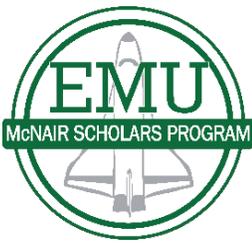


EMU McNair Challenger

November 2018 Edition

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Helping things fall into place!

In this edition, we talk to Tiffany Browne, M.A. about transitioning and completing graduate school, TRiO, and her current project— making resources more available to students at the University of Michigan! We are also talking to Jaylen Taylor, a current McNair Scholar who discusses her two research projects in Biochemistry.

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Future Events:

Thanksgiving Recess
Nov. 21-25th

Team Challenge Presentations, Halle Library Auditorium
Dec. 7, 12:00 noon

End of Semester Celebration!
Dec. 7th, 7:00-10:00
Dr. Neff's homestead

Last Day of Classes
Dec. 11th

Final Examinations
Dec 12-18th

Semester break!

Winter Semester McNair Seminars begin:
Jan 25th, 2019

McNair Interviews Tiffany Browne, M.A.



After graduating from Eastern Michigan University with highest honors and a degree in English Literature, Tiffany pursued graduate studies at the University of Michigan. She completed a Master's degree in Higher Education with a concentration in Student Access and Success in December, 2017 and still works at Michigan, where she serves as a General Academic Advisor in the Newnan Academic Advising Center. A vital portion of this role is working one-on-one with students, assessing their current academic needs and any challenges they face in their studies.

Tiffany is working on "The Digital Place Project," a joint effort between the Newnan Center and the College of Literature, Science and Arts (LSA). While still in its early phases, the project's goal is to centralize all of the digital resources available through the LSA, and to make them accessible through an online portal as a resource for students, alumni and employment recruiters.

Tiffany feels that the combination of her coursework and her experience in assessing student needs was crucial to the design and implementation of this project. Additionally, she feels that the skills she acquired as an EMU McNair Scholar — the in-depth, hands-on focus on research, and her networking ability have helped her stand out and excel. She feels that McNair prepared her well for Graduate School, and the challenges that lie beyond (continues on page 2).

While she addresses student difficulties on a daily basis, Tiffany also can relate to many of the struggles they face. During her transition from EMU to Michigan, Tiffany worked to establish a new network of peers. She encourages everyone to “find your community. It’s out there, it just may take a little more practice when you get to Graduate School.” Tiffany plans to continue her studies at the doctoral level, while staying within

the TRiO family of programs afterwards, and plans to work in an administrative role. Her current focus is on helping the typically underrepresented succeed in academia, which parallels the purpose of TRiO programs.

Tiffany says that while McNair research may be difficult, it is definitely worth the effort: “You don’t realize how impactful the program is until after you leave.”

Cyril Yancey

Cyril (pictured right) is a rising Intern, currently in his third year at Eastern Michigan University. Cyril is studying International Affairs, with a minor in EMU's brand new Leadership program. Cyril's research interest is in Russia, China, and international trade. In his spare time, he enjoys playing soccer, watching the stock market, reading historical fiction and playing video games competitively.



The New Scholar Watch!



Chocolate Brooks

Chocolate (pictured left) is an incoming Cadet, and is in her third year of studies in the Health Administration program. Chocolate plans to study Public Health at the graduate level, building the skills required to open her own senior care facilities and become CEO of a hospital one day. She is currently heavily involved in TRiO Student Support Services, both as a student and peer mentor. In her spare time, she listens to music, reads and enjoys exercising.



Living and Enjoying Life in the Lab!

The Challenger talks to Jaylen Taylor, McNair Intern dedicated to cancer research!

A junior pursuing studies in Biochemistry, Jaylen Taylor strives to excel, both inside the classroom and the lab. Jaylen's article, "Cysteine Deleted Tachyplesin Peptide Analogs as

Anti-Cancer Agents was published in Volume 11 of the *Eastern Michigan University McNair Scholars Research Journal* (2018), under the mentorship of Dr. Deborah Heyl-Clegg.

Tachyplesin is an antimicrobial peptide that is isolated from the Horseshoe Crab. The possibilities of Tachyplesin as an anti-cancer agent emerged with the understanding that cancer cells and the bacteria sensitive to Tachyplesin have the same exterior cellular charge. When the specific amino acid Cysteine is removed from the sequence, Tachyplesin no longer has disulfide bonds and is more linear. Previous experiments have shown that this modified peptide is more efficient in hindering and causing cancer cell death than unmodified Tachyplesin, although the root cause of this is unknown.

Jaylen synthesizes these peptides through synthetic means, manually stringing together premade amino acids. This Cysteine deleted tachyplesin is tested on cell line A549, which is a line of adenocarcinoma lung cancer cells (non-small cell lung cancer). One of the challenges with working with living cell cultures is, as she says, "Cells are like people—they are not always going to do what you want them to."

This research has taught Jaylen the fundamentals of cell culture techniques, practical applications of organic chemistry, analysis and

presentation of data, chromatographs and HPLC. Even though many techniques are crucial to this research, the key is also the simplest: Organization. A highly organized laboratory notebook is vital when identifying causes of errors, should an experiment not go as planned. Jaylen plans to expand testing to other types of cancers with varying levels of aggressiveness, and on non-cancerous cells to verify safety in vivo.

Jaylen spent this past summer at a University of Michigan Summer Research Opportunity Program (SROP), under the mentorship of Dr. Marie Hoarau, in the Marsh Laboratory. The research was focused on a fluorescent biosensor for testing water. Jayden honed the skills she learned in her McNair research while developing new skills, including the extraction and purification of proteins from *Escherichia coli*. Jaylen describes this experience as beneficial on many fronts, both inside and outside of the laboratory. On a whole, it was similar to "being in college in an alternate universe," or being in a graduate program dedicated to research, without the added strain of classwork. Her SROP experience overlapped with the work she's engaged in as a McNair Scholar. Jaylen has gained confidence that she can excel in graduate school and continue to engage in groundbreaking research along the way. She plans to seek a Doctorate in Biological Chemistry and remain in academia. In her spare time Jaylen focuses on self-care and enjoying time with her gorgeous Labrador puppy!

*Science is not only a disciple of reason
but, also, one of romance and passion.*

—Stephen Hawking