

**ANNUAL REPORT 2023-2024**

**SOCIETY OF PETROLEUM GEOPHYSICISTS  
(SPG) STUDENT CHAPTER**



**DEPARTMENT OF GEOPHYSICS,  
KURUKSHETRA UNIVERSITY,  
KURUKSHETRA**

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## **OVERVIEW**

The Kurukshetra University, Kurukshetra SPG Student Chapter had an active and successful 2023-2024 year. Our chapter aims to promote interest in the field of geophysics, facilitate professional development, and provide networking opportunities for students. This past year, we organized 4 guest lectures from industry professionals, hosted 3 co-curricular events, and participated in 3 community outreach events to teach students about various topics related to earth sciences and geophysics. Through technical talks, career panels, short courses, and social events, our chapter provided members with diverse channels to expand their knowledge, explore career paths, and build camaraderie. We are proud of our accomplishments this year in fostering an engaged community of students passionate about geophysics.

# OFFICE BEARERS 2023-24

Faculty Advisor: Dr. Manisha Sandhu

Co-Faculty Advisor: Dr. R.B.S. Yadav

President: Ishika Agarwal

Vice President: Aditya Malik


Secretary: Sarthak Yadav


Treasurer: Neeraj

Executive Members: Aashu Mehra, Aarzoo Galhotra, Arun Jhangra, Prashant Vishwakarma, Swarnima Pandey


## MEET THE TEAM

( 2023 - 2024 )







**PRESIDENT**  
ISHIKA AGGARWAL



**VICE PRESIDENT**  
ADITYA MALIK




**SECRETARY**  
SARTHAK YADAV




**TREASURER**  
NEERAJ


EXECUTIVE MEMBERS :-




AASHU




AAZZOO



ARUN



PRASHANT



SWARNIMA

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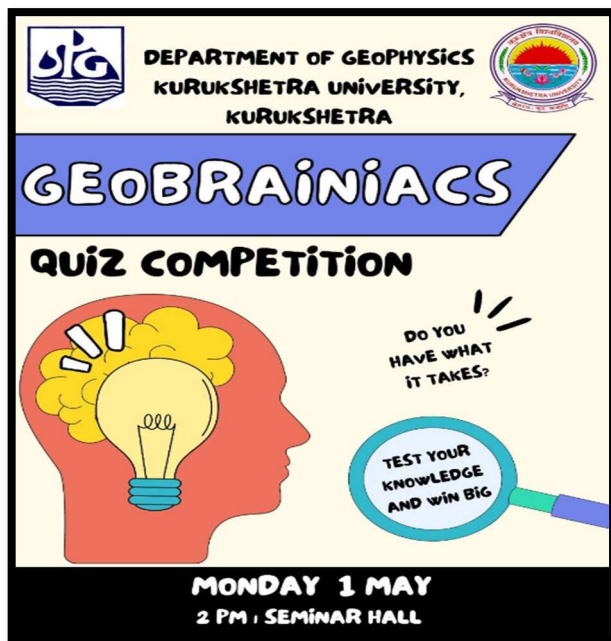
# **EVENT 1: GEOBRANIACS - A CHALLENGE BOWL**

The Society of Petroleum Geophysicists (SPG) Student Chapter at Kurukshetra University organized an exciting departmental-level competition called "Geobraniacs - A Challenge Bowl" on May 1st, 2023. This remarkable event provided a platform for students to showcase their skills and knowledge in the field of geophysics.

The competition witnessed active participation from a total of eight teams, comprising students from the first and second years of the geophysics program. The atmosphere was charged with enthusiasm and friendly rivalry as these young minds eagerly seized the opportunity to test their mettle against their peers.

The format of the competition was designed to challenge the participants' understanding of various geophysical concepts and their ability to think critically under pressure. The questions spanned a wide range of topics, including but not limited to seismic data analysis, gravity and magnetic surveys, well-logging techniques, and subsurface modeling.

Throughout the event, the students displayed remarkable poise and a deep commitment to their field of study. Their responses were not only technically sound but also reflected their passion for geophysics and their eagerness to learn and grow.



## **EVENT 2: CLEANLINESS DRIVE**

Under the vibrant banners of SPG Student Chapter, Department of Geophysics Kurukshetra University join hands along with the NSS on the occasion of Gandhi Jayanti to usher in a cleaner, greener India. Embracing Mahatma Gandhi's wisdom in the divine land of Kurukshetra. 'Cleanliness is next to godliness,' and together, we're making it a reality. One step at a time, one commitment at a time! Students and professors actively participated in this initiative, cleaning the streets of Kurukshetra starting from the Brahma Sarovar Gate.

