STEM

Maisha Jameson

om:	Matthew Stavis <mstavis@gmail.com>
Sent:	Wednesday, June 18, 2014 1:40 PM
To:	Maisha Jameson
Subject:	Re: PLEASE CONFIRM RECEIPT OF YOUR PROPOSAL:: Peralta Accountability for Student Success (PASS) Fund for Innovation
Attachments:	PASS Proposals for Laney College.pdf

Please find my PASS proposal attached.

Thanks,
Matt Stavis
Laney chemistry

On Wed, Jun 18, 2014 at 12:46 PM, Maisha Jameson <mjameson@peralta.edu> wrote:

Greetings All,

It seems as though for the past several days we have been experiencing technical difficulties as relates to receiving email messages. I've been notified by multiple individuals that emails were sent when I in fact had never received them.

Given this, if you have not received an email response from me that confirms receipt of your submitted PASS proposal, please try to re-send, and also contact me that you have done so. That way I will know what I should be looking out for.

Thank you,

Mai

Maisha Jameson

Executive Assistant

Office of the President

Laney College

900 Fallon Street

Oakland, CA 94607

510-464-3236

mjameson@peralta.edu

From: Maisha Jameson **On Behalf Of** Laney President
Sent: Monday, June 16, 2014 5:24 PM
To: Laney-FAS
ıbject: REMINDER - DUE TODAY: REQUEST FOR PROPOSALS: Peralta Accountability for Student Success (PASS) Fund ror Innovation
Importance: High

Greetings All,

This is a reminder that the proposals for Peralta's new fund for innovation, PASS, the Peralta Accountability for Student Success were due today.

Please submit your proposals by tomorrow, June 17th to ensure sufficient time to review and consider all proposals received.

Thank you to those of you who have already submitted your proposals to my Office.

Elnora

Elñora T. Webb, Ph.D.

President

Laney College

900 Fallon Street

Oakland, CA 94607

510 464 - 3236 (Executive Assistant, Ms. Maisha Jameson)

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From: Maisha Jameson **On Behalf Of** Laney President
Sent: Wednesday, June 04, 2014 2:52 PM
To: Laney-FAS
Subject: REQUEST FOR PROPOSALS: Peralta Accountability for Student Success (PASS) Fund for Innovation
Importance: High

Greetings All,

Per the Chancellor's message on May 14th in which he announced Peralta's new fund for innovation, PASS, the Peralta Accountability for Student Success, I am following-up to solicit formal requests for funding for the 2014-15 school year. Please note that although the District's deadline is June 30th, **the deadline to submit your requests to my office is June 16, 2014**.

Please find attached the following:

1. Information on PASS
2. The Laney College PASS Funding Request Form

3. Background information on the Student Success and Equity Plans (both due in Fall 2014)

Please also note that ideas for strategies to address student success were also shared at our College-wide End of the Year Retreat last week. Input gathered there will also be taken into consideration, and the final plan for Laney College that is presented to the Chancellor may consist of a consolidation of the proposed ideas/strategies that are submitted.

Elnora

Elñora T. Webb, Ph.D.

President

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-----Original Message-----
From: announcement
Sent: Wednesday, May 14, 2014 4:27 PM
To: Announcements
Subject: Message From the Chancellor: Peralta Accountability for Student Success (PASS) Fund for Innovation

ɔlleagues,

I am pleased to announce Peralta's new fund for innovation, PASS, the Peralta Accountability for Student Success.

With the new PASS program each college will receive a significant amount of money from Peralta's Measure B parcel tax to fund innovative ideas that support high quality programs leading to student success. These programs must adhere to the Measure B ballot language, which specifically states that funds can be used for three areas:

A. Protect and maintain core academic programs including math, science, and English;

B. Train students for successful careers; and

C. Prepare students for transfer to four-year universities.

In addition to academic and educational programs, I also want to consider innovative approaches that include technology and facilities improvements that lead to enhancements to the three areas noted above.

ıch college president has been requested to prepare project proposals to be funded from Measure B proceeds. PASS funding can be used for single-year or multi-year projects. The proposals should be submitted to me by your college president no later than June 1st.

I have attached a detailed process for incorporating PASS funding into college budgets for the 2014/15 fiscal year. The process includes the amounts each college is to receive and reporting requirements. I look forward to reviewing the college proposals in June.

Thank you for contributing to the success of our students.

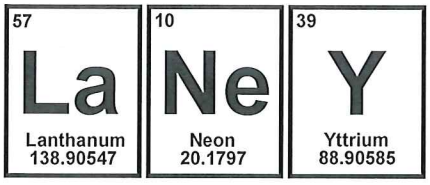
Dr. José M. Ortiz

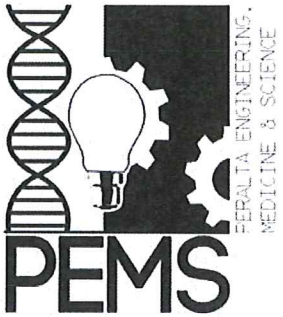
Chancellor

.EASE DO NOT "REPLY" TO ANNOUNCEMENTS. IF YOU WISH TO COMMENT ON A POSTER'S MESSAGE, RSVP OR ASK QUESTIONS, PLEASE CLICK THE "FORWARD" BUTTON AND FORWARD YOUR RESPONSE TO THE POSTER'S ADDRESS. DO NOT USE "REPLY."

POSTERS: PLEASE INCLUDE YOUR CONTACT INFORMATION IN YOUR POST.

Peralta Accountability for Student Success Fund, PASS
Proposals for Laney College
FY 2014-2015





June 15, 2014

Prof. Matthew Stavis
Laney College
Department of Chemistry
Director, Peralta Engineering Medicine and Science (PEMS)
Education Director, Friends of Leona Heights

Peralta Engineering Medicine and Science (PEMS):
A new Peralta learning community

PEMS was started nearly two years ago when one of my students, Dennis Yu, approached me after the final exam in my Chemistry 1B course saying that he wanted to build a club to make up for what Peralta lacked in career development and educational opportunities in engineering and the sciences. Dennis made clear what I had already seen as a big problem for years, but had not thought possible to fix, the fact that Community College usually lacks any sense of community.

While we may provide a quality education to our students in the classes we teach, students at Peralta are still missing out. Let's take as an example, the cohort of young (18-25 years old) students attempting to transfer into a four-year Bachelor's program from a Peralta school. Such students may be attending Peralta for any number of reasons. They might have performed poorly and high and need a second chance. They might be transitioning from a job to higher education, or they might be attempting to save money on tuition by completing their general education requirements at Peralta. In all of these cases, our mission is to provide these students with a chance at success, giving them the intellectual tools and skills they will need to do well upon transferring. However, if all we do is provide good coursework, these students are still missing out on at least half the experiences and opportunities they would have had available to them if they went to a four year program as freshmen. The privileges of a four year program include a consistent, stable, supportive and engaging cohort; a sense collegial of belonging and a group identity; mentorship from upperclassmen and sometimes graduate students. It turns out, that STEM and medicine students are ready for something like PEMS. Our organization provides community to students who would otherwise miss out on connection to their cohort. Our students are engaged with their peers, and so can keep each other on track to transfer in a reasonable amount of time. PEMS provides opportunities for finding mentors, professional development opportunities, and funding and peers to participate in potently effective independent projects.

PEMS has proved to be a highly effective way of promoting STEM and medicine careers, while being very low-cost.

PEMS has helped numerous students become more engaged in their studies, providing them with the opportunity to engage in entrepreneurial science and engineering projects, field trips to industrial, academic, and government labs, present seminars and discussion panels with visiting speakers, and perhaps most importantly, establish edifying and supportive contacts with their science, engineering and medicine cohorts.

I am a synthetic inorganic chemist, an artist, even an activist. I am not an engineer, or a doctor, or a programmer. However, I have still been able to direct and advise PEMS students to successfully engage in engineering projects, medical career development activities, and even computer science projects. This is possible because PEMS students operate under an entrepreneurial, team oriented, project centered structure. Students come up with a project they're interested in pursuing, recruit a team of other students, conduct literature research, write a proposal, and get funding. This is a bit of a golden age for DIY building, engineering and making of pretty sophisticated devices. Companies like Adafruit, Make, and others have made sophisticated electrical engineering and computer science projects accessible to the lay-person. Open-source Arduino and Raspberry Pi microcomputers are cheap, easy to use, and well studied by a large community of potential collaborators accessible via the internet. Also, our proximity to UC Berkeley, UCSF, and the Bay Area tech industry, make potential mentors and advisors for projects plentiful and relatively easy to contact. I have prompted students to seek help with projects from graduate students, internet resources, community members, and have succeeded in getting students to learn on their own how to complete their projects. In doing so, they learn much more than how to build something. They learn project management, how to resolve interpersonal conflict, how to network, how to do independent research, how to collaborate with people all over the world. PEMS allow its members to find a community of like minded students, and from my perspective, this is very exciting stuff. All it really takes is a place to work, a little bit of money for supplies and tools, and faculty support. It isn't free, but when the payoff is considered, it's an extremely good value.

Recent PEMS Alums (not a complete list):

Van La (Engineering, UC Davis)

Juliana Price (Engineering, UCLA)

Dominique Yancey-Piens (Engineering, Stanford; also got in to MIT!)

