



Left to right: Olivia Sanders uses precision to sculpt a model of the human brain; Larsen Braswell and Alexander Dudley examine slides under a microscope.

# PAGING DR. SPARTAN: STUDENTS IN BIOMEDICAL ENGINEERING TACKLE REAL-WORLD HEALTH SCENARIOS

When you think back to your high school science classes, they probably involved Bunsen burners, frog dissections, and quizzes on the periodic table.

Oh my, how things have progressed!

Sure, students still learn those fundamentals, but in Bainbridge High School's Biomedical Engineering class, they're also performing polymerase chain reactions (PCR) for identifying cancer genes, mapping proteins, designing heart valves and reading x-rays and ultrasounds.

"It's so cool that this class is offered at the high-school level," said junior Julia Edwards. "It gives us a real taste of what we may want to pursue in the future."

Biomedical Engineering at BHS initially started out as an afterschool club. The club's first year had 15 participants, and in three years' time, participation skyrocketed to 101. That's when club advisor and science teacher Charisa Moore decided there was enough interest to turn the club into a formal class.

"The students are learning how to think, problem solve and design things for the medical field that haven't yet been invented," Moore said. "I am constantly asking students, 'What is missing and how can you make this better so it improves the quality of life?'"

The equipment students use in class is the same as found in professional labs. Rocking tables keep cells moving, which is crucial in keeping cells alive. Microscopes are fitted with

digital cameras which allow students to electronically count and record images of Plasmodium Falciparum (Malaria) under the microscope. Heart valves and stents are designed using computational modeling and data analytics, similar to what is currently being used in the biotech industry. Once students have an idea on how to create a heart valve, they test its effectiveness on a cow's heart using clinical surgical procedures.

Along with the technical equipment, students are building the human body from the inside out using a model and clay. Working in groups of four, they learn about the body system and then create veins and nerves, muscles and tissues. At the end of the year, they will have completed the entire human body and understand how each system works together.

A quick survey of the students shows their interests range from becoming a doctor or a physical therapist, to working in a marketing department for a biotech firm. Moore said the plan is to extend the class into a three-year program, and eligible students may receive college credit if the classes are taken in succession.

"Even though it's only the first year for the class, it's having a large impact on students' interest in biotechnology," Moore said. "Their passion for this field motivates me to continually seek out meaningful lessons that inspire them to make a scientific difference in the world."

## IN SHORT SUPPLY: HOW BSF IS HELPING COUNTER A NATIONAL PROBLEM

The Bainbridge Schools Foundation (BSF) has launched a multi-year initiative in partnership with the Bainbridge Island School District to help the district attract and retain high-quality teachers over the next decade and beyond. The **Teacher Support Initiative** is a formal mentoring and support program that helps to draw the very best teachers to the district, and motivates and nurtures the ones who already work for BISD.

As a result, the **Teacher Support Initiative** allows BISD to proactively address the national teacher shortage, which is particularly challenging for our region. The Office of Superintendent for Public Instruction reports that ninety-three percent of school principals in Washington reported being in a "crisis mode" or "struggling" to find qualified certificated candidates. Principals on Bainbridge Island are noting a dramatic drop in applicants in the past three years.

Kristen Haizlip, Associate Principal for Bainbridge High School, said, "Teachers have their choice of districts—as every district is in need. They can ask for teacher support, a mentor, paid time for curriculum work, and more planning time. I am guessing some districts will think creatively to provide these things, as an incentive to join the staff."

The Bainbridge Schools Foundation is working to raise \$100,000 to support this initiative and is asking for the community's support.

"Highly qualified educators have a profound impact on the lives of our students and our ability to attract and retain exceptional teachers is critical to the future," said Mairead Shutt, Bainbridge Schools Foundation executive director. "We hope many in our community will give generously to ensure we have an exceptional educator in every classroom."

