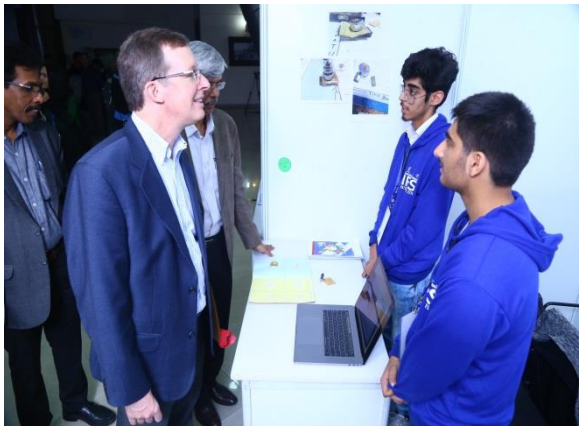
Initiative for Research & Innovation in STEM (IRIS) 2018

The Initiative for Research & Innovation in STEM (IRIS) 2018 is a Public – Private partnership program that encourages school children to create indigenous solutions for local problems and put India on the global innovation map. It promotes and nurtures scientific research among young Indian innovators, recognizes outstanding projects in the field of Science, Technology, Engineering, and Mathematics (STEM), and provides a platform to showcase them at a global stage through Intel ISEF.

IRIS 2018 was held at the Sam Manekshaw Centre, New Delhi, from 2-4 December 2019 which saw the brightest young innovators from across the country showcasing their projects.

Intel ISEF is a unique platform for young children to showcase their innovations and be selected as Team India who get an opportunity to represent our country and compete against young innovators from 80 other countries at Intel® International Science & Engineering Fair to be held in the United States in May 2019.



At the three-day national fair held from December 2-4, 2018 a total of 78 projects selected through a two level evaluation process, from 1500 online applicants from across India, were showcased by 106 students vying for the IRIS Grand Awards. An expert jury comprising of 25 judges, including members of the IRIS Scientific Review Committee, and external Judges from the Scientific Community selected the top 20 projects.

These winning projects will get an opportunity to represent our country and compete against young innovators from 80 other countries at Intel® International Science & Engineering Fair to be held in the United States in May 2019, as Team India to Intel ISEF.

Highlights of the event:

- A total of 106 students from across the country came together to display their creative genius and celebrate innovation.
- Enthusiastic Students and Teachers from 15 Schools in the Delhi NCR region attended the event during the Public Visitation day
- Fireside Chat on "Building Innovation Capacity for the Youth" discussing ideas about innovation and entrepreneurship streak in young entrepreneurs was organized and the panelists were:
    - Dr. Arabinda Mitra, Scientific Secretary Office of the Principal Scientific Advisor to Government of India
    - Mr. J. Robert Garverick, Counsellor for Economic Affairs, Environment Science and Technology
    - Mr. Sujit Banerjee, Director, NCSTSC, Dept of Science & Technology, Government of India
    - Dr. Sultan Ahmed Ismail, Chairperson, Scientific Review Committee, IRIS
    - Ms. Sharon Snyder, Manager International Affairs, Society for Science and Public, Washington DC

- Dignitaries on the award ceremony held on 4 December 2018 included :
    - Ms. Meenakshi Lekhi Member of Parliament from New Delhi constituency
    - Prof. Ashutosh Sharma Secretary to Government of India Department of Science and Technology
    - Dr. Rajiv K. Tayal Executive Director, Indo-US Science and Technology Forum
    - Dr. Anjan Ghosh, Global Director, Intel Corporate Affairs

- 20 winner Projects with a total of 27 students will represent India at the Intel ISEF in Phoenix, Arizona, USA in May 2019

<u>IRIS 2018 Winners</u>:

