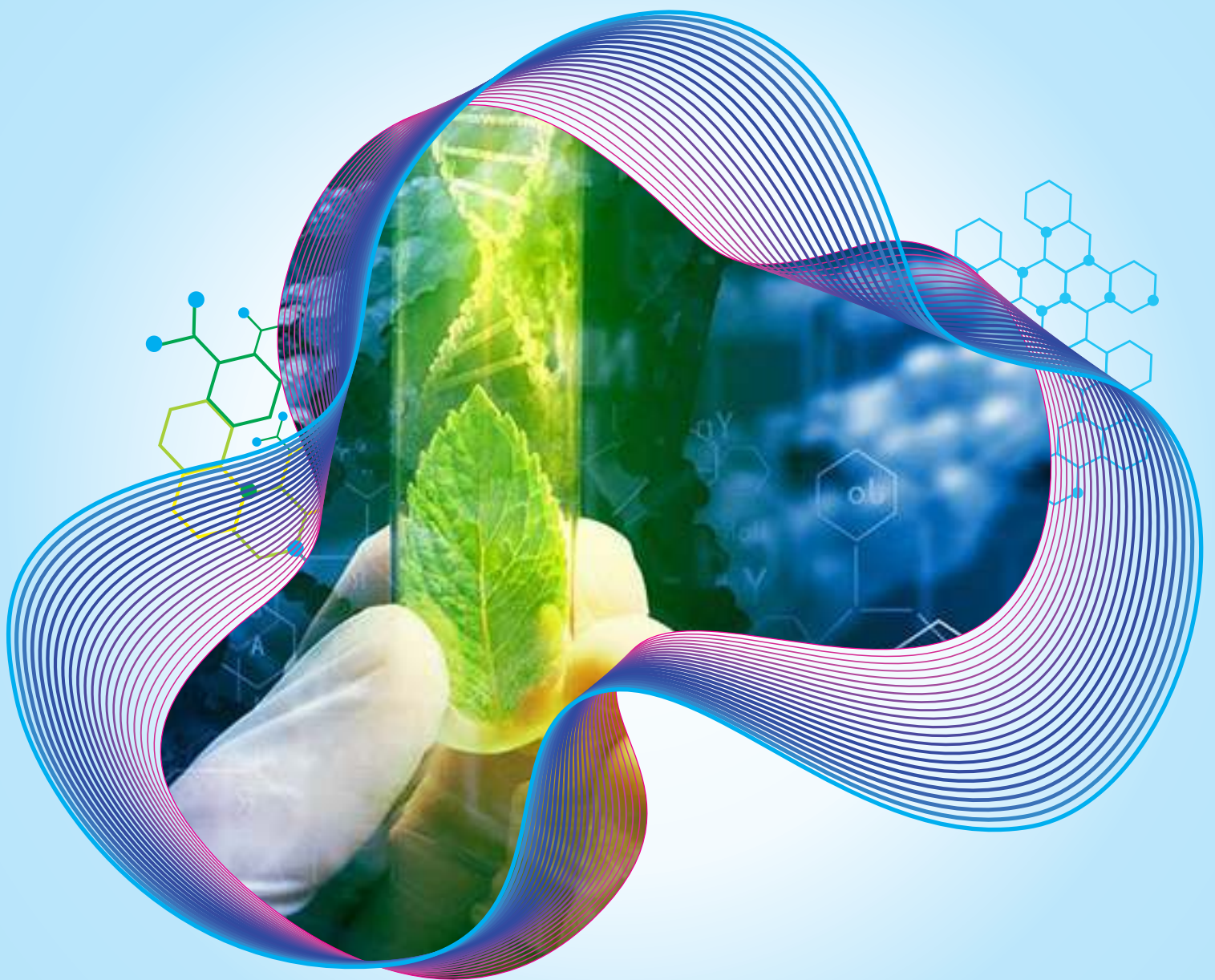


science VIEW

Student's Magazine, Issue: 1, 2019

SCIENCE 4.0



School of Science



GSFC
UNIVERSITY

EDUCATION RE-ENVISIONED



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President's Message

It is my pleasure to announce the launch of the GSFC University's first e-magazine - "Science View". This magazine will serve as a portal for all the students and faculty to share their point of views on rapid advancement in technology in all areas of science and society.

Along with technology, the magazine is also focused on E 4.0 - an education model which is aligned with future trends in order to develop and enhance individualized education that will eventually go on to define the manner in which youngsters of the future will work and live.

I firmly believe that every student is a unique personality and have their own aspirations. This magazine will hone their thinking skills and keep them acquainted with the development in scientific and technological world. It is my strong opinion that such projects would foster confidence, discipline, clarity in thought and decision-making ability to set and achieve goals, and above all, social responsibility as a life-long process.

