

Birbal Sahni Institute of Palaeosciences

53 University Road, Lucknow 226007

An Autonomous Institute under the Department of Science and Technology,
Government of India



Capacity Building Field Workshop in Sedimentology 2026

**Sedimentary Facies and Biota: Modern
to Ancient Field Perspectives**

18th - 23rd November, 2026



An intertidal flat with ripple bedforms along Chandipur coast, Odisha

First Circular through email notification on 25th March 2026

About the Institute

Professor Birbal Sahni, FRS, founded the Institute of Paleobotany in 1946 with the objective of advancing research in palaeobotany. He emphasized applying insights derived from palaeobotanical studies to address wider geological problems, particularly those related to paleoclimate and fossil fuel resources. In recognition of his contributions, the Institute was subsequently renamed as **Birbal Sahni Institute of Palaeobotany (BSIP)**. In the recent years, the mandate of BSIP has been expanded to enhance the scope of palaeobotanical research integrating with other domains of Palaeosciences, supported by the establishment of state-of-art laboratory facilities. Reflecting this broaden vision, the Institute has been renamed the **Birbal Sahni Institute of Palaeosciences** and currently functions as an autonomous research organization under the **Department of Science and Technology (DST), Ministry of Science and Technology, Government of India**.

About the Field Workshop

The Odisha seacoast functions as a natural laboratory and provides an ideal setting for developing fundamental concepts in modern sedimentology. The preordained multiplicity of environmental regimes at three locations- **Chandipur, Kasafal and Dagara**- can be readily correlated with their respective facies characteristics. Such contemporary depositional settings highlight that significant spatial and temporal variations may occur within single facies. This variability leads to the crucial concept of the **preservation potential of sedimentary features**, without which one can hardly appreciate the wide variability of facies characteristics recorded within an apparently static rock record.

Comparative analysis of sedimentary structures and textures in adjacent aeolian and marine environments, at the aforementioned sites, clearly demonstrates the controlling role of sediment-flow density. Further, the distribution of living organisms across the different depositional regimes provides an additional tool for facies characterization. Animal traces, in particular, offer deeper insight into sedimentation processes operating within a facies. Even subtle or pronounced periodic changes can induce significant alterations in biotic responses to sedimentation, whether processes are slow or rapid, continuous or episodic.

Direct observation of the sensitive responses of biota to dynamic sedimentary processes provides important insights for sedimentologists, palaeontologists and stratigraphers in equal measures. In contrast, ancient sedimentary rock records rarely allow such direct correlation between depositional processes and their resulting products. The **Miocene Baripada marine bed**, however, serves as a succinct analogue of a modern shallow-marine complex. The lithological, structural, and palaeontological features clearly bear the signature of the depositional environment while stratigraphic succession documents the history of relative sea-level changes.

Objectives

All three sites- **Chandipur, Kasafal and Dagara**- are at land-sea interface but represent widely different energy regimes. They therefore offer a valuable opportunity to appreciate contrasting facies assemblages despite similar geographic settings. These differences allow direct visualisation of how substratum slope controls depositional regimes. The low slope at Chandipur favours tidal dominance over wave action, whereas the steep slope occurs along the steeper coast of Dagara.

The process-product relationship, however, is not as direct in the rock record as it is in modern settings. The knowledge gained from present-day environments must be extrapolated, invoking the adage "*Present is the key to the Past*". Moreover, the bed succession provides additional insight into the nature and evolution of accommodation space through time.

Target Audience (Maximum seats: 30)

- **Undergraduate and Postgraduate students** (Earth Sciences / Environmental Science) seeking to enhance their skills in sedimentological fieldwork in both modern and ancient sedimentary records.
- **Research scholars and Post-Doctoral Researchers** with interests in sedimentology and stratigraphy, Precambrian to Quaternary sedimentary environments, and biota.

