



Connecting Thinkers. . .

Editors' Message



Dear Thinkers,

It is that time of the year when our weeks and months are lined up with a lot of festivals, prayers celebrations and not to forget, yummy treats and prasadam. Long weekends and middle-of-the-week holidays add extra joy. It is also a time where not only is the occasion important, but also the people we celebrate with, the people who surround us- our family and friends. Even though we are with them throughout the year, we appreciate their presence much more during special occasions.

It is often said that research is a lonesome journey. However, don't we all pour our hearts out to our family and friends in the 'acknowledgement' page of the thesis? The commitment that each scholar makes at the beginning of their research expedition is not theirs alone. The family including parents, spouse, children, and siblings are all committed to the fulfillment of that goal. Your tough times are their testing times too. They learn to give you space when you are preparing for presentations; learn to be patient when you have not had a good day at the laboratory; learn to pep you up when you are confused and filled with self-doubt. So the joys of achievement are not yours alone. They have also worked equally hard in the title that you earn. Take this opportunity today to thank them, to appreciate their efforts and let them know that you also recognize their contribution to your research journey.

Thinklet takes this opportunity to wish all its readers a very Happy Dasara and a prosperous Diwali. With this edition of Thinklet we would also like to welcome our new researchers who have joined us this year. May you all have many fulfilling research experiences.

Inside the Issue

<i>Guide's Column</i>	2
<i>Article by Vishaka V.H</i>	3
<i>Article by Dr. Sowrirraajan A.Ve</i>	3
<i>Article by Dr. Amit Kumar</i>	4
<i>Article by Abhijith Shenoy K.</i>	5
<i>Article by Dr. Smitha Sarma Ranganathan</i>	5
<i>Article by Dr. Reetika Syal</i>	6
<i>Response to Thinklet</i>	7
<i>Ph.D Comic</i>	7

GUIDE'S COLUMN

The First Quarter

Whoever you are- an individual, an organization or even a phenomenon; wherever you are- in New Delhi, New York or in the space, the first quarter in your life cycle is always significant. It might give you qualms or exhilaration, but one thing is for sure- it is almost indisputably *uncertain*. The first quarter is about newness, expectations, and that niggling ache in the stomach, because it is perceived to be typically characterizing the age-old adage- *morning shows the day*. But why am I ranting at length about the first quarter, and why is it relevant to someone engaged or trying to engage in research? Guess what, I am into the first quarter of my “mentoring” journey at JU, *a doctoral guide* as the research world terms it. This prompted me to explore the implication of the first quarter in various aspects of our life and understand its connotation from a researcher’s perspective.

A week after the New Moon, when the Moon has completed about a quarter of its turn around the Earth, we can see the first quarter phase. The right half of the Moon appears lighted and the left side of the Moon appears dark. It unambiguously epitomizes a researcher’s dilemma- *how to balance the left side of the brain (logic) with the right one (creativity) and still be relevant?* The first quarter of pregnancy is considered to be most important for the growth of a baby, as all the interior organs develop during this time. This first quarter signifies the development stage of the human life cycle, *more like that tinkling of a research idea in a scholar’s mind*. A line of study has further shown that historically individuals born in the first quarter, typically started school later than those born in the fourth quarter, completed less education and earned less than those born in the rest of the year. *And we thought the timing of our birth (as a researcher!) didn’t matter!* In many ways, a student's first-quarter report card can be likened to the first lap in the yearlong race to achieve. Good grades and positive comments from teachers signify that (s)he has the basic skills, study habits and drive to keep up a good learning pace. *A possible reflection on the internalization of the core subject papers of the JU PhD program, I presume!*

What is a typical representation of the first quarter for doctoral research scholars? It is dominated by a concoction of several queries, with probably no immediate plausible answers in sight: “Will my proposed research theme be accepted?” “Will I get a guide who is willing to work with me and “my” theme?” “Will I be able to “get out” in the scheduled time?” “How will I write and publish in a journal?” As (s)he goes through the spread of courses offered in the first quarter, and is inundated with a multitude of theory and concepts, realization dawns. The seemingly well thought out research synopsis, submitted during the selection stage, now looks so naïve. Fleetingly, the thought crosses the mind- *will I be able to do it?* Yes, definitely (s)he can. Perhaps (s)he needs to do a quick environment analysis, to find the likelihood of “succeeding” in the research journey. Well that’s what an organization does prior to entry into a market, right!

