Indian Institute of Technology Madras

Office of Alumni & Corporate Relations

Alumni Endowment Fund

2019-2020 Report

The purpose of the Alumni Endowment is to use the annual interest accruals to fund initiatives that will have a key transformational impact on the Institute and keep it as a world-class institution of technological advancement. Every year, the Director of the Institute will issue instructions on disbursements to be made from the fund, which will be equal to or less than the amount that has additionally accrued to the fund as returns from its investments. The capital of the fund and any additional capital contributed during the year will not be disbursed.

The selection of projects, for which the money was raised, should be in line with the following:

- Key transformational initiatives, where the results are not proven or have uncertain outcomes, and hence do not get funded from the regular government funds
- Act as a catalysts in risk-projects, some of which might get funded later by the Government after their success is proven
- Support the Institute in innovating strategies to maintain IITM as a world class institution.

- The **1987** batch contributed Rs. 223 lakhs towards the Alumni Endowment Funds which partially supports travel grant.
- The **1985** batch contributed Rs. 274 lakhs.
- The **1986** batch contributed Rs. 6 lakhs.
- The **1988** batch contributed Rs. 118 lakhs.
- The **1978** batch contributed Rs. 20 lakhs.
- Other alumni contributed Rs. 2.6 lakhs.
- Currently the endowment is worth about **643 lakhs.**

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FY 2019 - 2020 Deployments

Annual interest from the Alumni Endowment Fund was utilized towards Travel Grant **(Rs.40 lakhs)** and Web studio activities (Rs.3 lakhs).

1. **Travel Grant**

- Travel Grant program is very popular amongst Institute students, and is one that impacts the students directly by helping them financially to participate in International Conferences to present research papers, as well as participate in competitions, workshops, summits, exchange programs, internships, etc.

- **A total of Rs.100.39 lakhs** was deployed towards **IITM Travel Grant** in the Year of 2019-20, which includes Rs.40 lakhs, annual interest accrued from Alumni Endowment fund.

Feedback from few beneficiaries

Paper Presentation - IEEE International Conference on Data Science and Systems, 2019, B.Tech, Mechanical Engineering (ME16B077) – E Naveen

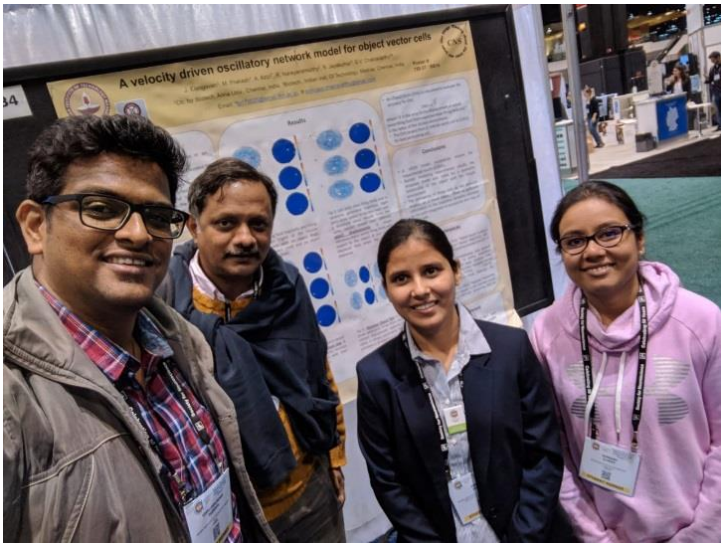
I visited the city of Zhangjiajie in China's Hunan province in the month of August, 2019 for presenting my successfully accepted paper titled - 'Checkpointing in Practice for Memory Efficient Training on the Edge'. On the first day of the three-day conference I spent the morning in orientation session followed by welcome speeches by several of Industry cum Academia leaders who enlightened about what's in store for the following days. Over the afternoon I got acquainted with several other post graduate students from several Universities in India and neighbouring countries and understood their area of research. On day 2 I met with Dr. Pavan Balaji, an IIT Madras alumnus from 2001 batch, who was keynote speaker that day, who shared about his journey starting at IIT Madras and currently the group lead at Argonne National Laboratories. The afternoon was spent in revisiting the presentation slides and gaining feedback from fellow post graduate students who certainly shined light on completely new areas that I was unaware of. On the third day in the morning I completed sharing my ideas and methodologies conveyed through my paper in the presentation and the afternoon was spent parting ways with all of my friends whom I met at the conference. As for the benefits derived from the visit apart from those mentioned above, I certainly learnt to live in a foreign country such as China with extreme cultural differences in terms of food habits and language spoken. Having to adapt quickly and surviving under unexposed scenarios was a good exercise for me and am hoping that it will come in handy in the future. I would like to Acknowledge the Alumni and the IAR team of IIT Madras for facilitating such a wonderful possibility of encouraging students to visit countries abroad for educational purposes by funding their travels through means of the Travel Grant and am sincerely grateful for being awarded the Grant.

