



AMITY UNIVERSITY MAHARASHTRA

Established vide Maharashtra Act No. 13 of 2014, of Government of Maharashtra, and recognized under section 2(f) of UGC Act 1956.

A Report on



SDG-17: Partnership For the Goals

Sustainable Development Goals Year 2020

Amity University Maharashtra, Bhatan Post - Somathne,
Mumbai - Pune Expy, Panvel, Bhatan Pada,
Maharashtra 410206



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GOAL 17: Partnerships to achieve the Goal

Introduction

This report is prepared to summarize the MoUs signed to achieve excellence in teaching, research, and collaborations. The University has entered into the various MOUs to achieve Sustainable Development Goals.

Partners for SDG

Level	Partner for SDG	Contribution to SDG
Regional	MoU with Param Foundation	SDG2
International	University of Cincinnati	SDG3
International	Wuyi China and Evergreen University	SDG3
National	Institute of Acupuncture and Natural Medicines, New Delhi.	SDG3
Regional	LTM Medical College and General Hospital Sion, Mumbai	SDG3
Regional	Jagruti Rehabilitation Center Taloja, Navi Mumbai	SDG3
Regional	Public Health Department Government of Maharashtra	SDG3
National	Prokaryote Lab	SDG3 & SDG4
National	Vrovafacets	SDG3 & SDG4
National	Annotation Analytics	SDG3 & SDG4
National	Gumpro	SDG3 & SDG4
International	Liverpool John Moores University England	SDG4 & SDG11
International	RMIT, Australia	SDG4 & SDG11
International	List of 25 Foreign Universities	SDG4
Regional	Mahatma Phule Arts, Science and Commerce	SDG4



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	College, Panvel	
National	JMS Mining Pvt Ltd.	SDG9
National	CEMS	SDG9
Regional	Instron Technologies	SDG9
Regional	Digitech Confidential	SDG9
National	Paras Defence and Space Technologies Limited	SDG13, SDG14, SDG15
International	Open University UK	SDG13, SDG14, SDG15
International	Blue Marble Space Institute of Science	SDG13, SDG14, SDG15
International	Mars Society Australia	SDG13, SDG14, SDG15
National	Birbal Sahni Institute of Palaeosciences	SDG13, SDG14, SDG15
National	SatSure	SDG13, SDG14, SDG15

Collaboration with NGOs for SDGs

Amity Institute of Liberal Arts (AILA) at the Amity University Maharashtra collaborating with the various NGOs like Udan Foundation, YRG Care, Kotak Foundation, Wockhardt Foundation, Reliance Foundation, Shree Mukti Sanghatana, SWASTI, Childline 1098, Khula Asman, TISS CSR Hub, and Sanjeevani – Life beyond Cancer.

Through these collaborations, the Bachelor of Social Work (BSW) students actively participate in a field visits, social work, and community activities. The outcome of these activities is to provide awareness among the poor and deprived sections of society. The University's contribution is for the various Sustainable Development Goals such as Good Health and Well-beings, Zero Hunger, No Poverty, and many more.

Amity Institute of Liberal Arts - AUM has communicated with the five schools from the Bhatan village near Amity University Maharashtra, and the Students have started the fieldwork. Communication with the school principals initiated washing hands, value building, morale building, and inculcating healthy habits. Faculty Ms. Meera Limaye, Faculty member AILA initiated the Activity with the woman group and trained them for bread making and selling and starting a shop at Bhatan Village.

The summary of the activities ongoing with various NGOs as following.