What to include in the analysis? At the macro-level it could be useful to explore the existence of any political or power center(s); opportunity costs of joining the program and a cost-benefit analysis of pursuing it; constitution of the peer community and the providers of knowledge; locating peer in-groups and out-groups within the community, who can facilitate and provide support for the entire period; and usage of technology to access peer-reviewed articles to bridge the information asymmetry divide between the providers and recipients of knowledge. The micro-level investigation could look at the hint of “rivalry” between published work, ongoing work and what the scholar is trying to examine; the source of bargaining power of scholars, if any; and the sufficiency of ‘quality’ guidance providers, to gauge their bargaining power.

And how should a doctoral scholar judge the performance of his/her first quarter? By demonstrating the right intent through reading extensively, understanding and internalizing relevant concepts and theories, ability to draw frameworks related to the research domain, and not hesitating to ask “the stupid” questions. After all, apples have been falling for eons together, but it is the gravity of only one Newtonian Law that counts.

Dr. Arun Bhattacharya
Research Guide and Associate Professor
Kautilya Entrepreneurial and Management Institute (KEMI), Jain University
Email: b.arun@jainuniversity.ac.in

My Ph.D Journey So Far

From childhood, I had a strong desire to pursue science. The research bug was planted during my M.Sc. at CNMS, Jain University, as I was passionately looking forward to updates about the current status in the field of science and technology. The research orientation classes provided by the CNMS department exposed me to new and exciting trends in present-day research, rendering a platform to work in lab closely with Ph.D. scholars, experienced professors and faculties, even though in comparison we probably just had the fundamental knowledge of the subject. Eventually, I chose to pursue Ph.D. in Chemistry and the journey began in August 2016.

Research methodology and course work classes nourished my knowledge about the procedures of formal research. Cautions of 'plagiarism' reminded me to work hard to achieve the required quality and novelty in my work. Continuous training on

From my research experience of one year, I strongly believe that Ph.D. is truly an emotional roller coaster ride

research skills through the Skill Development Program, Workshops, and Research Retreat by the University showed the practical side of research and gave a push in the direction of balancing academic rigour and research and personal life. It also gave me a chance to set the stage for my own ideas, at the same time viewing my research from another person's perspective.

From my research experience of one year, I strongly believe that Ph.D. is truly an emotional roller coaster ride. At times, it fills me with aspiration, and then there are phases where I realize I haven't really gotten far. But it is heartening to know that this experience is a natural phenomenon, almost universal, since my senior Ph.D. colleagues also recollect feeling the same way. A guilt regarding the same is only going to make it worse over time. A practical tip I found useful is to have frequent interactions with experts in the related field. This will give great exposure to improving skills, focusing on research objectives, further giving you short-term and achievable targets. Needless to say, dedication, understanding capacity, uncompromising efforts, reading more and more journals and most importantly patience go a long way in shaping your personality and giving you a new perspective of your work. Therefore, to me, research is not only a process to discover knowledge but also an expedition to raise one's character and learning skills.

Vishaka V H

Ph.D Scholar in Chemistry, Jain University

Email: vishaka.dilnith@jainuniversity.ac.in

My Work after Achieving Doctorate in Fire Chemistry

To my understanding learning is a continuous process and in this connection achieving Doctorate is a prestigious stepping stone or token to perform or continue research in one's passionate field. Research in the area of fire and fire safety in India is still emerging and I am hopeful of getting more opportunities to continue my research in this area. My current field of work is in synthesis of elemental Boron using modified approach. In this regard I have been getting constant encouragement and support from my mentors Prof. H.S. Mukunda, Chairman, JU-ARC and Dr. Bhaskar Dixit, Director, FCRC. Currently the synthesis is at lab level and the product has been tested successfully using a lab scale combustion study developed at FCRC recently.

