As we start the spring semester and look ahead to prepare for commencement, this is a good time to reflect on the past few years. While thinking about former and prospective S.T.E.M. graduates of Bergen Community College, I recognize their role in the program’s progression at the College.

Let me start with our S.T.E.M. Student Union. From a small group of students who responded to minor suggestions, to the owners of their own activities today, this group of over achievers represents the best of what it means to be in S.T.E.M. at Bergen. Read about a handful of S.T.E.M. Student Union members who have set out to research and build an unmanned aerial vehicle (UAV) – also called a drone – to fly over Bergen’s campus. Known as the UAV Team, this group of students took on the challenge – and won!

The S.T.E.M. community thrives at Bergen and many career opportunities exist in the fields of science, technology, engineering and mathematics. If prospective graduates can’t apprehend the thought of leaving the classroom — consider a S.T.E.M. teaching career.

Bergen’s S.T.E.M. faculty — an amazing group of real leaders — make major contributions to the success of the program. From new problem solving workshops for S.T.E.M. students to the recently launched Science Infusion Program (SIP) that brings science content into English classrooms, I send a huge shout out to the professors and instructors. They have dedicated their time to enrich and excel disciplines of the program.

Speaking of the progression of S.T.E.M., we now have three water bottle filling stations on campus. These stations help the Bergen community eliminate harmful waste and contribute to a healthier campus — and planet. So far, the staggering number of bottles saved has reached stupendous results.

If you are a student, you should be very proud of what you and your peers have achieved. Whether slated for graduation this semester or in the midst of your college career at Bergen, take my word that the best is yet to come. I wish everyone loads of success as you continue your education at a four-year institution or prepare to embark on the ultimate goal of a rewarding career as you grow into a master of your field.

Congratulations to the 2014 Bergen graduating class.

Sincerely,
P.J. Ricatto,
Dean, Mathematics, Science and Technology

Some aspiring engineers are content to build robots that can see, move, avoid obstacles, maybe talk and even walk, but not Bergen S.T.E.M. Student Union members Peter Lehrer (Computer Science, 2013), Brian Giraldo (Engineering Science, 2014), Faton Spata (Engineering Science, 2014), Gaby Marani (Engineering Science, 2013) and Andriy Kovtun (Engineering Science, 2015). They insist that their robots also fly!

Since summer 2013, they have been active leaders of the UAV (Unmanned Aerial Vehicle) Team of the S.T.E.M. Student Union and have been diligently busy building, programming, flying, crashing and re-building their first flying robot – a quadcopter — also known as a drone. It may seem strange that drones are operating over Bergen’s campus. After all, talk of drones immediately conjures up perceptions of their military use. But, UAV Team members are quick to counter such a stereotype.

Peter, a history buff, concurs and is quick to cite many historical examples of S.T.E.M. innovators beating swords into plowshares. “The Internet has its origin in the military and so does the computer. It’s how technology is used that matters,” Peter said. “Yes, drones have been in use for the military, but like many other technologies developed by the military (rockets, internet, GPS) they have practical, peaceful uses.” Drones like Bergen’s quadcopter are in development for use in agriculture, search and rescue, and fire-fighting.

Faton envisions that drones “will change things in our society. They can be used to benefit others. They can save people. Just think of the benefit if drone technology was sophisticated enough to quench the fires at the Fukushima Daiichi nuclear disaster in March 2011 in Japan following the earthquake and tsunami. Drones could have been used to drop water on the (continued on page 2)
Students to science on a comprehensive level and improve science literacy skills.

Professor Barbara Davis from the Department of Biology and Horticulture—who helped launch the program—emphasizes that students consider the broad picture when tackling the subject of science. “Learning about science involves developing knowledge and understanding of the impact science makes on students’ lives, the environment and the economy.”

The professor explains the new interdisciplinary courses aim to engage students by presenting issues that pertain to science exposure in everyday life. Additionally, Davis points out new SIP courses, which combine science and English through article assignments about topics like the environment, help students discover their interest in the subject and foster the development of useful science skills.

So how do you, the student, benefit from SIP? The proven effective teaching method strengthens reading and writing skills in the S.T.E.M. areas. If your major doesn’t focus on the subjects of S.T.E.M., look forward to a better understanding of topics discussed in required science classes as you also evolve into a science-literate citizen.

Are you a S.T.E.M. or English faculty member interested in participating in this program? For more information contact Barbara Davis at bdavis@bergen.edu.

Student Showcase (continued from page 1)

Faton is in charge of the UAV project’s autonomous systems. His task is to make the quadcopter follow precise preprogrammed GPS guided paths. He will also design an automatic recharging docking station for the UAV. Faton hopes to contribute to medical robotics one day. Brian and Andriy, are the UAV Team’s most skilled quadcopter system troubleshooters and repairers. They find building and repairing crashed quadcopters the most interesting—more interesting than flying them!

Brian gives advice for fellow Bergen students who are thinking about joining the S.T.E.M. Student Union. He says “Try it out. Even if you are not sure you are interested. If intimidated, don’t back down. Challenge yourself. Immerse yourself in it.”

For more information contact Barbara Davis at bdavis@bergen.edu.
Saving the Planet, One Bottle at a Time

Three water bottle filling stations were installed in early October and have been welcomed by Bergen students. Located in the Student Center, cafeteria and outside of the gym, the stations have helped save 11,963 plastic bottles in only two months. These filling stations provide filtered water to students—a safe alternative to buying plastic bottled water.

On campus a 20-ounce bottle costs $1.80—which means a gallon of water is more costly than a gallon of gasoline. Our new filling stations give students an opportunity to break the habit of buying bottled water by investing in a stainless steel or BPA-free plastic reusable bottle.