Clay Fischer (Biology, UC Santa Cruz)
Daniel Sanchez (Park Ranger, National Park Service)
Christopher Cook (Conservation Biology, Cal State East Bay, Director of Friends of Leona Heights)
Conrad Petraborg (Civil engineering, UC Davis)
Vincent John (Electrical Engineering and Computer Science, UC Berkeley)
Dennis Yu (Mechanical Engineering, UC Berkeley)

PEMS serves a very diverse group of students.

Every student is welcome to join PEMS. As such, our membership is a reflection of Peralta. Our members come from many different racial, class, and cultural backgrounds. Unlike the unfortunate composition of many of the sectors of industry in engineering and the sciences, PEMS is not dominated by students of any one racial background. With more funding, I believe we can improve our recruitment of students who are underrepresented in STEM and medicine fields, especially women.

PEMS activities (not a complete list):

Spring 2013

- Chartering of PEMS through Laney student government
- Seminar Beate Heinemann, Particle UC Berkeley Physics Professor, about her work at the Large Hadron Collider (LHC) and CERN Project, ATLAS
- Tours of Lawrence Berkeley National Laboratory
- Tour of Dinan Engineering Labs
- Interpretive Natural History tours in local forests and tide pools led by Peralta alums Clay Fischer and Christopher Cook
- Lab Experience with extracting, manipulating, amplifying and visualizing DNA at Merritt College's Genomics Lab, led by Peralta students Christopher Villreal and Clay Fischer, and Merrit Prof. Bob Macey
- Engineering Projects including a sun tracking solar panel
- Visits to local Hacker and Maker Spaces including Noisebridge in San Francisco

- Opportunities to learn about grant writing, laboratory design and setup, and scientific instrument trouble shooting at the Merritt College Genomics Lab
- Service event and Bioblitz (species survey powered by iNaturalist.com) on Oakland Earth Day at Leona Heights Park in collaboration with Friends of Leona Heights
- Weekly Meetings on Laney campus
- Chemistry and math tutoring (managed by Laney student Luis Guzman)
- Career development projects in conservation biology, architecture, and civil engineering in collaboration with Friends of Leona Heights

Fall 2013

- Expansion of engineering projects (funded by Laney Inter-Club Council) to include:
- Computer aided *de novo* design and fabrication of a model fixed-wing Airplane
- Tesla coil
- Battle robot
- Instrumented weather balloon
- Discussion Panel with visiting Peralta alums who had successfully transferred to UC's or been admitted to graduate programs (attendance exceeding 50 students at Laney campus on a Friday evening!)
- Peer review workshops on transfer application essays
- Weekly meetings on Laney campus
- Lab experience opportunities at the Merritt College Genomics Lab
- Tour at Stanford Linear Accelerator
- Service event on Oakland Creek to Bay Day at Leona Heights Park in collaboration with Friends of Leona Heights, (Career development opportunities in civil engineering and conservation biology)

Spring 2014

- Continuing Engineering Projects:
    - Airplane, Tesla Coil, Weather Station

    - New projects: electric go-cart, robot able to solve simple mazes, both funded by the Laney Inter-Club Council
- Discussion Panel about the process of becoming a career scientist with two Physical
- Chemists from Lawrence Livermore National Laboratory (attendance of about 45 students on a Friday night on Laney campus)
- Discussion Panel with medical professionals about their journey from college freshman to medical practitioner. Panelists included two Peralta alums and one current Laney student. Professions represented: medical doctor, physician assistant, registered nurse, nurse practitioner, registered dietician. (attendance of about 60 students on a Friday night on Laney campus)
- Service event on Oakland Earth Day at Leona Heights Park in collaboration with Friends of Leona Heights, (Career development opportunities in civil engineering, conservation biology, and landscape horticulture)
- Development of an ongoing chemistry and biology research project analyzing water quality in Lion Creek in Leona Heights Park and the Laney Lagoon (Lake Merritt Estuary) Project is currently partially funded with a Community Stewardship Grant from the Alameda Country Clean Water Board, managed by Friends of Leona Heights *via* Prof. Matthew Stavis at Laney College, with Friends of Sausal Creek acting as an advisor.
- Workshop in robotics and programming helicopter drones to exhibit swarm behavior.
- Networking social hour at UC Berkeley hosted by the Society for Women in the Sciences (SWIS)
- Weekly meetings for planning and project work
- Tours of Lawrence Berkeley National Lab
- Trip to Maker Fair in San Mateo

What PEMS needs to grow and to be sustainable:

- Financial support for me to devote more time to developing PEMS, as well managing and advising students in this growing program. Many of the very active PEMS students have successfully transferred to UC's and other schools. This is both indicative of the success

of our program as well as a chronic problem of maintaining a vibrant student learning community at a community college. When we're successful at helping students transfer, we also loose the membership of that community. This requires very active and consistent recruitment of new membership and advertisement of about the PEMS to community to new students in the Peralta system. At a four year school, there's more time to recruit and train leaders to promulgate a learning community, but at Peralta, since teachers are the only element with any true longetivity in the community, they must take that role. To give it enough time, PEMS will at least take as much of my time as teaching my general chemistry classes. If I must devote time to PEMS rather than teach in another district, it seems that's equivalent to the support I need to get to do this work, roughly $13-$14 thousand per semester.

- A highly visible office/workspace for engineering projects and other activities. So far, all meetings have been held on Friday afternoons on the Laney campus in room A239. Students have had to bring tools and projects from home to Laney to work with their project groups. Our work would be made much easier if we could have a secure location to leave tools and in-progress projects. I have found space to store some large object in the Laney Chemistry Department labs, but there isn't much room to spare. The upside to working in A239 was the high visibility of the location. There was frequent foot traffic past our meetings which often resulted in students stopping by to find out more about the club. We need a space that is both visible and available. It's possible that we could store some material in cabinets that could be installed in room A239 or A233 with little impact on the use of those rooms as classrooms. It might also be possible to house PEMS in the Laney student center on one of the upper floors. PEMS officers have had discussions with Tomoko Roudebush as well as members of student government about this possibility, but action did not proceed past the initial discussions. One problem with an office in this location is the lack of visibility for PEMS.
- We need funds for advertising PEMS to new students. So far we have made inexpensive flyers and posted them around the Peralta campuses. We need to go further with color flyers, development of web documentation of PEMS, and social media marketing. I have connections who work in social media marketing who can help me put together an effective campaign for PEMS as well as train students to contribute. Our plan thus far is

to teach students to document their project work with tumblr and flickr blogs which have a low barrier to consistent participation by PEMS students. We need a vinyl banner with our logo and name for tabling in the Laney quad. To be taken seriously, we need to appear serious. An advertising fund of around $500 can get us started.

- A fund to support new projects. So far, PEMS engineering projects have been funded by the Inter Club Council. This is mostly possible because of the lack of other clubs requesting money. This may not be sustainable, and it would help to have another fund. The projects that students have funded have been pretty cheap, usually no more than $300 each. The payoff is pretty significant, and more reliable funding would allow PEMS to grow, taking any and all students. As with other dollar values in this proposal, I'm not sure what's reasonable to ask for. It seems with seed monies of around $5 thousand we could acquire tools, a solderin station, and have enough left over to fund quite a few projects. The philosophy we always use is to reuse and salvage everything we can. As an example, through lab equipment giveaways from the biotech industry, I have access to motors, discarded robots, and other materials that can easily be put to use by our creative young makers. Our electric go-cart project is proceeding mostly with salvaged materials. A little bit of funding can go a very long way. PEMS is an educational force multiplier.
- Creation of supportive and mutually beneficial interactions between STEM students and CTE programs and students. There are already amazing technical education programs all over campus, under the purview of CTE. The accomplishments of Louis Quindlen and his colleagues are truly impressive. Unfortunately, the obvious synergy between CTE students, and engineering students is not exploited. Cross-disciplinary collaboration can be encouraged such that CTE programs can benefit without loosing their precious, and often threatened, material and professional resources to the engineering students. PEMS can be used to promote this interaction, and reinforce beneficial connections across campus. All this really takes is time, and as such, support for me to devote that time.

Improvement of Avenues of Communication to the Laney Student Body:

Through my involvement in advertising for PEMS and promotion of PEMS events, it has become very clear that it is incredibly difficult to communicate with the Laney student body. Problems are multifaceted:

- Emails to the various FAS lists for Peralta schools don't seem to be very effective. While Peralta faculty is supposedly required to use their Peralta email addresses, the very large number of messages that are bounced back from full email inboxes indicate that many in the Peralta system do not use their accounts. Creation of discipline specific email lists using the preferred email accounts of Peralta teachers would greatly improve communication with STEM teachers who can spread the word about relevant events to their students.
- When students register for classes, they could be given the option to opt in to email lists relevant to their intended career path. This would allow direct and targeted communication with STEM students.
- Laney is very poorly designed when it comes to visual means of communicating with students around campus. Bulletin boards are typically placed in breezeways where students do not linger since these tend to be the more inhospitable locations on campus. These locations also ten to have very short line of sight such that flyers in these locations are only visible as students round corners, and tend to be ignored as a result.
- Students tend to gather in front of classrooms when they wait for teachers to arrive. These locations don't have any places to post flyers, and when flyers are posted at the entrances to classrooms, it is in violation of Laney facility policies. Flyers posted on windows leave tape residues that are difficult to remove and are unsightly.
- The best places to post flyers are corners of buildings with long sight lines. These are also places where there are no bulletin boards and flyers posted on the brickwork do not stay up and cause a mess.
- The only places to post flyers in the student union are in locations that are out of the main flow of foot traffic and thus tend to be ignored.
- There are several flat screen kiosks for the distribution of information, most notably into lobby of the tower, and in above the exit from the cafeteria. These screens are usually not in use. There is no clearly published procedure for submitting information to be posted on

these screens. The display in the tower looks very professional except it's never displaying any information and is in a location that students very rarely notice.

