DANCING — FROM MOLECULES TO THE BALLROOM

This is what college is supposed to be like. University of Northern Iowa sophomore, Joseph Tibbs, has been at UNI for just over a year and has already made some great memories in and out of the classroom. “Last year was probably the best year of my life,” he said. He went on to say the UNI community is great, he loved meeting new people, doing new things and that it was very different from high school. As a freshman, he was able to make his own path, and got completely out of his comfort zone.

Originally from the Iowa Falls and Alden area, Joseph was looking forward to coming to UNI because it was the perfect size, close to home, offered good programs, and some good scholarships. He has declared majors in Biochemistry and Physics and is on track get a B.S. in both. He choose the double major because he is interested in biochemical problems, life sciences, and the methods physicists utilize.

Joseph has stayed dedicated to academics. His courses are focused on his interests. The Liberal Arts core courses focus on topics that all students should know. The variety of classes have been good and his favorite course within his major so far has been Quantitative Analysis, using mathematics to understand chemistry. Dr. Hanson has made learning about these fundamental laws of the world, accessible to the students. Other professors, such as in the Chemistry department and his Honors section of the Introduction to Literature, have led Joseph to engaging in deeper aspects of learning. The questions the professors ask really make students think.

In the second semester of his freshman year, Joseph joined a research team in the Physics department. He wrote computer programs to simulate biophysical phenomena. This included the simulating the cytoskeleton in a cell to demonstrate how motor proteins move in a cell and within its network. A very large and connected network that requires a computer to analyze.

This research as a freshman led to being invited to take part in the FUTURE program with his physics professor Dr. Tabei. Fostering Undergraduate Talent – Uniting Research and Education in Biomedicine (FUTURE) is a program that invites professors and researchers from around the state of Iowa to collaborate with and use the biomedical sciences facilities at the University of Iowa. UNI, Drake and Cornell are among the campuses that participate. Dr. Tabei was invited and was allowed to bring one student with him. Joseph accepted the invitation.

The program included about seven professors and four students. Participants were paired with a specific lab, depending on interests. Dr. Tabei and Joseph were paired with Dr. Spies’ Biochemistry lab. Dr. Spies is also interested in Biophysics: perfect for Joseph who is interested in both subjects. They investigated numerical approaches to analyze single molecule data for studying the mechanism of homologous DNA repair. In other words, they used biophysics to study how cells repair their own DNA.

Dr. Spies and her interns and graduate students were working on different projects, but the majority of them centered on fluorescence microscopy. With a Total Internal Reflection Fluorescence microscope, the details of individual molecules
Joseph Tibbs and Jenn Curtis are competitive members of the Ballroom and Swing Club.

Joseph is also involved in the American Chemical Society (ACS) club, Physics club, and campus youth ministry with the Navigators. He volunteers to tutor students, in math and science, and plays the piano.

Once he graduates from UNI, Joseph plans to obtain his Master’s and Doctorate at a research university where he will narrow down his focus. He looks forward to finding his passion and doing research. With his degrees, there will be many fun and interesting opportunities for him either in research or development. He will be content as long as he is making discoveries, finding new things, creating new methods and not just doing research that has already been done.

Joseph’s advice to students considering a STEM career path is to not be afraid. Don’t be afraid to take courses outside of your major because you never know where that subject may apply in your career or life. Do not be afraid to ask your professors about their research. It is one thing to look up what your professor does online, but completely another to have a conversation and listen to what they are excited about and what they love to do. If you find that a professor has a research position available and it works in your schedule, go for it. Be willing to learn and put yourself out there as soon as possible because research is really the best experience.

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-Joseph Tibbs

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