# **Annual Report of Centre for Geographical Studies**

The Centre For Geographical Studies (CGS) came in to existence vide Bihar Government notification-15/P 5-09/2016 Va'K -193, Date- 09.02.2018 as an autonomous institute affiliated to Aryabhatta Knowledge University. However, vide Bihar Government notification – 15/M 1-69/2021 – 1997, dated – September 20<sup>th</sup>, 2021, Centre for geographical studies is now a constituent unit of the Aryabhatta Knowledge University.

The Centre for geographical studies was established as a center of excellence by Bihar government with the basic objectives of teaching, training and undertaking research in the areas of geographical studies. The first enrollment in the Centre Ph.D. was taken in the session 2020-21 and the second enrollment for Ph.D. was taken in the session 2021-22. Presently total 08 Research Scholars are doing research in the Centre.

The first batch of M.A/M.Sc. in Geography was launched in 2022. M.Sc. in GIS and Remote Sensing, PG diploma and certificate courses in GIS and Remote Sensing courses will be started in the near future once the regular teaching positions are filled.

The Centre aims to become a premier and prestigious Institute of Geographical studies in the Bihar region. The growing need for quality education in the field of Geographical Studies and research led the Government of Bihar to establish the Centre for Geographical Studies as an institution of higher learning.

### Mission

- To build intellectual, creative, and practical abilities of the institution and students.
- To recruit and retain outstanding faculty to foster the advancement of developmental vision and mentoring emerging scholars to realize their highest potential and assume roles of leadership, responsibility and service to society.
- To create a wealth of Knowledge through rigorous research work and make vital publications.

## Vision

The Centre for Geographical Studies will be a cornerstone of learning and of academic excellence. It will be the destination of choice for meritorious students. This will be achieved by actively fostering learning and enquiry.

### Courses on offer :-

The 18<sup>th</sup> Academic Council held on 17.02.2022 approved the following courses for the Centre for Geographical Studies:-

- 1. Ph.D. in Geography
- 2. Post Graduate Diploma Programme (PGDP) in GIS & Remote Sensing
- 3. M.Sc. Programme in GIS remote Sensing
- 4. M.A./M.Sc. in Geography



At present, the Centre for Geographical Studies runs Ph.D. Programme and M.A/M.Sc. in Geography. At present, total 08 Research Scholars are doing research in the Centre and the course of M.A./M.Sc. is running for session 2022-24.

# Sanction of posts for CGS

The Bihar Cabinet decision held on 24.02.23 sanctioned 19 posts for the Centre for Geographical Studies. The Department of Education, Government of Bihar, Patna vide Letter No. 15/P 2-01/2011-740 dated 28.02.2023 sent a letter to the Aryabhatta Knowledge University in this regard.

# शिक्षा विभाग

16. आर्यभट्ट ज्ञान विश्वविद्यालय, पटना के मुख्यालय तथा विश्वविद्यालय में स्थापित 07 (सात) विमिन्न स्कूलों के लिए शिक्षकों, पदाधिकारियों एवं कर्मचारियों के कुल 201 (दो सौ एक) पदों के सृजन एवं उक्त स्कूलों में पूर्व में सृजित समन्वयकों के पदों को सहायक प्राध्यापक के पदों में परिवर्तित करते हुए इन पदों को स्कूलों के लिए सृजित किए जा रहे सहायक प्राध्यापक के पदों के अन्तर्गत परिगणित करते हुए वर्तमान में कार्यरत 03 (तीन) समन्वयकों को संबंधित स्कूलों के लिए सृजित किए जा रहे सहायक प्राध्यापक के पदों सहायक प्राध्यापक के पद पर अईता के आधार पर सेवा अन्तर्लीनीकरण की स्वीकृति प्रदान करने के संबंध में।