The uniqueness of GSFC University pedagogy backed up with meticulously framed infrastructure brings excellence in learning, training and placements. Our students are groomed to think out of the box and engulf articulation, innovation and team work.

With this I congratulate all those who have worked hard to conceptualize the idea of this magazine and wish them good luck for further editions.

P K Taneja, IAS (Retd)

Former Addl. Chief Secretary to Govt. of Gujarat



Provost's Message

The quest for knowledge is always endless resulting into a joyful journey to learn, unlearn and relearn. Such initiatives provide a great platform for such quest. Students have immense potentials to be on the path of the learning process by which they give a different perspective to the existing body of knowledge, and at times, they create a new dimension.

This type of initiative also helps to develop the scientific temper among the students which they carry with themselves enabling to contribute to the society in the long run.

I appreciate the efforts taken by the students for this magazine. I look forward to more participation from students in future. I wish all the success to this initiative and congratulate all those who have active involvement in the publication of this magazine.

Dr. Nikhil Zaveri

Provost, GSFC University



Former Provost's Message

I am very happy on the first issue of " Science View", an E-magazine of GSFC University managed by students and faculties. E 4.0 in education is a must for progress of any University. Being a known University in which students are treated as partner with management, this initiative will take a step ahead in direction of E 4.0. GSFC University has shown courage to diversify in the area of education with futuristic approach in line with Industry requirements so far with unique USP of internship after each semester.

E- magazine initiative will provide excellent platform of interaction and sharing of knowledge across University. This magazine will also provide platform of great ideas and thoughts for entrepreneurship minds of energetic students of the University. My best wishes to the managing committee and all stack holders of E-magazine.

Bimal Bhayani

Sr VP - GSFC Ltd. / Former Provost, GSFC University



Director's Message

The magazine is GSFC Universities attempt to enable E 4.0 methodology of learning. The whole idea behind this initiative is to make information and ideas available to anyone seeking knowledge - be it student or faculty or society, in present rapidly evolving world of science and technology. This magazine would enable easy access of interesting information and also kindle interest on various topics shared in the readers.

Looking forward to large scale participation from more and more students and congrats to efforts of entire team. Best luck for future editions.

S P Bhatt

Sr. VP, Operation Division, GSFC Ltd.,
Director (Admin) - GSFC University



From the Editor's Desk

We are glad to launch the first ever-online version of GSEC University's magazine and it is a matter of great pride and privilege for me to be a part of the first issue. In this era where literary works are produced, processed, published and documented through the digital media, the e-magazine is an endeavor to keep pace with the changing nature of readership and accessibility. We hope that the magazine will reach out to a larger circle of readers both within and beyond the University. This magazine is by the students and for the students. It aims at providing a platform to the students to explore their latent capabilities and talent to express their creativity and to develop their writing skills. This magazine will help them to broaden their mental, psychological and intellectual horizon.

I would like to extend my heartiest thanks to all those had been meticulously working on materializing the magazine and the university management for their encouragement and support.

Dr. Rajni Pania,

Assitant Professor, SoS & Editor In-Chief, Science View



Plagiarism & Importance of Citation

Plagiarism, is a form of stealing someone else's intellectual property and a popular method of cheating, familiar to students from all over the world. Alternatively it is also defined as using the words or ideas of others and passing them off as your own. Plagiarism can be of many types, from deliberate cheating to accidentally copying from a source without acknowledgment. Therefore, whenever you use the words or ideas of another person in your work, you must acknowledge where they came from.

In academic writing (assignments, reports, research work), students are expected to research and refer to experts and authorities, and also expected to produce original work. This is based on the assumption that students are very clear about their own ideas and how the work of others have influenced their understanding. University students, for instance, often base their assignments on selecting, ordering, summarizing and interpreting what others have reported to support their own academic arguments. Therefore, it is important to learn how to reference well; that is, how to consciously and clearly, acknowledge others work so that your own contribution can be clearly identified and appreciated. As part of an academic community, all students are expected to abide by its ethical practices and this partly followed by acknowledgment of sources, in the form of 'in-text' citation or footnotes. This separates academic writing from other forms of knowledge.

Plagiarism is considered unethical as it is a form of theft. By taking the ideas and words of others and pretending they are your own, you are stealing someone else's intellectual property. Also, a degree is evidence of its holder's abilities and knowledge. If a student gains employment on the basis of a qualification they have not earned, they may be a risk to others.