Philips Prince Pokkatt - CH17M013 (M.Tech Chemical Engineering)

The primary objective for attending the conference was to present the work I have done during my master's in Chemical Engineering at IIT Madras. My research paper titled "Effect of Ambient Conditions on Boil off Gas Generation in LNG regasification terminals "was accepted for the European Symposium on Computer and Process Engineering as a poster. I considered it as an ideal platform for sharing the work our group was working on, in front of colleagues with similar fields of study and will be able to receive positive feedback and constructive criticism about my research.

The interactions I had with the pioneers in the process system engineering domain helped me gain different perspectives on approaching problems. It also helped me discuss with different research groups working actively in the natural gas related projects across the globe. It also helped me identify gaps in my work. It enabled me to build a network of people which I believe will raise my caliber of work to greater heights as we have shared objectives. Conference proceedings are also a good way to have one's research published and indexed. So, I also got my work published in Computers & Chemical engineers, one of the reputed ones in the field.

Being an M.Tech. student I was not eligible for funding provided by the Institute and had very limited options to get the funding from. Hence, I would like to express my sincere gratitude to the alumni for providing me partial financial assistance.



Azra Aziz - BT17D025, Department of Biotechnology

Work accomplished during the visit abroad:

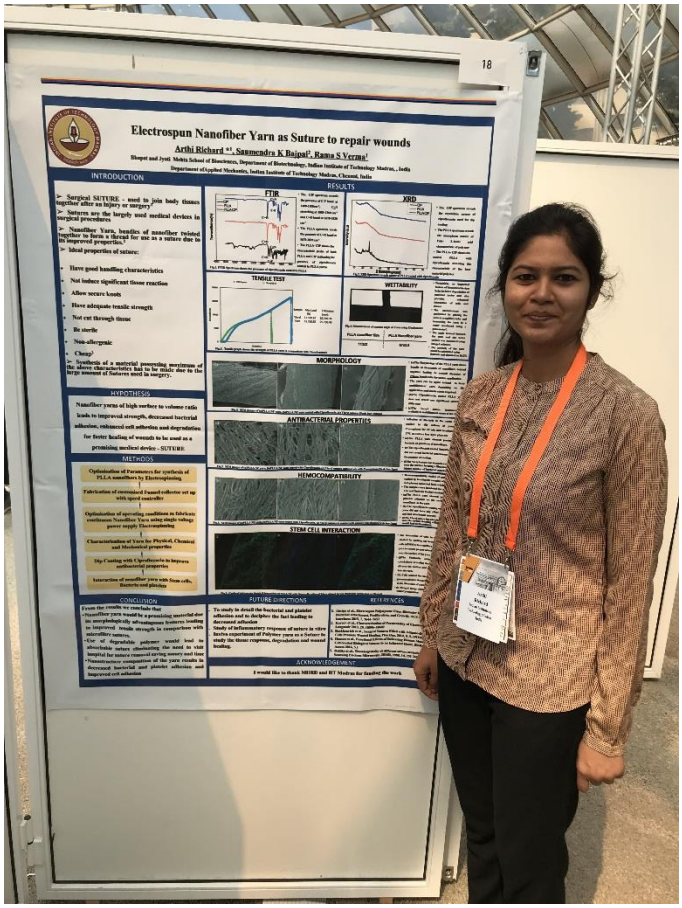
Mainly the visit to US had two sole purposes. First, I presented a poster on "A velocity driven oscillatory network model for object vector cells" at Neuroscience 2019, the 49th Annual Meeting of the Society for Neuroscience (SfN), being held October 19 – 23, 2019 in Chicago, IL. Second, I visited Computational Neuromechanics Laboratory, Rice University, Houston for lab collaboration purpose.

