



## Announcing Top 20 Projects of the Initiative for Research & Innovation in Science 2017

*Chosen projects to represent Team India for awards and scholarships worth over USD 4 million, at the Intel International Science and Engineering Fair in Pennsylvania*

At the grand finale of the Initiative for Research & Innovation in Science (IRIS) Fair held at the Manekshaw Centre, New Delhi, Intel India, Department of Science and Technology (DST), and the Indo – U.S Science and Technology Forum (IUSSTF) announced the top 20 finalists of their flagship national science fair for students. The selected projects of these high school student innovators will represent India at the Intel International Science and Engineering Fair (Intel ISEF) 2018, the world's largest pre-collegiate science fair, to be held in May next year at Pittsburg, Pennsylvania, U.S.A.

At the three-day national fair held from November 16-18, 2017 a total of 70 projects were showcased by 102 students vying for the IRIS Grand Award. An expert jury comprising of 30 judges, including members of the IRIS Scientific Review Committee and PhD scholars from various reputed scientific institutions selected the top 20 projects.

Intel India in partnership with Department of Science and Technology (DST), Government of India and Indo-US Science & Technology Forum hosts IRIS to promote and nurture scientific research among young Indian innovators, recognize outstanding projects in the field of Science, Technology, Engineering, and Mathematics (STEM), and provide a platform to showcase them at a global stage through ISEF. Hosting students from over 78 countries, regions, and territories, ISEF will grant the most innovative independent research projects with awards and scholarships worth over USD 4 million. Over the years, Team India has won 121 awards at Intel ISEF, in the fields of biotechnology, medicine, biomedical engineering and mathematics, and 25 of them have minor planets in their name.

### Table of Top 20 Grand Award Winners

Engineering: Material & Bioengineering	An Economical Early detecting and dosage monitoring tool for PEM	Swasthik Padma	Mohammed Suhail C S	St Aloysius P U College
Computer Science	An Inexpensive Solution for Visual Acuity Testing in Preverbal Children using Deep Convolutional Neural Networks	Ishita Mangla		Delhi Public School R K Puram
Computer Science	Architecture tweaking Image Analysis Software for Automated Detection of Land Features in Satellite Images	Param Singh Gujral		La Martiniere for Boys
Engineering: Electrical & Mechanical	ExoHeal - A modular exoskeletal device based on utilizing neuroplasticity and mirror learning to retrain the motor cortex and recover motor function in patients with hand stroke/paralysis	Zain Ahmed Samdani		Al Yasmin International School
Earth & Planetary Science	Studying planetary system formation through analysis of exoplanetary data	Antara Raaghavi Bhattacharya		GD Somani Memorial School



Computer Science	Connecting doctors for good using a Peer to Peer Lung Cancer Detection Program	ParthRaghav		Pusa Public School
Computer Science	Machine Learning Approach to Cancer Identification	Shinjini Ghosh		South Point High School
Physics	Determining space debris orbits for collision prediction using Chaos Theory	AswathSurya narayanan		Devi Academy Senior Secondary School
Plant Sciences	The Plant Doctor - An Artificial Intelligence Based Collaborative Platform for Plant Disease Identification and Tracking for Farmers	Kaushik Kunal Singh		Inventure Academy
Mathematics	Proof of the analogue of Szemerédi's theorem for rectangles, $n \times n$ lattice, cuboid and $n$ -orthotope	NishantDhan khar		Delhi Public School, R K Puram
Mathematics	Solving a Mathematical Mystery: Schinzel's Conjecture	SachethSath yanarayanan		National Public School, Chennai
Cellular & Molecular Biology	A novel approach to a p53 stabilizing agent to accelerate cell apoptosis to prevent malignancy and initiate cell arrest	ShuvayuDas gupta	Syed Roshan Ali	La Martiniere for Boys
Microbiology	Biodetoxification of hexavalent chromium using <i>Anabaena cylindrica</i>	NaisargikLen ka		DAV Public School, Unit-8
Microbiology	Insights into Bacterial Pathogenesis- Establishing Quorum Sensing as a novel virulence regulator	Harshit Jindal		Maharaja Agarsain Public School
Plant Sciences	Efficient and economical control of pests in rice through seedlings raised in soilless media using Nano biopesticides	A Siva bharathi		NSN Matriculation Higher Secondary School
Cellular & Molecular Biology	Epigenetically repressing endocrine disruptors through algal derivative for an obesity free world	Tanya Goyal	SharenMan galamCham u Ganesh	Maharaja Agarsain Public School
Microbiology	Fabrication of Highly Specific Genosensor for the Detection of pathogenic <i>E. coli</i> Using Uniquely Designed Molecular Tag from 16S rRNA Gene	Kunal Singh		Maharaja Agarsain Public School
Behavioral & Social Science	Creating self designed mazes for autistic people to map their analytical skills	Tanya Kaur Talwar	Akshat Gupta	Amity International School, Pushpvihar



Medicine & Health Sciences	Non-invasive self detection of asymptomatic acute myocardial infarction using BioElectrics: A translational investigation of transcutaneous blood analysis	Akash Manoj		The Ashok Leyland School
Environmental Sciences	Cost effective, Real-time monitoring of pollution in water bodies using a portable floating device	Pranav Shikarpur	SiddharthV swanath	Bangalore International Academy

### Table of Special Award Winners

Biochemistry	Sugar Testing Exhalometer	Rakshith Vyas	AnanthGaganpapala	Sri Prakash Vidyaniketan
Behavioral& Social Science	Electrical learning aid for visually challenged children for gaining confidence to take up Engineering field which can elevate their status equal to sighted children and help in maintaining social relationship in the society.	G Manasa	G Sushanth	Devnar School for the Blind
Cellular & Molecular Biology	A novel approach to a p53 stabilizing agent to accelerate cell apoptosis to prevent malignancy and initiate cell arrest	ShuvayuDasgupta	Syed Roshan Ali	La Martiniere for Boys
Environmental Management	STINK MAP Monitoring Environmental Pollution by Detecting and Classifying Odors using a Simple and Easy to use Mobile Probe	Lalitha Pingali		0
Mathematics	Vector to People (V2P) Disease Prediction : A Differential Equation Approach	AyushSachdeva	Siddhant Mal	Springdales School



Mathematics	Proof of the analogue of Szemerédi's theorem for rectangles, $n \times n$ lattice, cuboid and $n$ -orthotope	Nishant Dhankhar		Delhi Public School, R K Puram
Chemistry	A Nano Solution to Giga Nano Problems	Eshan Bajaj		Ryan International School Kharghar
Environmental Sciences	Cost effective, Real-time monitoring of pollution in water bodies using a portable floating device	Pranav Shikarpur	Siddharth Viswanath	Bangalore International Academy
Computer Science	RoadVisor A Smartphone App to Sense Bumpy Conditions of Indian Roads	Shreya Sandurkar		Amanora Pearson School
Computer Science	iThink: A wearable self-learning neurotransmitter with embedded database and trained neural networks for encoding EEG raw data enabling Brain to Text (BTT), Brain to Speech (BTS) and Brain to Command (BTC) for real-time BCI and machine learning applications.	Aman Shrivastava		St. Paul College Hudkeshwar
Plant Sciences	Efficient and economical control of pests in rice through seedlings raised in soilless media using Nano biopesticides	A Siva bharathi		NSN Matriculation Higher Secondary School



Microbiology	Biodetoxification of hexavalent chromium using anabaena cylindrica	NaisargikLenka		DAV Public School, Unit-8