During this cleanliness drive, students and faculty members pledged their commitment to maintaining the city's cleanliness. They cleaned plastic waste, engaged in tree plantation activities, and assisted in cleaning the streets. This collective effort symbolized their dedication to cleanliness on this significant occasion.

Echoing the slogan of the Swachh Bharat Mission, "Swachh Bharat, Swasth Bharat" (Clean India, Healthy India), the students and faculty of Kurukshetra University showcased their commitment to the mission on the important occasion of Gandhi Jayanti.

Through cleanliness, we can honor the vision of Mahatma Gandhi and remember his greatness. This cleanliness drive by Kurukshetra University reflects the adherence to the ideals of the Swachh Bharat Mission.

The department's dedication to cleanliness on Gandhi Jayanti has set an example for fellow citizens, demonstrating their commitment to a cleaner and healthier India.



## **EVENT 3: TREE PLANTATION**

Recognizing the importance of environmental conservation and sustainable practices, the SPG Student Chapter at the Department of Geophysics, Kurukshetra University, organized a tree plantation activity on October 5th, 2023. This event was a part of the chapter's initiatives to promote environmental awareness and contribute to the greening of the campus and surrounding areas.

Students from the geophysics program enthusiastically participated in the sapling plantation, working alongside esteemed faculty members, including Dr. Sushil Kumar, Dr. Manisha Sandhu, and Dr. R.B.S. Yadav. The collective effort of the students and faculty members exemplified the department's commitment to environmental stewardship and sustainable development.

The tree plantation event was more than just a symbolic gesture; it was a tangible effort to combat climate change, reduce carbon footprints, and promote biodiversity. Each sapling planted represented a step towards creating a greener and more sustainable future for generations to come.

Throughout the event, the participants demonstrated a deep understanding of the importance of trees in maintaining ecological balance and mitigating the adverse effects of environmental degradation. The event not only provided students with hands-on experience in tree planting but also fostered a sense of responsibility towards the environment and encouraged them to adopt eco-friendly practices in their daily lives.



## **EVENT 4: OUTREACH PROGRAM IN KAMODA GOVERNMENT SCHOOL, KAMODA, HARYANA**

The SPG Student Chapter, Department of Geophysics at Kurukshetra University organized a significant outreach program at Kamoda Government School, aimed at educating students on various important topics related to geophysics. The program was conducted under the guidance of Dr. Manisha Sandhu, a professor from the department. The main objective of this outreach program was to raise awareness among students about key aspects of geophysical science. The program covered the following topics:

About Earth - Structure/Composition

Groundwater (Importance/Conservation)

Energy (Energy Sectors/Energy Conservation)

Landslides/Floods

Earthquake (Precautionary Measures and Awareness)

The primary goal of this outreach program was to spread awareness about the field of geophysics among the students. Additionally, the program provided valuable insights into environmental changes and sustainable development goals.

This initiative by the Geophysics Department proved to be a crucial step in enhancing knowledge through geophysical education and in making students aware of the importance of sustainable development and environmental conservation.



# EVENT 5: WEBINAR WITH DR. SANJIB KUMAR AGARWALLA

On October 27th, 2023, the SPG Student Chapter conducted a webinar featuring the esteemed Dr. Sanjib Kumar Agarwalla as the guest speaker. This webinar delved into the intricate realms of gravitational measurements and seismic studies, highlighting the pivotal role of neutrinos in advancing topographic measurements within the Earth system and Earth science.

Dr. Agarwalla, a renowned expert in his field, delivered a groundbreaking lecture that captivated the audience. He commenced by elucidating the definition of neutrinos and their sources, emphasizing their origin in cosmic phenomena. With his deep insights, he unveiled the groundbreaking application of neutrinos in topographic measurements, a novel concept that piqued the curiosity of the attendees.

The webinar provided a platform for Dr. Agarwalla to share his expertise and insights, illuminating the path for future research and inspiring scientists and researchers to delve deeper into the mysteries of our planet.

Department of Geophysics,  
Kurukshetra University,  
Kurukshetra

JOIN US  
**WEBINAR**  
Imaging the  
Deep Earth  
with Neutrinos

OUR SPEAKER  
*Sanjib Kumar Agarwalla*  
Associate Professor  
Institute of Physics,  
Bhubaneswar,  
Odisha

Specialization:  
High Energy Particles physics

27th October, 2023  
10:30 – Till end

Register Here!

Meeting Link: [meet.google.com/bct-woae-hmw](https://meet.google.com/bct-woae-hmw)

+91 9996608691 [www.linkedin.com/in/KUGS](https://www.linkedin.com/in/KUGS)

Imaging the Deep Earth  
with Neutrinos

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Institute of Physics (IOP), Bhubaneswar, India  
Department of Physics and WIPAC, UW Madison, USA

Logos: IOP, SERB, WISCONSIN

Zoom interface showing multiple participant windows and a presentation slide.

