

Jaiw-Patrika



MANAV RACHNA
॥vidyanatariksha॥

JUNE 2022

BIOTECH NEWSLETTER

VISION

Our vision is to produce competent biotechnologists who can employ premium processes and applications which will profoundly influence existing paradigm of agriculture, industry, healthcare and restoration of environment providing sustainable competitive edge to present society.

MISSION

- *To provide Biotechnology educational program with impetus to generate quality workforce.*
- *To create awareness about potentials of Biotechnology with socio-ethical implications.*
- *To instill spirit of innovation and creativity in young minds with sound research aptitude.*
- *To nurture confident individuals who are effective contributors towards growth of the nation.*



Chief editor : Prof. Manu Solanki, Head of Department

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On the shoulders of the Giants...!!!



Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less.

Marie Curie

Every component of the organism is as much of an organism as every other part.

Barbara McClintock



I tell young people: Do not think of yourself, think of others. Think of the future that awaits you, think about what you can do and do not fear anything.



Know your

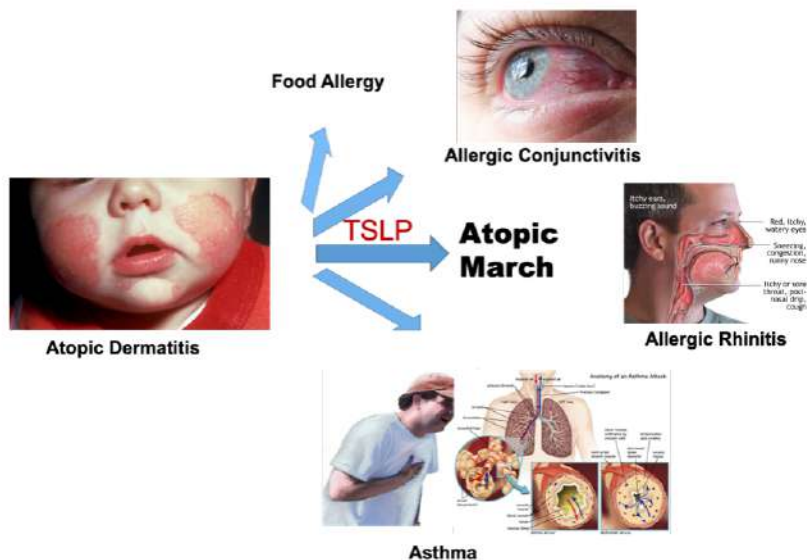
Scientists...!!





Dr Krishna Priya Ganti is an Associate Professor in Department of Biotechnology, FET, MRIIRS. A passionate academician who is intrigued by the intricacies of life; explores it both inside and outside of the laboratory. Specifically, the well-orchestrated defence mechanism of an organism, the remarkable immune system has always fascinated me.

In chronic disorders like atopic/allergic disorders, the immune response is mounted against a non-pathogen or an allergen. Owing to genetic and/or environmental predisposition, the same allergen stimulation, which offers protection to some, sensitizes other individuals to adverse immune reactions. If at one end of the spectrum, the immunological memory offers protection, at the other end it also aids in aggravating inflammation like in atopic diseases.



Atopic or allergic diseases comprise atopic dermatitis, asthma, rhinitis, conjunctivitis and food allergy. Once considered disease of the western world, changing environmental factors and associated lifestyle modifications have increased its prevalence across the globe.

Importantly, atopy is known to follow familial inheritance; there is 25% of chance that the child will be affected if one parent is atopic while it increases to 50% when both the parents are atopic. There is also 50% probability that individuals affected with atopic dermatitis/eczema in childhood tend to develop asthma and/or allergic rhinitis/conjunctivitis later in life, in a phenomenon called “Atopic march”.

Thymic Stromal Lymphopoietin (TSLP), a cytokine expressed by a number of cell types, including epithelial cells, plays a pivotal role in the development and/or progression of atopic diseases. Recent evidences have also implicated its role in other inflammatory diseases, including cancer.

My research interest includes, exploring (i) the epi(genetic) mechanism(s) regulating the human TSLP gene expression in epidermal keratinocytes and (ii) role of inflammatory cytokines in keratinocyte differentiation and epidermal barrier dysfunction, which might pave way for the development of better therapeutics for atopic dermatitis.



