DEV BHOOMI
—UTTARAKHAND—
UNIVERSITY

विMarsh

A NEWSLETTER

Volume 1, Issue 1, July-Dec 2022

School of Allied Sciences

Editor-In-Chief: Prof. (Dr.) Nabeel Ahmad
Editor: Dr. Nirjara Singhvi

From Chancellor's Desk

Mr. Sanjay Bansal

School of Allied Sciences is dedicated to providing a quality learning atmosphere for its students. By offering experiential and community exposure opportunities, as well as seminars and classroom teaching, students gain practical, hands-on experience in their field of study. I would like to congratulate the team of 'विMarsh' and all the faculties and students of School of Allied Sciences for working tirelessly in contributing to the growth of our university as it is said:

"Success is no accident. It is hard work, perseverance, learning, studying, sacrifice and most of all, love of what you are doing or learning to do".

From Vice-Chancellor's Desk

As DBUU works diligently towards its mission of providing best learning, teaching and research opportunities to the students and academicians equally, it continues to impart students with the basics of modern knowledge and high values. The School of Allied Sciences has shown steady growth and has strived to provide the best of academics, hands-on training and skill to its students. The teaching pedagogy adopted at School of Allied Sciences is interactive with emphasis on experiential learning. The publication 'विMarsh' is yet another feather in the cap of SoAS. I congratulate School of Allied Sciences for this great initiative and wish for the success of its newsletter.

Dr. Preeti Kothiyal

From Pro-Vice Chancellor's Desk

Dev Bhoomi Uttarakhand University's academic and career opportunities are well balanced among campus life with a dedicated array of sports, cultural and social activities. Member of the Faculties of School of Allied Science impart education till the maximized growth and development of the student.

In compliance to DBUU's strong commitment towards holistic development, I congratulate School of Allied Sciences for working efficiently for the professional development of our students to emerge as great leaders who will be capable enough in shaping their tomorrow and creating a positive change.

Dr. R.K. Tripathi

From Dean's Desk

Dr. Nabeel Ahmad

With a first of our newsletter, I am delighted to share with all of you the milestones achieved by School of Allied Sciences showcasing various Research publications encouraging future skills courses, academic prospects and extracurricular activities. We have a well-qualified team of faculty fraternity who are dedicated to promoting research- based quality education and encouraging students to strengthen their knowledge in related fields and nurture them for global competitions. The Session from July-December 2022 has been an excellent start to the new academic session focussed on grooming overall personality of the student in such a manner that they graduate as industry professionals and entrepreneurs.

Department has made continuous efforts for interdisciplinary education and research programs in several sub-disciplines of Microbiology & Biotechnology.

Dr. Vijya Laxmi,
Department of Biotechnology & Microbiology

Department provide insight into research & analysis areas, educational programs and entrepreneurial activities as well as services related to food science and Technology.

Mrs. Renu Bala Sharma
Department of Food Technology

With a strong vision to inculcate skills in our students through high quality education innovative Research and services to society in the field of Plant Science.

Dr. Muhd. Mubashshir
Department of Botany

At Physics Department, we nurture the student's talent in the area of core and applied physics and ignite enthusiasm, interest and passion in the study of Physics.

Dr. Keshav Dabral
Department of Physics

Until one has loved an animal, a part of one's soul remains unawakened. We are preparing students to address emerging scientific and technological issues of national priorities with interdisciplinary approaches.

Dr. Tripti Negi
Department of Zoology

Forensic Science Department aims to provide comprehensive and holistic education and training to aspiring students in the field of Forensic Science.

Mr. Om Dubey
Department of Forensic Sciences

Our Chemistry Program imparts skilled knowledge and prepare the students in various sub field of Chemistry and equips them to excel as a new generation of professionals to face the challenges of the twenty-first century.

Dr. Man Vir Singh
Department of Chemistry

We focus on experiential learning especially from the forest regrowth, change and beauty so that we can manage our beautiful forest in such a way that it can be called home for all the living creatures.

Ms. Anshika Kaushik
Department of Forestry

Carl Friedrich Gauss rightly said, 'Mathematics is the queen of all sciences.' Department has come to recognize mathematics as the language of science.