Research in the area of fire and fire safety in India is still emerging and I am hopeful of getting more opportunities to continue my research in this area

The results were presented at a conference held at GTRE recently. Work is under progress to scale up the process and meet the demands put up by the combustion groups. The degree has also given me opportunity to interact with experts in the field of fire protection both at national and international level which has helped me in expanding my research interests to

study in the area of fire retardant coatings. I am also involved in upgrading the fire lab facility to meet the National Accreditation Board for Laboratories (NABL) accreditation as per IS/ISO: 17025 requirements of the existing UL Jain Fire Laboratory at FCRC, Jain University. I take this opportunity to thank my guides and management of Jain University for helping me achieve this prestigious degree and prosper.

Dr. Sowrirajan A Ve

Associate Professor, Fire & Combustion Research Center (FCRC), Jain University,

Email: ave.sowrirajan@jainuniversity.ac.in

Challenges and Opportunities in Drugs Discovery

The research in our group is aimed at addressing important health issues by applying the knowledge of chemistry and biology. Even after the decades of research, many devastating diseases remain the global challenges. Cancer, diabetes and tuberculosis are among the leading causes of death worldwide. Being the second largest population in the world, these epidemics pose serious threats to India. The lack of selectivity and multidrug resistance to the existing drugs are major concerns for researchers in drug development.

The major focus of our research is the development of new drug candidates, effective against the emerging drug resistance. In this direction, we explore small molecules as anticancer, anti-diabetic and anti-tuberculosis agents. Organic molecules with biologically relevant motifs and their transition metal complexes are envisioned as prospective targets to overcome the drug resistance. Among various bioactive organic moieties, functionalized coumarins are privileged scaffolds due to their wide range of pharmaceutical actions, biological functions and significant pharmacokinetic activity. We have recently developed a coumarin-derived small molecule as potent anti-tubercular agent with the activity comparable to that of the commercially available drug Isoniazid. Further ongoing structure-activity studies, chemical modifications and mechanistic studies are amenable towards potent drug development against drug resistance in tuberculosis.

We have recently developed coumarin-derived small molecule as potent anti-tubercular agent with the activity comparable to that of the commercially available drug Isoniazid.

The success of platinum-based metallodrugs for the treatment of cancer has certainly been decisive for the search of new metallodrugs. Metal complexes provide a highly versatile platform for drug design. Variations in the metal and its oxidation state and geometries allow the fine tuning of the rates of ligand exchange, strengths of metal–ligand bonds and redox potentials of potent metallodrugs. In our recent studies we have developed V^V , Cu^{II} , Ni^{II} based metal complexes that exhibit excellent anticancer and anti-diabetic activities. We also emphasize on the study of the functioning pathways of the active agents. For example, in cancer, majority of anticancer drugs involve the apoptotic programmed cell death, and adaptation to this pathway is considered as the major cause for drug resistance in various cancers. Currently, we have also developed some vanadium complexes as potential anticancer agents that are projected to act *via* the non-apoptotic cell death and therefore, may bypass the drug resistance in cancer. Such studies for the anti-tubercular and anti-diabetic agents developed in our laboratory are also of significant interest to us.

Our future research focuses include *in-vivo* evaluation of bioactive agents and their molecular docking studies with target biomacromolecules to gain deep insights into the structure-activity relations. The interaction studies with the carrier, plasma proteins are underway to understand transport mechanism of therapeutic agents for the target oriented delivery.

*Dr. Amit Kumar
Group Leader, Bioinorganic and Clinical Chemistry Group
Centre for Nano and Material Sciences, Jain University
Email: amit.kumar@jainuniversity.ac.in*

Theory without Data is a Myth; Data without Theory is Madness

Phil Zuckerman

My Ph.D. Experience

Hoping I'm not the first one to play on the word "Thinklet", now LET me THINK. And that is exactly what this PhD has done: It has LET me THINK - in new dimensions, with new people. (I KNEW them. I now "KNOW" them in a new light).