Water companies mislead consumers into believing that bottled water is safer than tap water. But, in fact, because bottled water is a private industry, it’s subject to less regulation than public water supplies.

The habit of drinking bottled water is also detrimental to our environment. Bottled water creates a lot of unnecessary plastic. If consumers don’t recycle the bottles, the harmful material ends up in landfills or oceans, for example, killing fish that mistake the pollution for food.

Bergen students can be part of the solution through the new bottle filling stations. By investing in a high quality reusable water bottle, students gain access to a higher quality of drinking water and immediately begin saving money.

At Bergen, about 40 percent of our recycled waste is water bottles. If each student replaced bottled water with a reusable bottle, the College could reduce plastic consumption on campus by the same amount. This solution is in the near future of the Bergen community.

Want to learn more about the water bottle industry? Check out the movie “Tapped.”

A Great Time for a Great Teaching Career

“If you want to make a difference in the life of our nation, if you want to make a difference in the life of a child, become a teacher. Your country needs you.” —President Obama, 2011 State of the Union

Inspiring and encouraging students to explore S.T.E.M. subjects has been a focal part of the U.S. Education System since the launching of the Russian satellite, Sputnik in 1957. With a renewed commitment by President Obama to recruit and prepare 100,000 new teachers in the fields of science, technology, engineering and math, it’s the perfect time to train for a career as a science or math teacher.

The process of becoming a S.T.E.M. teacher can be confusing. Visit the Education Department for a no-nonsense, easy to follow road map of the teacher certification process, from choosing a major at Bergen to becoming a fully certified S.T.E.M. teacher.

National Board Certification can lead to higher salaries and opportunities for advancement. A S.T.E.M. education movement is underway. Consider joining. Make a difference.

S.T.E.M. Problem Solving Workshops

As part of the S.T.E.M. grant initiative, program faculty at the Cerullo Learning Assistance Center (CLAC) developed a new learning resource called Problem Solving Workshops for Students. The sessions complement course materials in chemistry, physics and biology while providing highly needed extra help.

During the workshops, faculty members who currently teach in the same discipline help students with problem solving techniques. Instead of re-teaching the course, the workshops show an alternate approach to solving difficult exercises taught in class.

The free workshops take place several times throughout the semester. A detailed outline and calendar of scheduled workshops for the entire semester can be found at the CLAC in rooms L-125 and A-113. Also, keep an eye out for flyers about the workshops posted around campus.

If you have any questions or comments, please do not hesitate to visit us at the CLAC.

The Green Team does a variety of projects on campus including—recycling (cans, bottles, paper), managing the compost in the cafeteria, planting the Bergen Community Garden, offering rides on the Bergen pedi-cab, and giving Sustainability Tours on campus.
Q. How do I know which courses will transfer from Bergen to another four-year institution?
A. The counselors at the Center for Student Success are experts in the transfer process. You should meet regularly with the S.T.E.M. counselor or another transfer counselor at the Center for Student Success to receive help with selecting courses that apply to the major you want to pursue. Also, njtransfer.org is a great resource if you plan to attend an in-state college or university.

Q. When and how do I apply to four-year institutions?
A. Most colleges start the application process one semester prior to transferring. Others have a two-semester deadline. Make sure you check the application deadlines for transfer students at your college of choice! Many colleges use the Common Application combined with their own online supplements, which include elements like an essay or letters of recommendation. Read through the application directions of your chosen school in advance so you can prepare and submit your materials by the deadline. Colleges appreciate proactive students — so apply early. For many of the colleges, the sooner you apply, the higher your chance of getting accepted!

Q. What is an official transcript and how do I get mine?
A. The colleges you apply to must see your official transcript from Bergen. Your application will not be complete until you submit your transcript. An official transcript is one that is sent directly from one institution to another. You must fill out a “transcript request” form in the Registration Office to have your transcript sent to the colleges you request. Do not print out your transcript from Portal and send it, this is considered “unofficial.” After you finish your last semester of courses for graduation, you will have to repeat this step, so all of the courses you took here can be evaluated and transferred.

Q. What is the graduation process like?
A. You must apply for graduation. This step is extremely important. To officially receive your associate degree and be considered a Bergen graduate by the four-year colleges you apply to, you must fill out the “Application for Degree” form in the Registration Office. You are likely to transfer many more credits to the four-year school if you officially graduate.

Q. Anything else?
A. Wait for your acceptance letters, make your decision, and attend Bergen’s Commencement ceremony! Congratulations!

If you have any questions regarding the graduation process or would like to set up a meeting with Jessica, contact her at jmontanaro@bergen.edu.

The contents of this publication were developed under a grant from the Department of Education. However, those contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the Federal Government.

Want to meet other stellar students from S.T.E.M. at Bergen?

*Join the S.T.E.M. Student Union*

Connect with other student leaders, share creative ideas and broaden your knowledge.

Students can visit Room S-315 or email Dorothy Wright at dwright@bergen.edu to learn more about the S.T.E.M. Student Union.

UPCOMING EVENTS

JANUARY 31
S.T.E.M. Welcome Party

MARCH 21
Teen S.T.E.M. Day

APRIL 11
S.T.E.M. C2 Research Summit, 8 a.m. - 4 p.m., TEC 128

APRIL 22
Earth Day events

MAY 17
S.T.E.M. Student Union 5K Run, Paramus campus

For more details, visit the S.T.E.M. Center in Room S-315 or contact Dorothy Wright at dwright@bergen.edu.