Mr. Saurav Agarwal
Department of Mathematics

Meet our Heads / Program Coordinators

Sr. No.	Faculty Name	Designation	Department
1.	Ms. Shruti Sinha	Assistant Professor	Microbiology
2.	Ms. Pooja Bisht	Assistant Professor	Microbiology
3.	Mrs. Geeta Rawat	Assistant Professor	Biotechnology
4.	Ms. Apoorva Narad	Assistant Professor	Forensic Sciences
5.	Ms. Aakansha	Assistant Professor	Forensic Sciences
6.	Mr. Arun Prakash	Assistant Professor	Food Technology
7.	Ms. Anjali Pal	Assistant Professor	Food Technology
8.	Mr. Mohd. Suhail	Assistant Professor	Food Technology
9.	Ms. Reetika Binjola	Assistant Professor	Forestry
10.	Mr. Sagar Mehta	Assistant Professor	Forestry
11.	Mr. Rahul Saini	Assistant Professor	Forestry
12.	Dr. R. C. Sharma	Associate Professor	Chemistry
13.	Dr. Pragati Joshi	Assistant Professor	Chemistry
14.	Dr. Neha Bhatt	Assistant Professor	Chemistry
15.	Mr. Manendra Chauhan	Assistant Professor	Chemistry
16.	Dr. Renu Rawal	Assistant Professor	Botany
17.	Dr. Hina Khatoon	Assistant Professor	Botany
18.	Mrs. Ganga Negi	Assistant Professor	Mathematics
19.	Ms. Isha Sharma	Assistant Professor	Mathematics
20.	Mr. Ashish Rawat	Assistant Professor	Mathematics
21.	Ms. Gunjan Bisht	Assistant Professor	Physics
22.	Ms. Nidhi Kanswal	Assistant Professor	Physics
23.	Mr. Amitesh Gihar	Assistant Professor	Physics
24.	Dr. Nirjara Singhvi	Assistant Professor	Zoology
25.	Ms. Ushasi Ghosh	Assistant Professor	Zoology
26.	Ms. Amreen	Assistant Professor	Zoology

Meet Our Faculties

Research at School of Allied Sciences

Research / Review Articles (Published/Accepted*)

(June - December- 2022)

1. Ahmad N. Development and Applications of Embedded Passives and Interconnects Employing Nanomaterials (2022) Nanomaterials, Sept 12(19):3284. (IF: 5.71)

2. Mubashshir M, Ahmad N. An exclusive review of melatonin effects on mammalian melanocytes and melanoma (2022) Experimental Dermatology, Nov 2022,00:1-7.

3. Ahmad N. In silico screening and molecular docking studies of potential inhibitors of PP1γ2 (2022) Advances and Applications in Mathematical Sciences, Sept 21(11):6557-6570.

4. Ahmad N. In Silico Study of Rutin with Rho-Associated Protein Kinase (ROCK) for the treatment of Cardiovascular Disease(2022) Cardiometry, Nov 24:1059-1064.

5. Singhvi N. Draft genome sequence of Streptomyces sp. KD18, isolated from industrial soil (2023) 3BioTech, Jan 13 :34. (IF:2.89)

6. Singhvi N. Virtual screening of gut microbiome bacteriocins as potential inhibitors of stearoyl-CoA desaturase 1 to regulate adipocyte differentiation and thermogenesis to combat obesity(2023) Journal of Biomolecular Structure and Dynamics, Jan 1-11. (IF:5.23)

7. Singh MV. A $BaCO_3$ nanomaterial for pyrolysis of sustainable waste and virgin polystyrene into green aromatic derivatives (2022) ChemsitrySelect (Accepted)*(IF:2.30)

8. Singh MV. Ground water quality assesment of jhunjhunu district, rajasthan reference to fluoride (2022) Environmental and ecology research (Accepted)*(IF:1.25)

9. Singh MV. Pyrolysis Processes and Physiochemical Properties of Liquid Hydrocarbon Fuel from Waste Plastics: A Review (2022) Chemical Engineering & Technology (Accepted)*(IF:1.73)

10. Singhvi N. Computational approaches for structure-based identification of novel inhibitors targeting NAP in Mycobacterium tuberculosis (2022) Molecular Biotechnology. (Accepted)* (IF:2.86)

11. Negi T. Fatty acid analysis, anti oxidants, anti microbial and biological activity of essential oils of Skimmia Laureola leaves (2023) Vegetos. (Accepted)*(IF:1.34)

12. Chauhan A. Effect of integrated nutrient management on quality of carrot (Daucus carota L.) var. Pusa Kesar (2022) Pharma Innovation 11(9):1046-1048.(IF:2.11)

13. Verma AS. Empirical predictions for bulk and shear moduli of zinc-blende structured binary solids (2022) J Taibah University for Science 16(1):676-682. (IF:3.45)

14. Verma AS. Emerging Study on Lead-Free Hybrid Double Perovskite: Potential Material for Energy Conversion between Heat and Electricity (2022) Energy Technology 10(9):2200002.(IF:4.19)