Benefits derived of this visit:

- I got exposure in my field, met many big scientists and understood their current work which made me self-sufficient to generate new ideas in my domain.Got to meet with Moser's (Noble prize receiver) lab students and looking forward for collaboration.
- I got to sit in oral talks of many big names like Buzaki etc. which was very fascinating and related to my work.
- Networking with lots of people around the globe.
- Lab collaboration with Prof BJ Fregly, Computational Neuromechanics Laboratory, Rice University, Houston.

Acknowledgement: I would like to express heartily gratitude to IIT Madras Alumni for providing me partial financial

assistance for my trip to US.



Arthi N (BT14D300) - The Poster presentation was on "Electrospun Nanofiber yarns as sutures to repair wounds" and was presented from 3.30 to 4.30 pm (all days) from 27-30th May and the last day (31st) had Special lectures by Scientists from various Institutes across the Earth. The Conference covered various fields such as I attended oral presentations rendered by the Scientists, Professors, Industrialist and students on "Biomaterial scaffold and in vivo studies" and Raman Spectroscopy to visualize cell behavior on scaffolds The Conference was informative, provided insights for improving the quality of my work. Various companies portrayed their models of 3D Bio printing, Electro spinning, Gel matrix for Cell culture, Enzymes for Cell culture, Tensile Testing machine for small samples with minimum load, Nano Indentation. I had opportunity to test my research samples in the equipment's kept for demonstration and obtained an idea of how to pursue further in the testing of stiffness of the material for low load bearing materials. Also, I tried to test the sample for Mechanical strength by tensile testing machine with minimum load and non-slippage sample mounter. I had the opportunity to discuss my work with Professors from National University of Singapore, University of Warsaw Poland and various Researches working in my area of research. I was provided with fee waiver for Special issue in Frontiers in Bioengineering and Biotechnology (I.F: 5.12) for the poster to be published as a paper. I am glad that I got an offer for Post-Doctoral Position in National University of Singapore to be applied after completing my Ph.D. I thank IIT Madras for providing the opportunity to present my work in the renowned International Conference and visit the country of ancient civilization, Greece. As it was vacation period in European countries, the air ticket fare was too expensive and I request IIT Alumni to provide help in reimbursement of money spent on other expenses as only Airfare and registration fee was covered by IIT Madras. I would like to acknowledge IIT Madras for providing partial financial assistance incurred for participating in the International conference.

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R.C DiviaHarshaVardini - AE16D004

I participated in the 32nd International Symposium on Shock Waves (ISSW-32) held at Singapore on 14-19 July 2019 as an oral presenter. I am working in modelling the hypersonic boundary layer transition which is an important ongoing research area in the Aerospace field. This work helps in reducing the expenditure as well as increasing the reliability of Launch vehicle design by properly designing the thermal protection system and drag estimation during its initial design phase. In the conference, I have presented my work on how the new transition model integrated with the SST k-ω RANS model helps in estimating the boundary layer transition properly even for the surface with curvature since none of the current transition models doesn't explicitly studied the transition due to the curvature effect in the RANS framework. This work has been well appreciated in the hypersonic community and lots of questions were asked after the presentation which helped me to approach this problem in different angle.

