**Programme Name:**

SIAM Conference on Analysis of Partial Differential Equations (PD19)

**Programme Website:**

https://www.siam.org/Conferences/CM/Conference/pd19

**Programme Dates:**

December 11-14, 2019

**Travel Dates:**

December 8-25, 2019

**Programme Venue & Location:**

La Quinta Resort & Club, La Quinta, California, USA.

**Describe the programme and how it pertains to your personal/professional development:**

Organised by the Society for Industrial and Applied Mathematics, SIAM Conference on Analysis of Partial Differential Equations (PDEs) is a conference which aims to bring together scientists and mathematicians working in PDEs and in related fields. In this conference, contemporary challenges raised by recent advances in engineering, industry, and bio-technology, are discussed and confronted with state-of-the-art mathematical and computational tools in PDEs. The themes of this year range from fluid dynamics, mathematical physics, to PDEs in biological and complex systems. The conference consists of plenary sessions, tutorials, and smaller thematic sessions.

Academically, the conference intersects with the topic of my capstone, which is about understanding certain PDEs in fluid dynamics. Now, my capstone is part of a bigger project that led by my advisor, Prof. Katie Oliveras, and her colleagues at this moment. Since my advisor and her collaborators (Chris Curtis, SDSU, and Vishal Vasan, ICTS Bengaluru) will be present at the conference, I will have a unique opportunity to meet them in-person and understand my project and its role within a bigger project better. This is especially important, given that my advisor is from an external institution, and I will not be able to work with her in-person throughout the academic year.

Furthermore, although my advisor and I have defined a clear set of goals for the theoretical component of the project, the applied component has to do with application of the obtained results, and thus is very much exploratory in nature. Many thematic talks at the conference also explore wide-ranging applications of fluid dynamics, and through conversations with researchers, I will have a chance to look at fluid dynamics from a broader perspective, and thus understand the possible ways in which I could pursue my capstone.

Professionally, the conference will give me an opportunity to talk to mathematicians with whom I am interested in working. I am applying for PhD programs in mathematics, and an important part of professional development is learning whether a given graduate school is a good fit for me. Attending a large conference like PD19 as I apply allows me to get to know potential faculty, their research, and see if their institutions suit my research interests.

For any researcher, being able to deliver their results is just as important as conducting research and getting results. Even though I have presented a poster at the 2019 Summer Research Symposium, my experience of presenting results to the public is nonetheless limited. By attending the conference, I will witness how mathematical research is presented under different settings, be it a large scale lecture, a medium-sized tutorial, or a poster session. Thus, learning how to deliver my results will enhance my presentation skills, which is important, especially for my capstone final presentation, and in my future career as a researcher.

**What are your goals and outcome of this trip?**

One goal that I will pursue is learning about new areas in PDEs. Since the Yale-NUS Faculty who work in this field are on study leave this academic year, it’s important for me to supplement my curriculum with the knowledge of PDEs. The conference provides one excellent way to do so, with talks that span both the theoretical and applied portions of fluid dynamics, that do not just focus on what is already known, but also present the frontiers of current research. In particular, I am interested in attending the talks such as:

* MS63 **Inviscid Fluid Dynamics**: <https://meetings.siam.org/sess/dsp_programsess.cfm?SESSIONCODE=67605>, Dec 13, 8:30-10:30am

## MS72 Recent Results in Incompressible Fluid Mechanics - Part I of III: <https://meetings.siam.org/sess/dsp_programsess.cfm?SESSIONCODE=67625>, Dec 13, 3:15-5:15pm

## MS61 Regularity, Singularity and Turbulence in Fluids III: <https://meetings.siam.org/sess/dsp_programsess.cfm?SESSIONCODE=67617>, Dec 13, 8:30-10:30am,

## and many more.

## My second goal is to get to know potential PhD advisors. A number of faculty from schools of my interest, including NYU, Brown University, and UC Davis, will be present at the conference. In fact, the potential faculty in whom I am interested, for example, Prof. Tarek M. Elgindi (UC San Diego), Prof. Nader Masmoudi (NYU Courant), and Prof. Steve Shkoller (UC Davis), will be involved in the conference, mainly giving talks. Attending these talks and becoming acquainted with their research will allow me to narrow down the graduate schools where I will apply.