15. Verma AS. Transition metal-based halides double Cs2ZSbX6 (Z = Ag, Cu, and X = Cl, Br, I) perovskites: A mechanically stable and highly absorptive materials for photovoltaic devices (2022) Journal of Solid State Chemistry 314:123420. (IF:3.49)

16. Verma AS. Advances in micro and nano-engineered materials for high-value capacitors for miniaturized electronics (2022) Journal of Energy Storage 55:105591. (IF:6.58)





Research at School of Allied Sciences

Books Edited/ Authored

(June-December- 2022)

1. Emerging Nanotechnologies for Medical Application (2022) Ed. Ahmad N . Elsevier

2. Futuristic Trends in Renewable & Sustainable Energy(2022) Ed. Singh MV . IIP Proceedings Publication

3. Singh MV. Sustainable development and growth through small and medium industries. In Being Enterprenuer-skill,scope and beyond (2022). Door Publication Delhi.

Patents Granted/ Published/ Filed

(June-December- 2022)

1. Dr. Nabeel Ahmad, Dr. Man Vir Singh has published a patent with title 'Deep Learning based intelligent gloves to measure vermicompost fertility parameters in real-time vermicompost beds' in Indian Patent office New Delhi India with Application No: 202211055779 A, Published Date: 15/07/2022

2. Dr. Nabeel Ahmad has published a patent with title 'Hand Exercise Device for Arthritis Patients' in Indian Patent office New Delhi India with Application No: 202211055779 A, Published Date: 07/10/2022

3. Dr. Man Vir Singh has published a patent with title 'Real-time peripheral bed system for relaxing spine of patient using stretches intensity and position' in Indian Patent office New Delhi India with Application No: 374256-001, Published Date: 17/11/2022

4. Dr. Man Vir Singh has published a patent with title 'Pyrolysis of waste polyolefin's into nanoparticles over SRCO3' in Indian Patent office New Delhi India with Application No: 202111036156, Published Date: 17/11/2022

Research at School of Allied Sciences

Memorandum of Understanding

Awards & Recognition

Invited e-Talks:

- Dr. Nabeel Ahmad at IGNTU-Central University on Entrepreneurship and Governmental Funding, 2022 (November 26, 2023)
- Dr. Man Vir Singh at Waste Management Technology Trends and Development e- Conference, 2022 (July 14-15, 2022)
- Dr. Nirjara Singhvi at Indian Network for Soil Contamination Research International e-Conference, 2022 (November 8-10, 2022)

Oral Presentations:

- Dr. Vijya Laxmi at Indian Network for Soil Contamination Research International e-Conference, 2022 (November 8-10, 2022)
- Dr. Tripti Negi at Indian Network for Soil Contamination Research International e-Conference, 2022 (November 8-10, 2022)

Scientific Association/Academic Memberships

Faculties:

- Dr. Vijya Laxmi, Department of Biotechnology
- Ms. Shruti Sinha, Department of Microbiology

Association of Microbiologists of India
भारतीय जीवाणुतत्ववेत्त संगठन
Association of Microbiologists of India

Faculties:

- Dr. Nabeel Ahmad, Department of Biotechnology
- Dr. Nirjara Singhvi, Department of Zoology

SOCIETY FOR ETHNOPHARMACOLOGY
SFE INDIA

Students:

- Keshav Bijalwan (Zoology)
- Chandni Thapliyal (Zoology)
- Khushi Rathor (Zoology)
- Sunadaram Tripathi (Zoology)
- Mehak Mahajan (Zoology)
- Lalit Kishor (CBZ)
- Trivedi Yashashvi (CBZ)
- Rajni Geriya (CBZ)
- Vivek Rai (CBZ)
- Sakshi Upadhyay (CBZ)

Awards & Recognition

Student Awards

1. Ms. Dimple Dasila, B.Sc Food Technology (Batch 2021), Gold Medal on 3rd Convocation of Sri Dev Suman Uttarakhand University (July 6, 2022).