There was a special talk given on the hypersonic boundary layer transition given by Prof. Cunbiao Lee which helped me to get more insight on this problem. This conference has given me lot of exposure to people working in the hypersonic field and I could able to talk with various eminent professors worldwide working in this field. It also helped me to meet Prof. John D. Mee, University of Queensland who is doing the experiments on transition over curved surfaces. He also got interested in the work I presented in the conference and is ready to share their experimental data for further improvising the work. Out of 140 papers presented in this conference, one fourth is dedicated to the hypersonic flows and I could able to interact with researchers directly working in the same field from various institutions to understand more on their ongoing research work. It helped me immensely to understand the progress and the future of hypersonic research area in the Aerospace field.

All these are not possible without the help of IITM Alumni by providing the partial financial assistance for attending an international event through "Alumni funded travel grant". Without their support, I couldn't have been able to go out of our country to present my ideas on the worldwide research community. I thank the IITM alumni for their support in extending my horizon on the hypersonic research area through funding my conference.

Chirag Alreja – ME15D206 Manufacturing Mechanical Engineering

Work accomplished during the visit:

Except plenary talks, e.g. Dr. Marc Madou, Lab Tour at North Carolina university was really worth it where we saw different additive manufacturing facilities for various materials (metal, plastic etc.)

My conference paper got accepted for a Journal paper invitation for special issue of ASME Journal of Micro and Nano Manufacturing

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Benefit derived out of this visit:

Talk with few Professors e.g. Dr. Shiv G Kapoor, Sylvie Castagne for post doc opportunity. Also, I met Dr. Melkote (at Georgia Tech) at Atlanta USA, and discussed the possibilities for future collaboration work. I would really like to thank Alumni (I and AR) IIT Madras for providing partial financial assistance.

Jayakrishnan N - HS15D017

International conference of the International Association of Media and Communication Research (IAMCR) 2019 – Communication Technology and Human Dignity: Disputed Rights, Contested Truths. Venue: Complutense University of Madrid, Madrid, Spain

Work Accomplished during the visit abroad

Presented a paper titled "The Music of Gods: A Semiotic Analysis of the Representation of Indian Classical Music in Visual Media" in the Visual Culture subgroup of the conference.

Attended several plenary sessions, panel discussions and paper presentations, actively involving in the academic discussions that followed.

Travelled to important cultural and heritage sites in Madrid such as the National Museum of Prado, the National Museum of contemporary art and places such as Toledo, thus exposing myself to the rich cultural heritage of Spain.

Benefits derived out of this visit

Though research in Media and Communication has become very popular in India, it is not always that a researcher gets to attend and present a paper at a conference so widely attended by researchers in the communication field all over the globe. IAMCR has the reputation to be one of the biggest and prestigious organizations concerning communication research added to its affiliation to the United Nations. The conference also had one of the largest representations from India, with around 30 delegates presenting their papers in varied streams of communication. They came from the media and communication departments from renowned universities of the country such as Indian Institute of Mass Communication, IIT Bombay, Central University of Hyderabad, Delhi University, Manipal University etc., to name a few. It was thus highly advantageous for scholars like us to spend even the travel time in the august academic company of renowned academicians from India such as Prof. Vinod Pavarala (Professor and UNESCO Chair in community media, University of Hyderabad), Prof. T T Sreekumar and Dr. Subba Rao Gavaravarapu among others.

With leading names in the contemporary academia of communication and media in attendance, I made sure that I attended as many lectures and panel discussions as possible apart from the highly informative plenary sessions. Thus, I could meet and discuss my work with academicians such as Nico Carpentier and Monroe Price, among others. My paper was presented to a gathering of learned academicians and experts in the field of Visual Culture. The paper was well received and was discussed in detail in the discussions that followed. These discussions were both enlightening and encouraging as apart from getting ample constructive critiques and suggestions, these discussions also made me feel confident about the direction of my ongoing research.

Finally, I would like to thank the fraternity of the alumni of IIT Madras for having constituted this travel grant programme which has been of tremendous significance and support for research scholars. I thank them sincerely for their financial assistance for my journey and I look forward to contribute my share into this noble cause once I complete my doctoral programme.