Why is communication with the student body important?

My work with PEMS has made it very clear to me that students need much more than just classes. Regardless of which cohort they belong to, students miss out and are disadvantaged by the lack of student life, community building, and professional development opportunities that are abundant at four year institutions. Students need a reason to stick around on campus, to get more involved to be come engaged and involved with their peers. We can create any number of activities for them to participate in, but without an effective way of communicating with our students about these events, we will not succeed.

Proposal for improvements:

- We need to conduct research about how to more effectively communicate with students electronically. An insistence on using Peralta email addresses does not appear to work for establishing easy and effective channels of communication with our students. We need to lower the barriers to effective communication, adapting to how our students communicate rather than ineffectually trying to force them into our own system.
- Placement of bulletin boards throughout campus needs to be revised. The very old bulletin boards in breezeways need to be abandoned and optimal placement needs to be studied.
- Bulletin boards are very old, wasteful, easily co-opted technology. I can't begin to list how man times I've seen completely inappropriate advertisements for the vapor den plastered all over campus. We can install a fairly large number of electronic kiosks around campus, securely placed in the windows to frequently used classrooms. This technology is fairly inexpensive, can be controlled with turn key web based automation, and can be much more effective at establishing effective lines of communication with our students than any method we currently use. The kiosks in the student center and the lobby of the tower look nice, but they are also very expensive. The kiosks installed in the windows to classrooms, can be fairly small, no bigger that the average desktop screen, secured by being behind glass, and inexpensive. These displays can be controlled

remotely using free web apps. We don't need expensive touch screen kiosks. Networked digital picture frames would suffice. An example is the Pix-Star FotoConnect XD (http://wireless-digital-frames-review.toptenreviews.com/pix-star-fotoconnect-review.html). At a mere $200 with tax, we could install something like this all over campus, connect them the wifi in smart classrooms and enable effective communication all over campus without wasteful flyers for $10,000.

- A perfect project to unite various disciplines across campus would be a kiosk placed just inside the entrance to the student center. This object could be constructed much like a map kiosk at a shopping mall. The structure could have a triangular footprint so traffic flows around it, but be placed in the way of traffic so that students are readily exposed to information displayed on it. The structure could have digital displays wired up by student in the electrical CTE department, the structure itself designed by architecture students, the cabinetry built by wood working CTE students, the content system built by computer science students, the facing built by art students. It could be a showcase that helps students communicate with each other as well as lets students of various disciplines interact with each on a fulfilling and interesting project. This maybe isn't ready for prime-time, but I think it should be talked about.

Appendix of Supporting Information

The following pages include letters of support from PEMS students, as well as flyers form our various events.

To Whom It May Concern,

As a transferring Laney college student, I am fully in support of the PEMS club having a dedicated space at Laney College as well as more funding for its projects. My experience with the PEMS club has been a determining factor in my recent collegiate successes, which include obtaining two competitive undergraduate research internships at the Lawrence Berkeley National Laboratory, being awarded the prestigious JKCF transfer scholarship, and gaining admission into top engineering universities (Stanford, MIT, UC Berkeley, University of Michigan – Ann Arbor, ...).

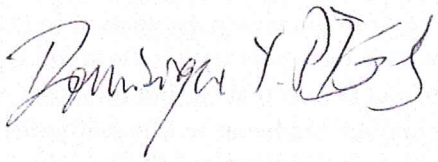
In my first fall semester at Laney College, I had navigated my way into chartering an Engineering club and was desperately trying to get funding. The process was very opaque and difficult, to the point that the next term, I decided to just focus on academics. At that time, Prof. Matthew Stavis became the advisor of the new PEMS club, which started running fueled by great commitment and personal investment of students like Dennis Yu. I then joined the club and began working on some club projects that allowed me to develop as an engineer in ways science and math classes had not. I was also able to collaborate with like-minded students, and seek advice from a very dedicated Prof. Stavis on both our STEM projects and my college career.

As a result, these experiences enriched my college and scholarship applications. In any essay, I could discuss my engineering experience and interests thanks to the PEMS club. Then, the relationship I was able to develop with Prof. Stavis through the PEMS club allowed him to know me as more than just a student, and to write genuine letters of recommendation on my behalf. I know for a fact that his recommendation earned me my research internships and that I was awarded everything else he recommended me for, e.g. admission to MIT and Stanford.

Coming from a community college, students need much more than good academics in order to be competitive. In STEM, it is difficult to gain relevant extra-curricular experience without equipment or guidance. PEMS provided both and is valuable to all Laney STEM majors. The transfer process is hard enough that new students should never be in our situations and have to reinvent the wheel. PEMS has built a solid foundation for the development of STEM students, but it is still fragile. The club's existence is tied to individuals who are keeping it alive. Laney College and the Peralta District should officially recognize its value and take more steps to preserve and develop the club now, while engaged students and advisors are involved.

The club needs more funding and equipment in order to develop flagship engineering projects that can showcase the strength of Laney College's STEM academics. While I was active in the club, we also had problems finding rooms at Laney to work on electronics at times when students' schedules matched. Additionally, STEM equipment can be large, expensive and sometimes fragile. PEMS needs funding and its own dedicated space at Laney College in order to enable the development of a Laney College STEM student body that will be competitive on a national level.

Sincerely,
Dominique S. Yancey Piens



"The PEMS club at Laney community college unites students from all the Peralta campuses in one goal, to go beyond their studies and educate/benefit the community. The students get together under guided supervision and embark on projects which require them to work together to create things which would be too difficult by themselves. I've worked with colleagues from all the Peralta campuses who I would now consider friends; those of whom I may have not met otherwise. The ultimate goal is to share science with the community which we do by organizing talks on campus lead by scientists currently in the field, sharing our finished science experiments with the campus, or getting involved in Leona Heights park project. The Leona Heights project allows the members of PEMS to use the skills they've gained in the club to benefit our local community. Such as using engineering skills to create structures beneficial to the parks plant life or restoring stairs in areas of trail which have now become dangerous. PEMS has given me skills which there may not always be time to teach in a classroom but are necessary for success in the scientific fields.

-Robert Jimenez
Current Peralta Student

To whom it may concern,

My name is Dennis Yu and I am a former Peralta CCD student. I recently learned from Matt Stavis that he is applying for funding through Peralta and I reached out to him with this letter to express how extremely supportive of his endeavor. As you may or may not know, the Peralta Engineering, Medicine, & Science Club is a STEM-based club that Matt and I founded during my first semester at Laney College. I personally chose to attend Laney because of its proximity to my home, as well as the constant advertisement of the great STEM programs they have available. When I arrived, I found a lackluster offering of classes, a dysfunctional student government, and a lack of student community within the students studying STEM.

When I met Matt and proposed the idea of starting PEMS, he was on board 100% and relentlessly supportive in the establishment of the club. Our mission was clear from the start: create a community in a commuter college, which we should all know is very, very difficult. We began small, started recruiting, and reaching out to local businesses and establishments about our club and our mission. We found that many places were supportive of our efforts, and we took that to heart and continued offering additional resources such as tours of facilities, career panels, and networking opportunities as well. This club was founded on the principle that we could overcome the challenges of being a commuter school and providing students pursuing STEM opportunities to improve on their understanding of science by participating in events and projects. We finally did and found some supportive members within the student government to actually help us with funding all these projects and events that we put on in the past year and half. I urge you all to consider Matt's funding application because it is really difficult for a club of our size to continue functioning on just student government and fundraisers.

I have just finished my last semester at Laney College and will be applying to UC Berkeley for mechanical engineering in the fall. Many of our other club members got into UC Berkeley, as well as other top-tiered institutions such as MIT. Although their success was completely their

own doing, it should be apparent the drive and tenacity of our members that they have to strive towards academic and professional enrichment. Opportunities such as the ones we provide through the club mean much more than just what it appears to be on an college application. I can tell you for a fact that I learned what it takes to work with many different students studying different fields and to expose them to the other fields in science as well. Collaboration is paramount in the sciences and it should be as well for students studying science. I learned through my time working with Matt and the many members we have that it takes patience and determination to claw our ways uphill towards continuing our efforts. Although we have survived so far on just funding from the student government and fundraisers, we need more help. We need administrators in Peralta to see what great things we are doing to benefit our students of Peralta but to also see beyond the itemized costs and look deeper into the importance of what we are doing.

We are trying to make Peralta a competitive, practical, and supportive environment for all students but we can't do this alone. Please consider Matt's proposal and I assure you that your help will aid Peralta students in their continuing efforts on to be successful scientists, engineers, and whatever else they desire to be. See this not as an expenditure but as an investment in your own students and wonderful faculty that have gotten students to the points where they are now. It was not without the help and guidance from Matt that we have been successful. I can say without a shred of doubt that Matt is one of the few truly caring faculty members at Laney College who wants to see his students succeed.