The word "Let" at times reeks of permission sought from others or self, beseeching from others - "May I...?", and haggling with one's own mind - "Can I...?" Compared to which I prefer the word "Let's" - taking everyone in stride with "Shall WE....?", and actionizing own intent with "LET'S DO THIS...!". The second word - "ME". Sad to say, given our current education system, the "Me" is lost in being force-fed a prescribed dose of syllabus. As a performing Hindustani vocalist, I can vouch for the importance of "Upaj" - Cultivation of own thought and its culmination in action. This PhD journey "LET'S" us wander, explore,

Circumstances are mere excuses masked as lame reasoning towards self-induced laziness

search, and finally find "ourselves". So, WHO or WHAT did not LET ME THINK? Not my family definitely. Witnessing my hard work, their co-operation mixed with respect is a blessing; bringing us closer than ever before. Not my colleagues, because brainstorming with them provokes new insights. And this takes us to the highly debatable but plausible reason - the 'I' factor claiming innocently "WASN'T ME!" Circumstances are mere excuses masked as lame reasoning towards self-induced laziness.

Not forgoing occupations and pre-occupations, the realization that I can go that extra distance is invigorating. And that is what makes it "MY" PhD Experience. The word - "PhD" - a Philosophy not limited to a course, but a Doctrine for life. Knowledge, they say, is gained by asking the right questions to the right person at the right time, leading to the right answers. In the course, we are learning to do just this, both humbly and tactfully. The word - "Experience". Thank God (or all of you) for making the classes practical, filled with the 3 A's - anecdotes, activities and assignments. Else, given the huge gap from our college days, sitting as a student in A chair/ THE bench for three hours at a stretch was a foreboding thought. What makes it an "Experience"? It's the FEEL, the TAKEAWAY and the APPLICABILITY. All which I have FELT, TAKEN AWAY and APPLIED; every weekend post our class.

A thought to end with (for now) but to ignite a new flame - "An experience is often sought, rarely felt and hardly learnt from. It's time to change this!".

*Abhijith Shenoy K.
Ph.D Scholar in Music, Jain University
Email: b3andd3@gmail.com*

Recalibrating the Research Compass

A periscopic view of my research journey that 300 pages of leather jacketed thesis could not capture

In the Google Yuga it isn't difficult to *wikify* and gather that a *compass is an instrument used for navigation and orientation that shows direction relative to the geographic cardinal directions*. Despite a well-calibrated compass, preparing to sail in the 'right' direction is equally challenging for, the concept of 'right' direction is a near perfect illusion. Nothing can describe my dilemma better than this anecdote, for it represents my transition from a high adrenaline career in advertising to the deep oceans of academic research.

When the learner in you rises and consciously 'empties the bucket' to absorb more, opportunities are infinite

No journey begins without a resolve; my research journey was propelled by compulsive curiosity on lesser known facets of branding. However, the eye-opener in this endeavour is an acquired means to channelize my *compulsiveness* to a form of *conscious enquiry* through self-discipline. The other unspoken reality of a researcher's journey is the constant conflict between *innate opinion* and *registering observations-as-they-are*. Dealing with this aspect through the last three years has led me to 'let go' of long-held *passive biases* and relook at situations as an *active listener*. Arguably, this has helped me evolve in terms of emotional quotient while advancing my subject understanding.

When the learner in you rises and consciously 'empties the bucket' to absorb more, opportunities are infinite. I acknowledge with deep gratitude that these research-acquired attributes have opened a multitude of avenues for me to engage in active consulting with Fortune 500 companies and global universities, besides authoring books. Looking back I wonder in awe but for the strengthening of my intent via numerous interventions by the wonderful team at Jain University I would have been just another *wannabe* Ph.D candidate lost amidst the treacherous sea of hard-to-comprehend hardbound journals.

*Dr Smitha Sarma Ranganathan
Email: sarma.smitha@gmail.com*

Dr. Smitha was recently awarded her Doctoral Degree in Management from Jain University her research has been acknowledged by various academicians and medical professionals worldwide. Recent media coverage includes- <http://m.ilatimes.com/article.php?id=87802>.