### 7790

स्वीकृत।

### Cabinet decision dated 24.02.23

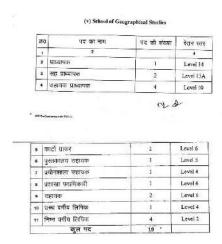
### बिहार सरकार शिक्षा विभाग

संचिका संख्या — 15/पी 2-01/2011

प्रेस नोट

आर्यभट्ट ज्ञान विश्वविद्यालय, पटना के मुख्यालय तथा विश्वविद्यालय में स्थापित 07 (सात) विमिन्न स्कूलों के लिए शिक्षकों, पदाधिकारियों एवं कर्मचारियों के कुल 201 (दो सी एक) पदों के सृजन एवं उक्त स्कूलों में पूर्व में सृजित समन्वयकों के पदों को सहायक प्राध्यापक के पदों में परिवर्तित करते हुए इन पदों को स्कूलों के लिए सृजित किए जा रहे सहायक प्राध्यापक के पदों के अन्तर्गत परिगणित करते हुए वर्तमान में कार्यरत 03 (तीन) समन्वयकों को संबंधित स्कूलों के लिए सृजित किए जा रहे सहायक प्राध्यापक के पद पर अर्हता के आधार पर सेवा अन्तर्लीनीकरण की स्वीकृति प्रदान की गई है।





List of teaching and non-teaching posts sanctioned for CGS

The activities conducted by CGS can be described under the following categories:

Date: 02 April 2022

Event Name: Campaign

Theme: World Autism Awareness Day
In collaboration with: Utkarsh Seva Sansthan

World Autism Awareness Day was organised by Centre for Geographical Studies, Aryabhatta Knowledge University, Patna on 2<sup>nd</sup> April 2022 in a collaboration with Utkarsh Seva Sansthan. The chief guest, Dr. Manisha Krishna, Secretary, Utkarsh Seva Sansthan gave a broad view over the World Autism Awareness Day.









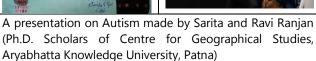


A presentation on Autism made by Saurabh and Vishwanath (Ph.D. Scholars of Centre for Geographical Studies, Aryabhatta Knowledge University, Patna)

A presentation on Autism made by Swati Singh (Ph.D. Scholar of Centre for Geographical Studies, Aryabhatta Knowledge University, Patna)











A presentation on Autism made by Kritika Priyadarshni (Ph.D. Scholar of Centre for Geographical Studies, Aryabhatta Knowledge University, Patna)





A presentation on Autism made by Poornima Kashyap (Ph.D. Scholar of Centre for Geographical Studies, Aryabhatta Knowledge University, Patna)



The Director's (Prof. Dr. Poornima Shekhar Singh) inaugural speech...



Prof. Surendra Pratap Singh (Vice Chancellor, Aryabhatta Knowledge University), Prof. Poornima Shekhar Singh (Director, Centre for Geographical Studies, Patna) and Dr. Rakesh Kumar Singh (Registrar, Aryabhatta Knowledge University) while the presentation on Autism by Dr. Manisha Krishna



Prof. Poornima Shekhar Singh (Director, Centre for Geographical Studies, Patna) elaborating about autism to media persons





Gifts were presented on the occasion of World Autism Awareness Day



Date: 22 April 2022
Event Name: Campaign
Theme: World Earth Day

In association with Aryabhatta knowledge University

World Earth Day was celebrated on 22 April 2022 at the Centre for Geographical Studies in association with Aryabhatta Knowledge University, Patna. A number of Neem and Arjun Trees were planted in the campus. Further, an essay competition was organised on the topic "Discuss in detail the ecological processes involved in the soil system, their relationship with human and its protection in context of World Earth Day, 2022".







# SAVE TREE SAVE LIFE

Dr. Rakesh Kumar Singh (Registrar, Aryabhatta Knowledge University), Prof. Poornima Shekhar Singh (Director, Centre for Geographical Studies, Patna), Er. Rajeev Ranjan (Examination Comptroller, Aryabhatta Knowledge University) and Er. Ramji Singh (Finance Officer, Aryabhatta Knowledge University), Employees of Aryabhatta Knowledge University and Ph.D. Scholars while the celebration of World Earth Day on 22<sup>nd</sup> April 2022



A group image of the Director, Coordinator, Employees and Ph.D. Scholars of CGS on the occasion of World Earth Day celebrated on 22<sup>nd</sup> April 2022

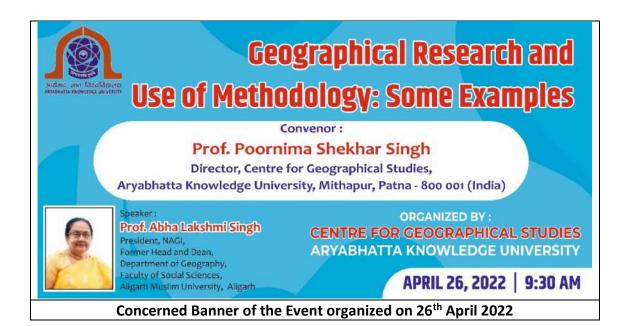
Date: 26 April 2022

**Event Name: Extra Mural Lecture** 

Theme: Geographical Research and Use of Methodology: Some Examples

Chief Guest: Prof. Abha Lakshmi Singh

A mural lecture by Prof. Abha Lakshmi Singh was hosted by Centre for Geographical Studies, Aryabhatta Knowledge University, Patna on 26.04.2022. The theme of the event was "Geographical Research and Use of Methodology: Some Examples".