2. Ms. Navneet Kaur, Winning Team, Cricket Tournament, DBUU Sports Meet, 2022 (October 3-15, 2022).

3. Shivam Dhuriya, Sumit Kumar, Shivam Kumar, Ashish Roy, First Position, Quiz Competition, by Ministry of Environment, Forest and Climate Change, GoI (September 16, 2022)

4. Aishna Rawat, Mansha Negi, Priya Paul, Riti Raj, Second Position, Quiz Competition, by Ministry of Environment, Forest and Climate Change, GoI (September 16, 2022)

5. Lalit Kishor, Best Poster Award by Ministry of Environment, Forest and Climate Change, GoI (September 16, 2022)

Congratulations

A Dietician's Plan

Vitamins and minerals we need in little,
Getting you stronger and smarter, it will!
Eat carbs, proteins and fats more,
You'll feel energetic than before!
Breakfast , lunch and dinner you shall consume,
Three meals a day will make you immune!
Balanced diet is a must,
Don't let your body rust!
Nutritious meals you must eat,
Include fruits , vegetables and meat.
These are the golden rules to follow,
To keep yourself healthy and away from sorrow!

- Tulika
B.Sc. (H) Nutrition & Dietetics
2nd Year

- The department under SoAS includes Botany, Biotechnology, Microbiology, Forestry, Forensic Sciences, Food Technology, Zoology, Physics, Chemistry and Mathematics.
- The lens shows a complete view of Allied Sciences, its programes and course taught in SoAS.

School of Allied Sciences through my lens
-Lalit Kishor
B.Sc. CBZ, 1st Year

NATURAL DISASTER -IS IT?

"There are disaster that are entirely manmade, but none of that are entirely natural."
A natural disaster is an unforeseen occurrence of an event that causes harm to society. Natural disaster occurs when natural hazards adversely impact the life of an individual. Not every disaster is a natural disaster directly or indirectly human interference is the cause of these natural disaster.

Due to immense constructions in flood-prone areas, the chances of villages and towns to get affected by coastal floods and flash floods is also increased. Unplanned urbanization is another human activity that contributes towards the occurrence of natural disaster. like landslides are induced due to over interfence with the slope stability by unplanned construction or mining.

Humans in the name of development and convenience are ignoring the laws related to environment protection which is resulting in hampering the environment and the innocent people have to suffer the consequences. So proper research should be done before starting new projects and construction so that there is no threat to the environment and hence disasters can be prevented.

- Shweta Bisht, B. Sc. PCM, 2nd Year

GUT MICROBIOME: AN ASPECT OF HEALTH

Over the past few years, our view of human-associated microbes has expanded beyond that of a few species toward an appreciation of the most diverse and niche-specialized microbial communities that develop in the human host. The largest reservoir of these microbes exists in the distal gastrointestinal tract, lodging almost a trillion microbial cells, which are largely composed of bacterial commensals, in a homeostatic ratio, however upon any perturbations leads to an array of diseases.

Today, remarkably, the role of the gut microbiome in Cardiovascular Diseases (C.V.Ds) has gained much attention. The study on patients who undergone carotid endarterectomy by 16SrRNA gene sequencing confirmed that the most abundant bacterium Proteobacteria alongside three other phyla Actinobacteria, Bacteriodetes, and Firmicutes found in aortic plaque can translocate from the gut into the circulatory system due to certain gut barrier dysfunction leading to atherosclerosis. Several metabolites like indoxyl sulfate and eterolactone produced by these microbes also add on to its effects. The gut microbiome acts as an endocrine organ affecting various organs and with increasing knowledge of the relationship, we have high expectations for the clinical application of gut microbiome modulation to cure it.

- Keshav Bijalwan, B.Sc. (H) Zoology, 2nd Year

Students from SoAS, Ankit Mrigank Kashyap, B. Sc. (H) Microbiology and Parth Chaturvedi, B. Sc. CBZ are part of NGO, 'ROOह' - Ray of our hope

ROOह is a community of young people, Inspired to serve society by enriching the basic societal need by working on a touch ground assisting and educating people about SDG Goals, sustainable development Health, Education, and Human rights helps them to achieve their goals for the future generation.

As the slogan says 'sarvtra rooh sanrakshan', ROOH contribute in protection and development of every soul and make this world a better place for living. Their area of contribution includes every field where humanity or any soul needs, like environment, education, hunger, animal care and the list goes on.

Advancements in Forensic Sciences

Forensic Science has always played a pivotal role for law enforcement agencies in delivering justice. Advancements in this field are swift, and frequent. And that's because – modern technology (in all facets) is moving at the speed of light. So, in order for law enforcement to perform at high-levels, investigative techniques must outmatch the modern, tech savvy, criminal. Here are five modern techniques, which are on the cutting-edge of forensic science. Bacterial Examination in the hair to identify the source of perpetraor is one such modern area of investigation.

Phenotyping is another such modern techniques which is helpful in recreating the physiology of suspected criminal from the minutest DNA evidence left on the crime scene.