Thank you very much for your time,

Best,
Dennis Yu
PEMS and Peralta alum, former PEMS President and Founder

There was a moment, on a Friday afternoon late in the spring semester, that sums up why I have continued to stay involved with PEMS. We punched the on button for our little, motorized, wheeled robot, probably for the 150th time at least. Yet this time, the little thing, wires poking out in every direction, LED lights pulsing, followed the path we had set down for it perfectly. My friend Vincent and I looked at each other, and couldn't help ourselves, this deserved a high five, and we gave that moment its appropriate celebratory hand gesture. Our small group had overcome many problems, and created something that had sparked our imagination, and challenged our problem solving skills. We had relied on each others complementing strengths, asked questions of our team mates when knowledge or experience shortcomings surfaced, and built something we could be proud of.

Peralta has many strengths that has made it a good fit for my return to school. Convenient locations and times, and a very affordable option for taking entry level science and math courses. PEMS has provided me with several opportunities for learning and growth that cannot be found in the classroom. It is a place I can go to ask my peers advice on classes, instructors, or internship opportunities. It is a place I can go to find like minded students: motivated, interested and engaged in the world in similar ways. It is a place I can go to make new friends, find new

networking opportunities, or just share a laugh and compare notes on a new movie. These are the moments that are invaluable to the college experience.

-Eric Andler
Current Laney Student, President of PEMS for 2014-2015 school year.

It is with great joy that I write this letter in support of the Friends of Leona Heights and PEMS. Working on this project has provided me with hands experience in the planning, planting and construction of park improvements. I have seen our how the installation of a few trash cans have diverted hundreds of spray cans from polluting the fragile environment in Leona Heights Park. I have participated in the building trail stairs that have greatly improved a dangerous slope on the trail. The building of the stairs was very rewarding. When we are working the trail it's great to engage with park users. They usually respond positively to the work we are doing and always make it a point to thank us as the try out a freshly repaired patch of trail. This experience opened my eyes to the world of natural and historical interpretation. Working on this project have given me the opportunity to use the skills which I have acquired while going to school at the Peralta Colleges. Working with in this a community group has thought me a lot about civic engagement. The experience helped me to land a new job as a U.S. National Park Ranger. I encourage you to support Friends of Leona Heights and PEMS because they do an amazing service to the park users and there is still plenty of work to be done

Daniel Sanchez
Peralta Alum, National Park Service

June 17, 2014

To Whom It May Concern:

I am writing this letter in support of PEMS at Laney College. This club is an active and involved piece of Laney student life, and accommodates student members from every college in the Peralta system. Since its beginning, PEMS has strived to create a community of learning for all students interested in science, engineering, and medicine.

As an engineering transfer student to UCSD, PEMS was a crucial component to my success. At club meetings, I met students with goals and experiences similar to my own, as well as students further along the path to working in their desired field. They gave me insight, support, and knowledge about the transfer process, and de-mystified what is usually a confusing and difficult ordeal. PEMS also hosts panels, events, and student-led projects, all of which have let me experience what working as an engineer could be like.

At the risk of causing offense, I would say that PEMS is one of the most meaningful clubs in the Peralta Community College system. All at once mentoring, teaching, and engaging students, PEMS provides fun and hands-on ways for students to get involved in the sciences. Something significant has been created at PEMS, and everything possible should be done to preserve and sustain it.

Sincerely,

Juliana Price

Wondering how that science degree works in "The Real World"?

Come meet working scientists, face to face.

PEMS
PERALTA ENGINEERING, MEDICINE & SCIENCE

Presents…

THE LIFE IN QUANTA

A Panel Discussion

Friday, April 4th, 2014 6:00 pm
Room A239, Laney College

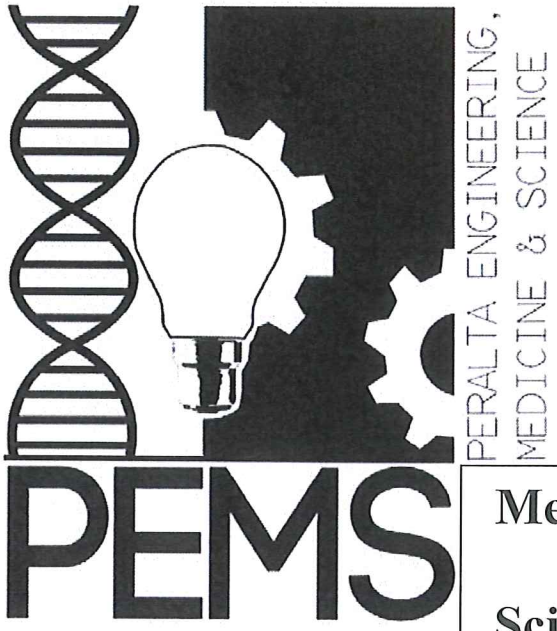
Join **Peralta Engineering Medicine and Science (PEMS)** Club in hosting two very special guests as they discuss their research and answer YOUR questions about a life working in the physical sciences.

Panelists:

Matthew Grace – Theoretical Physicist working on quantum information science at Sandia National Laboratories

Eric Meshot- Research physicist working with carbon nanotubes at Lawerence Berkeley Lab

Please submit questions before the discussion to mstavis@peralta.edu



Peralta Engineering Medicine and Science

"Part of the difficulty with being at a community college is, ironically, the lack of community."

PEMS exists to bridge the gap between the student experience at a community college and four year schools. We are working to make Peralta more engaging beyond the classroom, giving students opportunities to explore their interests and encourage more students to pursue careers in STEM fields. Please help us redefine what it means to be a student at a community college!

Medical Section on Wednesdays:
4:15pm, rm. A236, Laney College
Science and **Engineering** Sections on Fridays:
12:15pm, rm. A239, Laney College

Contact Matt Stavis, mstavis@peralta.edu for information

Though PEMS, you can

-Gain engineering experience with student led, team-based engineering projects. Ongoing projects include a total-design remote control plane, battlebot, maze-solving robot, and a Tesla coil, and a electric go-cart.

-Start an engineering project of your own. Recruit a team and get started. PEMS can facilitate finding funding and materials.

-Start or join a student-led science project. PEMS can facilitate project design, funding, etc. One new science project will be investigating contaminants in Leona Heights Park.

-Get exposure to the wider world beyond Peralta. PEMS will be organizing trips the Stanford Linear Accelerator, Lawrence Berkeley Labs, the Crucible, hikes and more. Tours of manufacturing, research, and clinical facilities will be determined by student interest.

-Get experience with applied landscape design, civil engineering, and natural history work via a partnership between PEMS and Friends of Leona Heights.

-Participate in community service including the Peralta Sustainability Festival, Earth Day events, and tutoring.

-Get connected to you engineering, medicine, and science cohort. Meet your engaged and motivated peers beyond the classroom. We will take trips to UC Berkeley, UC Santa Cruz, and more.

-Gain insight on how to accomplish your goals. In the fall of 2013, PEMS presented a popular discussion panel with Peralta alums who had successfully transferred to UC's. This semester, we plan to organize similar discussion panels with professionals in medical, engineering and science fields.

-Go to Maker Faire! PEMS will be fundraising to pay for all interested students to attend Bay Area Maker Faire in May.

-Get support! PEMS offers a community of like minded students that can help you with classes, career development, applications.

Do you want to work in medicine?

PERALTA ENGINEERING, MEDICINE & SCIENCE
PEMS

Come talk to medical professionals about their journey from school to career.

This Friday, May 2 at 6pm
Room A233, Laney College

Join **Peralta Engineering Medicine and Science** club for our first annual Medical Career Discussion Panel! Come to gain insight, find out how to prepare, and see what it takes to get a career in medicine

Take your goals from theory to reality.

Panelists:

Christina Pingol: Nurse Practitioner working in infectious disease, attended UC Davis, with a MSN from San Francisco State in 2010.

Larry Barden: 2001 graduate of the Samuel Merritt University Physician Assistant program, currently working for the Department of Surgery at Highland Hospital in Oakland. Took classes at **Laney** College.

Rachel Odes : Psychiatric Nurse working at John George Psych Hospital in the Alameda Health System. Received MSN from San Francisco State University in 2010. Took classes at **Laney** College.

Kathryn Stemler: Registered Dietitian, currently practicing medical nutrition therapy at a skilled nursing facility. Attended Cal State Long Beach and San Francisco State. Currently a student at **Laney** in preparation for a career in food science.

Dr. Ernestine Renee Petty: MD from the University of Minnesota with 21 years of experience in Anesthesiology.

