



Connecting Thinkers...

Editors' Message



“By 2030, India will be amongst the youngest nations in the world. With nearly 140 million people in the college-going age group, one in every four graduates in the world will be a product of the Indian higher education system.” This has been predicted by Ernst & Young in their document titled ‘Higher Education in India: Vision 2030’ Many other such agencies have made such *bhavishyavaanis*. It does fill us with a sense of hope for the young generation but we also need to examine the level of preparedness to meet these challenges. This cannot happen without striving in a concerted effort and clarity of purpose. In the last two decades, India has made conscious efforts to transform its education system. Responding to the clarion call of the leading agencies of the world, an environment for creating quality Institutions has been created. Ground has been prepared to allow new Universities to start, an extensive debate on the need for changes in pedagogies and the use of technology is being encouraged and beyond all this, a small, but strong, voice can be heard emphasizing the need for inter-disciplinary approach in studies too. Being a new and fledgling University, we at Jain University have the right opportunity to create the values and ethos that will rise to the need of the hour. We have also exhibited through our programmes, that imbibing human element while educating the youngsters is equally, if not, more important than the skills that are needed for financial sustenance. We are a country which believes in “sarve janah sukhino bhavantu, sarve santu niramaya” and therefore the emphasis is more on the Universal than on the Individual.

With that thought in mind, we have the utmost pleasure to unveil the sixth issue of Thinklet, presenting more thought provoking ideas generated by the scholars at Jain University. We encourage you to send in many more articles for the upcoming issues.

Achievements

- Ms. Ashwini N. V. Ganig a Doctoral Student in Psychology was voted to the first position at the St. Gallen Symposium, Switzerland; for her Next Big Small Idea.
- Ms. Sangita Gupta a doctoral student in Computer Science won the best presentation award in Computer and Information Sciences during International Academy for Computer Technology (IACT), conference at Dubai
- Ms. Kavitha Somashekar, an interdisciplinary doctoral student working in Public Policy and Management, has been selected for the NAMASTE Project Scholarship of the Erasmus Mundus European Community Mobility Programme.

Inside the Issue

Distinguished Researcher's Column	2
Article by Bindu Subramaniam	3
Article by Dr Meera Rajaram Pranesht	3
Article by Mayuresh Gokhale	4
Article by Srinivas Deshpande	4
PhD Comic Strip	4
Research Conclave	5-6

DISTINGUISHED RESEARCHER'S COLUMN

Structural Health Monitoring: Safety Related Novel Technological Approach

The technological scenario in transport vehicles and in many other safety critical areas such as nuclear engineering is demanding continuous monitoring of structures to ensure safety during operation. The emergence of this field is strongly supported by the developments in micro- and nano-sensor technology. The Scientists working in aerospace field look at this technology for aircraft safety as the primary requirement.

The Structural Health Monitoring (SHM) consists of primarily two parts viz., Diagnosis and Prognosis. From time immemorial, scientists learnt how to inspect structures non-destructively and identify the size and location of the damages if any. They have also realized that every NDT technique can miss flaws below a size which cannot be detected with 100% reliability. So in every structure, cracks may be left out and during their operations these cracks may grow and cause catastrophic failures. Prognosis is the methodology to estimate the growth characteristics of cracks at critical locations and estimate the remaining life. For a typical aircraft structure, this crack growth will be under variable amplitude fatigue loading, experienced due to atmospheric turbulence, gusts and maneuvers.

At Jain University, we are working on the prognostic part at the fastener and bonded joints including the contact stress non-linear effects and geometric non-linearity. For components which are designed by safe life, the fatigue damage estimation is used to assess the remaining life and the residual strength. In the case of components designed on the basis of damage tolerance, fatigue damage is also combined with crack growth studies for assessing the status of the structure. In future, SHM will play a vital role in high technology structures. Combining with engine and systems health monitoring in aerospace structures, this new technology is now called Integrated Vehicle Health Monitoring (IVHM). Several non-aerospace applications are picking up which includes monitoring bridges and automobiles.

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Why every Ph.D scholar should do an M.Phil first?