Many students who plagiarise do so unintentionally, because they don't have the academic skills to avoid over-reliance on the work of others or because they aren't sure what constitutes plagiarism. So, it's important to take every opportunity to develop your academic skills.

Dr. K. S. Kumar

Associate Dean, School of Science



SCI-WARS: THE WRATH OF SCIENCE TITANS!!

Henry Wordsworth Longfellow wrote- “lives of great men all remind us, we can make our life sublime and, departing leaves behind us footprints on the sand of time.”

Sublime, as oxford dictionary defines it is a thing of great beauty, something noble, awe-inspiring, glorious, majestic or magnificent. Sublime is the word that would best describe one's journey into the realm of science. The brilliance of scientific minds and the untiring dedication and complete devotion to solving the mysteries of universe, life, human body, the more you read the more you feel like a minion in the scheme of science. Inspired by scientists stellar discoveries one can't help but wonder about the strength of their character, about their personal lives to understand where did these men draw inspiration from? Was it their family, was it their friends or was it the environment they grew up in? It will be a revelation when you look deeper into the lives of these men who changed the canvas of science.

Thus started my very own journey. I started reading about the lives of these great men and to my utter amazement I find that their contribution to science is nothing short of glorious but their personal conduct was anything but that. It was intriguing—this duality of behaviour- brilliant minds but somehow they were also bickering personalities.

For those uninitiated and unread I list out few well recorded scientific feuds between some of the well-known names in the field that defies all logic and establishes one fact that despite their greatness each one was a slave of human instinct of survival and supremacy.

1. BETTER or BITTER???

Robert Hooke was a scientist par excellence and was called the most inventive person that ever lived. He invented compound microscope. He was first to discover cell. His discoveries and contribution to science covered all fields from mathematics to astronomy, from physics to biology. He was a revered figure in science until one fine day he decided to lock horns with Newton (yes! The one who sat under the apple tree). An open and all out war broke over whether light is a particle (Newton) or a wave (Hooke). A hostile exchange of letters and a public display of their disagreements followed. The result Newton had a nervous breakdown and withdrew from the public eye.

This however was not the end years later when Hooke claimed that it was him and not Newton who first gave the idea of inverse square law of gravitation, Newton decided to exact revenge. It is believed that Newton destroyed the only portrait of Hooke that existed in Royal Society when he became the president. Till this date no one knows what Robert Hooke looked like!!!



2. Gentlemen Don't Wash Their Hands:

Dr. Ignaz Semmelweis vs Medical Community led by Dr. Charles Megs

When the Viennese doctor Ignaz Semmelweis proposed that doctors should wash their hands before delivering the babies to reduce infant mortality because of infection, he was met with the fiercest opposition from the medical community led by Dr. Charles Megs. Why you ask??? Well!!! Because doctors are all gentlemen and “Gentlemen's hands are always clean.”

The indignation and opposition to this preposterous idea was so strong that Dr. Semmelweis was excommunicated from the medical profession. Honor and Hygiene- the twain shall not meet and did not meet even when the infant mortality rate tripled. It was only after the discovery of germs by Louis Pasteur that new guidelines for hygiene were established.

3. A Race To The Finish: Francis Collins vs. Craig Venter

In 1988 a fight erupted over the sluggish pace of progress of Human Genome (Human Genome Project) Sequencing between the NIH director and HGP head Dr. Francis Collins and Craig Venter, Director Celera Genomics. With privately funded Celera and Public Funded NIH a rabbit and tortoise race was naturally expected. The conflict also arose over free access of the HGP data to public as proposed by Dr. Francis Collins to a paid access to the data as wanted by Craig Venter. The two institutions fought neck to neck to finish first. Towards the end the US President Bill Clinton and UK Prime minister Tony Blair played Referee and called the race a tie- with both sides announcing the first draft of the completed Human Genome Jointly on 26 June 2000.

4. Order! Order! – French Scientists vs. American Scientists

In 1985 Pasteur Institute of Paris sued US Govt. as it was them and not American scientists who had discovered the AIDS virus and the patent rights for developing the detection antibodies for AIDS virus in the blood should go to them and not the American team. Two years of bitter scathing attacks on each other in the courts until the presidents of the two countries decided to end this legal war and asked the warring factions to accept joint recognition for the discovery. The fight over who invented French Fries or who has a refined palate or who has the best wine pales in comparison as these are the men of logic, reason and good standing as opposed to emotional patriots for whom country pride is placed over logic.

I can go on and on as I seemed to have touched just the tip of an iceberg and I have not even yet gone into the controversies where women scientists were robbed of recognition and were considered an inferior mind.