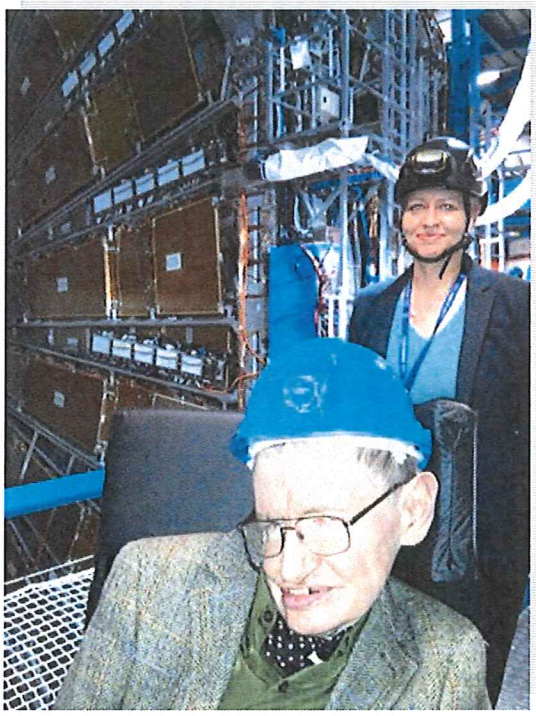
Please help us to gear this event toward YOU! **Take our quick survey** to let us know what information you want to hear from the guest speakers.
Go to (http://tinyurl.com/mc9v8tj) or scan the QR code.
Contact **mstavis@peralta.edu** for additional information.

PERALTA ENGINEERING, MEDICINE & SCIENCE

PEMS

April 29, 2013 6:00PM
At the Laney Forum
900 Fallon St. Oakland, 94607

Beate Heinemann,
Particle Physics Professor at UC Berkeley
Research Scientist at Large Hadron Collider (LHC) CERN/Project ATLAS



Beate Heinemann with theoretical physicist Stephen Hawking at the LHC.

The Peralta Engineering, Medicine,& Science Club is hosting an exciting talk on Monday April 29, 2013 at 6:00pm in the Laney Forum. Our guest, Beate Heinmann, is a research scientist at the Large Hadron Collider CERN which has recently confirmed the discovery of the Higgs Boson (more commonly known as the "God Particle") Please come by for an exciting chance to listen to Ms. Heinemann share her experiences about working at the LHC and about the elusive Higgs Boson.

Admission is open to the general public. Students of the Peralta CC system are encouraged to come and attend the event.

For more information
please visit: *www.peraltaems.wix.com/pems*
Or scan our QR Code!

Oakland Earth Day 2014

This Saturday, April 26, 9am-1pm, at

Leona Heights Park

Help improve our beautiful urban park!

Meeting at Carl B. Munck Elementary School
11900 Campus Drive, Oakland

Tasks will include:

- **-trail improvements**
- **-installation of trash cans**
- **-litter removal**
- **-French Broom removal**
- **-Building a native plant interpretive garden**
- **-Bring heavy work gloves, hiking shoes, and water!**
- **-Let us know you're coming!**

Please RSVP mstavis@peralta.edu.

Sponsored by

Peralta Engineering Medicine and Science Club, Friends of Leona Heights, City of Oakland

PEMS
PERALTA ENGINEERING, MEDICINE & SCIENCE

Friends of Leona Heights

57	10	39
La	Ne	Y
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PERALTA COMMUNITY COLLEGE DISTRICT

Come learn how to write code and fly helicopter drones.

PEMS
PERALTA ENGINEERING, MEDICINE & SCIENCE

Presents…

ATTACK OF THE DRONES!

Workshop in coding and robotics.

<u>THIS</u> Friday, May 2nd, 2014 12:30 pm
Laney College Student Center

Join **Peralta Engineering Medicine and Science (PEMS)** Club with Laney student Max Wallace to fly eight Parrot AR quadcopter drones, and learn how to program them to act as a swarm. Bring your smartphone!

Go to: http://tinyurl.com/lnolb8m, or scan the QR code.
Contact mstavis@peralta.edu for more information

Peralta Accountability for Student Success Fund, PASS
Proposals for Laney College
FY 2014-2015

June 15, 2014

Prof. Matthew Stavis
Laney College
Department of Chemistry
Director, Peralta Engineering Medicine and Science (PEMS)
Education Director, Friends of Leona Heights

Peralta Engineering Medicine and Science (PEMS):
A new Peralta learning community

PEMS was started nearly two years ago when one of my students, Dennis Yu, approached me after the final exam in my Chemistry 1B course saying that he wanted to build a club to make up for what Peralta lacked in career development and educational opportunities in engineering and the sciences. Dennis made clear what I had already seen as a big problem for years, but had not thought possible to fix, the fact that Community College usually lacks any sense of community.

While we may provide a quality education to our students in the classes we teach, students at Peralta are still missing out. Let's take as an example, the cohort of young (18-25 years old) students attempting to transfer into a four-year Bachelor's program from a Peralta school. Such students may be attending Peralta for any number of reasons. They might have performed poorly and high and need a second chance. They might be transitioning from a job to higher education, or they might be attempting to save money on tuition by completing their general education requirements at Peralta. In all of these cases, our mission is to provide these students with a chance at success, giving them the intellectual tools and skills they will need to do well upon transferring. However, if all we do is provide good coursework, these students are still missing out on at least half the experiences and opportunities they would have had available to them if they went to a four year program as freshmen. The privileges of a four year program include a consistent, stable, supportive and engaging cohort; a sense collegial of belonging and a group identity; mentorship from upperclassmen and sometimes graduate students. It turns out, that STEM and medicine students are ready for something like PEMS. Our organization provides community to students who would otherwise miss out on connection to their cohort. Our students are engaged with their peers, and so can keep each other on track to transfer in a reasonable amount of time. PEMS provides opportunities for finding mentors, professional development opportunities, and funding and peers to participate in potently effective independent projects.

PEMS has proved to be a highly effective way of promoting STEM and medicine careers, while being very low-cost.

PEMS has helped numerous students become more engaged in their studies, providing them with the opportunity to engage in entrepreneurial science and engineering projects, field trips to industrial, academic, and government labs, present seminars and discussion panels with visiting speakers, and perhaps most importantly, establish edifying and supportive contacts with their science, engineering and medicine cohorts.

I am a synthetic inorganic chemist, an artist, even an activist. I am not an engineer, or a doctor, or a programmer. However, I have still been able to direct and advise PEMS students to successfully engage in engineering projects, medical career development activities, and even computer science projects. This is possible because PEMS students operate under an entrepreneurial, team oriented, project centered structure. Students come up with a project they're interested in pursuing, recruit a team of other students, conduct literature research, write a proposal, and get funding. This is a bit of a golden age for DIY building, engineering and making of pretty sophisticated devices. Companies like Adafruit, Make, and others have made sophisticated electrical engineering and computer science projects accessible to the lay-person. Open-source Arduino and Raspberry Pi microcomputers are cheap, easy to use, and well studied by a large community of potential collaborators accessible via the internet. Also, our proximity to UC Berkeley, UCSF, and the Bay Area tech industry, make potential mentors and advisors for projects plentiful and relatively easy to contact. I have prompted students to seek help with projects from graduate students, internet resources, community members, and have succeeded in getting students to learn on their own how to complete their projects. In doing so, they learn much more than how to build something. They learn project management, how to resolve interpersonal conflict, how to network, how to do independent research, how to collaborate with people all over the world. PEMS allow its members to find a community of like minded students, and from my perspective, this is very exciting stuff. All it really takes is a place to work, a little bit of money for supplies and tools, and faculty support. It isn't free, but when the payoff is considered, it's an extremely good value.

Recent PEMS Alums (not a complete list):

Van La (Engineering, UC Davis)

Juliana Price (Engineering, UCLA)

Dominique Yancey-Piens (Engineering, Stanford; also got in to MIT!)

Clay Fischer (Biology, UC Santa Cruz)

Daniel Sanchez (Park Ranger, National Park Service)

Christopher Cook (Conservation Biology, Cal State East Bay, Director of Friends of Leona Heights)

Conrad Petraborg (Civil engineering, UC Davis)

Vincent John (Electrical Engineering and Computer Science, UC Berkeley)

Dennis Yu (Mechanical Engineering, UC Berkeley)

PEMS serves a very diverse group of students.

Every student is welcome to join PEMS. As such, our membership is a reflection of Peralta. Our members come from many different racial, class, and cultural backgrounds. Unlike the unfortunate composition of many of the sectors of industry in engineering and the sciences, PEMS is not dominated by students of any one racial background. With more funding, I believe we can improve our recruitment of students who are underrepresented in STEM and medicine fields, especially women.