A memento by Prof. Poornima Shekhar Singh (Director, Centre for Geographical Studies, Patna) to the Chief Guest Prof. Abha Lakshmi Singh (President, National Association of Geographers India)





An excellent lecture was delivered by Abha Lakshmi Singh, President, National Association of Geographers India (NAGI) on the theme Geographical Research and Use of Methodology: Some Examples.





A group image at the Extra Mural Lecture delivered by Prof. Abha Lakshmi Singh, President, National Association of Geographers India (NAGI), on 26<sup>th</sup> of April 2022 at the Centra for Geographical Studies, Aryabhatta Knowledge University, Patna.

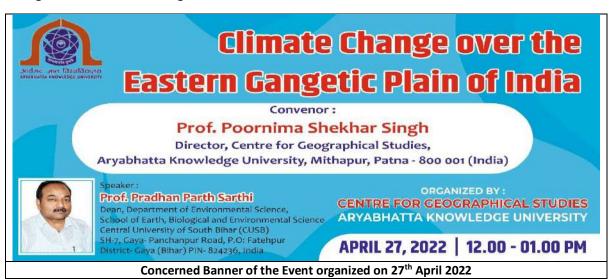
**Date: 27 April 2022** 

**Event Name: Extra Mural Lecture** 

Theme: Climate Change over the Eastern Gangetic Plain of India

Chief Guest: Prof. Pradhan Parth Sarthi

A mural lecture by Prof. Pradhan Parth Sarthi was hosted by Centre for Geographical Studies, Aryabhatta Knowledge University, Patna on 27.04.2022 at 12 p.m. The theme of the event was "Climate Change over the Eastern Gangetic Plain of India".





Gooseneck lamp was lit by Prof. Poornima Shekhar Singh, Prof. Pradhan Parth Sarthi (in the left image) and Er. Rajeev Ranjan (in the Right image) at the Inauguration of Extra Mural Lecture.



Greetings by Poornima Kashyap and Kritika Priyadarshni, Ph. D. Scholars of Centre for Geographical Studies, Patna





Adenium Plants were presented to Dr. Rakesh Kumar Singh (Registrar, Aryabhatta Knowledge University), Prof. Poornima Shekhar Singh (Director, Centre for Geographical Studies, Patna), Prof. Pradhan Parth Sarthi (Dean, Department of Environmental Science), Er. Rajeev Ranjan (Examination Comptroller, Aryabhatta Knowledge University) and Er. Ramji Singh (Finance Officer, Aryabhatta Knowledge University) as memento





The Director's (Prof. Dr. Poornima Shekhar Singh) inaugural speech...





An excellent lecture was delivered by Prof. Pradhan Parth Sarthi, Dean, Department of Environmental Science on the theme Climate Change over the Eastern Gangetic Plain of India.



Employees of Aryabhatta Knowledge University and Ph.D. Scholars while the lecture session...

Date: 09 May 2022

**Event Name: Workshop** 

Theme: Dashboard Presentation on Covid-19 Bihar Portal by State Health Society, Bihar

Chief Guests: Arvind Kumar (System Analyst cum DO)







The Director's (Prof. Dr. Poornima Shekhar Singh) inaugural speech...



A detailed overview on Dashboard Presentation on Covid-19 Bihar Portal by the Chief Guests, Arvind Kumar (System Analyst cum DO) and Ranjan Kumar (AD – HMIS, State Health Society, Bihar)



Dr. Rakesh Kumar Singh (Registrar, Aryabhatta Knowledge University), Prof. Poornima Shekhar Singh (Director, Centre for Geographical Studies, Patna) and Arvind Kumar



Ph.D. Scholars while Dashboard Presentation on Covid-19 Bihar Portal.