For more information, visit:  
[www.bainbridgeschoolsfoundation.com](http://www.bainbridgeschoolsfoundation.com)

*Teachers are a tremendous asset for BISD, and the success of the district is directly tied to high-quality staff.*



Clara Goldwater works in shades of reds and yellows to create her art contribution which became part of a bigger installation now on display at BIMA.

## AWASH IN COLOR DISTRICT 3<sup>RD</sup> GRADERS COLLABORATE ON ART

If the gray and dreary days are making you blue, pay a visit to Bainbridge Island Museum of Art (BIMA) and immerse yourself in color.

Earlier this fall, third graders from across the school district collaborated on an art project that is now installed at the museum. Each school was assigned a set of analogous colors; for example, Blakely Elementary was assigned reds through yellows. Armed with paint and donated wood from island woodworkers, student artists created a piece that makes you glow pink with joy.

"Each student's work is an individual 'fingerprint' inspired by his or her personality and interest," said Kristin Tollefson, Education Director for BIMA. "What excites me about this project is the way it starts a conversation that is continued from the schools and into the museum and beyond."

The exhibit will be on display through early February. BIMA is open daily, 10 a.m. to 6 p.m. and admission is free.

For more information, visit:  
[www.biartmuseum.org](http://www.biartmuseum.org)

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 WHAT'S HAPPENING  
 IN YOUR SCHOOLS:**

- Woodward students create for the silver screen
- BHS students tackle real-world health scenarios
- Getting artsy! Third graders play with color

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*OpenBook is a Bainbridge Island School District publication  
 which connects the community to its district news.*



Left to right: Lauren de Gall, Max Macrae, Brennan Krantz, Julius Happonen and Madi Gregerson work on creating commercials.

# BEHIND THE CAMERA:

## WOODWARD STUDENTS LEARN HOW TO CREATE FOR THE SILVER SCREEN

*Quiet on the set! We're filming in 3... 2... (fade-out).  
 Adjust the lighting – it's glaring on the green screen.  
 Keep rolling... we'll edit out that part.*

Are we in Hollywood? Not quite, but for Woodward Middle School students in Sean Eaton's TV / Video Production class, it seems like it. Students buzz around the class writing scripts, directing and filming and then edit the material using a sophisticated multi-layering software. The result is a piece of work that rivals network newscasts and Super Bowl-worthy commercials.

"I am really impressed at how far the students extend the learning," said Eaton, who has taught the elective for seven years — three at Woodward and four at Bainbridge High School. (Some of Eaton's previous students have gone on to make multiple documentaries like the award-winning film "Living on One Dollar".)

It's been Eaton's experience that if you give the students a taste of video production, they'll take it and run with it —

often coming in before and after school to learn all about the equipments' capabilities and filming extracurricular school and community events.

"Students are learning job-related skills which are the same ones used in professional careers," said Eaton. Along with the technical-side of filming, the students also learn how to work together. It takes a team to pull off professional-quality productions.

"When they cover events, the students communicate with the person running the event, plan out the equipment needed, organize set-up times, figure out how to get the equipment to the site and who is going to do which job. It takes a lot of coordination and formulating," Eaton said.

Class assignments range from creating commercials and infomercials to filming a mini-documentary. Along the way, the acquired skills are built upon, refined and mastered. The editing software is the same program the pros use (like CNN), and it's amazing to watch how fluent the students become—they take to the program like a fish does to water.

"I wanted to take this elective because it seemed like such a creative one," said eighth-grader Lauren de Gall. "We have access to great equipment, and even though it's hard work, it's also a lot of fun."

Let's hope these students remember where they got their start when they're onstage at the Emmys!

Superintendent Dr. Peter Bang-Knudsen reads to an excited class of Ordway first graders.



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## GET IN ON THE FUN FOR FREE!

With BISD's GOLD PASS, community members age 65+ can enjoy free admission to a variety of BISD activities, including sporting events and theatrical performances. Reacquaint yourself with memories from your youth and join in on the fun. Passes are available at any school office and the District Office.