Dear Mr. Salter,

I am Michael Mong, a design focused Mechanical Engineering Junior at Carnegie Mellon University who is interested in being one of your design interns this upcoming summer. I am incredibly interested in this role as my passions lie in the design and development of new and interesting products. I have had a long experience engaging in rapid prototyping and have explored in the realm of toy creation which I believe make me a good candidate for your design program.

I began developing my design skills in high school where I participated in FIRST Robotics, a high school level international robotics competition. Each year we were given a new challenge and limited time to complete the construction of a robot which could complete the various tasks. While a part of FIRST Robotics, I led many groups of younger students through rapid prototyping sessions of various subsystems from drivetrains to trashcan manipulators. As time was of the essence, I developed the skills to use Solidworks to quickly create a model and build a test assembly to assess its feasibility and compare it to other prototypes in order to move to the manufacturing stage as soon as possible. Upon entering college, I continued to build upon these skills in my classes and used them to preform exceptionally in my design competitions. During my freshman year, I created the fastest mousetrap powered car in the class by lasercutting living hinges into my design to create a 2D suspension system which minimized the weight while allowing a higher max speed when going over the obstacles. Then, in sophomore year, I created a lightweight crane which lifted a 1lb weight the second highest height in the class. This was done by utilizing the high second moment of inertia of a hollow cylinder to allow us to save weight in the structure and therefore use a heavier counterweight on our servo arm as weight was limited. My ability to quickly test various approaches to problems and create meaningful models and prototypes would be of great use to Objex this upcoming summer.

While I have typically used my skills to solve straightforward problems, I have had some experiences designing aesthetic solutions which would be entertaining to those interacting with them, much like the toys made by you. While working at REV Robotics I developed a remote control scaled down WALL-E robot using only standard REV Robotics parts. My main challenge here was to remain faithful to the movie depictions which also adding enough actuators to make it engaging but not bulky. In the end I created a very authentic looking WALL-E robot despite the part limitations. This model has gone on to be featured in promotional materials such as the 2018 FIRST Global Challenge reveal video. Even while studying at school I have sought out classes which would allow me to further my skills and gain more design experience. During my freshman year I took rapid prototype design, a class where we worked in small groups to prototype various toy concepts. During this class we went through many iterations of designs and then tested them with groups of children to get feedback and further refine our toy concepts. Both my experience turning a movie concept into an engaging toy using limited materials and my practice taking feedback on a toy from the intended users and using it integrate the design would be valuable at Objex.

The combination of my past experiences with rapid prototype design and my skills experiences prototyping toys will allow me to create a positive impact at Objex. I understand that I lack experience with product design currently but I am very passionate about pursuing design and believe I have the skills necessary to embark on this path. I have enclosed my resume and hope that you will consider me for your design internship. I look forward to hearing back to you can I can be contracted at mmong@andrew.cmu.edu or (817)938-0798.

Very Respectfully,

Michael Mong