Over the past few years, many novel cancer treatments have made their way into the physician’s toolbox, including antibody-drug conjugates (ADCs). Using an antibody, the drug is able to selectively target specific surface proteins expressed on cancer cells, thus delivering drugs with greater precision. This year, our team worked to create a DNA nanotechnology-based version of ADCs to target acute myeloid leukemia (AML). Our drug delivery vehicle is a self-assembling DNA tetrahedron. Instead of using antibodies, we used an aptamer to target CD33, a receptor that is overexpressed on AML cells. Doxorubicin, the chemotherapy drug to be delivered, was incubated with the tetrahedron and allowed to intercalate between the DNA strands, bypassing the complex conjugation chemistry required for ADCs. The ultimate goal is to deliver doxorubicin exclusively to AML cells using our structure.

Themes:

Check (highlight) the most applicable theme according to the abstract.

| Innovation and Technology | Health and Wellness | Culture and Society | Sustainability and Conservation |

Comments:

Commented [A1]: Excellent abstract. Maybe add a sentence on the need for this given the non-specificity of traditional cancer treatments. It will make the context clearer and make the abstract more impactful. Otherwise, well done, should be an interesting talk.