NGO	Activity Summary
Udan Foundation	Working with HIV People (couple and children) AUM students have been working with the Udan foundation, Since 2017.
YRG Care	YRG Care works with HIV Positive children. They conduct residential camps. AUM Two students are working with YRG Care NGO
Kotak Foundation	Ms. Meera Limaye Madam communicated with CRC and arranged to send students for fieldwork and internship. In Even Semester 2020, a total of 8 students conducted fieldwork.
Wockhardt Foundation	In association with the Wockhardt Foundation, 02 Students have worked in the field, and the Organ donation awareness camps were conducted in 4 colleges. At Fanaswadi, fruit-bearing plants donated 02 pants for each house. A total of 70 plants were donated.
Reliance Foundation	AUM Four students worked for the fieldwork and internship. They work on-site at slum areas Navi-Mumbai, Aeroli, Katkari Pada, Working on Mal-Nutrition.
Shree Mukti Sanghatana	AUM 01 Girl Student worked as an intern, and she created the group of Ragpickers women. In addition, she created awareness about savings and Wet Compost making camp. The Activity resulted in the In-orbit space, Big Bazaar (Vashi).
SWATI	SWATI works in Community development (Health-related, prevention, and awareness). During the State level meeting, the BSW faculty received an Award and trophy. There is planning to conduct a WASH project in Collaboration. In addition, SWATI people Visited Amity and conducted a lecture.
Childline 1098	Government helpline. (In-Communication)
Khula Asman	Khula Asman works on the Psychology issues of children, Community development. How to council on movement therapy (Use of Dance), Best out of West. Two students of AUM



	conducted a leadership development and team-building workshop near a Lallu Bhai Compound Municipality school.
TISS CSR Hub	Semester 3 & 4 MSW students worked here regarding the scrutiny of the NGOs applications for CSR.
Sanjeevani – Life beyond Cancer.	AUM Students completed as an intern and worked as employees to contribute and help the patients and families suffering from cancer.

International Collaboration

MOU with University of Cincinnati

The Amity Institute of Biotechnology and the University of Cincinnati entered into the cooperation between their faculty and scientists, departments, and research center within fields that are mutually acceptable and visits by and exchange of doctoral students, faculty members, and scientists for research and courses. The Scope of the MOU covers Intellectual Property and Publications for the duration of 5 years. The MOU is signed on 13th April 2021.

MOU with RMIT, Australia

The School of Property, Construction & Project Management, RMIT University Australia, and RICS School of Built Environment, Amity University Maharashtra entered into MOU for the cooperative relationship for the general purpose of promoting educational, research, and cultural programmes for the mutual benefits of both parties, such as

- a) Development of admission/articulation agreements and educational programs.
- b) Cooperation on academic, administrative, and curriculum matters;
- c) Collaboration on research projects
- d) Exchange of academic and administrative staff and students.

The MOU is signed on 22nd March 2017, and for the duration of the three years.



MoU with Liverpool John Moores University England

Department of the Built Environment, Liverpool John Moores University and RICS School of Built Environment, Amity University Maharashtra entered into the MOU with the following objectives.

- a) Development of admission/articulation agreements and educational programs.
- b) Cooperation on academic, administrative, and curriculum matters;
- c) Collaboration on research projects
- d) Exchange of academic and administrative staff and students.

The MOU was signed on 04 July 2017 for the duration of the three years.

MOU with Wuyi China and Evergreen University

Symposium on Art, Culture, and Mind is organized to bring together students from AIBAS, Amity University, India; WuYi University, China; and The Evergreen University, USA, to share the cross-cultural ideas on Art, Culture and Mind, specific to their country of origin and culture. Our objective for the Symposium is for students to interact in small groups and then share their new learning and cultural competency in the larger group. Under the Collaboration, the International Symposium on Cross-Cultural Learning “Art, Culture and Mind” were conducted on November 21, 2020

MOU with List of Foreign Universities for Quality of Education

List of foreign institutes having exchange programs (both student and faculty) with our institutes. The Global Study Programmes and 3 Continent programmes offered by Amity University Maharashtra in Collaboration with the Following universities.

1. University of Birmingham
2. University of Queensland, Australia
3. Deakin University, Australia
4. Queen Mary University of London
5. Curtin University
6. Swinburne University of Technology
7. University of Northampton
8. University of Canberra



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9. RMIT University
10. Brunel University, London
11. University of New Castle, Australia
12. University of Denver
13. Adelphi University, New York
14. University of Massachusetts, Amherst
15. Presidio Graduate School
16. Iowa State University
17. Monash University
18. University of Western Australia
19. University of Kentucky
20. University of Portsmouth
21. La Trobe University, Australia
22. University of Roehampton, London
23. Columbia University/
24. John Hopkins University – whiting school of Engineering
25. Lincoln University

MoU with Param Foundation

The MoU is signed with Param Foundation after realizing the difficulties faced by the Community living in the villages in the neighborhood of the University Campus. This exposure has equipped Amity University Maharashtra to technically understand the needs of the residents of these villages and carry out activities to equip them with skill and knowledge. The MOU was signed on 20th March 2020.