As a person from a non-research background, I was sure I wanted to do a Ph.D, but I was not sure what to expect. With all the confidence of a person who has never spent a day in her life researching, I applied to do a Ph.D in Music at Jain University. When I was told to first complete an M.Phil, I was a little disappointed, because, like most people, I wanted to fast track my academic achievement, and “get there” as soon as possible. Fast-forward a year, I have completed my M.Phil, enrolled for Ph.D, and am now a strong proponent of first completing an M.Phil, and here is why:

1. You have no idea what you are getting into – you might think you know what it means to be a researcher, but you don’t. Getting straight into a Ph.D will definitely make you feel like you’ve bitten off more than you can chew. An M.Phil, on the other hand is still daunting, but somewhat more manageable, since it’s a one-year program, and a comfortable mix of course work and thesis writing. *I have completed my M.Phil, enrolled for a Ph.D, and I am now a strong proponent of first completing an*
2. You will want to give up – Almost everyone I know has wanted to give up at some point and according to my guide, this is a fairly normal feeling! You feel overwhelmed, underprepared, and just generally lost. You start asking the big questions and think of a million reasons why you shouldn’t/can’t continue. If you are doing an M.Phil, in my opinion, it’s easier to shake yourself out of it and get back to work, because there is an end in sight.
3. Your ideas will change – After you get over wanting to give up, in all likelihood, you will want to change your topic entirely. The good news is an M.Phil gives you a fair bit of flexibility, both during the course, and after, when you need to choose a topic for Ph.D.

After completing an M.Phil, I have realised that my ambition is not just to get another degree, but to be a lifelong researcher. I’m glad that I’ve completed an M.Phil, because it gives me confidence to pursue a PhD, and it also gives me some extra letters to add to the end of my name!

Bindu Subramaniam
Ph.D. Scholar in Music

Research in Music at Jain University

Music is one of the branches of fine arts falling under the realm of Performing arts. Generally people think that music is a practical subject and question as to what is there to do research in it. Since music was mainly passed on to the future generations through oral renditions, the documentation is poor. But few of the theoreticians from past centuries who authored treatises have contributed in the documentation of music. Hence there is a need to conduct research in music and bring to light many aspects which are masked. All performing art forms are interdependent and music is in and through all of them. It takes either the main or background positions. A

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study of interdisciplinary contributions, treatises- the primary sources for tracing the development, analysis of compositions both musical and philosophical, science of music, influence of Indian music on social reformation and music of different countries, origin and evolution of instruments and their playing techniques, music therapy, teaching methods and benefits of learning and listening are some of the areas in which research is conducted.

Jain University is motivating their students to conduct research at three levels: IV semester PG at a ground level M.Phil and Ph.D.

Some of the ongoing research at the level of M.Phil and Ph.D cover the following areas-Muthuswamy Dikshitar’s compositions on the deities of Tanjore Brihadeeshwara temple, Influence of Indian classical music on Kannada dramas, Acoustics in performance spaces with reference to Indian classical music, Udupi as a principal seat of devotional music, Melakarta raga and Harmony- creating symphonic orchestral compositions using implied harmony from the raga system, Influence of Indian Classical music on Kathakeertan, Muthuswamy Dikshitar’s compositions on Goddesses of knowledge, New methods of teaching Indian classical music to young children, and, Globalization in the techniques of violin

Dr.Meera Rajaram Pranesh
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Experiential Research

Research can be exploration, observation, drawing conclusions, put forth theories, and align the learning to real world situations, making path breaking insights, making lives easy, so on and so forth. I happened to ask the samosa and kachori wallah , as to how he arrived at a number of kachoris or samosas to be made on a particular day. His answer was really an eye opener to me as a researcher. He came out with some cumbersome permutations and combinations which were related to day of the week, nature or type of people visiting the store, timing of expeditious sale and sluggish sale, and any sporting or political activity on a specific day. All of the following information was used to arrive at the number. Surprisingly, weekends especially on Saturdays, the quantum of snack sold was doubled in a very short period of time. So the raw material requirement and preparation for the snack too varied on a particular day. It was a crude form of time series analysis and regression analysis at work with vast experience and judgment put to use. It involves 'n' number of parameters to be integrated and try to investigate the impact of each parameter. Although it does not involve software to compute the same, it comes to the person at the helm of the affairs.

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Significance of Research in the Engineering Domain

Research should be to innovate to avoid any reinventing of wheel. It gives us an insight into the specific areas to modify existing one. Also, we have to make it feasible, universal, and easily accessible to all. Nowadays, interdisciplinary Research work is of paramount importance. It involves the integration of two or more streams of Engineering to innovate a product. Research laboratories with all infrastructures at place has to be established for experimenting in various engineering domain alongside respective software for simulation and to get accurate results. It also motivates the scholar to pursue work in varied analysis/simulation. Research institutes which organize expert lectures of various streams, show us the pathways to channelize thought process in right directions. Research scholarship or funding either by state/central government or private institutions is lacking in India, whereas in foreign countries/universities they fund for research hugely. This encourages the student/Faculty to pursue research in area of their interest.

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RESEARCH CONCLAVE: AN OVERVIEW

Jain University organized a three day Research Conclave (18th – 20th May 2015) at the Knowledge campus in Jayanagar. The conclave not only provided an opportunity to the research scholars to interact with the invitees, it also enabled them to seek information from different research centers in the university. The research centers innovatively exhibited their thrust areas of research.

