating and contributing and moving forward; the momentum is on. To choose this nominee is to join both journeys together in a powerful move forward toward more enlightenment and inclusion.

English Professor



**Regina Stanback-Stroud Diversity Award**

**Letter of Senate Support**

**March 5, 2013**

To the Members of the Selection Committee:

As senate president, I am excited to write this letter on behalf of our college's nominee for the Regina Stanback-Stroud Diversity Award. Our college's nominee has a distinguished record of advocating in favor of equity and diversity in education, in general, and higher education, in particular. In fact, I would characterize our college's nominee as a tireless advocate on behalf of equity and diversity issues in his community, at our college, and in the state. S/he speaks on behalf of those who may find it difficult to speak up for themselves, and on behalf of community college students and faculty. Please allow me to elaborate on her/his efforts.

**A Community Leader**

Our college's nominee is a community leader. S/he serves as the President of MANA, which is an organization that provides leadership and voice to Latinas at the local, state, and national levels. Its goal is to empower Latinas through leadership development, community service, and advocacy. It initially started as a Mexican-American women's advocacy group, but it has expanded its advocacy and efforts on behalf of all Latinas.

What truly makes her/his leadership special is her/his primary goal of encouraging young Latinas to become scientists, mathematicians, and engineers. Last spring, as president of the local chapter of MANA, s/he created a MANAmathon program (a math-a-thon) to encourage young *hermanitas* to pursue education and careers in science, technology, engineering, math and medicine (STEMM). Under his presidency, the MANAmathon constitutes a series of one-day events, organized throughout the academic year and during which, volunteers will tutor and mentor Latina high school and community college students to help them achieve their educational and career goals. I characterize this goal as august because he wants to close both the gender gap and the racial/ethnic gap in educational achievement, in general, and in STEMM fields, in particular. That is no easy feat, but our nominee does not shy away from such challenges.

Last year, these efforts were recognized by the county's Hispanic Education Endowment Fund when they selected our nominee as their recipient for the Apple of Gold Award. Their award aims to recognize outstanding educators who passionately advance student success both inside and outside of the classroom. This organization found her/his personal mission of helping her/his students transfer to four-year colleges and universities inspiring. One of her/his students helped to explain that she earned her first 'A' in a math class because our nominee helped her develop the confidence necessary to master the material and excel.

**An Academic Leader**

Our nominee is a mathematician at our college so our academic senate knows that s/he can use discipline-specific knowledge, expertise, and experience to make a difference in the intersection between MANA and STEMM as s/he works to implement the MANAmathon. We know s/he can make a difference in MANA because we know her/his work at our college.

In fact, as an academic, our nominee is a leader in the field of ethnomathematics. So, s/he is an academic leader devoted to discipline-specific knowledge as it cuts across different cultures. Ethnomathematics is the study of the association between mathematics and culture. More specifically, it seeks to determine how different cultures have practiced mathematics and how patterns become articulated in different cultures. As an educator, he seeks to tap into those cultural differences to help community college students learn mathematics, encourage them to connect with mathematics in different ways, and expose them to the variety of ways of understanding math; ways that often get ignored in traditional mathematics education. S/he seeks to bring diversity, equity, culture, and a more complete history of the field to the students enrolled in her/his classes at our college. Ultimately, s/he wants to help his students learn math, a scary proposition for many students, but finds success by using culture to connect them to math. S/he especially finds success with such methods in basic skills classes. Again, that is not an easy feat, but our nominee enjoys such challenges.

#### **A College Leader**

To top it off, our nominee is active in shared governance at our college. S/he is a college leader, having served as a senate president and currently serving as a senator. Her/his desire to address equity and diversity issues in education came out during his tenure as senate president. S/he authored numerous resolutions on such topics at our college and at ASCCC plenary sessions. For example, s/he helped one of our counseling colleagues develop an Umoja Community at our campus and worked to ensure that the academic senate would support and endorse such an endeavor by authoring a resolution and advocating on its behalf. The Umoja Community is devoted to enhancing the educational opportunities and outcomes of African-American and other students in California Community Colleges. As such, s/he is a founding member of the Umoja Community on our campus, helping to publicize the issue among the faculty, as well as lobby administrators, to devote resources to the program to ensure its continued success.

In conclusion, as senate president, I am happy to write this letter on behalf of our college's nominee. S/he is truly a tireless advocate for equity and diversity in education; serving in numerous leadership roles in the community, as an academic and as a faculty member. S/he has used these leadership opportunities to pursue equity, diversity, and multiculturalism in education. Her/his record speaks clearly to the advocacy on behalf of students and faculty. Thank you for considering this letter of recommendation. I hope that I have imparted the reasons why s/he is a strong candidate for the Regina Stanback-Stroud Diversity Award.

Sincerely,

Academic Senate President  
Professor and Chair, Political Science Department

March 6, 2013

To whom it may concern: It is with great respect that I submit the following letter in support of this exceptional candidate. I was fortunate enough to have had this professor as an instructor and a mentor at

As a female, and specifically a Latina, this candidate supported and encouraged me to pursue my dreams beyond what I thought was possible. I returned to school as an adult student, and although faced with many obstacles, found encouragement under the wing of this professor.

On more than one occasion, this instructor would remind me: "struggle and frustration are okay" which became the voice in my ear that kept me pressing forward through thick and thin. He further inspired me to adopt the mantra "Never, ever give up!"

After benefiting from this professor's teaching style, geared at teaching critical thinking in the process of learning statistics, I continued on in my studies and became a NASA Aerospace Scholar. This professor taught me to dare mighty things. With this in mind, I pursued a research opportunity with NASA, and was granted one of 14 prestigious spots in the country to fly my proprietary research aboard the Zero G aircraft at Johnson Space Center in Houston.

This phenomenal professor sets a consistent standard of supporting the minority students of \_\_\_\_\_ I represent the students of color that are also women. Without the support and encouragement of outstanding leaders in education such as this professor, our struggles would be greater and success would be more difficult to reach. This professor possesses a much needed cultural sensitivity that contributes to the provision of a safe circle in which truly beneficial learning may take place.

This role model has directly impacted my academic success for the better, and has contributed to lifetime accomplishments that have changed my life forever. I know that countless students have been touched and inspired, and most importantly moved to be their best through their partnership with this outstanding individual and his contributions to education.

Student,

and NASA Aerospace Scholar