A group image at the Dashboard Presentation on Covid-19 Bihar Portal presented by Arvind Kumar (System Analyst cum DO) and Ranjan Kumar (AD – HMIS, State Health Society, Bihar), on 09<sup>th</sup> of May 2022 at the Centra for Geographical Studies, Aryabhatta Knowledge University, Patna.



The concerned article published in the newspaper

(System Analyst cum DO) while Dashboard Presentation on Covid-19 Bihar Portal.

Date: 09 May 2022

Event Name: 5-days capacity building workshop on

Theme: Geospatial Analytics and Post-COVID-19 Urban development for early career researchers under

**Urban Studies Foundation (USF)** 

Chief Guests: Hon'ble Minister Shri Sumit Kumar

Centre for Geographical Studies, Aryabhatta Knowledge University, Patna was the host institution for 5-days capacity building workshop on "Geospatial Analytics and Post-COVID-19 Urban development for early career researchers under Urban Studies Foundation (USF) Seminar Series Awards on "Recasting the City, Lives and Livelihood and Inequalities in the Post COVId-19 World (ReCLIC) in collaboration with University of Wolverhampton, United Kingdom. The program is planned for 17<sup>th</sup> May 2022 to 21<sup>st</sup> May 2022. In this workshop cum 5-days training program, resource persons and participants are from different states of India as well as United Kingdom.













### REPORT OF 5 DAYS EARLY CAREER WORKSHOP ON GEOSPATIAL ANALYTICS AND URBAN PLANNING

Five days International Workshop (17.05.2022 -21.05.2022) was launched in collaboration with Wolverhampton University, Urban Studies Foundation, United Kingdom on 17.05.2022 at Centre for Geographical Studies, Aryabhatta Knowledge University, Patna. The title of this international workshop is "Geospatial Analysis and Urban Planning". Hon'ble Minister, Shri Sumit Kumar Singh, Science and Technology Department, Govt. of Bihar, Patna was present as a Chief Guest in the Inaugural Session of the workshop. Shri Deepak Kumar Singh, Additional Chief Secretary, Education Department, Government of Bihar, Shri Rash Bihari Prasad Singh, Former Vice Chancellor, Patna University and Komali Yenneti, Wolverhampton University, United Kingdom were present as special guests. Key Note Speaker was from National Institute of Urban Affairs, New Delhi, Professor Debolina Kundu.

Prof. Kundu presented her Key Note Lecture titled – "Covid19 and Indian Cities". She said that there was a reduction in the level of consumption due to the effect of Covid-19. Problems like lack of income, shortage of food grains etc. have been noticed. She talked about the need to take various steps at the policy and implementation level and focused on people living in poverty. Prof. Kundu pointed out the emergence of new poor which can become a big problem if properly not taken care of. Thus, she emphasized on the need of real time tracking building, housing and the infrastructure.

Prof. Debolina also mentioned the United Nation's Moto - "Leaving no one behind". Dr. Komali Yenneti, from Wolverhampton University followed her. In her lecture on the study of urban heat island and its hotspots presented her views in the context of the construction of Dashboard by Covid, urban planning, and capacity building plans through 3D modeling. After this, Prof. Rash Bihari Prasad Singh, former Vice Chancellor, Patna University said that our country and the state of Bihar need new technology-based skilled people in huge quantity who can do the work of urban Centre, urban planning through GIS and remote sensing. For this, he told that at present the rate of urbanization in Bihar is very low. Many problems are emerging due to new urban planning in small towns of Bihar like Muzaffarpur, Bhagalpur, Gaya etc. In such a situation, the result or report of this workshop can be used by the government for planning so that the society can get maximum benefit.

Shri Deepak Kumar Singh, Additional Chief Secretary, Education Department, Government of Bihar also expressed his views in this regard. He told on the basis of observation that Urban Heat Island is becoming a widespread problem. At present, the temperature of a metropolis like Delhi has gone up to 46 °C in Patna. The main reasons for this are the structures made of concrete, bitumen and glass. All these factors are responsible for the rise in temperature.

