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Projects

The Dr. Gary B. and Pamela S. Williams Honors
College

Spring 2023

Effects that the methylenetetrahydrofolate gene mutation (both the C677T and A1298C polymorphisms) have on both men and women's fertility abilities and subsequent fetal development, as well as what nutritional changes can possibly do to aid in reversing these supposed negative effects.

Elizabeth Simkanin

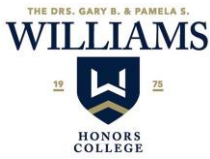
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Williams Honors College
The University of Akron
Akron, OH 44325-1803

Honors Research Project Proposal

Congratulations! The inception of your Honors Research Project represents the beginning of your last phase as an undergraduate student at The University of Akron. As a member of the Williams Honors College you have maintained an outstanding academic record that has hopefully prepared you for this independent project. Your Honors Research Project Proposal is an important component of your overall project. In particular it provides a guideline and timetable for the work to be accomplished and ensures that the expectations of the project sponsor and readers are clearly defined. When preparing your written description please include the following sections:

1. **Goals and Objectives:** In the initial section of the proposal, describe the specific research questions to be addressed, as well as the goals and objectives of the project. What are the motivations for the work and the benefits if successful? This section should be written at a level that is readily accessible for non-experts in the field of study.
2. **Methodology:** Then, discuss the work to be undertaken including the methodology used. How will the goals and objectives be met and the questions described above be answered? Does this work build significantly on existing research and efforts? This section can be more in-depth than the previous section, but should still be understandable by someone in the field of study. **Please include a tentative timeline for the efforts with projected intermediate project deadlines.** While the timeline is subject to change as the research progresses, it provides an initial guide for the work to be undertaken and is an important part of the proposal. Proposals without a timeline will not be approved.
3. **Outcomes:** Describe the final output of this project, including the written report for the Honors College. If the project is to be performed or presented publicly, what will be the expected event and audience?
4. **Academic Impact:** Finally, please describe how you see your Honors Research Project building on and adding to your undergraduate experience and knowledge. How does this project serve as an enveloping experience for the undergraduate major? What is expected to be applied from the curriculum and learned from the outcomes?

Any references cited can be included in a final section when appropriate. The length of your written description is expected to be 3–5 pages. For projects involving more than one Honors student, please submit a single project description, but with a separate and completed cover sheet for each student. In addition, please include a statement regarding the expected responsibilities for each Honors student.

Provide copies of the completed proposal (cover sheet and project description) to your project sponsor, your readers, and your Honors Advisor for their approval. Once approved your proposal should be [submitted online through IdeaExchange](#). You will be notified by email once your project proposal has been reviewed by the Williams Honors College.

Honors Research Project Proposal

Please Print

Name: Elizabeth Simkanin	Student ID: 4556684
Email (@zips.uakron.edu): eis7@uakron.edu	
Title of Proposed Project: Effects That the Methylenetetrahydrofolate Gene Mutation (both the C677T and A1298C polymorphisms) Have on Both Men and Women's Fertility Abilities and Subsequent Fetal Development: What Nutritional Changes Can Possibly do to Aid in Reversing These Supposed Negative Effects	
Major: Food and Environmental Nutrition	Graduation (semester/year): Spring 2023

Please include a brief (maximum 200 words) summary of your proposed project

This study examined the perceived negative effects of variants (C677T and A1298C) in the methylenetetrahydrofolate (MTHFR) gene on male and female fertility and fetal development, as well as the potential for nutrition changes to aid in reversing these negative effects. This research project was completed in order to identify the possible association with and connection between nutrition and fertility in both male and female individuals who have either of the two most common MTHFR gene polymorphisms, 677C>T and 1298A>C. These two polymorphisms are of particular interest because they are associated with the most decreased activity of the MTHFR enzyme. After the review of numerous scholarly articles, it is still unclear the impact that an MTHFR genetic polymorphism may or may not have on an individual's everyday life, and its contributions to current or preexisting health conditions remain unclear. It is relatively simple to see that a majority of the clinical tests and research pertaining to the MTHFR gene and the issues it potentially causes shows mixed results and conclusions. Methylenetetrahydrofolate gene polymorphisms are becoming increasingly common in the general population, so it is difficult to determine correlation verses causation when considering its exact influence on human health.

Approval:

Honors Course No.:	No. of Project Credits:
Honors Project Sponsor Signature/Date 2/7/2022 Print name Pei-Yang Liu Email: liu4@uakron.edu	
Reader Signature/Date Debra Horning 2/22/2022 Print name Debra Horning MSN RNC OB Email: dh79@uakron.edu	
Reader Signature/Date Date: 2/23/2022 Print name Dr. Carrie Wissmar DNP, MBA, MSN, RN Email: cap@uakron.edu	
Honors Faculty Advisor Signature/Date 2/7/2022 Print name Pei-Yang Liu Email: liu4@uakron.edu	

Your approved cover sheet and proposal must be submitted to the Williams Honors College through IdeaExchange