First day of the conclave began with zealous research scholars and guides registering their participation. This was followed by inauguration of the research exhibition. The exhibition was inaugurated by Bharat Ratna Dr. C.N.R Rao. He also delivered a special lecture and paved time to interact with the audience. He provided an exhilarating overview of the milestones in Research in Science. He focused on the need for unbounded energy, unflinching commitment and unwavering integrity in any scholar pursuing serious research. He held the audience spellbound with a breath-taking range of practical examples to illustrate the points he made.



The second special session was addressed by Padma Vibhushana Dr. V S Arunachalam, former Scientific Adviser to the Defence Minister. Dr Arunachalam stressed on the need for a clear focus on the part of the researcher. The afternoon session of the Conclave saw renowned Economist and former Member, Economic Advisory Council of the Prime Minister, Dr. M Govinda Rao interacting with the researchers. Dr. Rao underscored the importance of commitment on the part of the researcher and their capitalising on the right opportunities.



Day Two of the Research Conclave (19th May) saw an OPEN HOUSE with the Research Exhibition attracting a lot of visitors. They evinced very keen interest in the research activities of the different departments and research centres. The day also saw a series of discussions. It began with 5 Parallel track sessions led by Guides and Doctoral Students. While Dr. Narendra Reddy focused on Interdisciplinary Research, Dr. Meera Chakravarthy focussed on linkages between Environment, Society and Gender. Dr. K.R. Santhosh led a discussion session on Path Analysis and Ms. Sanjana Malhotra focussed on Journal Article Reporting Methods (JARM) and Ms. Ashwini N A Ganig highlighted the importance of Qualitative Analysis.



RESEARCH CONCLAVE: AN OVERVIEW

The Conclave also saw presentations and detailed discussions on the Research work undertaken by the different Research centres at Jain University. In the pre-lunch session, Dr. Krishna Venkatesh spoke about the work being undertaken at Centre for Emerging Technologies, Dr. Bhaskar Dixit elaborated on the Research focus of the Centre for Disaster Mitigation (CDM) and Prof. Sridhar Murthi highlighted the achievements of the International Institute for Aerospace Engineering and Management (IIAEM). Dr Jayagopal Uchil, Director - Academics and Planning, chaired the Session. The post lunch session saw, three more presentations. Dr. Varalakshmi highlighted the research profile of the Centre for Post Graduate Studies (CPGS) and Dr. Reetika Syal elaborated on the research and consultancy achievements of the Centre for Research in Social Sciences and Education (CERSSE). The last speaker was Dr. Geetha Balakrishna who spoke of the Centre for Nano and Material Sciences (CNMS). Dr. Sandeep Shastri, Pro Vice Chancellor presided over the Panel Discussion. The day concluded with a presentation in the Chenraj Roychand Centre for Entrepreneurship by Prof. Krishnan the Registrar of the University.

The third day of the Research Conclave saw two interesting panel discussions and a special Interactive Session with Dr. Kasturirangan. The first Panel discussion was on the theme Sustaining and Strengthening a Vibrant Research Culture. The first panelist, Dr. Krishnadas Nair, the Chancellor of Jain University, underscored the importance of a research culture that had humanism, ethics and excellence at its core values. Mr. Vora, a Director of Tata Engineering Services and Member, Academic Council of Jain University drew attention to the emerging scenario in the Manufacturing Sector and the preparedness of the Indian research establishment in this regard. Dr. Indra Jaiprakash a Professor of Psychology, emphasized the importance of the research atmosphere in a University defining its true character. She stressed on the need for institutionalizing research excellence. Dr. Eresi, the former



Dean of Commerce of Bangalore University spoke of the emerging paradigm shift in research and its wider implications for sustaining a vibrant research culture. The last panelist, Dr. GSD Babu, Director of M P Birla Research Centre and Member of the Planning and Monitoring Board of Jain University, spoke of the need to strive towards excellence and innovation.

The participants in the conclave asked a range of questions to the panelists. The second panel discussion focussed on strategies to ensuring greater collaboration among the different research centres of Jain University. Moderated by Dr. Sandeep Shastri, Pro VC of the University, the other panelists included Dr. Sudha Deshmukh (CPGS), Prof. Parameshwaran (IIAEM), Dr. Geetha Balakrishna (CNMS), Dr. Bhaskar Dixit (CDM) and Dr. Gopalakrishna (CET). The concluding session of the Conclave was a special interactive session with Dr. Kasturirangan, Chairman, Karnataka Knowledge Commission and former Member of Parliament and Planning Commission. Dr Kasturirangan, shared the highlights of his research journey with the audience and underscored the importance of the researcher having an eye for detail. He commended the efforts at Jain University in building a strong research profile.

*If you can Dream it,
You CAN do it!*

Team Thinklet

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