Achievements



Congratulations
Prof. Kapila Kumar
“Outstanding Woman Researcher”

WRA-2022-051



**Venus International
Foundation**

Estd. u/s 3 of the Indian Trusts Act, 1882
ISO 9001:2008 Certified

Center for Advanced Research and Design

The Board of Management of the Venus International Foundation
based on the VIFA 2022 Expert Committee Report and Apex Committee
Recommendations hereby makes known that

Dr. Kapila Kumar

Manav Rachna International Institute of Research and Studies, Faridabad, India

has been conferred upon the award of



OWR – SC – 3555

Outstanding Woman Researcher in Molecular Biology
for the contribution and achievement in the discipline of
Science

Given under the seal of the Foundation



R. Jagdish Kumar

Chairman

Faculty of the Month



Congratulations

Prof. Sabiha Imran

Dr Sabiha Imran is Professor in the Department of Biotechnology. She did her post graduation, M.Phil in Biotechnology and PhD is in Microbiology. Her area of specialization is medical biotechnology and Immunology. She has more than eighteen years of research and teaching experience. She got first position in MSc Biotechnology and received best paper presentation award in 2008 and 2020 in a National conference in AIIMS, New Delhi and Aligarh Muslim University Aligarh respectively. She has presented Research Papers in many International and national conferences as key note and Invitee Speaker. She also invited in an international conference on clinical virology and infectious diseases in Dubai as member of organizing committee, key note speaker and moderator. She has more than Thirty publications in reputed Scopus and web of science indexed national and international journals. She is also awarded as Start Faculty and Manav Rachna Karmsetu Kaushlam Puruskar in September 2022 .She also received KALP Outstanding Award in Biotechnology and Microbiology on 27th November 2022.Many UG and PG students worked under her supervision for Dissertation and Research Project .She is mentor of Three startup and won first prize in faculty fed Startup in October 2022.



The

Scientific

Viewpoint



The “Genome Space”

Dr Jayant Maini

Assistant Professor

BT, FET, MRIIRS



In the course of evolution, many “differently complexed” organisms have evolved via diverse mechanisms. The genome complexity has often been correlated to the origin of repetitive DNA (Britten and Davidson, 1971). “Complexity” in itself was the term to describe the diversity of DNA sequences in the genome. It was observed that large differences in the genome size could not be correlated with differences in the mRNA complexity. Comparisons were made between the mRNA complexities of eggs of various species and it was found that mRNA were roughly of the same complexity even though the genome size varied in the range of 100-fold (Davidson, 1986). Further, on comparison of two amphibian species, which differ in genome size by a factor of 10, for the number of active transcript units in “lampbrush” chromosome in the oocytes, it was found that a similar number of genes were being transcribed. Thus, it could be stated clearly that number of genes and gene expression is independent of the genome size. Every genome consist of a set of genes which have evolved for a specialised function in that organism, along with the set of pan-bilaterian genes which encode for common proteins. Apart from the genes, genomic DNA consists of sequence-dependent DNA (gene regulatory elements) and sequence-independent DNA (repetitive elements). The size of the sequence-independent DNA has been found to be directly proportional to the size of the genome. Increase in genome size is often correlated with increase in the sequence-independent DNA.

The repetitive sequence originates mainly due to insertions and replication of transposable elements (Moore et al. 1978; Britten, 1984; Deininger and Batzer, 2002) even though polyploidization and duplication (Becak, 1969) may also play an important role. Repetitive elements are known to change easily during the course of evolution and hence are known to be freely evolving. Thus, the complexity ranges from the simple genome to genome size along with diversity of the repetitive DNA sequences.

A large part of the sequence-independent genome in most animals consist of single or very low copy sequence which comprises mainly of intronic as well as intergenic sequence. This so called “Genome space” (Davidson, 2006) has enormous significance in that it allows the given regions to be partitioned into large functional domains. Genomic space provides (1) a template for chromatin assembly, (2) thus, acting as component of nuclear 3D structure initiating (3) combinatorial inter-relations among different elements. These features in turn have a direct significance for the gene regulatory apparatus. The sequence specific regulatory element arose from the sequence in the “Genomic space” with no prior known regulatory function, thus, the space provides a material for the evolutionary creation.