Drawing attention to the drainage system of the cities, he stressed on the need to locate the water bodies around the cities and also told that it is not practical to completely abolish the old drainage systems. Its conservation and promotion need attention. Hon'ble Minister Shri Sumit Kumar Singh, the chief guest of this program, extended his best wishes for the successful organization of this international workshop. He said that the Geographical Studies Centre was established with the thinking of the Honourable Chief Minister Shri Nitish Kumar, which seems to be fruitful. He said that whatever results come from this workshop, there is a need to reach it to the general public so that everyone can benefit from it. The second day of the International Workshop was successfully completed on 18-05-2022. In the second day's workshop, firstly Atul Saini of Delhi University presented his lecture on the topic - "Climate Change in Cities and Modeling". He observed that there is a rapid change in temperature. Presenting his research with the help of various models, he said that at present the temperature rise in Leh and Ladakh region is an unusual and untimely phenomenon.

He also described the characteristics of various sensors of the satellite and gave a detailed description of different types of climatic maps.

After this, Prof. Komali Yenneti of Wolverhampton University presented her lecture on the urban heat island. In her lecture, she discussed various reasons responsible for the increase in temperature in

cities, she also talked as to how the temperature can be reduced with the help of various parameters which was presented as a model through example maps of many cities of the world.

Again, the practical class was conducted by N. N. Salghuna of Madras University. She apprised the students present in the workshop about the various techniques of making Landsat map.

The third day of the International Workshop was successfully completed on 19.05.2022. On the third day a short lecture was presented by Dr. Pankaj Kumar, Associate Professor, Delhi School of Economics, University of Delhi. He presented the analysis in terms of the functionality of GIS. He was followed by Ranjan Kumar, a representative of the State Health Society, Govt. of Bihar. He discussed in greater details the preparation of battle with the Covid-19. He discussed the various processes of the data collection through various technical software and accordingly the decisions were taken at different level. Through his presentation, he made it clear that as the preparation went on, the strong software was built in due process.

With the help of these software, the data was linked from the PHC level to the National level New Delhi. From sample collection of Covid 19 to its identification and sending it to the laboratory, work used to be done with the help of GIS. Along with this, information was given to the investigator through SMS and it was continued all through the inspection process till the patient become healthy. He also told that the help of this type of portal was taken to ensure the availability of oxygen cylinders along with ensuring the beds in the state hospitals through various portals.

In the Hands-on session, N.N Salghuna who is head and proprietor, member of Active Spatial Science Research Group, told us about a new app called tableau from which Dashboard can be created. During this learning session, any data, description can be represented by statistical details like construction of map, bar diagram etc. Finally, in the workshop by Naga Venkata Sai Kumar Manapragada, Assistant Professor, Manipal University, talked about new software like Python, Anaconda and Spider and explained the importance in the research work.

The fourth day was successfully completed on 20.05.2022. The International Workshop of the Fourth Day began with a lecture by Dr. Anil Kumar Roy, Associate Professor, Faculty of Learning, CEPT University, Ahmedabad. The title of his lecture was "Knowledge, Skill and Employability of Planning Profession". In his lecture, Dr. Roy, firstly described the history related to the planning from the very beginning till the date. He also talked about the planning in different regions like Europe, Africa, Asia, India etc. Accordingly, there has been a change in its form. In India, the planning first started in 1955 and till now the various dimensions of the planning has been developed.

He observed that the educational planning is going through various types of changes. In the past, planning was used for industrialization, urbanization and modernization but now there is a paradigm shift towards multi-disciplinary approach, which includes civil engineering, geography, economics, social science, political science, architecture, law, information technology, etc. Through this the approach of holistic planning can be realized.

Dr. Roy stressed that the land use plannings are done under three main categories, namely, physical or spatial planning, socio-economic planning and design planning. He emphasized the need for collaborative research analysis in the field of planning, which is not being used at a bigger scale.

Dr. Roy also talked about the need for gender planning in the present-day context and also to keep in mind the climate change for the future of planning.

At present there are a total of 4500 planners in the country but by 2030, the country will need about three lakh planners as said by Dr. Anil Roy. Finally, while discussing the problems related to planning in the urban area at present, he said that planning can be successfully done with new technology but community participation is must. He explained the various methods of operating the Rhino Grasshopper tools while creating the Urban Geospatial strata for Sustainable cities and communities.

He told that with the help of this tool, urban modelling and analysis, study of urban heat island, study of urban heat island and wind speed can be done.

After that Naga Venkata Sai Kumar Manapragada, Assistant Professor, Manipal University explained the various methods of operating the Rhino Grasshopper tools while discussing the Urban Geospatial strata for Sustainable cities and communities. He told that with the help of this tool Urban Modelling and Analysis, Study of Urban Heat Island, Study of Wind Speed can be done.