Plan & Method of the Field Workshop

The field workshop will involve hands-on training in different modern sedimentary environments developed along an approximately **70 km stretch of the Odisha coastline**. Primary sedimentary structures, tidal bundles, aeolian features, and sediment–biota interactions will be observed through trenching, burrow casting, and related field techniques in various coastal environments. One day of fieldwork will be conducted in the **Miocene marine beds near Baripada, Odisha**, as well as in **Precambrian rocks exposed near the Simlipal Forest area**. ***All selected participants must reach Balasore Railway Station by 6:00 PM on 18th November 2026.*** Transportation from Balasore to the hotel at Chandipur will be arranged by the organisers.

Detail Field Plan		
Day 1 18/11/2026	Before 6 PM (Mandatory for all participants)	Arrival at Balasore and stay at Chandipur Hotel
	6 – 8 PM	a. Inaugural function of the workshop b. Orientation of the workshop to the participants
	9PM-10 PM	Dinner
Day 2 19/11/2026	7.30 AM-8.30 AM	Breakfast
	9AM – 5 PM	Introduction of the beach –barrier-tidal flat complex of Chandipur (near the Buribalam Estuary); Lunch Break within the field
	6PM-7PM	Evening Snacks
	7 PM- 9PM	Discussion
	9PM-10 PM	Dinner
Day 3 20/11/2026	7.30 AM-8.30 AM	Breakfast
	9AM – 5 PM	Fieldwork in Dagara beach; Lunch Break within the field
	6PM-7PM	Evening Snacks
	7 PM- 9PM	Discussion
	9PM-10 PM	Dinner
Day 4 21/11/2026	7.30 AM-8.30 AM	Breakfast

	9AM to 5 PM	Fieldwork in Precambrian rocks near the Simlipal forest area and the Miocene marine bed near Baripada; Lunch Break within the field
	7 PM – 7.30 PM	Evening Snacks
	7.30 PM – 9PM	Discussion
	9PM-10 PM	Dinner
Day 5 22/11/2026	7.30 AM-8.30 AM	Breakfast
	9AM – 12 noon	Fieldwork in Kasafal/Dublagadi beach (crossing the Buribalam estuary) – introduction of beach and aeolian environments
	After 1 PM (as per tide timings)	Lunch break within field
	2 PM – 5 PM (Depending on high tide timing)	Back to Chandipur tidal flat, introduction to barrier –lagoon system; burrow casting etc.
	6PM-7PM	Evening Snacks
	7 PM- 9PM	Workshop Valedictory Session and Certificate distribution
	9PM-10 PM	Dinner
Day 6 23/11/2026	7.30 AM-9 AM	After Breakfast Check-out of all participants from hotel

Key Takeaways from the Field Workshop

Participants will gain hands-on training in sedimentological and palaeontological fieldwork through direct exposure to diverse modern and ancient depositional environments along the Odisha coast. The workshop will develop skills in identifying and interpreting sedimentary facies, structures, and textures across intertidal, aeolian, and shallow marine settings, with emphasis on process–product relationships and tidal cyclicity. It will also introduce critical and heavy mineral perspectives along the modern coastline, along with insights into coastal erosion and geomorphological controls on sedimentation. Participants will further explore sediment–biota interactions for palaeoenvironmental

reconstruction. Guided by experts from BSIP and leading institutions, attendees will learn to integrate field observations with stratigraphic data, linking modern processes to the ancient rock record.

Resource persons

Subject experts- such as the Director and the scientists of BSIP, Lucknow professors from other universities and institutes, will interact with participants during the fieldwork. Research scholars and associates of BSIP will assist participants throughout the programme.



