



CENTRAL WASHINGTON UNIVERSITY

January 29, 2009

RE: Advisor Endorsement for [REDACTED]

Dear Dr. Lupton,

It is my pleasure to enthusiastically endorse [REDACTED] Undergraduate Research Fellowship Application for Winter Quarter 2009.

[REDACTED] began working in my research group this quarter and has evinced a profound level of interest in a challenging research project she is undertaking. Although she is only working in my research group as a volunteer this quarter (due to her full (18 credit) course load), she plans to enroll for research credit in future academic quarters and plans to work full time in my research group this summer.

[REDACTED] project will initially involve computer-assisted design (using the Spartan molecular modeling program) to optimize the structure of a molecular scaffold that will be used to control the topology of a reactive chemical intermediate. When the scaffold controls the topology of the intermediate, the anticipated result is a selective chemical reaction. Specifically, the scaffold only allows another molecule to approach the intermediate from one of two possible directions. If the chemical reaction proceeds under mild conditions and leads to one product selectively, this method will have powerful implications for the design of more complicated systems in the future. For example, one molecular target we will endeavor to prepare has shown promise as a chemical therapy to treat addiction to harmful narcotics. Certainly, a more efficient way to make this molecule and others like it (that might work better), is a worthwhile goal.

If [REDACTED] computational research and the results from the chemical reactions she plans to conduct are promising, I hope to develop her findings into a full-fledged research program devoted to preparing chemical agents selectively. Therapeutic chemicals have enormous potential to treat addiction to narcotics in combination with, or by replacing, behavioral therapy. In addition, because the biological mechanisms of drug addiction are poorly understood, [REDACTED] research and future collaborative efforts will likely pave inroads into that field of study.

One of [REDACTED] goals, if she receives this research fellowship, is to present her results at SOURCE this spring. When enough computational and laboratory data has been gathered, we plan to submit her work to the *Journal of the American Chemical Society* or *Organic Letters*, two of the most highly regarded peer reviewed journals in organic chemistry. [REDACTED] is a quick learner and is extremely perceptive. She has outstanding potential to successfully attain her research goals at CWU and beyond in a science-related career. Her academic and research experience at CWU will prepare her well for her stated goal to enter a dual M.D./Ph.D. degree program upon graduation.

If I can provide additional information about [REDACTED] or her research to support her application for this Undergraduate Research Fellowship from the Office of Undergraduate Research, please do not hesitate to contact me at (509) 963-[REDACTED] or [REDACTED]@cwu.edu.

Sincerely,