Faculty

Development

Programs



FACULTY DEVELOPMENT PROGRAMME
On
Intellectual Property Rights & Patenting in India

Organized by NITTTR, Chandigarh

Course Coordinators:

Dr. Niraj Bala & Mr. Amardev Singh

Date: 13-06-2022 to 17-06-2022

The week long FDP covered various topics and challenges related to the Intellectual Property (IP) and IP Rights, need and usefulness of IPR as well as the career opportunities associated with the field of IPR. On the first day, we explored the legal rights, mechanisms used to protect creations of the mind, convergent and divergent thinking, the process of filing patents. We focused on the creation of appropriate ecosystem for innovation, patenting, research licensing and technology transfer. We also discussed how innovation leads to economic growth, human well-being and provides competitive advantage. One of the sessions, highlighted patent drafting and legal writing.

The second day included magnificent talks on “ Licensing and Technology Transfer” by Dr. Arvind Dhingra followed by a talk on “Copyrights, Provisions of WTO TRIPS Agreement, and other related Aspects” by Sh. Parmod Malik. Post lunch Dr. Neeraj Bala threw much needed light on the process of filing of patents in her talk “Filing of Patents - An Inventor’s Perspective”.

The third day was as exciting and included talks on various topics ranging from “Opportunity Identification for New Product Development – A Practicum” by Mr Amardev Singh to “Industrial Design – Fundamentals and Filing Aspects; and What /What not to disclose to your Patent Attorney” by Mr Pulkit Bansal.



On the fourth day of the FDP, the first session included two talks by Dr. Harsh Vardhan Samalia who talked about “Managing Patents for Competitive Advantage” and by Mr, Ajay Kumar who elaborated on “Latest Developments in the Indian IPR Ecosystem from the perspective of facilitating Business Start-ups”. The afternoon talk on “Layout of a Patent Specification and Drafting & Legal Writing Terms in Patent Filing The fifth and last the day of the FDP” was conducted by Sh. Varun Sharma.

The fifth and last day the morning talks on Patent Infringement and Patent Searching (by Dr. Divya Kaushik) were followed by valedictory function where every participant expressed his or her views on the FDP and its importance and take home message.



Guest

Lectures



Guest lecture entitled “Career prospects of Bioentrepreneurship and supporting ecosystem”

31st January 2022

This guest lecture was delivered by Ms. Suman Gupta, Chief Operations Officer (COO), BSC BioNEST Bio-Incubator (BBB), RCB, Faridabad.

The speaker was introduced by Dr. Kanchan Bhardwaj, the event coordinator.

Ms. Gupta started her talk by explaining the concept of Bio-entrepreneurship and gave examples of various recent innovations in the field of life sciences. She then introduced the components of the startup ecosystem and the role of Bio-incubators in nurturing bio-entrepreneurship followed by the available infrastructure and facilities available at the BBB. She finally introduced and described the possible funding opportunities available for bio-entrepreneurs.

After the talk, Ms. Gupta attended to queries of the audience.

The event ended with a vote of thanks by Dr. Kanchan Bhardwaj.

The screenshot shows a Zoom meeting interface. On the left, a video feed displays Ms. Suman Gupta, the speaker, wearing a blue patterned top and white earbuds. On the right, a presentation slide is visible. The slide features a colorful mind map with terms like 'IDEAS', 'STARTUP', 'ACTION', 'ANALYSIS', 'PLAN', 'STRATEGY', and 'TEAM'. Below the mind map, contact information is provided: 'Contact Us-> Email: bbb@rcb.res.in, Website: bbb.rcb.res.in, Call: 0129-2848629'. At the bottom of the slide, there is a section titled 'Example of Innovation: AUM voice prosthesis' with a small image of the device and text describing its function for throat cancer patients. The bottom of the Zoom window shows logos for RCB and BBB, and a footer with the text: 'Bioentrepreneurship and supporting ecosystem', 'Regional Centre for Biotechnology', 'Suman Gupta, Chief Operations Officer, BBB', and '31 January 2022'.



Events

&

Workshops



Anveshan 2022

Association of Indian Universities (AIU) organised the National Student Research Convention called **“Anveshan”** in association with Academy of Maritime Education and Training (AMET) University in Chennai on 27th and 28th March 2022. A team of two students (**Somya Sharma, B Tech Biotechnology Sem IV and Abhilansh Pandey, B Tech Biotechnology Sem VIII**) from Biotechnology Department, FET, MRIIRS led by **Dr. Kapila Kumar, Assistant Professor Biotechnology Department and In-Charge, Molecular Biosciences Research Cluster** as mentor of the project participated in the event. The project was selected after strict and rigorous selection process by MRIIRS, AIU and AMET University. The students displayed their project titled **“Li-Koff- A cost effective method to detect Nitrosamines”** in front of the panel of expert judges in the form of Poster and Powerpoint Presentation. After three rounds of selection process, the team was awarded **First prize in Basic Sciences Category** in the valedictory function of Anveshan 2022. The team was highly appreciated by all the judges and have been **awarded with a cash prize of 50,000 Rs** for the same. The Award includes a **Trophy, Certificates** and the cash prize.

