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| Title V HSI STEM CompetitionBMCC Concept Paper | | | December 23, 2015 | |
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| Project Title: | **T.E.A.M.S.2** in Media Arts and Technology *for Hispanic and other low income Students* (Together Everyone Achieves More Success in Technology, Engineering, Art, Math and Science) | | | |
| BMCC Strategic Goal Alignment: | **The proposed project will align with the following priorities, goals and objectives from the BMCC Strategic Plan:**  **Strategic Priority 1:** Excellence in Teaching, Research, and Learning  *Goal*: Foster a culture of scholarly rigor and creativity for students, faculty, and staff.  *Objectives*:  1.3 Expand the use of technology to facilitate student learning, improve student services and ensure technologically proficient students, faculty and staff.  1.4 Strengthen curricular offerings to facilitate transition to four year institutions and address current and future workforce needs.  **Strategic Priority 2**: Student Success and Retention*Goal*: Support a learning environment and culture that promotes student success. *Objectives*:  2.1 Provide comprehensive and cohesive student services that maximize student success.  2.2 Provide timely and appropriate guidance for all students, with emphasis on freshmen.  2.4 Identify barriers to student success and implement strategies to remove them. 2.5 Recognize and celebrate student success inside and outside the classroom.  **Strategic Priority 4**: Community Engagement and Economic Development*Goal*: Enhance college visibility and enhance stakeholder participation.  *Objectives*:  4.1 Develop strategic partnerships with the public and private sectors.  4.2 Strengthen and broaden the connections between the college, NYC public high schools and other constituencies.  4.5 Increase alumni support and participation in the life of the college. | | | |
| Partnering Senior College: |  | Senior College Official Contacted | | [Contact Information: Address, Phone, Email] |
| ***1. Problem* Statement/Project Description;** the extent to which specific gaps or weaknesses in services will be addressed by the proposed project.  Project Description:  ***T.E.A.M.S.2*** *in Media Arts and Technology for Hispanic and other low income Students* will address gaps and weaknesses in outcomes and services related to academic achievement, transfer and career planning for Hispanic and low-income students. The focus of the project is to build teams of faculty, administrators, staff, students, parents, alumni and industry professionals while also strengthening the physical and technological infrastructure upon which these teams will communicate and deliver services. Barriers created by the financial status of Hispanic and low-income students will also be addressed. The overarching idea of the project is to improve outcomes by connecting and strengthening already existing programs and services to create a strong pipeline for students into the Media Arts and Technology fields, while also leveling some infrastructure and financial hurdles.  The CUNY initiative with the MECA high school has already begun to implement this approach. That initiative shows CUNY’s and BMCC’s commitment to this type of work and the MEA department’s participation in the initiative is building expertise in our department and shows our interest.  It is also a goal of the ***T.E.A.M.S.*** project design that by connecting, strengthening and building on existing programs and services this model will be sustainable and replicable in other BMCC STEM areas as well as at other colleges. ***T.E.A.M.S.2***also includes a plan to examine the curricular opportunities in the MEA department degrees and communicate how these offerings support the student’s interests, and future in the workplace. ***T.E.A.M.S.2***will facilitate pipelines from middle school through senior colleges and into industry.  **TEAMS**  Student TEAMS  Groups of students will be created based on factors like their position in the k12-4yr pipeline, field of study and other factors. More work needs to be done to determine how to create the Student TEAM cohorts and how large they should be.  Support TEAMS  These student TEAMs will be supported by TEAMS of admins, faculty, staff and professionals in the following three areas:   1. **Advising**: leverage existing: academic advisors AA&TC and MEA faculty, special programs like ASAP, College Discovery, MEOC and Student Services Programs such as Single Stop, COPE and Peer Mentoring Program. Use grant funds to expand these to include advising and informational sessions with middle and high school students and families. 