Virtual Autopsy is non invasive technique which generate 3D model of the dead body to investigate the unnatural death. The technique helps to take second or third opinion.

Nanotechnology is another attractive domain where modern nanosensors are being developed to detect the minutest quantity of illegal drugs, explosive residues, latent fingerprint and other biomolecules. Artificial Intelligence (AI) are used as contemporary methods to perform the handwriting and fingerprint investigation.

- Mr. Om Dubey,
Department of Forensic Sciences

Artificial Intelligence (AI) based therapeutic approaches

There is immense demand on novel therapeutics for the cure of metabolic disorders, such as purine metabolism, fibrosis conditions, tissue inflammations or microbial infections to oncogenesis or cardiovascular diseases. The new methods of therapeutics have always been explored by researchers across the world. Further, the physiological management of these diseases can be achieved by targeting multiple engineered bio-molecules using enzymes catalytic activities. Due to affinity and specificity properties, these treatments present several advantages compared to established therapeutic approaches and they might be attractive options. Alongside, protein engineering also holds the potential to transform the metabolic drug landscape through the development of smart, stimulus-responsive drug systems.

In last two decades, engineered enzymes have risen as promising therapeutic solutions and in combination of computational tools and artificial intelligence (AI) their speed of identification have increased rapidly.

- Dr. Nirjara Singhvi,
Department of Zoology

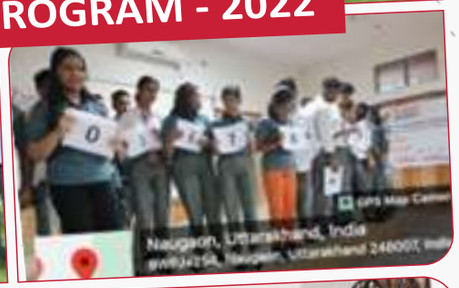
Biogas: A Recent Trend

Biogas is a viable, and sustainable energy resource due to the massive supply of cheap feedstocks and the availability of a wide range of applications in heat-power generation, fuel, and raw materials for further processing and production of sustainable chemicals that include hydrogen, and carbon dioxide and biofuels. Power through biogas is proliferating for the past decade from 65 GW in 2010 to 120 GW in 2019 showing a 90% growth. Renewable energy sources such as biogas, biomass, and biofuel all have varying stages of development. Cattle wastes, agricultural crop wastes, and poultry droppings can all be converted into biogas by controlled anaerobic degradation. It reduces our dependence on solid biomass like firewood as cooking fuel. Biogas is produced by anaerobic digestion (AD) by the methanogen bacteria that helps produce a renewable energy resource, mainly in the form of methane gas. Biogas production and use are increasing throughout the globe and it is promising to be a leading economical alternative to produce sustainable and renewable bioenergy.

- Dr. Muhd. Mubashshir,
Department of Botany

INTERNATIONAL e-CONFERENCE

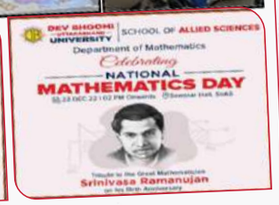
ORIENTATION PROGRAM - 2022



WORKSHOPS

INDUSTRIAL VISITS

GUEST LECTURES



Events		Organizing Department
Conference (1)	International e-Conference in association with INSCR and University of Delhi	
Workshop (2)	1. Cheetah Re-introduction awareness campaign 2. Nutrition Month	1. Zoology 2. Food Technology
Guest Lectures / Day Celebration (3)	1. Scope and advancement of Forensic Sciences 2. Biotechnology Ignition Grant Scheme by C-CAMP 3. National Mathematics Day	1. Forensic Sciences 2. Biotechnology 3. Mathematics
Educational Visit (5)	1. Forensic Science Laboratory 2. Genetics and Tree Improvement division, FRI 3. Forest Research Institute 4. Regional Sericultural Research Institute 5. Regional Science Center	1. Forensic Sciences 2. Biotechnology/ Microbiology/ Zoology 3. Forestry 4. Zoology

Glimpses of Events

Events @ SoAS 2023

February 2023

- Millet Year Celebration
- National Science Day

March 2023

- Science Exhibition & Microbial Literacy Outreach Program
- Legal Awareness Camp
- World TB Day

April 2023

- Hands-on Bioinformatics Workshop
- World Health Day

May 2023

- Art of Scientific Writing and Communication Workshop
- International day for Biological Diversity

June 2023

- Hands-on Biotechnology Workshop
- World Environment Day

Upcoming Events

School of Allied Sciences

Through My Lens

School of Allied Sciences, Dev Bhoomi Uttarakhand University