BIOCORE

UNIVERSITY OF WISCONSIN-MADISON

THE OBSERVER

JAFFNA MATHIAPARANAM

Seeing Biocore
through the eyes of *The Observer*

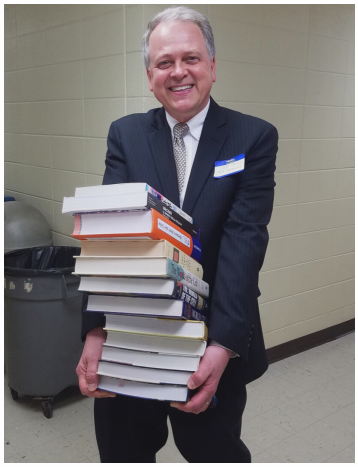
Enter the Biocore quote contest - winner's quote will join *The Observer*. Submit here!

A beautiful new mural now graces the Biocore corridor of Noland Hall, painted in summer 2019 by Jaffna Mathiaparanam ('17 Neurobiology with Biocore). “I was really excited for the opportunity to paint a mural reflecting on my learning experiences in Biocore, combining my love of science and art."

On the surface, the mural represents many of the concepts taught in Biocore; ecology, physiology, evolution, cell biology, and genetics. But in Jaffna's mind "it’s really the way that these facets of biology interact and influence each other that makes the process of discovering science an exciting field to pursue". From the Biocore Prairie to the molecular components of living cells *The Observer* integrates the wonder and curiosity of biology with "how we know what we know" - Biocore style.

Beyond her Biocore coursework, Jaffna was a Biocore Peer Mentor, Biocore Prairie intern, undergraduate TA, and Biocore Outreach Ambassador. All of these co-curricular activities have influenced her lens as an observer and scientist. Jaffna began graduate school at the University of Pennsylvania in fall 2019 to pursue a PhD in neuroscience.

See this video on how Jaffna created *The Observer* and stop by third floor Noland Hall to check out the mural in person!



PROF. JEFF HARDIN

Congratulations and many thanks to Jeff Hardin, Chair Integrative Biology, who stepped down as Biocore Faculty Director after 18 years of dedicated leadership. We are delighted that Jeff will continue to teach in Biocore's cell biology course and serve as the lead author for (Wayne) *Becker's World of the Cell* textbook- a text that was written for Biocore and is now used around the world. Thank you for your strong vision, advocacy, and leadership for the type of integrative biology education that defines Biocore.

CLAIRE EVENSEN

Congratulations Claire ('20 Biochemistry & Applied Math with Biocore) on an exciting year of awards for her research and leadership including 2019 Astronaut Scholar, Goldwater Scholar, Marshall Scholar, and Rhodes Scholar finalist. She will be presenting her research with Prof. Tom Record (Biochemistry) at *Molecules of the Midwest*- a regional conference Claire is leading and organizing. Claire plans to pursue a PhD where she can combine her love of mathematical modeling and biochemistry to help biologists refine and test their hypotheses.

DANIEL BEARDMORE, DO

In coordination with his invitation to a new Biology@Work SuccessWorks event, Dr. Dan Beardmore ('08 Biology with Biocore) stopped by Biocore to meet personally with students. Dan is a board certified doctor of osteopathy in pediatrics for SSM Health in Janesville, WI. He talked about Osteopathic Medicine, how Biocore prepared him for life after college, and his experience as a practicing clinician to current Biocore students. Thanks Dan!

OTHER NEWS

Baila Khan ('18 Biology with Biocore and Global Health) joins Biocore staff as *High Impact Practice Facilitator* to expand peer advising, outreach, communication, and course support.

Alder Levin ('19 Biochemistry & History of Science with Biocore) and Olympia Mathiaparanam ('19 Biology & Psychology with Biocore) publish Biocore Prairie research on flowering time phenology. Read it here! Alder is currently working as a Peace Corps volunteer in Tanzania. Olympia is now a research specialist in Prof. Martha Alibali's lab in Cognitive Development & Communication.

FROM THE DIRECTOR

Greetings from Biocore! We are thrilled to connect with you and to share some recent news.

In Fall 2020, we offered a taste of Biocore's 'how we know what we know' to first year students through a new Freshman Interest Group (FIG) course called *Becoming a Scientist*. It has been exciting to expand our learning and friendship to a growing Biocore community- from freshman to seniors.