It was a great exposure for the students, they felt motivated and appreciated and were exposed to multitude of people from different backgrounds. The event had participants from **45 universities spanning Pan -India and showcased a total of 110 projects having 285 students.** This victory was special as the award was handed over by President, AIU and VC, AMET University, Dr. Thiruvassagan in the esteemed presence of Joint Director (Research), Dr. Amarendra Pani and Dr. Velraj, VC Anna University along with other distinguished guests.



THE CELEBRATION OF NATIONAL ANTI TERRORISM DAY ON 20 MAY 2022

The BIOTECHNEA CLUB organised an event on NATIONAL ANTI TERRORISM DAY on 20 MAY 2022. A group of 39 UG and PG students from the Biotechnology Department along with Dr Manu Solanki (HOD, Professor, BT, FET), Dr.Kanchan Bhardwaj (Associate Professor, BT, FET), Dr Rashmi Rameshwari (Associate Professor, BT, FET) and Dr. Krishna Priya Ganti (Associate Professor, BT, FET), Dr Nidhi (Associate Professor, BT, FET), attended the session.



The session comprised of an informative speech by Pragya Vats from Msc BT 2ND Sem. Then a poem was recited by Dimpi Teotia from Msc BT 2nd sem. There after Dr Manu Solanki (HOD, Professor, BT, FET), administered the OATH. A short discussion was held thereafter with students and their perspectives were heard by all the members of the club in the form of Poems and their thoughts.

The event ended with a vote of thanks by Dr. Kanchan Bhardwaj.



Industry - Academia
Interactions



Virtual visit to BSC BioNEST Bio-Incubator (BBB), RCB

The Biotechnology Department, FET, MRIIRS, organized a virtual visit to BSC BioNEST Bio-Incubator (BBB), RCB, Faridabad on 28th April 2022. A group of 36 UG and PG students from the Biotechnology Department along with Dr. Kanchan Bhardwaj (Associate Professor, BT, FET), Dr. Manu Solanki (Professor, BT, FET), Dr Rashmi Rameshwari (Associate Professor, BT, FET) and Dr. Krishna Priya Ganti (Associate Professor, BT, FET) attended the session.

The session comprised of a short lecture that was delivered by Ms. Suman Gupta, Chief Operations Officer (COO), BBB, followed by a visit around the facility and short interviews with the Director, RCB as well as some of the incubatees of BBB.

Through this visit the attendees became aware of various funding schemes for bio-entrepreneurs, newly launched innovative products by the various start-ups incubated at BBB as well as the services and infrastructure offered by the Bio-incubator.

The event also became an opportunity for us to discuss the possibility of developing an MoU between the two institutions and possibility of future interactions for the benefit of students.

Ms. Gupta also attended to queries of the audience.

The event ended with a vote of thanks by Dr. Kanchan Bhardwaj.





*Lyrical
Narratives*



Singularity

Do you sometimes want to wake up to the
singularity
we once were?

so compact nobody
needed a bed, or food or money—

nobody hiding in the school bathroom
or home alone

pulling open the drawer
where the pills are kept.

For every atom belonging to me as good
Belongs to you. Remember?
There was no Nature.
No them. No tests
to determine if the elephant
grieves her calf or if

the coral reef feels pain. Trashed
oceans don't speak English or Farsi or French;

would that we could wake up to what we were
—when we were ocean and before that
to when sky was earth, and animal was energy, and
rock was
liquid and stars were space and space was not

at all—nothing

before we came to believe humans were so important
before this awful loneliness.

Can molecules recall it?
what once was? before anything happened?

No I, no We, no one. No was
No verb no noun
only a tiny tiny dot brimming with

is is is is is

All everything home

Marie Howe



Mrs. Darwin

Went to the Zoo.
I said to Him—
Something about that Chimpanzee over there
reminds me of you.

Carol Ann Duffy

Rocket Science

An Ivy-League graduate student designed
A project. His Summary Abstract outlined
Statistical research on "Mortality -
Its Long-Term Effects On Humanity."
The rubrics said nothing would be left to chance,
And soon it was funded by government grants.