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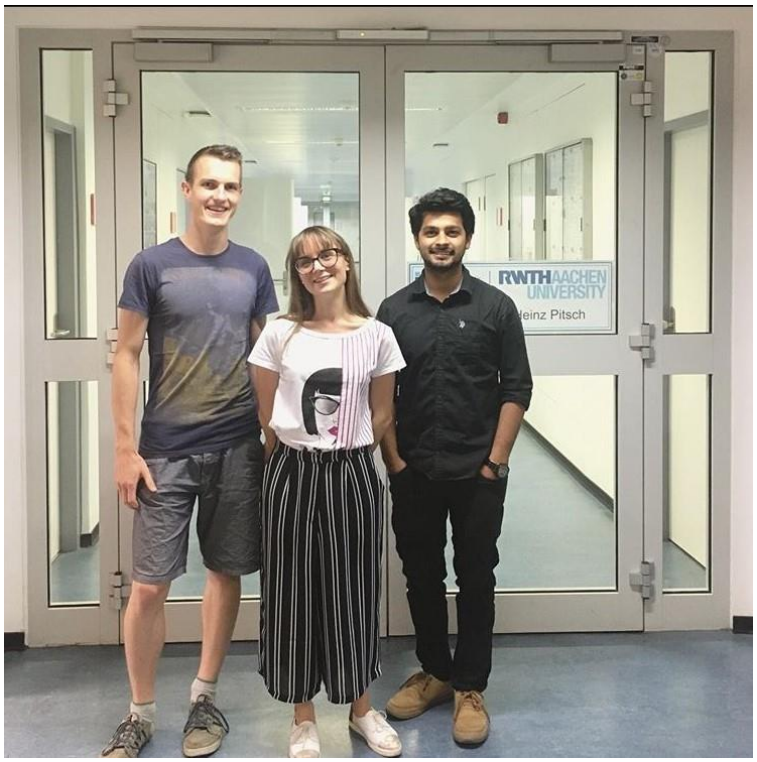
Ameer Hassan A S - NA15B003
5th International Conference in Ocean Engineering - 28th July – 1st Aug. 2019, Mauritius

I, Ameer Hassan A S from the department of ocean engineering, IIT Madras presented a research paper in the Fifth International Conference in Ocean Engineering which was held in Mauritius. Title of my research work was 'Surf-Riding and Broaching- A Numerical Investigation on the Vulnerability of Ships'. During my research we successfully developed a numerical tool for capturing the phenomenon surf-riding, which is a dynamic instability problem in container ships and fishing vessels.

As an undergraduate student, Conference was really a great exposure for me. During the Conference, I have got opportunity to interact with various scientists in the field of ocean engineering. I consider it as a valuable experience and I am sure that it will help me further research. Also I got to know about emerging areas of the research and challenges involved. Keynote addresses by experts from various countries across the globe gave me inspiration for further research work.

I consider this experience as a lifetime achievement as an undergraduate student. I am very happy that International and Alumni relations for providing us the funding for the visit. I express my sincere gratitude to all the alumni who are giving contributing to this fund. I also express my thanks to entire I & AR team of IIT Madras



Varun Goyal - ME15B165, Dual Degree, Department of Mechanical Engineering
Research Internship, RWTH Aachen University, Germany

Work Accomplished:

- The project aimed at investigating the detailed oxidation chemistry of biomass volatiles. Also, the goal of this project was to evaluate potential pathways for pollutants formation with a particular focus on soot precursors.
- I performed detailed speciation study of non-premixed counter-flow flames of 1-butene (single & mixed with CH4, C2H2, & C3H6) to investigate the combustion chemistry under oxy-fuel conditions with a Molecular Beam Mass Spectrometer equipped with Time-ofFlight detection.
- Counter-flow laboratory flames are an excellent candidate to explore combustion chemistry because they can be simulated with reduced computational efforts. For this reason, the overall setup is designed to produce the same velocity and scalar fields described mathematically by the similarity solution implemented in several 1D codes. So, I helped reduce the complexity of kinetics by performing 1-D simulations of the flame in FLAMEMASTER.