2. **Academics**: strengthen and build on existing teaching and tutoring work by MEA faculty, LRC, MECA and College Now. Expand to include Instructional Technology Fellows and curricular sharing from K12–BMCC–4yr 3. **Career Planning**: build on existing Internships and Experiential Opportunities, Center for Career Development, and CED faculty. Expand to include participation from MEA Advisory Board and industry groups. Work with MECA on enhancing their existing model that includes partnership with the 4A’s and integration into the curriculum.   Each area will have a grant-supported TEAMS Area Coordinator to facilitate the communication and collaboration within the support TEAMS and between support and student TEAMS.  **Physical and Technological Infrastructure Projects**  These projects improve on the existing infrastructure to support the work being done in the Student and Support TEAMS   * Additional and updated Teaching and Study Labs * Laptop program to support Hybrid, Online and Computer-Aided instruction * Shared Advising software to support team communication in Academic and Career Planning advisement * BMCC Open Lab Software to support communication among all teams (student, staff faculty, k12, 4yr) as well as teaching. Built in collaboration with and on top of City Tech’s existing and successful Open Lab.   Problem Statement in terms of Gaps/Weaknesses:  **Gap: Academic Achievement**  In both the Multimedia Programming and Design (MMD) and Video Arts & Technology (VAT) programs Latino students have an average GPA 1/10th of a point lower than the overall GPA for the major. For MMD it is 2.65/2.55 for all students compared to Latino students and in the VAT major the numbers are 2.61/2.51. Raising these numbers is a priority; particularly when competitive programs to transfer into have GPA requirements.  Proposed ways to address the gap:   * Related Support TEAMS: Academics * Improve and expand tutoring and supplemental instruction programs by adding more tutors and through the TEAMS and infrastructure more closely linking faculty, tutors and students. * Bring in peer mentors from 4yr schools for academic and inspirational support * Increase Online, Hybrid and computer-aided learning. The MEA Dept does not currently teach hybrid or online courses. Student access to our specialized software and hardware needs is part of the issue which the grant will address through 1:1 program where students in these courses would be provided CUNY owned laptops and get 24hour access to the software/hardware needed for their academic and production coursework. BMCC would partner with SPS faculty around curriculum design and with faculty at City Tech and York College to learn from their Open Lab and web hosting programs. * Create Instructional Technology Fellows program like what Macaulay does to bring in graduate students to partner with faculty around in-class instruction and curriculum design. * Increase college preparedness through middle and HS programs that begin teaching concepts earlier, share content and curriculum with college and K12 faculty and through programs like the MECA/BMCC partnership and College Now where HS students take college classes.   **Gap: Transfer Rates**  The transfer rates of our Hispanic graduates is behind that of the overall rate in both the MMD and VAT majors. In MMD it is students is 30%/23% overall to Latino and in VAT it is 57%/46% overall to Latino graduates.  Proposed ways to address the gap:   * Related Support TEAMS: Advising and Career Planning * Pipeline Programs: Pathways from Middle School to High School to BMCC on to a BA/BS or BFA need to be strengthened for Media Arts and Technology students. The MECA partnership is an existing program that can be strengthened and with grant funding additional pipelines can be built with other K12 schools. * Portfolio Review Program: Many majors at senior colleges in our field require a portfolio for entry, as does the internship & career pathway. As part of the grant the department would revise curriculum to mandate portfolio work in our degree and create opportunities for portfolio review by senior college faculty and industry professionals. We would also facilitate getting middle/high school students to see these portfolios created at BMCC with open events. * With Student TEAMS in place and shared software and communication the grant activity will increase the amount of contact between the students and the Advising and Career Planning TEAMS. Activities will include organized group meetings, 1:1 advising and informal contact facilitated by TEAMS.   We also see some weaknesses in the current system that the TEAMS grant project would address.  **Weakness: Classroom+lab space, and access to software.