AUM has the intent and human resources to provide skill development and training in cutting and stitching and related areas for a community development project in villages around AUM. Param Foundation, Navi Mumbai, has provided thirty sewing machines to ASFDT AUM as support in the area of skill development and training in cutting and stitching for community development.

MOU with Prokaryote Lab (Hydrocarbon)

Amity Institute of Biotechnology at Amity University Maharashtra and Prokaryotes Lab Pvt. Ltd, Bangalore, India entered into 15th July 2019 on Sustainable Development Goals and following objectives



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- a) Conduct joint research activities on the project entitled "Development of Hydrocarbon degrading Kit" and within the fields of interest with projects that are mutually agreed upon and subject to the availability of funds.
- b) Participate in conferences, symposia, and seminars of mutual interest
- c) Collaborate in joining research in the thrust areas of the respective company institute, and file patents, and publish research findings.
- d) Cooperate to solicit joint proposals for funding from various funding agencies and exchange scientific information and documentation, both written and electronic.

MOU with Vrovafacets

Amity University Maharashtra and Vrovafacets Private Limited Bangalore Singed MOU on 5th January 2021 for Sustainable Development Goals and in the benefits of the Community with the following objectives:

- a) Conduct joint research activities on the project entitled "Product of high-quality food-grade agar from seaweed" and within the fields of interest with projects that are mutually agreed upon and subject to availability of funds.
- b) Participate in conferences, symposia, and seminars of mutual interest
- c) Collaborate in joint research in the thrust areas of the respective Company-University, file patents, and publish research findings.
- d) Cooperate to solicit joint proposals for funding from various funding agencies and exchange scientific information and documentation, both written and electronic

MOU with Annotation Analytics

Amity University Maharashtra and Annotation Analytics Pvt. Ltd, Gurgaon Haryana, Singed MOU on 9th December 2019 for Sustainable Development Goals and in the benefits of the Community with the following objectives:



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- a) Conduct joint research activities on the project entitled "Product of high quality food grade agar from seaweed" and within the fields of interest with projects that are mutually agreed upon and subject to availability of funds.
- b) Participate in conferences, symposia, and seminars of mutual interest
- c) Collaborate in joint research in the thrust areas of the respective Company-University and file patents, and publish research findings.
- d) Cooperate to solicit joint proposals for funding from various funding agencies and exchange scientific information and documentation, both written and electronic

MOU with Gumpro

Amity University Maharashtra and Gumpro Drilling Fluids Pvt Ltd, Mumbai Signed MOU on 6 November 2019 for Sustainable Development Goals and in the benefits of the Community with the following objectives to execute the project entitled "Production of Gum for drilling fluids using biotechnological approach", subject to the availability of funds. Under the Collaboration, the Chiller Unity for Reactor equipment was delivered and installed.

Memorandum of Understanding Signed with CEMS

The AUM's Steps towards the Industry, Innovations and the Infrastructure Development the Memorandum of Understanding is signed between the Amity School of Engineering & Technology, AMITY University Maharashtra, and Centre of Excellence in Maritime & Shipbuilding (CEMS).

Amity School of Engineering & Technology, AMITY University Maharashtra has signed MOU with the Centre of Excellence in Maritime & Shipbuilding (CEMS) on 3rd Feb 2020. CEMS is promoted by the Indian Registrar of Shipping, Sagarmala, Ministry of Shipping, Govt of India. CEMS has Software and Physical Lab facilities in Mumbai and Vizag set up by Siemens India Ltd worth Rs 800 Crore. This will help to avail lab facilities set up by Siemens at Powai and Vizac for students and faculty of Amity.



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The main objectives of MOU are:

- Access and training for students of Amity
- Diploma and Certificate courses at nominal cost
- Training for pass out students
- Internships to the Amity students
- Faculty Development programs and access to the labs
- Availability of labs for undertaking industry projects and experiments
- Research scholars can use CEMS labs
- CEMS will set up a remote center at Amity.

Further, there will be access to high-end software and facilities like CAD/CAM, Robotics, Plant Design, Product design, Digital manufacturing etc, which useful to some schools and research scholars/students.