The history of science is not just about spectacular discoveries but as is evident it is also about inflated egos, bitter feuds, and petty rivalries all for personal recognition and to get that coveted position in the hall of fame!!

Disclaimer: If history teaches us anything it is the lesson that it is not how you lived that matters. What matters is how you are remembered. How these brilliant minds conducted themselves is a forgotten act, history will always remember them for their scientific contribution. That is their legacy.

Dr. Saroj Shekhawat

Asst. Professor, School of Science

PRIYANKA SHIVNANI

EDUCATION + TECHNOLOGY= EDTECH (EDUCATIONAL TECHNOLOGY)

“In education, technology can be a life-changer, a game changer, for kids who are both in school and out of school. Technology can bring textbooks to life. The Internet can connect students to their peers in other parts of the world. It can bridge the quality gaps

- Queen Raina of Jordan.

Technology serves to improve our lives in one way or another and make it much easier and also to advance an already existing software or gadget. Despite the fact that technology plays a big role in making our lives easier, it is not the only role it has. It also helps in educational Sector. The more the technology improves the more it makes the education level better for the students. Technology helps the students to understand and absorb what they are being taught. It also gives programs make available to students quizzes, tests, activities and study questions that could help the students continue with the learning process when they are out of the classroom.

A recent poll reveals that 75% of educators believe that digital content will replace textbooks by the year 2026, and there are more remarkable technologies on the way. In fact, choosing which innovations to bring into the classroom is somewhat of a challenge for educators. The technology can also encourage learning. Teachers could adopt a flipped classroom approach more often. Students will take ownership of their own learning. Teachers can put resources for students online for students to use. These could be videos, documents, audio podcasts or interactive images. All of these resources can be accessed via a student's computer, smartphone or tablet. As long as they have an internet connection either via Wifi, 3G or 4G they are good to go.

Rather than being 'taught' students can learn independently and in their own way. There is also a massive amount of resources online that students can find and use themselves, without the help of the teacher.

In today's world students have access to many part-time and certificate online learning programs not only that they can extend resources upto university levels as well. In fact, there is a growing vision toward online access to educational content and learning resources. Now, there is a wealth of available online learning opportunities. Part of the appeal of online classes is that they're convenient. Students can take lessons at home 24 hours a day, seven days a week, and thanks to a rapidly growing content, they can learn about nearly any topic that piques their interest.

CONCLUSION-

Technology will always be evolving and advancing. It will continue to make life easier for students, make students more prepared for future jobs, and more intellectual about the world as a whole. Technology and the education system will always go hand in hand now that we live in technology influence world and society. It will be up to our generation to make sure that these innovations in technology continue to evolve to fit the needs of people and to be used to make life better, especially for students.

SIDDHARTH NOTANI

THE END

While I was watching Endgame, where everything was coming to an end the inevitable, RDJ and half of the universe just with a snap I was thinking when is the periodic table going to end as the population of elements is increasing every year. IUPAC is solely responsible for it as they are trying to make elements which cannot even survive for microseconds so how can they help humans to evolve

Is there a finite number of elements in the universe?

So we have two free questions with the one above, is there an end to periodic table, and are humans capable of reaching it?

Taking the second question first, my view is a no. The issue is there can be more stable elements possible, but I think they will require a much bigger neutron to proton ratio, and then the question is, how do you get them into the nucleus. This is very much like molecules, and in this the neutron is important as it alone is multivalent. (As in molecules there is cation, anion and together they are neutral. Similarly neutrons has upquarks, downquarks to make it neutral) Once you get closed shells, a cluster of neutrons is potentially added to increase the stability of nucleus, not always all together, and that is the reason why the so-called closed shell elements have so many stable isotopes. Ca 40 is a closed shell, but Ca 48 is also stable. The problem then is to get the neutrons in as closed clusters, and just bashing two nuclei together is more likely to lose neutrons. Even if that is wrong, you need neutrons to dilute the proton density, as other answers point out. The next problem is you need the protons and neutrons to be arranged in a way they cannot give off alpha particles easily.

However, even if all that is wrong, there is a further problem. The reason an electron cannot convert a proton to a neutron easily is that the energy required for this is about is a little under 1.3 MeV, whereas the electron in hydrogen has an energy of about 13.6 eV. However, if you get strong enough electric fields these energies rise, and of course if the transformation of the proton into a neutron generates energy, that is available for the transformation. So eventually the electron will have so much energy that it will neutralize a proton, which, of course, means that the atomic number drops by 1.

There are far more interesting questions that are well within the realm of experimentation, if not answering:

Is Lead (or Bismuth, or some other element) the largest stable element? If Lead (or Bismuth) are the largest stable elements, then we have reached the end of the periodic table of stable elements. The set of all stable nuclei is a finite set. (side note: we don't know if bismuth is stable, or just very very very long lived.)