The money was spent on a series of polls
And interviews under the strictest controls
In places like Rio, Las Vegas, Jakarta,
Tahiti, Manhattan, and Puerto Vallarta.
The grant funding covered the cost of the trips.
The student paid nothing, except for the tips.

His schedule required him to stop off in Rome,
Geneva, and Paris before flying home.
His peer-reviewed paper brought praise and acclaim.
The Nobel Committee considered his name.
His thesis was simple, his proof was air-tight.
His facts beyond question, so . . . what did he write?

His research concluded, and helped clarify,
That one out of every one person will die.

James A. Tweedie

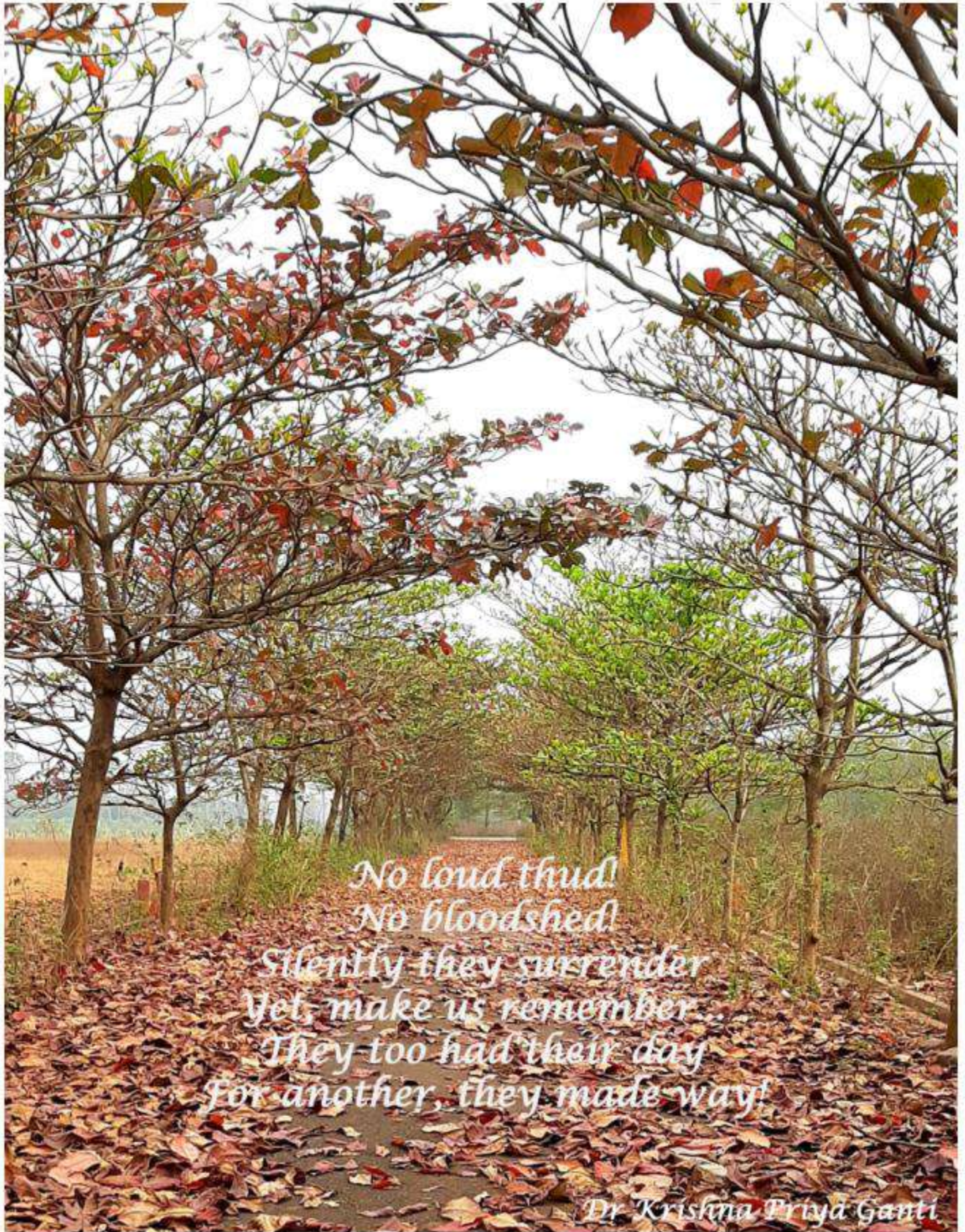


*The
Art
Of*

Seeing.....!!