Prof. Mahesh G. Thakkar is the **Director of the Birbal Sahni Institute of Palaeosciences (BSIP), Lucknow**. A leading Earth scientist with more than three decades of academic and research experience, Prof. Thakkar is widely recognized for his pioneering contributions to Neotectonics, Palaeoseismology, Quaternary Geology, Geomorphology, Geoheritage and Geoarchaeology. His work has significantly advanced the understanding of landscape evolution, active faulting, and seismic hazards, particularly in the Kachchh Basin, Western India. He was a Professor and Head of the Department of Earth and Environmental Science at Kachchh University, Gujarat, where he played a key role in developing Earth science education and regional geoscientific research capacity. Prof. Thakkar has guided 24 doctoral students, and published extensively in reputed peer-reviewed journals (almost 140 research papers, with h-index 32; i10-72 and citation 2929) and has been a guest editor in three international journals. His research has contributed to hazard mitigation strategies, geoheritage documentation, and understanding the geological context of ancient civilizations in northwestern India. His significant contribution as scientific expert in Smrutivan Earthquake Museum in Bhuj is commendable. He also developed the first Geoheritage site at Dholavira in Gujarat. At BSIP, he is spearheading a new vision to integrate palaeoscience with modern analytical and societal frameworks. Under his leadership, the Institute is establishing **Centres of Excellence** focusing on **Ancient and Modern DNA Studies, Palaeo and Present Pollen Research, Geochemical and Geochronological Investigations, and Hydrocarbon Studies**. He is also instrumental in making many Geoheritage sites in UP, MP, Jharkhand and Chhattisgarh. Dr. Thakkar has also initiated the Earth and Planetary Exploration Group in BSIP, Lucknow and commenced the astrobiological research.



Prof. Subir Sarkar is a distinguished geoscientist and former **Professor** in the **Department of Geological Sciences at Jadavpur University, Kolkata, India**, with over 35 years of exemplary experience in teaching and research. He obtained his Ph.D. from Jadavpur University and further advanced his academic career through postdoctoral research at premier institutions in Germany, Japan, and South Africa. His research expertise spans sedimentology, sequence stratigraphy, and basin analysis, with significant contributions to understanding sedimentation dynamics across diverse environmental regimes ranging from modern to Precambrian times. His work, integrating high-resolution field studies, petrography, and geochemistry, has been instrumental in resolving key geological problems. He has made notable advances in deciphering Precambrian sedimentation, particularly the role of microbial processes in early life records. Prof. Sarkar has published over 130 research papers in reputed journals (h-index: 39; 4500+ citations) and has edited several scholarly volumes, along with authoring field guidebooks on the Vindhyan Supergroup and modern sedimentary systems. He serves as Associate Editor of the *Journal of Earth System Sciences* (Springer) and is on the editorial board of the *Journal of Palaeogeography* (Elsevier). He is a recipient of the prestigious **National Geoscience**

Award (2011) and a *Fellow of the West Bengal Academy of Science and Technology*.



Dr. Subhronil Mondal is an **Associate Professor** in the **Department of Earth Sciences** at **IISER Kolkata**, India, and an emerging leader in the field of paleobiology and macroevolution. His research focuses on understanding macroecological and macroevolutionary patterns in marine invertebrates and their relationship with biotic and abiotic drivers across varied spatial and temporal scales, integrating field-based observations with global datasets and advanced statistical analyses. He has published around 50 research papers in reputed international journals, including *Paleobiology*, *Earth-Science Reviews*, *PALAIOS*, and *Journal of Paleontology*, with over 500 citations, reflecting his growing impact in the field. Dr. Mondal possesses extensive field experience across diverse geological settings in India, including recent work along the east and parts of the west coast, as well as studies in Permian successions of Arunachal Pradesh, Mesozoic sequences of Gujarat and Kerala, and Cenozoic deposits of Gujarat. He is a recipient of several prestigious recognitions, including the **Indian National Science Academy (INSA) Young Scientist Medal** (2022), the **Ministry of Earth Sciences Young Scientist Award** (2019), and the **Stephen Jay Gould Award** from the **Paleontological Society, USA** (2013). He is also an **Associate of the West Bengal Academy of Science and Technology**. An accomplished educator, he has consistently received appreciation from the Director, IISER Kolkata for excellence in teaching and actively supervises doctoral and postdoctoral researchers.