Memorandum of Understanding (MoU) with JMS Mining Pvt Ltd.

Memorandum of Understanding (MoU) Between Amity School of Engineering & Technology, Amity University, Maharashtra And JMS Mining Pvt. Ltd. Dongfang Electric (DEC) Building, 3rd Floor, Premises No. - 16, MAR - 1111, Action Area - 1A, New Town, Rajarhat, Kolkata - 700 163, WB, India Is signed on 03/06/2021. JMS (A Simplex Infrastructures Associate Company) is a mining company that has pioneered in introducing Mass Production Technology (MPT) using Continuous Miners (CM) in underground coal mines in India and is leading in the industry. The scope of the Activity under this Collaboration will be contained with respect to Coal mines for Proximity Detection.

MOU with the Institute of Acupuncture and Natural Medicines, New Delhi.

The memorandum of Understanding is signed on 9 December 2020



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between the Amity University and Institute of Acupuncture and Natural Medicines, New Delhi.

The possible areas of cooperation are

- a) Joint Research
- b) Joint projects
- c) Dissertation projects for AU and IANM
- D) Organizing Joint Seminars and Conferences
- e) Joint publication
- f) Internship to the Students
- g) Any other collaborations deemed to be fit from time to time.

MOU Singed - The Society for the Rehabilitation of Crippled Children

AIBAS -AUM Singed

The Society for the Rehabilitation of Crippled Children

MoU Signed Dated 23rd September 2019.

The Collaboration is for the Approval for placing M.Phil. Clinical Psychology Students.

MOU Singed LTM Medical College and General Hospital Sion, Mumbai

MoU signed between LTM Medical College and General

Hospital Sion, Mumbai Dated 26th December 2019.

MOU Singed Jagruti Rehabilitation Center Talaja, Navi Mumbai

AIBAS-AUM has signed the MoU with Jagruti Rehabilitation Center Talaja, Navi Mumbai Singed Dated 12th February 2020 for the following objectives.

- Capacity Building in Primary Care to deliver quality mental health.



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- Provide quality secondary care and advice to primary Care
- Use Principles of Clinical Psychology as appropriate
- Enhance public education on mental health to combat stigma against mental health
- Collaboration to enhance mental wellbeing
- Participate in developing training in mental health at the individual and community level.
- Mental Health training to providers of education and social work.

MOU Singed Public Health Department Government of Maharashtra

AIBAS-AUM has signed the MOU with the Public Health Department Government of Maharashtra. Dated 4th January 2020

MoU Signed with Instron Technologies

Amity Institute of Information Technology has entered into the MoU with Instron Technologies with the following objective.

- The MoU is for the research and academic development of faculty and students of the Institution and the mutual benefits of both collaborating parties.
- These functional MoUs with institutions/ industry will provide the opportunity to the students for internship, on-the-job training, project work, student and faculty exchange, and collaborative research with the mutual Understanding between both parties.
- Bridge the gap between industry and academics by training students in industrial approaches and technologies.
- Train and motivate students to learn to ideate and implement their own ideas that solve social and industrial problems.



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- Bringing holistic thinking in students, and train students, and doing initial mentorship.
- Enable students to participate and bag laurels at National and International level Conferences/Seminars/Contests.
- Increase employability by developing technical skills in the students.
- Providing the best technical internships to the students from the college.
- Conducting workshops in the latest technologies by industry experts.
- Encourage cross-functional learning by facilitating multi-disciplinary areas.
- Establish connect with the student in the college and have a constant conversation with them to motivate them to become the best IT professionals possible.
- Facilitate joint-research using company's and college premises.
- Provide research projects to teaching faculties to enhance the quality of education.
- Educating the students about the various opportunities available in the IT Industry.

MoU Signed with Digitech Confidential

Amity Institute of Information Technology has entered into the MoU with Digitech Confidential dated 8th June 2020 with the following objective.

- The MoU is for the research and academic development of faculty and students of the Institution and the mutual benefits of both collaborating parties.
- Bridge the gap between industry and academics by training students in industrial approaches and technologies.
- Train and motivate students to learn to ideate and implement their own ideas that solve social and industrial problems.
- Bringing holistic thinking in students, and train students, and doing initial mentorship.
- Enable students to participate and bag laurels at National and International level Conferences/Seminars/Contests.
- Increase employability by developing technical skills in the students.
- Providing the best technical internships to the students from the college.