## **EVENT 6: OUTREACH AT GOVT. MODEL SANSKRITI SENIOR SECONDARY SCHOOL**

Continuing its efforts to raise awareness about the field of geophysics, the SPG Student Chapter of the Department of Geophysics at Kurukshetra University organized an outreach program at the Government Model Sanskriti Senior Secondary School in Thanesar. The program was conducted under the guidance of Dr. Manisha Sandhu, a professor in the department.

The main objective of this program was to raise awareness about the field of geophysics. The students emphasized various important topics, including groundwater, floods and landslides, and earthquakes. Detailed information was provided on these subjects, explaining how the study of geophysics can help understand and manage these natural disasters.

In addition, the students gave a comprehensive introduction to the field of geophysics. They explained what geophysics is, why one should choose this course, its various areas of study, and its different applications. The students also discussed the broad career opportunities available in the field of geophysics and how it can address emerging scientific and technical challenges in the future.

The principal and teachers of the school also appreciated the program and encouraged the students to pursue careers in this field. They mentioned that awareness programs like this enhance students' knowledge and inspire them to think in new directions.

At the end of the program, students asked various questions related to geophysics, which were answered in detail by the presenters. This program was not only informative but also inspirational, motivating students to consider careers in the field of geophysics.



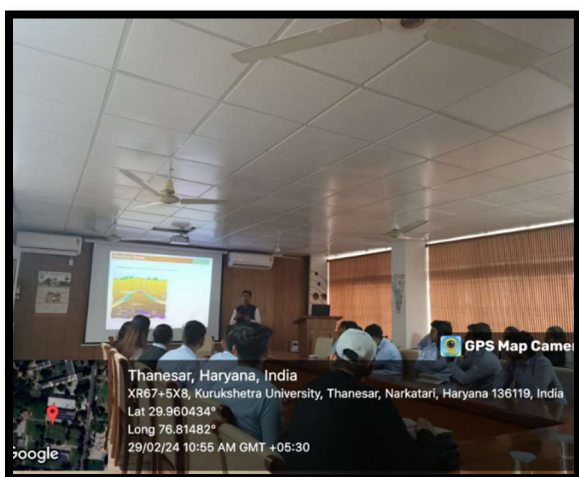
## **EVENT 7: INDUSTRIAL LECTURE BY PAWAN KUMAR AND USD PANDEY**

The SPG Student Chapter under the Kurukshetra University Geophysical Society hosted an insightful lecture featuring industry giants Mr. Pawan Kumar Singh, Chief Geophysicist at Oil India Ltd., and Mr. USD Pandey, Former Executive Director at ONGC (Oil and Natural Gas Corporation Limited).

Mr. Pawan Kumar Singh took the audience on a captivating journey into the world of hydrocarbon exploration. With his extensive industry experience, he shed light on the formation and migration of oil and gas deposits, a fundamental aspect of the exploration process. He meticulously explained the E&P (Exploration and Production) cycle, guiding the students through the various stages from exploration to production. Furthermore, Mr. Singh delved into the realm of geophysical prospecting techniques, highlighting the crucial role of gravity, magnetic, and seismic methods in identifying potential hydrocarbon reservoirs. His insights into onshore surveys and seismic data acquisition provided the students with a tangible understanding of industry practices and the technological advancements driving modern exploration efforts.

Complementing Mr. Singh's expertise, Mr. USD Pandey steered the discussion towards offshore exploration, a domain that presents unique challenges and considerations. He elucidated the intricacies of marine seismic surveys and techniques, shedding light on the different interfaces encountered underwater and the strategies employed to overcome them.

Throughout the lectures, interactive Q&A sessions allowed students to engage directly with these industry experts. The students seized the opportunity to explore their knowledge further, ask probing questions, and gain valuable insights from the wealth of experience shared by Mr. Singh and Mr. Pandey. This guest lecture served as an invaluable platform for students to gain first-hand exposure to the dynamic world of hydrocarbon exploration. By bridging the gap between academia and industry, the event fostered a deeper understanding of the practical applications of geophysical principles and techniques, ultimately preparing students for future careers in this exciting field.



## **EVENT 8: LECTURE BY PROF. SATYBIR TEOTIA**

The SPG Student Chapter, Department of Geophysics at Kurukshetra University hosted a captivating lecture by Professor Satybir Teotia, focusing on the cutting-edge technology of Ground Penetrating Radar (GPR). The session commenced with Professor Teotia underscoring the pivotal role of technology in our generation, setting the stage for an insightful exploration into the principles of GPR.

