

FINDING YOUR NICHE: ODBADRAKH TUGULDUR

Sam Umbaugh, *Student Editor*

Odbadrakh Tuguldur, who goes by “Togo”, is an upperclassman pursuing a Bachelors of Science in chemistry. Born in Mongolia, and hailing from Raleigh, North Carolina, Togo came to WVU when his parents moved to West Virginia. Initially a biology major with plans for medical school, Togo took Dr. Xiaodong Shi’s organic chemistry course and promptly switched to a chemistry track.

Togo is quite active as an undergraduate researcher, and was recently third author on a publication by Dr. Shi’s lab group entitled “One-Pot Synthesis of Substituted Di-Hydrofurans from Lewis Base-Catalyzed Three-Component Condensation”. As Togo explains it, one-pot synthesis is a way to run a chemical reaction in one step. “Pharmaceuticals usually go through different synthesis steps, all separate reactions. Here we are just doing it as a one reaction, but the mechanism is a three step cascade.”

While working under Dr. Shi, Togo screened reactions at the microscale level (millimolar) by varying experimental conditions including temperature, concentration, equivalencies, as well as switching in different reactants, such as dinucleophilic compounds. Togo also extracted and purified the target compounds using column chromatography and confirmed his results with NMR.

Togo plans to author his own paper on Mitsunobu reactions, which will combine alcohol conversion reactions with Dr. Shi’s triazole compounds. He plans to once again vary reaction conditions, and “...start with simple alcohols like butanol, t-butanol, and scale up to large-chain alcohols.”

When asked why he is passionate about organic chemistry, Togo responded with “...there are so many unexplored reactions and so many open doors. Organic chemistry is everything. We are all organic. Applications of organic chemistry are huge, from polymers to pharmaceuticals and medicine --even a new car paint.” Togo is looking forward to grad school in organic synthesis, and when asked about his future, said “I think I’ve found my niche.”