The Biocore walls of Noland Hall were paid a serious upgrade this summer with the painting of a beautiful mural entitled *The Observer* by Jaffna Mathiaparanam ('17 Neurobiology with Biocore). What an appropriate gift and recognition of the curiosity and learning mindset we aspire to daily. On your next trip to Madison, please come by to visit *The Observer*.

With much news on the importance of technical skills training for STEM majors, Biocore continues to emphasize scientific reasoning and integrative learning first, combined with science communication and a healthy dose of group learning- all supported and guided by caring and dedicated instructors. These skills will never become outdated and are, in our estimation, the most valuable skills students can learn during their undergraduate Wisconsin Experience.

Biocore's vision and mission of excellence and quality in undergraduate biology education depends on our committed UW Madison community, and your friendship and generosity. We appreciate your help and support!

Janet Batzli, Biocore Director
and the entire Biocore Team

Contact us to connect with students through **Alumni networking** or **Give to Biocore** @ biocore.wisc.edu

WISCONSIN
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INNOVATION

FIG

The Biocore experience was extended to first year students through a new Freshman Interest Group (FIG). *Becoming A Scientist: Doing Biology Research* is a 3 credit course, offered in conjunction with advanced general chemistry and a history of science course. Eighteen students this fall explored research at UW Madison using 'how do we know what we know' in close connection to our Biocore lab courses.

Students discovered both the “how” and “why” questions that drive the process of science by visiting research labs on campus and doing their own research projects. At the end of the semester, students presented their final projects on topics ranging from how multi-tasking influences human response time, the impact of *Anabaena* blue-green algae on zooplankton reproduction, and how *Brassica rapa* seed germination is affected by the bacteria in Kombucha drink (*Komagataeibacter xylinus*)

FIG students at the end of the semester commented that “the course has shown me to think more deeply about the process of science.” Additionally, they reflected on the skills fostered such as "effective communication, research-based thinking incorporating feedback, data analysis, and time management" a good starting point as they grow through their undergraduate experience.

PEER ADVISORS

The Biocore Peer Advisors program started in 2017, to serve as a bridge for prospective students to Biocore. Trained peer advisors are current Biocore students, who connect with interested first year students through in-person meet & greets, information sessions, summer SOAR, and resource fairs.

The peer advisors portray how Biocore fosters integrative learning, scientific communication, and research-based thinking over four semesters of rigorous college courses. In addition, they highlight the critical thinking skills and community aspects that Biocore provides while taking a deep dive into the fundamentals of biology. Their unique perspective also allows them to share how these skills personally prepared them for upper-level coursework, undergraduate research, and life beyond college.

The Biocore Peer Advisors, like other co-curricular opportunities within Biocore, extend students' learning, leadership, and communication skills beyond the classroom. Our three peer advisor co-chairs state that they wanted to be peer advisor leaders due to "Biocore's influential impact" and "the program's contribution to our critical analysis skills in any discipline." They add on, "For this reason, we wanted to serve as peer advisors to portray our experience as students in the program and why others willing to challenge themselves would value Biocore."

BOA

The Biocore Outreach Ambassadors (BOA) continue to work towards enhancing rural science education. The Ambassadors bring an inquiry-based learning approach to a K-12 audience, using the critical thinking and scientific reasoning learned in their Biocore courses.

This year, new classroom visits began in the Poynette School District for 1st and 5th graders. In one project, BOA volunteers helped 5th graders ask questions about plant growth by manipulating factors such as light, nutrients, and temperature. Through experiments like this, Ambassadors help students practice authentic science skills such as posing testable hypotheses, implementing experimental design principles, and making data based conclusions.

BOA, in addition to events at the Wisconsin Institutes for Discovery and bimonthly After School Science Club, continues to put on two Family Science Nights each semester. Each of these Science Nights are led by 35 Ambassadors for 500+ children and their families. BOA's last Science Night of 2019 took place December 6th in McFarland. Towards the end of the event, kids were exclaiming "I'm going to be a scientist now!" Parents also commented that it was "an amazing effort to bring science to kids". "I came for 20 minutes, but stayed for the whole two hours."