**  The production courses in the MEA majors, MMD, VAT and ANI, all require labs outfitted with specialized and expensive software and hardware. Our instructional classrooms are running at or near capacity. In some cases we are unable to run evening sections of some production course due to lack of properly equipped classrooms. This issue will be further exacerbated when the MECA students come to BMCC in the Fall Semester of 2016. More Hispanic and low-income students will also increase the need.  Increasing Online and Hybrid courses and the laptop program that will support those courses will also help address space issues. Grant funding can also be used to increase the number of classrooms capable of supporting our classes.  The campus study labs are also a weakness as only a portion of the study labs have the software and hardware our students need to complete homework. The Fiterman labs, for example, only have a handful of computers running Adobe Creative Cloud. The MEA Department’s space in the LRC is often crowded and doesn’t provide the same range of hours the other labs on campus do. Here again the laptop program in combination with increasing the number of seats will address this weakness.  **Weakness: few Pipelines/ARTICULATION for STEM/STEAM**  The current pipelines from Middle School to High School to BMCC and on to a bachelor’s degree in our field are not as strong as they could be. Our contact with students and institutions on either side of the pipeline are minimal. The MECA partnership has changed this dynamic and the grant would support this positive direction.  We also feel that more attention should be paid to middle school students. Studies have shown that middle school is a critical juncture as students at this level often drop out of the STEM pipeline, or are never substantially introduced to it. While there are several STEM and STEAM programs in the NYC area for middle school students, they are either available only in a few select competitive programs at a handful of schools, or they are available mainly at high-cost after school, weekend, and summer camps. Therefore, access to such programs for underrepresented minority and socio-economic groups is largely restricted. Without access to these programs interest in STEAM often dies on the vine. The Obama Administration and the [Committee on STEM Education (CoSTEM)](http://www.whitehouse.gov/administration/eop/ostp/nstc/committees/costem), has articulated a priority for STEM education that includes goals to improve STEM instruction in preschool – 12th grade and that better serves groups historically underrepresented in STEM fields. (<http://www.ed.gov/stem>) “There is a large interest and achievement gap ... in STEM,” said the President’s Council of Advisors on Science and Technology in a [**report**](http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-stemed-report.pdf) last year that called for 1,000 new STEM-focused schools over a decade. (<http://www.edweek.org/ew/articles/2011/09/14/03stem_ep.h31.html>).  Summer Programs  As part of the grant we propose to address this weakness by including summer activities such as a weekend workshop or summer program held at BMCC or at a partner high/middle school. The content could include units in robotics, introduction to technology, arduino, video production, and other hands-on creative and technology-based learning possibilities. Participation and collaboration with regional and online programs such as NYC Makery <http://www.nycmakery.com>, Code.org's [Hour Of Code](https://hourofcode.com/us), [Scratch](http://www.scratch.mit.edu/), and other groups will be explored with the goals of building interest in STEAM and awareness of the educational opportunities at BMCC and beyond. | | | | |
| **2. *Quality of the Project Design*;** list the goals, objectives, and outcomes to be achieved by the proposed project and indicate how they are aligned with the college’s 2015 strategic priorities.  GOALS & OBJECTIVES:  **This plan aligns to much of the college’s 2015 strategic priorities Strategic Priority 1 objectives 1.1,1.2,1.4;**  **Strategic Priority 2 objectives 2.1, 2.2, 2.3,4.2;**  **Strategic Priority objectives 4.1, 4.2, 4.4, 4.5 & 4.6;**  Outcomes include reducing the gaps in academic achievement and transfer for our Hispanic students. Improving retention and graduation rates for our current majors. Additionally the proposed middle school STEM/STEAM component would provide access to a hands-on, experiential, and collaborative program for students from middle schools across NYC. We are extending the STEM to STEAM because the arts (a core of the MEA Dept.) promote creative thinking, analysis, and problem solving, all of which are critical components of innovation. | | | | |