Academic Expertise and Cultural Context

Centre for Research in Social Sciences and Education (CERSSE) at Jain University has recently signed a contract with a Nepal based organization Governance Facility (GF) to assist in carrying out a National Governance Survey in Nepal. This is going to be the first study (similar to a baseline) that the Nepal administration would like to carry out to know the experiences of citizens during their interactions with the government and public servants. The study also aims to give an idea about what the citizens expect from the newly elected leaders, the new Constitution, and the new federal arrangements in the country. The GF team approached us for assistance in the study, given the Centre's work experience and expertise in organizing and executing country wide, large n sample surveys. The GF team in Kathmandu is also working with the Nepal Administrative Staff College (NASC), which is an autonomous institution under the Nepal Government. As part of the CERSSE team, I travelled to Kathmandu for the initial workshop which focused on designing a questionnaire based on the broad objectives of the project. Though I approached the project with the usual enthusiasm, I was doubly excited at the opportunity of visiting a new country. Out of the many thoughts running through my mind, one nagged me the most- are Nepal and India really similar: Culturally, Socially, and Politically? Will my experience of India be out of context in Nepal? Will I be able to draw parallels between the two countries? Having assured myself that I had prepared appropriately for the upcoming workshop, I went to meet the organizers and other participants on the first day. The next three days were unforgettable with enriching discussions about Nepal, Kathmandu, working of the government, life of the people, day to day interactions between civil servants, politicians, people etc, with an extremely knowledgeable and experienced group of civil servants, administrative experts and experts from International Non-Governmental Organisations.

Governance Facility has collaborated with CERSSE for Nepal National Governance Survey

One of the discussion topics on gender discrimination had various views going around the table, and I understood them to be very similar to that in India. However, I later came to know that Nepali society accords high respect to the women, and though their exact status would vary with communities, Nepali women are seen as having strong personalities with a voice in household decision making. I thought to myself, how then did the question of discrimination come up? Another thing which was a revelation was the meaning of 'diversity'. In India, we often acknowledge the diversity in terms of language, cultural and religious practices when we travel from one state to the other even within the country. But because of its geographical size, I thought of Nepal as being a largely homogenous country where 'diversity' would exist only in terms of 'hill people' and 'people from the plains' and everyone would speak in Nepali. When the discussion started about 'accommodating diversity in government offices and public spaces', I was a little confused about why this would even be a topic worth exploring. Imagine my surprise when I was told that there are 10 main languages and 123 officially recognized languages and dialects according to the 2011 census in Nepal, and Nepali is spoken and understood by just about 45% of the population. Moreover there are more than 13 major ethnic groups in the country.

While teaching the concept of 'cultural context matters' in class, never did I imagine that I would need a lesson in that myself. Assumptions and pre-conceived notions should be always kept aside while approaching any study or research. Having learnt this practically, the teachings are going to stay with me a very long time.

*Dr. Reetika Syal
Assistant Professor, Centre for Research in Social Sciences and Education
Email: reetika.syal@jainuniversity.ac.in*

Awards and Achievements

Mr. Michael Chhandama, PhD Scholar, Dept. of Biotechnology, Jain University has been awarded second prize in Poster competition at 5th Annual South Asia Biosafety Conference, Bengaluru, India, held from 11th-13th September 2017. He has received a two year membership for the International Society of Biosafety Research, a USD \$200 cash prize, and an award certificate. His presentation was on 'Estimation of Lipid content from Stress Induced Microalgae for Biodiesel Production'. The conference was co-organized ILSI Research Foundation and Biotechnology Consortium India Ltd, with cooperation from the Ministry of Environment, Forest and Climate Change (Government of India) and other regional partners.

Ms. Savita V Patil, PhD Scholar and DST project fellow, Dept. of Biotechnology, Jain University has been selected to represent South Zone at the Annual meeting of Indian Phytopathological Society (IPS), on 15th-17th Feb 2018 at Jorhat, Assam for American Phytopathological Society (APS) Travel Sponsorship. Her presentation was on 'Antioxidant-Mediated Survival Strategy in Primed Ragi Plants against Blast Disease' at Dept. of Plant Pathology, College of Horticulture, University of Horticultural Sciences (UHS) campus, Bengaluru from 12th-13th September 2017.

THINKLET Congratulates the Scholars for their achievements.