On the last day, presentations were given by research participants in the workshop (21.05.2022). It was given through various software already taught in the classes during the workshop of the last four days. Participants were divided into two groups. The name of the participants of group -A are Swati, Ravi Ranjan, Kritika, Poornima, Sarita, Saurav, Vishwanath and Rahul. The topic of the Presentation of Group-A is "Groundwater Pollution Assessment of Nalanda District". They discussed about the groundwater level of Pre-monsoon and Post- monsoon period and also presented different maps of groundwater level, rainfall and flourid level.

The name of the participants of group -B are Amol Jarag, Pravin, Sasanka Ghosh, Budhadev Hembram, Vidya, Bhawana and Kanan. The topic of the Presentation of Group-B is "Identification of Flood Inundations of Patna District using GEE (Google Earth Engine)". They discussed the impact of flood on land use and land cover of Bihar and Patna through different maps.

After that Sriparna Saha, Associate Professor, IIT, Patna delivered a talk on "Future of Data Analytics". She discussed about introduction of data, features of data analytics techniques, application of data analytics techniques in survival prediction of cancer patients. She also discussed chat-bot development and many real-life applications.

**Date: 23 August 2022** 

**Event Name: One Day Seminar Cum Lecture** 

Theme: Only One Earth

In collaboration with: Save International Patna

A seminar-cum-lecture on the theme Only One Earth was organised by Centre for Geographical Studies, Aryabhatta Knowledge University, Patna on 23<sup>rd</sup> August 2022 in the collaboration with Save International Patna. The chief guest, Dr. Janardan Jee, President, Save International gave a broad view over the topic "Only One Earth".



Gooseneck lamp was lit by Prof. Poornima Shekhar Singh (Director, Centre for Geographical Studies, Patna) and Dr. Janardan Jee, President, Save International at the Inauguration of the event.





An extensive lecture was delivered by Dr. Janardan Jee, President, Save International on the theme "Only One Earth", where Prof. Poornima Shekhar Singh, Er. Rajeev Ranjan (Controller of Examination, Aryabhatta Knowledge University) and Sri Ramjee (Finance Officer, Aryabhatta Knowledge University) witnessed the event.



Trees were planted on the in the presence of Sri Ramjee (Finance Officer, Aryabhatta Knowledge University), Er. Rajeev Ranjan (Controller of Examination, Aryabhatta Knowledge University), Dr. Rakesh Kumar Singh (Registrar, Aryabhatta Knowledge University), Prof. Poornima Shekhar Singh (Director, Centre for Geographical Studies, Patna), Dr. Kumari Anjana (Deputy Registrar, Aryabhatta Knowledge University) and Dr. Janardan Jee, President, Save International etc.

Date: 09 December 2022 Event Name: Lecture

Theme: Spiritualism vs. Modernization Chief Guests: M. Hanumant Rao Jee



Concerned Banner of the Event organized on 9th December 2022





A detailed overview on Spiritualism vs. Modernization by the Chief Guests, M. Hanumant Rao Jee





Guests while the Presentation.



A group image at the event of Spiritualism vs. Modernization, on 09<sup>th</sup> of December 2022 at the Centra for Geographical Studies, Aryabhatta Knowledge University, Patna.

Date: 04 August 2023

**Event Name: Seminar for P.G. Students** 

Theme: Research Methodology

Speaker: Dr. Sanjeev Kumar, Raiganj University, West Bangal

A lecture for Post Graduate Students was organised by Centre for Geographical Studies, Aryabhatta Knowledge University, Patna on 4<sup>th</sup> August 2023. The chief guest, Dr. Sanjeev Kumar, Raiganj University, West Bangal gave a broad view over Research Methodology.



Concerned Banner of the Event organized on 4th August 2023



Lecture delivered by Dr. Sanjeev Kumar, Raiganj University, West Bangal to the Research scholars and P.G. students of the Centre





# **Student Achievements**

# **UGC NET/JRF**

It was a proud moment for Centre for Geographical Studies, Aryabhatta Knowledge University, Patna as the Ph.D. Research Scholar Kritika Priyadarshi qualified for UGC NET JRF award and M.A. second semester student (2022-24 batch) Shantanu Kumar qualified for UGC NET Exam, June 2023.