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Benefits derived out of this visit

• This project's aim of identifying soot precursors has opened avenues for tracing the compounds responsible for its production and change the fuel composition in order to prevent it from being formed at all. • It has provided me the kind of research exposure that has convinced me to pursue doctoral studies after graduation. • Personally, it taught me composure and diligence that's required to carry out any research helping me in DDP. I am grateful and would like to thank the Alumni of Indian Institute of Technology Madras, for providing me the financial assistance that has helped me to visit one of the highly research-oriented institute, RWTH Aachen University, in the world. I am certain that in the future, I will contribute as an Alumni myself to help students like me gain exposure and learn boundlessly.

A Anbuthangam

I have been very fortunate among few students to get selected for 10th International Conference on Materials for Advanced Technologies. I can honestly say that taking part in this overseas conference is one of the best experiences of my life. The time I spent during the conference has provided me with a wonderful experience both personally and professionally. I have learned many new things in such a short period. Conference experience has allowed me to move out of my comfort zone and interact with people from various nationalities. I have enjoyed interacting with people from diverse backgrounds and learned a lot from them. I must say that the new learning experience from various researchers has a profound impact on me. Their expertise in material science has helped me to deepen my research focus. I got a chance to visit NUS and NTU. Where I could able to interact with few professors and students and got an opportunity to visit their lab facilities, those are of high quality and the lab environment goes beyond the excellent research system.

Overall, this particular presentation experience in Singapore was amazing. The international exposure will help me to have a deeper understanding of research and also help me to achieve greater heights in my career. I thank Alumni and Department of Metallurgical and Materials Engineering of IIT Madras for their kind support.

2. <u>Web Studio Activities</u>

In order to keep the alumni connected and constantly updated about the activities undertaken by the Institute and our Office, and about significant alumni related events at the Institute, campus Events are recorded and uploaded on YouTube. An amount of Rs.3 lakhs was disbursed towards the services of a professional videographer and the associated web-studio activities. Some of the major activities are listed below

- CCBR Video recording and Live interactions with overseas speakers
- Leadership Lecture Series
- UAY Program (Uchatar Avishkar Yojana) MHRD's initiative (over 200 Video conference sessions connecting all IITs participants on innovative projects.
- Online course on Computer science for Overseas participants on behalf of Ministry of External Affairs
- Video conferences for Higher Education Financing Agency
- Video programs for various departments in IITM
- Technical assistance for ICMR (National Institute for Epidemiology) in creating studios for recording and assisting in recording for NPTEL

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- Assistance in recording for Swayam Prabha – DTH Channels
- Coordinating and hosting of Inaugural event for Online Degree Courses of IIT Madras
- Technical assistance in creating recording ambiance to IIT Palakkad, IIT Tirupati & IIT Indore
- Technical assistance and coordinating Virtual Classroom for Government of Arunachal Pradesh. (Coordinated by Prof. Andrew Thangaraj)
- Technical coordination for MTech online courses offered by IIT Madras
- Hokkaido University, Japan – Inter University Exchange programe (Office of International Relations, IIT Madras)
- Thanks message videos for Alumni & Corporate Relations
- 56th Convocation – coordination for recording, live webcast and making of short videos for Director's presentation (Sept 2019)
- Videos for Swachata campaign
- Video for several events at IIT Madras
- Coordinating of Video recording for Hackathon 2019, Live webcast and Photography on behalf of Alumni & Corporate Relations
- Video production and post-production jobs for Alumni & Corporate Relations, Academic Departments, Research Scholars
- Video recordings of the Director & Dean, A &CR on IITM's vision and growth story
- Recordings of interviews of Alumnus for Heritage Centre
- Coordination of video recording for Institute day
- Coordination of Video recording, Live webcast and post production of Diamond Jubilee event organized by A & CR team
- Technical assistance in executing construction of NPTEL's video studios in Classroom Complex.
- During COVID 19 pandemic lockdown, several lectures were offered to private institutions, technical assistance in creating virtual classrooms in IIT Palakkad, hosting live sessions for IITM's faculty, assisting Students residing in remote locations to access these facilities etc.,

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