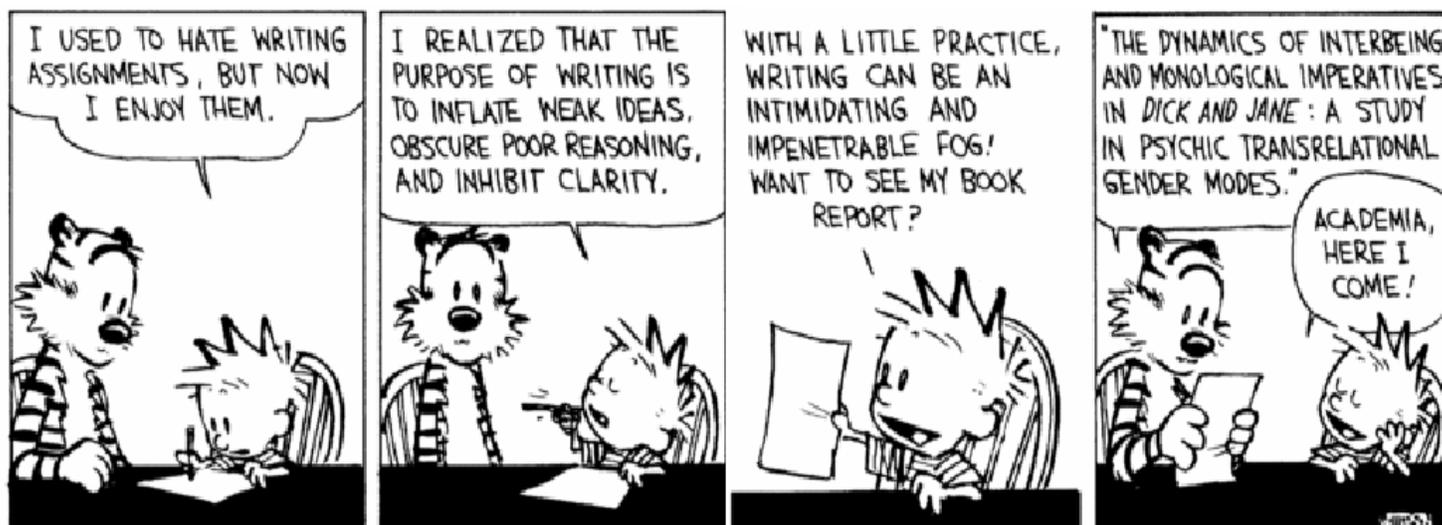
Response to Thinklet Issues

G. Nagendrappa, Research Guide and Professor in Chemistry, Jain University

This has reference to the Thinklet newsletter of September, 2017. It has complete coverage of the Research Retreat activity that took place in the previous month. The event itself was a big, complex task, but extremely well organized with meticulous arrangement of all the different varieties of presentations (and sessions). The success of the programme was due to the tireless effort of Dr Shastri with the able support of his team, and of course with the encouragement of the management and the enthusiastic participation of the students and the faculty members. Congratulations and thanks to all of you. The Thinklet has summarised the proceedings very nicely covering all aspects of the two day event...attracting the attention of the readers to the good research practices Jain University has adopted. You and your fellow editors have done a wonderful job of giving succinct description in the newsletter of what went by. I would also like to mention that since the newsletter is in the electronic form, it reaches not only Jain University members, but even readers outside it, including foreign countries. I came know about the foreign readership of *Thinklet*, when I was contacted by a foreign publisher to write a book based on the title of my article published in the August issue of the newsletter. Congratulations to you and your team for your sincere and tireless efforts.

Dr. Bindhu O.S, Research Guide and Assistant Professor in Biochemistry, Jain University

Thinklet has indeed been a very good platform for the exchange/sharing of ideas within our university. I appreciate your plan of extending its access to even eligible outsiders. Thinklet has indeed been a very good platform for the exchange/sharing of ideas within our university. I appreciate your plan of extending its access to even eligible outsiders. My Best Wishes to your team.



Team Thinklet

Chief Editors: Dr. Mythili P. Rao and Dr. Reetika Syal
Phone: 080-46498300

ARTICLES FOR NEXT ISSUE SHOULD BE SENT BY
**October 20, 2017 WITH NOT MORE THAN
250 WORDS**
PLEASE INCLUDE YOUR NAME, E-MAIL ADDRESS AND THE KNOWLEDGE DOMAIN OF YOUR INTEREST