Treachings...



*No loud thud!
No bloodshed!
Silently they surrender
Yet, make us remember
They too had their day
For another, they made way!*

Dr. Krishna Priya Ganti

**Dr. Krishna Priya Ganti
BT, FET, MRIIRS**



Sawan Yadav
B.Sc. Microbiology, 2nd Sem



Prof. Nidhi Didwania
BT, FET, MRIIRS



Dr. Preeti Nandal
BT, FET, MRIIRS

Dr. Rashmi Rameshwari
BT, FET, MRIIRS





Dr. Jayant Maini
BT, FET, MRIIRS

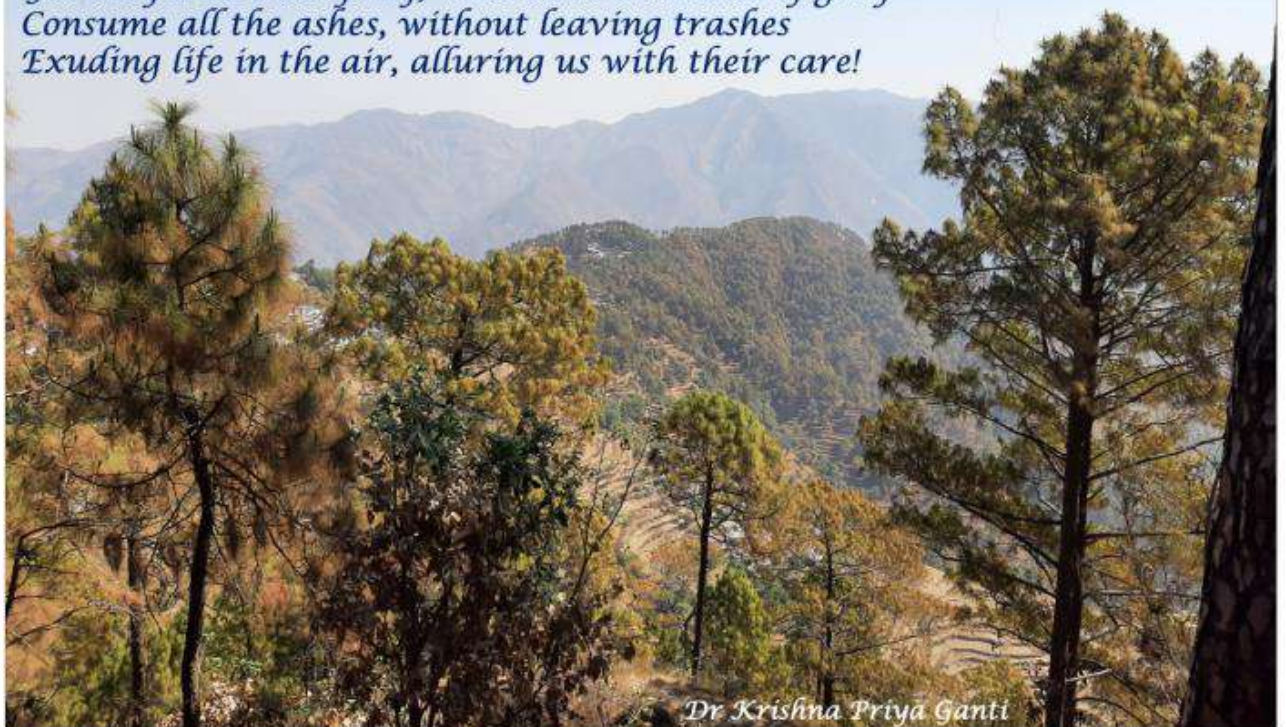
Dr. Jayant Maini
BT, FET, MRIIRS





Prof. Sabiha Imran
BT, FET, MRIIRS

*Embraced by the Earth and kissed by the Sun
Roots run deep, Stem takes a leap
Branches spread their arms, without seeking alms
Leaves sway in gay, making food all day
Being immobile, are struck all the while
Yet they seek their prey, which are in shades of grey
Consume all the ashes, without leaving trashes
Exuding life in the air, alluring us with their care!*



Dr Krishna Priya Ganti

Dr. Krishna Priya Ganti
BT, FET, MRIIRS



Moments

&

Memories