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- Conducting workshops in the latest technologies like GDPR & Data Protection Policies, Data Subject Access Requests, and Data Processing Agreements by industry experts.
- Encourage cross-functional learning by facilitating multi-disciplinary data protection and security-related projects.
- Establish connect with the student in the college and have a constant conversation with them to motivate them to become the best IT professionals possible.
- Facilitate joint-research using company's and college premises.
- Provide research projects to teaching faculties to enhance the quality of education.
- Educating the students about the various opportunities available in the IT Industry.

MOU between AUM and Mahatma Phule Arts, Science and Commerce College, Panvel

MOU is signed between ASAS- AUM and Rayat Shikshan Sanstha's Mahatma Phule Arts, Science and Commerce College, Panvel- Raigad (Maharashtra) dated 7th February 2019. The Collaboration is for

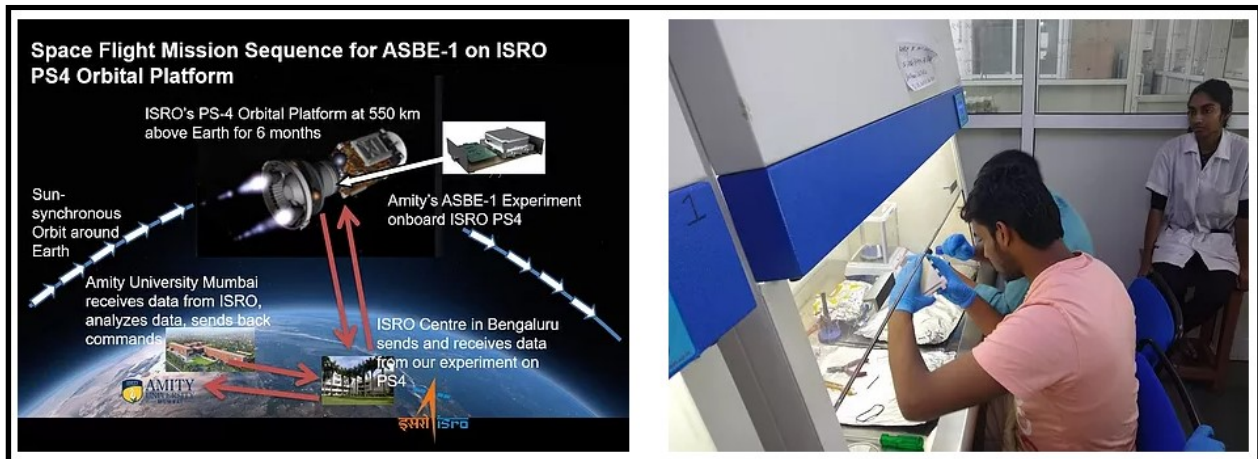
- a) Teaching, Research, and Training in selected and advanced thrust areas of science and technology with special reference to the applied sciences.
- b) Intellectual property rights
- c) Science and Technology Transfer wherever it is possible and necessary.

Amity Centre of Excellence in Astrobiology MoUs



AMITY
UNIVERSITY
— MUMBAI —

Our Centre is developing microgravity bioscience experiments for low Earth orbit



Our Centre is involved in studying the impact of reduced gravity on the growth and health of high-yielding plant crops. We have designed and developed in partnership with Paras Defence and Space Technologies Limited, the Amity Space Biology Experiment-1 (ASBE-1) which has been selected for flight as part of the Satellize SpaceShare Package on ISRO PSLV C49 PS-4 platform.

Amity Space Biology Experiment-1 (ASBE-1)

The Amity Space Biology Experiment-1 (ASBE-1) is our first spaceflight experiment. It has been designed and developed at Amity University Mumbai in partnership with Paras Defence and Space Technologies Limited. The experiment has been selected for flight as part of Satellize SpaceShare Package on ISRO PSLV C49 PS-4 platform. This will be India's first biological experiment in Space.



ASBE-1 Engineering Team with the flight payload prior to handover.



ASBE-1 Team integrating plant samples within hardware for tests.