S. No.	**Subject Category**	**Title**	**Names**	**School**
1.	Animal Sciences	The efficacy of the suction - bait trap in controlling bactrocera cucurbitae (melon fruit fly) in the agricultural fields of cheriyathekanam of ernakulam district	Richard Joseph & Manya M Kumar	Kendriya Vidyalaya, Kochi
2.	Behavioural and Social Sciences	A card and board game to reduce gender-based implicit biases using perspective-taking and counter stereotyping	Prerna Magon	Police DAV Public School, Jalandhar
3.	Biochemistry	A simple, non invasive, point of care, low cost, polynomial-derived colorimetric device, using reactive oxygen species-induced lipid peroxidative changes in saliva, to assess the risk of oral pre-cancerous lesions and oral squamous cell carcinoma in chronic smokers	Nikhiya Shamsher	Greenwood High International School, Bangalore
4.	Cellular and	A novel peptide drug as therapeutic for	Rutik Thorat	Dav Public

	Molecular Biology	sickle cell anemia		School, Mumbai
5.	Chemistry	Novel and innovative chemical strategy for mosquito repellent and antibacterial textiles	Sanjeev Hotha & M Suneetha Prabhu	Kendriya Vidyalaya, Ganeshkhind, Pune
6.	Computer Science	Flood risk prediction using extreme learning machine and particle swarm optimization algorithm	Sagnik Anupam	Delhi Public School, R K Puram, New Delhi
7.	Computer Science	Machine learning based approach to identify devices, measure and reduce power consumption and carbon footprint	Sayli Bande	JSS Public School, Bangalore
8.	Computer Science	Periphery sweep algorithm: conquering a* algorithm at graph traversal solutions	Richik Vivek Sen	Delhi Public School, Vasant Kunj, New Delhi
9.	Computer Science	A high-performance unhackable, nature inspired database cloud application; mendeldb	Mohammed Suhail C S	The Learning Centre, Mangalore
10.	Computer Science	Positively identifying species using convolutional neural networks and hypernetworks to aid wildlife conservation efforts	Aditya Radhakrishnan	Suguna PIP School, Coimbatore
11.	Computer Science	Fishiotherapy	Yashish Mohnot &Aayush Shah	Pace IIT and Medical, Mumbai
12.	Computer Science	A formal grammar generation procedure for domain specific vocabulary applications and optimizing speech recognition and voice control	Shashwat Goel & Wrik Karmakar	Delhi Public School, R K Puram, New Delhi
13.	Environmental Management	Swar - solid waste-management android-application resource	Rishu Kumar & Aditya Kaushal	Jawahar Navodaya Vidyalaya, West Champaran, Bettiah
14.	Energy and Transportation	Integrating the piezoelectric and triboelectric effects to harvest mechanical energy	Aryaman Trivedi & Stuti Lohani	Amity International School, Noida
15.	Mathematical Sciences	Predicting the power of 2 in mersenne prime formula	Rajat Lohan	Delhi Public School, Hapur
16.	Medicine and Health Sciences	Gattii – wearable portable mobility assessment device	Sidharth Jain	Jamnabai Narsee International School, Mumbai
17.	Medicine and Health Sciences	Kanna: a novel method for screening amblyopia using just a photograph	Viswesh Krishna & Vrishab Krishna	National Public School, Indiranagar, Bangalore

18.	Physics and Astronomy	Biodegradable insulator and packing material from areca catachu sheath	Anusha N	St Philomena Aided High School, Darbe, Puttur
19.	Plant Sciences	Nano-silica controlling bihar hairy caterpillar (spilosoma obliqua), a polyphagous pest accelerated mitogen-activated protein kinase (mapk) / src domain initiating positive feedback loop associated with apoptosis activity regulated by mir-1	Aranyo Ray	Auxilium Convent School, Kolkata
20.	Plant Sciences	A computational model of the stimulus response of Mimosa Pudica	Anantharaman Iyer	National Public School Bangalore

Society for Science & Public (SSP) also conferred some Special Awards on behalf of various American societies and organisations. The winners of these awards are:

S. No.	Category	Project Name	Students Name	School	Award Title
1.	Behavioural and Social Sciences	"DETOX" An Addiction Aalysis App for Children and Adolescents	Vanshika Malhotra & Yashvi Agarwal	N.H. Goel World School	Certificate of Award by the American Psychological Association
2.	Behavioural and Social Sciences	A Card and Board Game to Reduce Gender Based Implicit Biases using Perspective-taking and Counter Stereotyping	Prerna	Police DAV Public School	Certificate of Award by the American Psychological Association
3.	Environmental Sciences	Fresh Lock- A Novel Eco-Friendly Edible Coating to Extend the Post Harvest Quality and Shelf Life of the Vegetable Binjal (Solanum Melongena) using Bilimbi (Averrhoa Bilimbi) Leaf Extract	Amogha Narayana	Alva's English Medium High School, Moodbidri	ASM Materials Education Foundation
4.	Physics and Astronomy	Biodegradable Insulator and Packing Material from Areca Catachu Sheath	Anusha N	St Philomena Aided High School, Darbe, Puttur	ASM Materials Education Foundation
5.	Computer Science	Machine Learning Based Approach to Identify Devices, Measure and Reduce Powe Consupmtion and Carbon Footprint	Sayli Bande	JSS Public School	American Meteorological Association

6.	Cellular and Molecular Biology	Detection of Hepatocellular Carcinoma using MU-3	Vidhi Agarwal & Ridhi Maheswari	Calcutta International School	The Society for In Vitro Biology Award
7.	Cellular and Molecular Biology	Catharanthus Rosues: Never Worry about Obesity Again	Nishtha Upadhyaya & Riya Goyal	Maharaja Agrasain Public School	The Society for In Vitro Biology Award
8.	Environmental Management	Reducing the Carbon Foot Print through Innovative Vessels	Soubhagyalakshmi Navalagunda	Government High School, Ganeshanagar	Student awards for Geoscience Excellence by Association For Women Geoscientists Award
9.	Mathematical Sciences	Graphical Approach to Proof Goldbach'S Conjecture, Properties of Non-Trivial Zeros of Riemann Zeta Function,Primes, Partitions and Composite Numbers	Adarsh Kumar	Delhi Public School	Mu Alpha Theta Award
10.	Mathematical Sciences	Utilising Fractals to Support Abstract Learning	Muskan & Nandini Pathak	Maharaja Agarsain Public School	Mu Alpha Theta Award
11.	Computer Science	Fishiotherapy	Yashish Mohnot & Aayush Shah	Pace IIT and Medical	Yale Science and Engineering Association award for the most outstanding exhibit
12.	Environmental Sciences	Fresh Lock- A Novel Eco-Friendly Edible Coating to Extend the Post Harvest Quality and Shelf Life of the Vegetable Binjal (Solanum Melongena) using Bilimbi (Averrhoa Bilimbi) Leaf Extract	Amogha Narayana	Alva's English medium High School, Moodbidri	Ricoh Sustainable Development Award
13.	Environmental Sciences	ENAC- Eco-Friendly Natural Preservative from Anamirta Cocculus for the storage of Grains	Adarsh A.S & Abhishikth John	Indraprastha Vidyalaya, Uppinangady	Ricoh Sustainable Development Award
14.	Computer Science	ARCNET: A Secure, trusted and Fully Decentralized Hierarchical Peer-to-Peer Network	Lakshya Singh Panwar	Delhi Public School, Ranipur	Intel Excellence in Computer Science Award

15.	Computer Science	Active Learning and Its Aapplication in the Analysis of Scientific Data: Predicting MIE Scattering by Nanoparticles	M. Tarun Prasad	PSBB Senior Secondary School, Nungambakkam	Intel Excellence in Computer Science Award
16.	Plant Sciences	A study on Efficacy of Aqueous Extract of Careya Arborea Bark against Wood Termites	Sthuthi M S & B Sandhya Prabhu	Sudana High School	Society for Science & the Public - Award for Community Innovation
17.	Environmental Sciences	A Holistic Approach to Measuring Noise Pollution – Differential Iimpacts of Transient and White Noises using Pattern Recognition	Madhura Kumar	Navkis Educational Centre	Broadcom Masters
18.	Engineering: Electrical and Mechanical	O.T.A.S - A Self Tergeting Ssytem for Handheld Weapons - To Reduce Friendly Fires and Killing up of Innocents during Crowd Control	Ashfaque Khan	D A V Public School	University of Toronto Deep Summer Scholarship