Dr. Adrita Choudhuri, **Scientist C** at the **Birbal Sahni Institute of Palaeosciences (BSIP)**, **Lucknow**, India, with over a decade of research experience in sedimentology, Precambrian geobiology, and sequence stratigraphy. She obtained her Ph.D. from Jadavpur University, Kolkata, and further advanced her academic career through postdoctoral research at the University of Poitiers, France. Her research expertise encompasses sedimentation dynamics and early life processes, particularly the role of microbial life in Proterozoic basins such as the Vindhyan and Kaladgi, as well as in the Cretaceous basins such as the Shillong and Cauvery Basin. Her integrative approach, combining sedimentology, stratigraphy, and geobiology, has provided key insights into basin evolution and life–sediment interactions across the geological time. Dr. Choudhuri has published several research papers in reputed national and international journals and has contributed significantly to advancing knowledge in Precambrian geobiology. She was awarded the prestigious **DST INSPIRE Faculty Fellowship (2018–2024)**, leading a project on the evolution of motile life in the Precambrian. She is a **member of the International Commission on Stratigraphy (Precambrian Subcommittee)** and a **life member of the Indian Association of Sedimentologists and the SEPM Society for Sedimentary Geology**.



Dr. Arvind Kumar Singh, **Scientist D** at the **Birbal Sahni Institute of Palaeosciences (BSIP)**, **Lucknow**, India, with over a decade of research experience in the field of shale sedimentology, sedimentation processes, paleoenvironmental and paleoclimatic reconstruction and hydrocarbon assessment in ancient basins. He holds a PhD from University of Delhi, New Delhi and subsequently advanced to Post-Doctorate from Wadia Institute of Himalayan Geology, Dehradun. Dr Singh is a prolific researcher and actively involved in BSIP and ONGC funded projects on Indian Precambrian Sedimentary basins. He is also associated with international collaborative research projects with School of Earth, Energy and Environment, Stanford University, USA. He has numerous research publications in high impact journals including *Chemical Geology*, *Geological Magazine*, *Energy Geoscience* and *Journal of Sedimentary Research*. He has received several honors, including Honorary Assistant Professor, AcSIR, PhD Guideship, Kachchh University, Best Presentation, **SERB ITS fellowship**, **Volkswagen-Stiftung Fellowship, Germany**, **UTA fellowship, Delhi**

University, Birbal Sahni International Deputation Grant. He has also convened major conferences and serving on key academic and scientific committees including National Advisory Committee of Vindhyan Conference and is also life member of IAS and Himalayan Geology associations.

Registration process & selection criteria

Interested participants must register through-

<https://forms.gle/pW3VeurGjirCvVsH8>

Selection will be based on academic merit, with preference given to candidates securing **a minimum of 60% marks** in their qualifying examination.

Eligibility Criteria

- Undergraduate/Postgraduate students (Earth Sciences / Environmental Science or allied disciplines) with at least 60% marks; Research Scholars and Post-doctoral researchers with relevant research interests
- **Nationality:** Indian

Other Details

- **Duration:** **18th-23rd November 2026** (5 nights / 6 days)
- **Last Date of Application:** **15th June 2026**
- **Number of Seats:** **30**
- **Registration Fee:** **₹6,000 per participant**

Only selected candidates will be contacted for the payment procedure later.

The registration fee includes accommodation (double sharing) for 5 nights, meals, field transportation during the workshop, transfers between Balasore Railway Station and Chandipur, registration kits. **Travel expenses to and from Balasore has to be borne by the participants.**

Certification

All participants will receive a certificate upon successful completion of the workshop.

Course Coordinators

- **Dr. Adrita Choudhuri**, Scientist C, BSIP (Convenor)
- **Dr. Arvind Kumar Singh**, Scientist D, BSIP (Co-Convenor)
- **Dr. Santosh K. Pandey**, Scientist E, BSIP (Co-Convenor)

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