



**QUARTERLY RESEARCH
PROGRESS REPORT**
Submitted by Principal Investigator (PI)

Project Title:

Risk-taking behaviors and pre-frontal cortex activity of male adolescents in the presence of peer passengers during simulated driving: A functional near- infrared spectroscopy (fNIRS) study

Principal Investigator:

Anuj K. Pradhan, MS, PhD
Lisa Buckley, PhD

Department/Unit:

Young Driver Behavior & Injury Prevention Group, UMTRI

Quarter Reporting and Dates: May 15, 2014 to August 15, 2014

Please provide detailed answers to the following statements or questions. If there is nothing to report under a particular item, please state "*Nothing to Report*".

1. Please provide a status of the project and its' major activities that were completed this quarter.

The project is currently in progress and in line with budget. There may be shift in timeline necessitating a request for a no-cost extension.

- Final protocol tested & piloted.
- Training of Research Assistants and Students completed.
- Data collection is underway.
- Initial data analyses underway

2. Please describe any problems or delays with the project and the efforts undertaken to address them.

- Recruitment has been somewhat slow given strict age requirements
- Participants can only attend experiments during weekends or after school hours

3. Faculty, students, or other personnel working on the project. Were there any changes from last quarter report?

- we have added a number of undergraduate and graduate students to work on the project
- We added a PhD student as a summer intern to work on the study.

4. Please describe planned activities for next quarter.

- Data collection will progress through the next quarter.
- Analyses will be ongoing, as well as some report writing.

5. If an IRB was required for the project, what is the status of the application (please attach approval letter if not provided earlier).

- IRB approval has been received for the project.

6. What is the status of your funds? What was spent? What is remaining? Indicate High-level Expenditures (salaries, travel, research supplies, printing, etc.)

- The spending is in line with the budget and projected expenditure.
- Funds have been expended on salaries (including RA salaries), on participant incentives, and on recharge of fNIRS equipment.

7. List any products resulting from the program during this period. Describe the product(s) and how it/they is/are being shared. For example:

- Presentation by Summer Intern, Hanna Durbin Clark, at the UMich Injury Center's summer intern meeting.
- Poster presented at the UMich Injury Center's 1st Annual Symposium.

8. **Describe ways in which your work, findings, and specific products have had an impact during this reporting period.** Describe distinctive contributions, major accomplishments, innovations, successes, or any change in practice or behavior that has come about as a result of your research.

- An innovative fNIRS cap design was completed that could measure the relevant areas of interest in the brain. This task was completed with substantial interfacing with industry resulting in a 3D-printed cap design.

9. **What organizations have been involved as partners?**

The University of Michigan Transportation Research Institute has provided financial support in terms of driving simulator recharge funds.

Dr. C. Raymond Bingham has also supplemented the financial contributions from UMTRI by donating financial resources from his discretionary funds for simulator recharge costs.

Mr. Mark Gilbert of the Engineering Systems Group has contributed his time and the effort of his staff to develop the driving simulation workstation in order to streamline the move and data collection at the CHGD facilities.

The Center for Human Growth and Development (CHGD) has provided support, technical know-how, and staff to assist with the planning, implementation, and data collection.

10. **Have other collaborators or contacts been involved? For example, describe any significant:**

The project has gained the benefit of a summer intern mentored by the project PI. The summer intern, a clinical psychology doctoral student, will play a large role in the data collection, analyses, and dissemination, over the course of the internship.

The project has resulted in the collaboration with the University of Michigan Center for Human Growth and Development which houses the fNIRS laboratory. Collaboration has led to faculty associate memberships at the center for the PIs involved.

The project has also led to successful partnership with professors in the psychology, psychiatry, and neuroscience departments within the University of Michigan.

The project has taken on two Undergraduate Research Opportunity Program (UROP) students. This will help with outreach as well as provide an opportunity for undergraduate students to be meaningfully engaged in research.