

Michael Ruof

Graduation Year: Junior

College: Engineering

Major(s): Mechanical Engineering

Minors(s): Engineering Corporate Practices

Scholar Group Membership: No

Did you received other funding for this project?: The College of Engineering

Could you have completed this project without CUSE funding? No

More details on CUSE funding assistance?

Project Title: OPTIMIZING ICE EFFICIENCY THROUGH CYCLING

Project Location: Montreal, Canada

ND Faculty Mentor: Peter Bauer

Project Type: Research, Conference - Presentation

Why did you undertake this project/experience? Deepen your knowledge of a topic or issue, Prepare for graduate school (MA or PhD), Prepare for professional school (MD, MBA, JD), Internationalize your Notre Dame experience

Did your funded experience help you:

[Deepen your understanding of your coursework or field of study]: Very Much

[Discern your interests and post-bac goals]: Very Much

[Become confident in your ability to set and achieve your goals]: Very Much

[Gain a more nuanced view of local, national, or global communities]: Very Much

[Improve your written and verbal communications skills]: Very Much

Tell us about your experience.

Our research was on optimizing fuel efficiency of large diesel engines and how to hybridize large diesel engines. In our research we found where it is best to cycle for two power points and the benefits of cycling diesel engines.

We spent our second semester of our sophomore year researching this topic, and then spent our junior year refining our research and submitting it to conferences.

At the conference we were able to attain more background on the research on fuel efficient techniques and fuel efficient vehicles. It allowed me to see where the industry is going and what the future entails. I was also able to connect and network with other professors and industry leading engineers.

Describe the impact this project had, both on you as a student-scholar and on the people you worked with.

The project impact on myself is that it pushed me to stretch my imagination and challenge me in ways that my engineering classes couldn't in that it required me to use critical, creative, and analytical thinking together in a way I have never used it before. It also showed me the type of skill and work that is needed to create industry changing technology in the future. I was also

able to work with a professor who has published many research papers and he exemplified the quality of work, the knowledge and time-consuming nature of what a research paper entails and was a fantastic role model for me to follow.

Describe how this experience is connected to your plans as a student or future professional.

This experience is connected to my future endeavors, as it prepared me in the sense of continuing to give presentations in front of large audiences on technical papers, and information. It also prepared me to do continue to explore areas of research that contain my interest in the future and explore these possibilities in both professional and graduate school.

What advice would you give other students who are planning to pursue similar projects?

I would tell them to do it, and to think outside the box when doing research; think of the many possibilities to solve your research and to not get frustrated when one method does not work as you didn't fail, but found a way that it won't work. I would also say do things that are out of the box and may appear uncomfortable to you, as I never saw myself doing research at Notre Dame let alone presenting at an international conference.

I acknowledge that this form has been filled out truthfully and to the best of my ability. I understand that this information will be shared with many different CUSE constituencies. As such, I have provided as much useful information as I was able. I understand that CUSE will not complete my award disbursement until this form is successfully completed. If I have any questions or concerns, I will contact CUSE before submitting this form. To illustrate that you understand all of these points, please enter your Notre Dame email in the box below.
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