PEMS activities (not a complete list):

Spring 2013

- Chartering of PEMS through Laney student government
- Seminar Beate Heinemann, Particle UC Berkeley Physics Professor, about her work at the Large Hadron Collider (LHC) and CERN Project, ATLAS
- Tours of Lawrence Berkeley National Laboratory
- Tour of Dinan Engineering Labs
- Interpretive Natural History tours in local forests and tide pools led by Peralta alums Clay Fischer and Christopher Cook
- Lab Experience with extracting, manipulating, amplifying and visualizing DNA at Merritt College's Genomics Lab, led by Peralta students Christopher Villreal and Clay Fischer, and Merrit Prof. Bob Macey
- Engineering Projects including a sun tracking solar panel
- Visits to local Hacker and Maker Spaces including Noisebridge in San Francisco

- Opportunities to learn about grant writing, laboratory design and setup, and scientific instrument trouble shooting at the Merritt College Genomics Lab
- Service event and Bioblitz (species survey powered by iNaturalist.com) on Oakland Earth Day at Leona Heights Park in collaboration with Friends of Leona Heights
- Weekly Meetings on Laney campus
- Chemistry and math tutoring (managed by Laney student Luis Guzman)
- Career development projects in conservation biology, architecture, and civil engineering in collaboration with Friends of Leona Heights

Fall 2013

- Expansion of engineering projects (funded by Laney Inter-Club Council) to include:
- Computer aided *de novo* design and fabrication of a model fixed-wing Airplane
- Tesla coil
- Battle robot
- Instrumented weather balloon
- Discussion Panel with visiting Peralta alums who had successfully transferred to UC's or been admitted to graduate programs (attendance exceeding 50 students at Laney campus on a Friday evening!)
- Peer review workshops on transfer application essays
- Weekly meetings on Laney campus
- Lab experience opportunities at the Merritt College Genomics Lab
- Tour at Stanford Linear Accelerator
- Service event on Oakland Creek to Bay Day at Leona Heights Park in collaboration with Friends of Leona Heights, (Career development opportunities in civil engineering and conservation biology)

Spring 2014

- Continuing Engineering Projects:
    - Airplane, Tesla Coil, Weather Station

    - New projects: electric go-cart, robot able to solve simple mazes, both funded by the Laney Inter-Club Council
- Discussion Panel about the process of becoming a career scientist with two Physical
- Chemists from Lawrence Livermore National Laboratory (attendance of about 45 students on a Friday night on Laney campus)
- Discussion Panel with medical professionals about their journey from college freshman to medical practitioner. Panelists included two Peralta alums and one current Laney student. Professions represented: medical doctor, physician assistant, registered nurse, nurse practitioner, registered dietician. (attendance of about 60 students on a Friday night on Laney campus)
- Service event on Oakland Earth Day at Leona Heights Park in collaboration with Friends of Leona Heights, (Career development opportunities in civil engineering, conservation biology, and landscape horticulture)
- Development of an ongoing chemistry and biology research project analyzing water quality in Lion Creek in Leona Heights Park and the Laney Lagoon (Lake Merritt Estuary) Project is currently partially funded with a Community Stewardship Grant from the Alameda Country Clean Water Board, managed by Friends of Leona Heights *via* Prof. Matthew Stavis at Laney College, with Friends of Sausal Creek acting as an advisor.
- Workshop in robotics and programming helicopter drones to exhibit swarm behavior.
- Networking social hour at UC Berkeley hosted by the Society for Women in the Sciences (SWIS)
- Weekly meetings for planning and project work
- Tours of Lawrence Berkeley National Lab
- Trip to Maker Fair in San Mateo

What PEMS needs to grow and to be sustainable:

- Financial support for me to devote more time to developing PEMS, as well managing and advising students in this growing program. Many of the very active PEMS students have successfully transferred to UC's and other schools. This is both indicative of the success

of our program as well as a chronic problem of maintaining a vibrant student learning community at a community college. When we're successful at helping students transfer, we also loose the membership of that community. This requires very active and consistent recruitment of new membership and advertisement of about the PEMS to community to new students in the Peralta system. At a four year school, there's more time to recruit and train leaders to promulgate a learning community, but at Peralta, since teachers are the only element with any true longetivity in the community, they must take that role. To give it enough time, PEMS will at least take as much of my time as teaching my general chemistry classes. If I must devote time to PEMS rather than teach in another district, it seems that's equivalent to the support I need to get to do this work, roughly $13-$14 thousand per semester.

- A highly visible office/workspace for engineering projects and other activities. So far, all meetings have been held on Friday afternoons on the Laney campus in room A239. Students have had to bring tools and projects from home to Laney to work with their project groups. Our work would be made much easier if we could have a secure location to leave tools and in-progress projects. I have found space to store some large object in the Laney Chemistry Department labs, but there isn't much room to spare. The upside to working in A239 was the high visibility of the location. There was frequent foot traffic past our meetings which often resulted in students stopping by to find out more about the club. We need a space that is both visible and available. It's possible that we could store some material in cabinets that could be installed in room A239 or A233 with little impact on the use of those rooms as classrooms. It might also be possible to house PEMS in the Laney student center on one of the upper floors. PEMS officers have had discussions with Tomoko Roudebush as well as members of student government about this possibility, but action did not proceed past the initial discussions. One problem with an office in this location is the lack of visibility for PEMS.
- We need funds for advertising PEMS to new students. So far we have made inexpensive flyers and posted them around the Peralta campuses. We need to go further with color flyers, development of web documentation of PEMS, and social media marketing. I have connections who work in social media marketing who can help me put together an effective campaign for PEMS as well as train students to contribute. Our plan thus far is

to teach students to document their project work with tumblr and flickr blogs which have a low barrier to consistent participation by PEMS students. We need a vinyl banner with our logo and name for tabling in the Laney quad. To be taken seriously, we need to appear serious. An advertising fund of around $500 can get us started.

- A fund to support new projects. So far, PEMS engineering projects have been funded by the Inter Club Council. This is mostly possible because of the lack of other clubs requesting money. This may not be sustainable, and it would help to have another fund. The projects that students have funded have been pretty cheap, usually no more than $300 each. The payoff is pretty significant, and more reliable funding would allow PEMS to grow, taking any and all students. As with other dollar values in this proposal, I'm not sure what's reasonable to ask for. It seems with seed monies of around $5 thousand we could acquire tools, a solderin station, and have enough left over to fund quite a few projects. The philosophy we always use is to reuse and salvage everything we can. As an example, through lab equipment giveaways from the biotech industry, I have access to motors, discarded robots, and other materials that can easily be put to use by our creative young makers. Our electric go-cart project is proceeding mostly with salvaged materials. A little bit of funding can go a very long way. PEMS is an educational force multiplier.
- Creation of supportive and mutually beneficial interactions between STEM students and CTE programs and students. There are already amazing technical education programs all over campus, under the purview of CTE. The accomplishments of Louis Quindlen and his colleagues are truly impressive. Unfortunately, the obvious synergy between CTE students, and engineering students is not exploited. Cross-disciplinary collaboration can be encouraged such that CTE programs can benefit without loosing their precious, and often threatened, material and professional resources to the engineering students. PEMS can be used to promote this interaction, and reinforce beneficial connections across campus. All this really takes is time, and as such, support for me to devote that time.

Improvement of Avenues of Communication to the Laney Student Body:

Through my involvement in advertising for PEMS and promotion of PEMS events, it has become very clear that it is incredibly difficult to communicate with the Laney student body. Problems are multifaceted:

- Emails to the various FAS lists for Peralta schools don't seem to be very effective. While Peralta faculty is supposedly required to use their Peralta email addresses, the very large number of messages that are bounced back from full email inboxes indicate that many in the Peralta system do not use their accounts. Creation of discipline specific email lists using the preferred email accounts of Peralta teachers would greatly improve communication with STEM teachers who can spread the word about relevant events to their students.
- When students register for classes, they could be given the option to opt in to email lists relevant to their intended career path. This would allow direct and targeted communication with STEM students.
- Laney is very poorly designed when it comes to visual means of communicating with students around campus. Bulletin boards are typically placed in breezeways where students do not linger since these tend to be the more inhospitable locations on campus. These locations also ten to have very short line of sight such that flyers in these locations are only visible as students round corners, and tend to be ignored as a result.
- Students tend to gather in front of classrooms when they wait for teachers to arrive. These locations don't have any places to post flyers, and when flyers are posted at the entrances to classrooms, it is in violation of Laney facility policies. Flyers posted on windows leave tape residues that are difficult to remove and are unsightly.
- The best places to post flyers are corners of buildings with long sight lines. These are also places where there are no bulletin boards and flyers posted on the brickwork do not stay up and cause a mess.
- The only places to post flyers in the student union are in locations that are out of the main flow of foot traffic and thus tend to be ignored.
- There are several flat screen kiosks for the distribution of information, most notably into lobby of the tower, and in above the exit from the cafeteria. These screens are usually not in use. There is no clearly published procedure for submitting information to be posted on

these screens. The display in the tower looks very professional except it's never displaying any information and is in a location that students very rarely notice.

Why is communication with the student body important?

My work with PEMS has made it very clear to me that students need much more than just classes. Regardless of which cohort they belong to, students miss out and are disadvantaged by the lack of student life, community building, and professional development opportunities that are abundant at four year institutions. Students need a reason to stick around on campus, to get more involved to be come engaged and involved with their peers. We can create any number of activities for them to participate in, but without an effective way of communicating with our students about these events, we will not succeed.

Proposal for improvements:

- We need to conduct research about how to more effectively communicate with students electronically. An insistence on using Peralta email addresses does not appear to work for establishing easy and effective channels of communication with our students. We need to lower the barriers to effective communication, adapting to how our students communicate rather than ineffectually trying to force them into our own system.
- Placement of bulletin boards throughout campus needs to be revised. The very old bulletin boards in breezeways need to be abandoned and optimal placement needs to be studied.
- Bulletin boards are very old, wasteful, easily co-opted technology. I can't begin to list how man times I've seen completely inappropriate advertisements for the vapor den plastered all over campus. We can install a fairly large number of electronic kiosks around campus, securely placed in the windows to frequently used classrooms. This technology is fairly inexpensive, can be controlled with turn key web based automation, and can be much more effective at establishing effective lines of communication with our students than any method we currently use. The kiosks in the student center and the lobby of the tower look nice, but they are also very expensive. The kiosks installed in the windows to classrooms, can be fairly small, no bigger that the average desktop screen, secured by being behind glass, and inexpensive. These displays can be controlled

remotely using free web apps. We don't need expensive touch screen kiosks. Networked digital picture frames would suffice. An example is the Pix-Star FotoConnect XD (http://wireless-digital-frames-review.toptenreviews.com/pix-star-fotoconnect-review.html). At a mere $200 with tax, we could install something like this all over campus, connect them the wifi in smart classrooms and enable effective communication all over campus without wasteful flyers for $10,000.