Professor Teotia expressed his profound fascination for the field of geo-scanning, sharing his enthusiasm with the audience and setting the stage for an in-depth examination of GPR principles. He emphasized the significance of gaining knowledge to effectively communicate within one's domain, encouraging students to "speak the language of your domain" and master the terminology associated with their field of study.

The lecture then delved into the realm of seismic studies, unravelling the intricate terminologies and concepts associated with this discipline. Professor Teotia fostered an interactive atmosphere, prompting discussions with students on topics such as stacking in seismic data and zero-offset scenarios. Notably, he shed light on the paramount importance of Anemo in the context of GPR, highlighting its crucial role in the technology's applications.

Throughout the session, Professor Teotia's engaging style captivated the audience, making the lecture both informative and interactive. The students were not only introduced to the fundamentals of GPR but were also encouraged to actively participate in discussions, fostering a deeper understanding of the subject matter.

In conclusion, Professor Satybir Teotia's lecture provided a comprehensive overview of GPR principles, intertwining theoretical concepts with practical insights. The event proved to be a valuable learning experience for students, leaving them better equipped to navigate the complexities of geophysics.



## **EVENT 9: OUTREACH PROGRAM AT IIHS KUK**

On the occasion of Earth Day 2024, the SPG student chapter, department of geophysics, Kurukshetra university organized a special outreach program to raise awareness and curiosity about various aspects of geophysics. Under the guidance of our faculty members, final year BSc students from IIHS, KUK were provided in-depth knowledge about subjects like geology, groundwater, energy, oil & gas industry, as well as earthquakes.

The program was held at our seismological observatory, where students got to see the seismometer and its components. Through interactive sessions, they learned about the significance of these subjects and the career opportunities it offers. Throughout the program, the emphasis was placed on fostering an understanding of the Earth's intricate systems and the role of geophysics in addressing critical environmental and energy challenges. The students were exposed to the multidisciplinary nature of the field, with topics ranging from sustainable resource management to natural hazard mitigation.

The outreach program was not merely an educational endeavour but also served as a platform to inspire and motivate the young minds in attendance. By witnessing the cutting-edge facilities and engaging with passionate professionals, the students gained a newfound appreciation for the vast potential of geophysics in shaping a sustainable future.



## **EVENT 10: LECTURE BY DR. ABHEY RAM BANSAL**

The SPG student chapter of the Department of Geophysics at Kurukshetra University orchestrated a captivating lecture, shedding light on the intricacies of earthquake dynamics. Dr. Abhey Ram Bansal, a distinguished alumnus of the 1994 batch and Chief Scientist at NGRI, Hyderabad, graced the occasion as the keynote speaker.

Dr. Bansal delved into the phenomenon of dynamic triggering of earthquakes and tremors in South East Asia, captivating the audience with his expertise. He meticulously explored concepts such as near-field triggering, aftershocks, dynamic triggering mechanisms, and methods for identifying seismic events. Drawing from his extensive experience, he elucidated triggering incidents in notable regions like the Koyna-Warna area in Western India, the Gorkha earthquake in Nepal, and the Taroku earthquakes in Japan.

The lecture was not only informative but also interactive, as Dr. Bansal actively engaged with the students, igniting their curiosity about the subject matter. He also elaborated on the potential career avenues in research within this domain, inspiring the budding geophysicists to delve deeper into seismic studies.

The session culminated with heartfelt expressions of gratitude and appreciation from Chairman Dr. Dinesh Kumar and Assistant Professor Dr. Manisha Sandhu. Their acknowledgment underscored the significance of such academic endeavors in fostering intellectual growth and scholarly pursuits within the Geophysics department.

Overall, the event proved to be a resounding success, leaving an indelible impression on all attendees and reaffirming Kurukshetra University's commitment to academic excellence and scholarly discourse.



## **FUTURE OBJECTIVES**

- Expand industry collaboration and networking opportunities for students
  - Organize more guest lectures, workshops, and interactive sessions with professionals from oil/gas, mining, environmental, and geotechnical sectors
  - Facilitate internship and job placement assistance
- Enhance research exposure and skill development
  - Encourage student participation in research projects under faculty guidance
  - Conduct technical training programs on latest software, data analysis, and field techniques
- Promote environmental awareness and sustainable practices
  - Organize awareness campaigns, nature trails, and cleanup drives
  - Implement green initiatives within the department and campus
- Strengthen alumni network and global connections
  - Engage alumni for mentorship, career guidance and sponsorship opportunities
  - Establish relationships with international geophysics student societies and organizations
- Enhance community outreach initiatives
  - Expand school/college visits to remote areas for geoscience education
  - Develop interactive teaching modules and activities for students

The SPG Student Chapter aims to continually evolve, provide enriching experiences, and empower its members to become skilled professionals contributing to sustainable development goals.

**THANK YOU**