Research Motivation

- Gravity sensors are critical to plant survival, affect fundamental plant biology.
- To support humans in space, need to study the effect of space environment, mainly microgravity on the growth of high-yield plants.
- Learning exercise for students in design, assembly of space payload.
 - Hardware design, fabrication and assembly
 - Spaceflight software coding and testing
 - Life science payload handling and integration
 - Spaceflight Documentation and Presentation


Callus samples

Why plant?

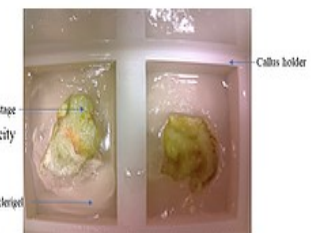
- Remarkable developmental plasticity = Regeneration capacity
- High versatility, respond to environmental challenges

Why Callus?


- Whole plant can be regenerated in one step
- Slow growth, time to study each stage of changes



Fengler et al., 2015, *Arabidopsis* callus



Our payload image: *Callus, Nicotiana* - 1 month old



ATCM PTC Lab Callus lab 3 months old

ASBE-1 Team

Project Manager: Dr Siddharth Pandey

Science Leads: Dr Renitta Jobby (Assistant Professor, Biotechnology, Amity Mumbai)

Dr Pamela Jha (Assistant Professor, Biotechnology, Amity Mumbai)

Mechanical Engineer: Mr Kartik Agrawal (B Tech AE 4th year, Amity Mumbai)

Electrical Engineer: Mr Akshay Ghaywat (B Tech EE 4th year, Amity Mumbai)

Software Engineer: Mr Ashish Sam (B Tech CSE 4th year, Amity Mumbai)

Biotechnologist: Ms Abigail Fernandes (MSc Biotech, Amity Mumbai)



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Off-Earth Drilling Technology Development

Lunar water and minerals are precious space resources that will support human exploration and future trade and commerce. With Chandrayaan-1, India has confirmed a significant presence of water in the Lunar south pole region. Data from Chandrayaan-2 will reveal the global abundance and locations for further analysis. The next missions would require the ability to acquire subsurface samples to characterize the volatiles and identify the locations at the south polar region. Drilling is a crucial piece of technology that would be required to search for signs of life under the surface of Mars and Icy Moons. Our lab is involved in studying the effect of the lunar near-surface and subsurface environment on the performance of drill systems for sample collection and handling systems.

Lunar Drill Development Summer Internship 2020

Students from Amity University Mumbai and IIT Bombay are currently undertaking summer internships with Dr. Siddharth Pandey, studying various aspects of lunar drill design and analysis.

Team

Neha Maanju, B Tech 2nd Year, ME, IIT Bombay

Nilay Awasthi, B Tech 3rd Year, ECE, Amity University Mumbai

Sipra Sonali Pradhan, B Tech 2nd Year, ME, IIT Bombay

Vedanth Sharma, BTech 2nd Year, AE, IIT Bombay

Paras Defence and Space Technologies Limited

Space Technology Development

Amity University has signed an MoU with Paras Defence and Space Technologies Ltd. to collaborate on the design and development of microgravity-based research hardware. This allows Amity's students to undertake hands-on training in building spaceflight hardware and software systems.



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Open University UK

Astrobiology Research, Student Training and Education Outreach

Amity University and Open University UK signed an MoU in September 2019. One of the primary focal areas of Collaboration is the exploration of hypersaline microbial environments that are early Mars analogues. Amity and OU are also partnering on engaging with the general population for Space education outreach.

Blue Marble Space Institute of Science

Astrobiology Education and Communication

Amity and BMSIS have been collaborating since August 2016 on Astrobiology education, outreach, and science communication. Blue Marble Space has a vast network of space scientists from NASA, NSF, and major universities in the US, Europe, and other parts of the world.

Mars Society Australia

Mars Analogue Research and Education

Amity and Mars Society Australia (MSA) have been partners since August 2016 while exploring Ladakh, India, as an early Mars analogue. MSA researchers have mentored Amity students on Mars habitat design projects.

Birbal Sahni Institute of Palaeosciences

Mars Analogue Research and Education

Amity students and researchers are actively collaborating with scientists at BSIP to work on the geo-scientific aspect of the field.

SatSure

Mars Analogue Research and Education



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SatSure is providing remote sensing data to the researchers. The data about Earth will help researchers understand more about particular analog sites.