- A perfect project to unite various disciplines across campus would be a kiosk placed just inside the entrance to the student center. This object could be constructed much like a map kiosk at a shopping mall. The structure could have a triangular footprint so traffic flows around it, but be placed in the way of traffic so that students are readily exposed to information displayed on it. The structure could have digital displays wired up by student in the electrical CTE department, the structure itself designed by architecture students, the cabinetry built by wood working CTE students, the content system built by computer science students, the facing built by art students. It could be a showcase that helps students communicate with each other as well as lets students of various disciplines interact with each on a fulfilling and interesting project. This maybe isn't ready for prime-time, but I think it should be talked about.

Appendix of Supporting Information

The following pages include letters of support from PEMS students, as well as flyers form our various events.

To Whom It May Concern,

As a transferring Laney college student, I am fully in support of the PEMS club having a dedicated space at Laney College as well as more funding for its projects. My experience with the PEMS club has been a determining factor in my recent collegiate successes, which include obtaining two competitive undergraduate research internships at the Lawrence Berkeley National Laboratory, being awarded the prestigious JKCF transfer scholarship, and gaining admission into top engineering universities (Stanford, MIT, UC Berkeley, University of Michigan – Ann Arbor, ...).

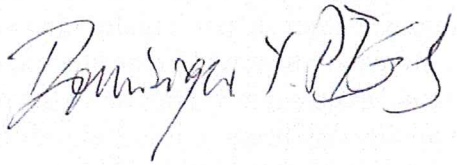
In my first fall semester at Laney College, I had navigated my way into chartering an Engineering club and was desperately trying to get funding. The process was very opaque and difficult, to the point that the next term, I decided to just focus on academics. At that time, Prof. Matthew Stavis became the advisor of the new PEMS club, which started running fueled by great commitment and personal investment of students like Dennis Yu. I then joined the club and began working on some club projects that allowed me to develop as an engineer in ways science and math classes had not. I was also able to collaborate with like-minded students, and seek advice from a very dedicated Prof. Stavis on both our STEM projects and my college career.

As a result, these experiences enriched my college and scholarship applications. In any essay, I could discuss my engineering experience and interests thanks to the PEMS club. Then, the relationship I was able to develop with Prof. Stavis through the PEMS club allowed him to know me as more than just a student, and to write genuine letters of recommendation on my behalf. I know for a fact that his recommendation earned me my research internships and that I was awarded everything else he recommended me for, e.g. admission to MIT and Stanford.

Coming from a community college, students need much more than good academics in order to be competitive. In STEM, it is difficult to gain relevant extra-curricular experience without equipment or guidance. PEMS provided both and is valuable to all Laney STEM majors. The transfer process is hard enough that new students should never be in our situations and have to reinvent the wheel. PEMS has built a solid foundation for the development of STEM students, but it is still fragile. The club's existence is tied to individuals who are keeping it alive. Laney College and the Peralta District should officially recognize its value and take more steps to preserve and develop the club now, while engaged students and advisors are involved.

The club needs more funding and equipment in order to develop flagship engineering projects that can showcase the strength of Laney College's STEM academics. While I was active in the club, we also had problems finding rooms at Laney to work on electronics at times when students' schedules matched. Additionally, STEM equipment can be large, expensive and sometimes fragile. PEMS needs funding and its own dedicated space at Laney College in order to enable the development of a Laney College STEM student body that will be competitive on a national level.

Sincerely,
Dominique S. Yancey Piens



"The PEMS club at Laney community college unites students from all the Peralta campuses in one goal, to go beyond their studies and educate/benefit the community. The students get together under guided supervision and embark on projects which require them to work together to create things which would be too difficult by themselves. I've worked with colleagues from all the Peralta campuses who I would now consider friends; those of whom I may have not met otherwise. The ultimate goal is to share science with the community which we do by organizing talks on campus lead by scientists currently in the field, sharing our finished science experiments with the campus, or getting involved in Leona Heights park project. The Leona Heights project allows the members of PEMS to use the skills they've gained in the club to benefit our local community. Such as using engineering skills to create structures beneficial to the parks plant life or restoring stairs in areas of trail which have now become dangerous. PEMS has given me skills which there may not always be time to teach in a classroom but are necessary for success in the scientific fields.

-Robert Jimenez
Current Peralta Student

To whom it may concern,

My name is Dennis Yu and I am a former Peralta CCD student. I recently learned from Matt Stavis that he is applying for funding through Peralta and I reached out to him with this letter to express how extremely supportive of his endeavor. As you may or may not know, the Peralta Engineering, Medicine, & Science Club is a STEM-based club that Matt and I founded during my first semester at Laney College. I personally chose to attend Laney because of its proximity to my home, as well as the constant advertisement of the great STEM programs they have available. When I arrived, I found a lackluster offering of classes, a dysfunctional student government, and a lack of student community within the students studying STEM.

When I met Matt and proposed the idea of starting PEMS, he was on board 100% and relentlessly supportive in the establishment of the club. Our mission was clear from the start: create a community in a commuter college, which we should all know is very, very difficult. We began small, started recruiting, and reaching out to local businesses and establishments about our club and our mission. We found that many places were supportive of our efforts, and we took that to heart and continued offering additional resources such as tours of facilities, career panels, and networking opportunities as well. This club was founded on the principle that we could overcome the challenges of being a commuter school and providing students pursuing STEM opportunities to improve on their understanding of science by participating in events and projects. We finally did and found some supportive members within the student government to actually help us with funding all these projects and events that we put on in the past year and half. I urge you all to consider Matt's funding application because it is really difficult for a club of our size to continue functioning on just student government and fundraisers.

I have just finished my last semester at Laney College and will be applying to UC Berkeley for mechanical engineering in the fall. Many of our other club members got into UC Berkeley, as well as other top-tiered institutions such as MIT. Although their success was completely their

own doing, it should be apparent the drive and tenacity of our members that they have to strive towards academic and professional enrichment. Opportunities such as the ones we provide through the club mean much more than just what it appears to be on an college application. I can tell you for a fact that I learned what it takes to work with many different students studying different fields and to expose them to the other fields in science as well. Collaboration is paramount in the sciences and it should be as well for students studying science. I learned through my time working with Matt and the many members we have that it takes patience and determination to claw our ways uphill towards continuing our efforts. Although we have survived so far on just funding from the student government and fundraisers, we need more help. We need administrators in Peralta to see what great things we are doing to benefit our students of Peralta but to also see beyond the itemized costs and look deeper into the importance of what we are doing.

We are trying to make Peralta a competitive, practical, and supportive environment for all students but we can't do this alone. Please consider Matt's proposal and I assure you that your help will aid Peralta students in their continuing efforts on to be successful scientists, engineers, and whatever else they desire to be. See this not as an expenditure but as an investment in your own students and wonderful faculty that have gotten students to the points where they are now. It was not without the help and guidance from Matt that we have been successful. I can say without a shred of doubt that Matt is one of the few truly caring faculty members at Laney College who wants to see his students succeed.

Thank you very much for your time,

Best,
Dennis Yu
PEMS and Peralta alum, former PEMS President and Founder

There was a moment, on a Friday afternoon late in the spring semester, that sums up why I have continued to stay involved with PEMS. We punched the on button for our little, motorized, wheeled robot, probably for the 150th time at least. Yet this time, the little thing, wires poking out in every direction, LED lights pulsing, followed the path we had set down for it perfectly. My friend Vincent and I looked at each other, and couldn't help ourselves, this deserved a high five, and we gave that moment its appropriate celebratory hand gesture. Our small group had overcome many problems, and created something that had sparked our imagination, and challenged our problem solving skills. We had relied on each others complementing strengths, asked questions of our team mates when knowledge or experience shortcomings surfaced, and built something we could be proud of.

Peralta has many strengths that has made it a good fit for my return to school. Convenient locations and times, and a very affordable option for taking entry level science and math courses. PEMS has provided me with several opportunities for learning and growth that cannot be found in the classroom. It is a place I can go to ask my peers advice on classes, instructors, or internship opportunities. It is a place I can go to find like minded students: motivated, interested and engaged in the world in similar ways. It is a place I can go to make new friends, find new

networking opportunities, or just share a laugh and compare notes on a new movie. These are the moments that are invaluable to the college experience.

-Eric Andler
Current Laney Student, President of PEMS for 2014-2015 school year.