| ***3. Quality of Personnel*; the** qualifications, including relevant training and experience, of the key project personnel.  **Lead PIs:**  Chris Stein  Janet Esquirol  Department full time faculty listed alphabetically with rank.   * Prof. Carol Basuru: Assistant Professor. * Prof. Jody Culkin: Full Professor. * Prof. Janet Esquirol: Assistant Professor. * Prof. Revital Kaisar: Assistant Professor. * Prof. Cynthia Karasek: Full Professor. * Shari Mekonen: Full Professor. * Prof. Anna Pinkas: Assistant Professor. * Prof. Anastassios Rigopoulos: Assistant Professor. * Prof. Jim Sayegh: Assistant Professor. * Prof Christopher Stein: Associate Professor and Chairperson of MEA Dept. * Prof. M. George Stevenson: Assistant Professor. * Prof. Jamal Sullivan: Assistant Professor. * Prof. Philip Weisman: Full Professor.   **Large grants awarded to MEA department: NSF DUE Award Abstract #0511209 -** http://www.nsf.gov/awardsearch/images/common/x.gif**Improving Student Learning through the use of 3D Simulation Activities and Case Studies in Multimedia Programming**  **NSF DUE ATE Award Abstract #0501830 -** http://www.nsf.gov/awardsearch/images/common/x.gif**Creating Career Pathways for Women and Minorities in Digital Video Technology** | | | | |
| ***4. Quality of Project Services*;** the extent to which the services to be provided by the project reflect up-to-date knowledge from research and effective practice.  We’ve based our suggestions around up-to-date knowledge from sources that include previous HSI grants, NSF grants, reports from What Works Clearinghouse on IES, Gartner, and PEW Research Center.  Studies show that mentors (professional, academic and peer) make a tremendous positive impact. Research is proving that 24 hour access to tools in technology related to our major lead to better academic outcomes. Evidence supports cohort-based learning that crosses disciplines. Finally, as mentioned previously, students are falling out of the STEM/STEAM pipeline very early on. | | | | |
| ***5. Adequacy of Resources*;** where will the project be housed and are there facilities, equipment, supplies, and other resources in place to carry forth this project?  The project would be housed within the Media Arts and Technology department at BMCC. We have facilities in Fiterman and 199 Chambers in the Media Center and a study lab in the LRC. The IRT Department also currently supports our hardware and software and would support new grant-funded initiatives like the laptop program and Open Lab software. The LRC currently and would continue to support tutoring. eLearning would provide support for instructional design and software related to the online and hybrid courses and use of Open Lab software. Classrooms and study labs would have to be created and modified which would also rely on support from Buildings and Grounds. Facilities for symposia and conferences could include those in Fiterman, Richard Harris Terrace, and/or TPAC.  As mentioned previously the project also relies extensively on other existing services and programs including AA&TC, Internships and Experiential Opportunities, Center for Career Development, special programs like ASAP, College Discovery, College Now, MEOC and Student Services Programs such as Single Stop, COPE and Peer Mentoring Program. | | | | |
| ***6. Senior College Partnership*;** the relevance and demonstrated commitment of the partnering institutions towards the proposed project to the implementation and success of the project.  The MEA department has articulation agreements with City Tech and part of their L4/Open Lab project includes expanding the Open Lab to other schools. CUNY SPS and York have both expressed interest in working with the department on articulation, pedagogical and infrastructure projects. We also have existing ties with senior colleges such as Brooklyn College, City College and Lehman College. | | | | |
| **7. Quality of the Management Plan;** the extent to which the time commitments of the key project personnel are appropriate and adequate to meet the objectives of the proposed project.  As department Chair Chris Stein is already committed to the goals of the project, in regular talks with many of the support services mentioned and sees much of the work as directly in line with his duties as chair. Janet Esquirol is currently the department liaison to MECA and is working with the Internships and Experiential Opportunities Department, Center for Career Development and CED teachers on revising our career related courses. As an untenured junior faculty member she has a need to produce research and scholarship and this grant would fit in nicely with that process. | | | | |

