

The Scientist of Yesterday, Today, Tomorrow

By Keon Vereen

Before I can discuss the topic “The Scientist of Yesterday, Today, Tomorrow”, I think that it is important to provide some contextual background about me. I am an African American male in the first year of my PhD program at the University of Washington majoring in aerospace engineering. Specifically, I am working with a plasma physics group to investigate experimental plasma physics with applications toward space propulsion. In order to better understand my path, I will frame my journey toward graduate school. I would also like to highlight Shaun Harper who performed a recent study on successful black males in academia. In his study, I concluded that the main motivating factors behind the successes of black males were due to strong parents, strong teachers, and strong mentors. With the adjective, strong, meaning that these people had a positive influence that lead to upward mobility. From this study, I could have easily been one of the participants. My K-12 education up to middle school was localized in an area where violence surrounded the public schools. Even though these schools lacked key resources and were not the best educational environment, there were still a few great teachers. I was fortunate to receive strong guidance from both my parents and those teachers. My parents taught me to avoid violent situations and to strive for success through hard work and dedication. My teachers taught me to strive for excellence by always challenging myself. Afterward, I was accepted into a high school International Baccalaureate (IB) program which challenged me to want to do even more with my life. The primary tenet of this IB program was Rene Descartes’ “cogito ergo sum” or “I think, therefore I am.” I was encouraged to think about my future and what I wanted to become. Since I had always had a fascination for the universe and what lies beyond the vastness of the unknown, I chose aerospace engineering as my college field of study and the University of Central Florida (UCF) because of the close proximity to the Kennedy Space Center (KSC). With this decision, I became the first person in my family to attend college. As a result of strong parents, strong teachers, and strong mentors, I developed a mentality for success that was fueled by persistence and determination. While at UCF, I had the opportunity to interact with scientists and engineers from KSC. Furthermore, I had the opportunity and the privilege to participate in research oriented programs like the EXCEL Program, the NSF REU Program, the Research and Mentoring Program, and the Ronald E. McNair Post-Baccalaureate Achievement Program. All of these programs with their outstanding mentors lead to my preparedness toward graduate school. Now that I am in graduate school, I realize that it was not just serendipity alone that got me to this point. Louis Pasteur said it succinctly with “Chance favors only the prepared mind”. As I move forward, I seek to learn from the journeys of other black scientists as I navigate my own. I would portray the “Scientist of Yesterday” as those that preserved through times of extreme prejudice and racism especially in regards to upward mobility and educational freedom. For instance, two African American scientists that stand out to me are Benjamin Banneker and George Washington Carver. Banneker taught himself mathematics and astronomy and

contributed by publishing an almanac. Carver applied agricultural science which leads to innovative methods including the peanut. I would portray the “Scientist of Today” as those that built upon the foundation set by our ancestors. Two scientists that I follow today are Mae C. Jemison and Lonnie G. Johnson. Jemison was not only the first black woman to fly in space but was also an American doctor. I admire her not only for the achievements she has acquired, but also her advocacy toward science education and diversity. Johnson is a mechanical and nuclear engineer who has had a career in energizing space probes using atomic batteries (being an aerospace guy, this is pretty cool stuff). He then went on to invent the Super-Soaker water gun. He is also a big advocate for research and development especially in the energy technology sector. I strongly believe Science, Technology, Engineering, and Mathematics (STEM) are the future of our country and the foundation of global competitiveness. The “Scientist of Tomorrow” should want to be a part of the STEM movement that takes today’s imagination and turns it into tomorrow’s reality. I extend Descartes’ “cogito ergo sum” by asserting that my thoughts today can influence everyone’s tomorrow if I dedicate myself to the advancement of knowledge in the scientific community. The challenges we confront in these difficult times are profound; however, I believe in the principle that opportunities exist for future scientists to propel our nation forward. Ultimately, the call doesn’t start and end with me; there needs to be a larger percentage of STEM professionals who advocate for science education, research and development, and diversity. Will it be you? If so, then you potentially represent the scientist of tomorrow.