It is with great joy that I write this letter in support of the Friends of Leona Heights and PEMS. Working on this project has provided me with hands experience in the planning, planting and construction of park improvements. I have seen our how the installation of a few trash cans have diverted hundreds of spray cans from polluting the fragile environment in Leona Heights Park. I have participated in the building trail stairs that have greatly improved a dangerous slope on the trail. The building of the stairs was very rewarding. When we are working the trail it's great to engage with park users. They usually respond positively to the work we are doing and always make it a point to thank us as the try out a freshly repaired patch of trail. This experience opened my eyes to the world of natural and historical interpretation. Working on this project have given me the opportunity to use the skills which I have acquired while going to school at the Peralta Colleges. Working with in this a community group has thought me a lot about civic engagement. The experience helped me to land a new job as a U.S. National Park Ranger. I encourage you to support Friends of Leona Heights and PEMS because they do an amazing service to the park users and there is still plenty of work to be done

Daniel Sanchez
Peralta Alum, National Park Service

June 17, 2014

To Whom It May Concern:

I am writing this letter in support of PEMS at Laney College. This club is an active and involved piece of Laney student life, and accommodates student members from every college in the Peralta system. Since its beginning, PEMS has strived to create a community of learning for all students interested in science, engineering, and medicine.

As an engineering transfer student to UCSD, PEMS was a crucial component to my success. At club meetings, I met students with goals and experiences similar to my own, as well as students further along the path to working in their desired field. They gave me insight, support, and knowledge about the transfer process, and de-mystified what is usually a confusing and difficult ordeal. PEMS also hosts panels, events, and student-led projects, all of which have let me experience what working as an engineer could be like.

At the risk of causing offense, I would say that PEMS is one of the most meaningful clubs in the Peralta Community College system. All at once mentoring, teaching, and engaging students, PEMS provides fun and hands-on ways for students to get involved in the sciences. Something significant has been created at PEMS, and everything possible should be done to preserve and sustain it.

Sincerely,

Juliana Price

Wondering how that science degree works in "The Real World"?

Come meet working scientists, face to face.

PEMS
PERALTA ENGINEERING, MEDICINE & SCIENCE

Presents…

THE LIFE IN QUANTA

A Panel Discussion

Friday, April 4th, 2014 6:00 pm
Room A239, Laney College

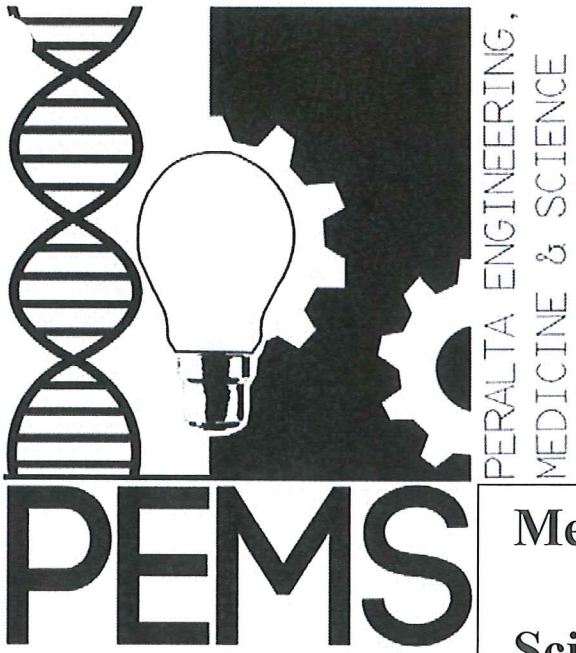
Join **Peralta Engineering Medicine and Science (PEMS)** Club in hosting two very special guests as they discuss their research and answer YOUR questions about a life working in the physical sciences.

Panelists:

Matthew Grace – Theoretical Physicist working on quantum information science at Sandia National Laboratories

Eric Meshot- Research physicist working with carbon nanotubes at Lawerence Berkeley Lab

Please submit questions before the discussion to mstavis@peralta.edu



Peralta Engineering Medicine and Science

"Part of the difficulty with being at a community college is, ironically, the lack of community."

PEMS exists to bridge the gap between the student experience at a community college and four year schools. We are working to make Peralta more engaging beyond the classroom, giving students opportunities to explore their interests and encourage more students to pursue careers in STEM fields. Please help us redefine what it means to be a student at a community college!

Medical Section on Wednesdays:
4:15pm, rm. A236, Laney College
Science and **Engineering** Sections on Fridays:
12:15pm, rm. A239, Laney College

Contact Matt Stavis, mstavis@peralta.edu for information

Though PEMS, you can

-**Gain engineering experience** with student led, team-based engineering projects. Ongoing projects include a total-design remote control plane, battlebot, maze-solving robot, and a Tesla coil, and a electric go-cart.

-**Start an engineering project** of your own. Recruit a team and get started. PEMS can facilitate finding funding and materials.

-**Start or join a student-led science project**. PEMS can facilitate project design, funding, etc. One new science project will be investigating contaminants in Leona Heights Park.

-**Get exposure** to the wider world beyond Peralta. PEMS will be organizing trips the Stanford Linear Accelerator, Lawrence Berkeley Labs, the Crucible, hikes and more. Tours of manufacturing, research, and clinical facilities will be determined by student interest.

-**Get experience** with applied landscape design, civil engineering, and natural history work via a partnership between PEMS and Friends of Leona Heights.

-**Participate in community service** including the Peralta Sustainability Festival, Earth Day events, and tutoring.

-**Get connected** to you engineering, medicine, and science cohort. Meet your engaged and motivated peers beyond the classroom. We will take trips to UC Berkeley, UC Santa Cruz, and more.

-**Gain insight on how to accomplish your goals.** In the fall of 2013, PEMS presented a popular discussion panel with Peralta alums who had successfully transferred to UC's. This semester, we plan to organize similar discussion panels with professionals in medical, engineering and science fields.

-**Go to Maker Faire!** PEMS will be fundraising to pay for all interested students to attend Bay Area Maker Faire in May.

-**Get support!** PEMS offers a community of like minded students that can help you with classes, career development, applications.

Do you want to work in medicine?

Come talk to medical professionals about their journey from school to career.

This Friday, May 2 at 6pm
Room A233, Laney College

Join **Peralta Engineering Medicine and Science** club for our first annual Medical Career Discussion Panel! Come to gain insight, find out how to prepare, and see what it takes to get a career in medicine

Take your goals from theory to reality.

Panelists:

Christina Pingol: Nurse Practitioner working in infectious disease, attended UC Davis, with a MSN from San Francisco State in 2010.

Larry Barden: 2001 graduate of the Samuel Merritt University Physician Assistant program, currently working for the Department of Surgery at Highland Hospital in Oakland. Took classes at **Laney** College.

Rachel Odes : Psychiatric Nurse working at John George Psych Hospital in the Alameda Health System. Received MSN from San Francisco State University in 2010. Took classes at **Laney** College.

Kathryn Stemler: Registered Dietitian, currently practicing medical nutrition therapy at a skilled nursing facility. Attended Cal State Long Beach and San Francisco State. Currently a student at **Laney** in preparation for a career in food science.

Dr. Ernestine Renee Petty: MD from the University of Minnesota with 21 years of experience in Anesthesiology.

Please help us to gear this event toward YOU! **Take our quick survey** to let us know what information you want to hear from the guest speakers.
Go to (http://tinyurl.com/mc9v8tj) or scan the QR code.
Contact **mstavis@peralta.edu** for additional information.

PERALTA ENGINEERING, MEDICINE & SCIENCE

PEMS

April 29, 2013 6:00PM
At the Laney Forum
900 Fallon St. Oakland, 94607

Beate Heinemann,
Particle Physics Professor at UC Berkeley
Research Scientist at Large Hadron Collider (LHC) CERN/Project ATLAS

Beate Heinemann with theoretical physicist Stephen Hawking at the LHC.

The Peralta Engineering, Medicine,& Science Club is hosting an exciting talk on Monday April 29, 2013 at 6:00pm in the Laney Forum. Our guest, Beate Heinmann, is a research scientist at the Large Hadron Collider CERN which has recently confirmed the discovery of the Higgs Boson (more commonly known as the "God Particle") Please come by for an exciting chance to listen to Ms. Heinemann share her experiences about working at the LHC and about the elusive Higgs Boson.

Admission is open to the general public. Students of the Peralta CC system are encouraged to come and attend the event.

For more information
please visit: *www.peraltaems.wix.com/pems*
Or scan our QR Code!

Oakland Earth Day 2014

This Saturday, April 26, 9am-1pm, at

Leona Heights Park

Help improve our beautiful urban park!

Meeting at Carl B. Munck Elementary School
11900 Campus Drive, Oakland

Tasks will include:

- **-trail improvements**
- **-installation of trash cans**
- **-litter removal**
- **-French Broom removal**
- **-Building a native plant interpretive garden**
- **-Bring heavy work gloves, hiking shoes, and water!**
- **-Let us know you're coming!**

Please RSVP mstavis@peralta.edu.

Sponsored by

Peralta Engineering Medicine and Science Club, Friends of Leona Heights, City of Oakland

PERALTA ENGINEERING, MEDICINE & SCIENCE
PEMS

Friends of Leona Heights

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PERALTA COMMUNITY COLLEGE DISTRICT

Come learn how to write code and fly helicopter drones.

PEMS
PERALTA ENGINEERING, MEDICINE & SCIENCE

Presents…

ATTACK OF THE DRONES!

Workshop in coding and robotics.

<u>THIS</u> Friday, May 2nd, 2014 12:30 pm
Laney College Student Center

Join **Peralta Engineering Medicine and Science (PEMS)** Club with Laney student Max Wallace to fly eight Parrot AR quadcopter drones, and learn how to program them to act as a swarm. Bring your smartphone!

Go to: http://tinyurl.com/lnolb8m, or scan the QR code.
Contact mstavis@peralta.edu for more information