Nuclear chemists have proposed that there exists an "Island of Stability" out in the Atomic Number range near 200. That means there will be physically stable elements around 200

The proposal was made on theoretical grounds. Atom smashing experiments have generated several elements heavier than plutonium, but they all decay quickly by fission. Only a few very ephemeral elements heavier than Atomic Number 100 have been convincingly identified.

Those same nuclear chemists are constantly on the alert for the appearance of such heavy elements in heavy atom collider tracks, and in the spectra of freshly exploded supernovas. The latter alert was prompted by some thin evidence that the isotope Californium-252 is present in supernovas.

What I think is the periodic table has no end. You can always have a “next element”, i.e. add one more proton to the nucleus and one more electron in the valence shell.



JOBANPREET SINGH

Sub-nucleon particles

We are aware about proton, neutron and electron being the basic constituents of atom. But we as students, must have a firm grip of information apart from this on a quantum level.

The general term of the family of Particles is 'Quark'. Quarks are colored charged particles having colors red, blue and green. Based on these colors (and amount of charge with respect to electron), they are classified into certain types or 'flavors' to be precise. For a better

picture, quarks can be considered as cousins of electron. Following are the flavors: Up quark, Down quark, Charm quark, Strange quark, Top quark and Bottom quark. The good names (Up, Charm and Top) have a positive charge of $2/3e$ while the rest (Down, Strange and Bottom) hold a negative charge of $1/3e$.

Besides their individuality, Interactions between them gives rise to another range of Particles. Gluons, Bosons and Muons are result of such interactions. Just when it couldn't get more fascinating, Quarks also have anti-particles known as Anti-quark which also has its own set of flavors (like Anti-Upquark etc.).

Personal Prediction: The electron density which we consider as orbital is not merely an electron but also has presence of these particles.

DIVY SHARMA

Black hole and their characteristics

The super massive black hole at the core of supergiant elliptical galaxy Messier 87, with a mass ~ 7 billion times the Sun's, as depicted in the first image released by the Event Horizon Telescope (10 April 2019)



- First, seeing the definition of black hole then it is the region of space and time which has a great gravitational pull which makes impossible for any particle or electromagnetic radiation such as light to escape from it. And the boundary of the region of no escape area is called Event horizon. Recently an unusual behaviour of black hole was determined – let us check it out.

Sometimes black holes just don't follow the rules.

- Astronomers announced in February that they found a black hole much bigger than it has any right to be – 12 billion times our sun's mass, a shocking weight considering its age. The finding challenges theories of how black holes form. The reason behind the large mass is, after a black hole has formed, it can continue to grow by absorbing mass from its surroundings. They merge with other black hole forming super massive black hole of millions of solar masses. It is believed that super massive black holes are present in the center of most galaxies.
- Knowing about formation of black hole can ease in understanding the characteristics. Gravitational collapse is the reason of forming of black hole. Understanding the concept of gravitational collapse, when any object is not able to handle its own gravity, it contracts inward and forms singularity and tends to gulp surrounding mass. Singularity is a single point which is formed by condensing million of solar mass over a long duration of time.

Above image shows gravitational collapse.

- How can we detect black hole

We can feel air around us but we can't see in the same way black holes can't be seen naked, they behave like an ideal black body so reflection of light is zero, so when black holes interact with surrounding matter and light falls onto a black hole can form an external accretion disk heated by friction, forming some of the brightest objects in the universe. This is the only way for knowing mass and location of black holes.

- What is Gravitational Singularity

At the center of a black hole, as described by general relativity, may lie a gravitational singularity, a region where the spacetime curvature becomes infinite. When object or matter reach the singularity, they are crushed to infinite density and their mass is added to

the total of the black hole. Before that happens, they will have been torn apart by the growing tidal forces in a process sometimes referred to as spaghettification or the "noodle effect". The appearance of singularities in general relativity is commonly perceived as signaling the breakdown of the theory

- Primordial black holes and big bang

Gravitational collapse requires great density. In the current epoch of the universe these high densities are only found in stars, but in the early universe shortly after the Big bang, densities were much greater, possibly allowing for the creation of black holes. High density alone is not enough to allow black hole formation since a uniform mass distribution will not allow the mass to bunch up. In order for primordial black hole to have formed in such a dense medium, there must have been initial density perturbations that could then grow under their own gravity. Different models for the early universe vary widely in their predictions of the scale of these fluctuations. Various models predict the creation of primordial black holes ranging in size from a Planck mass to hundreds of thousands of solar masses.

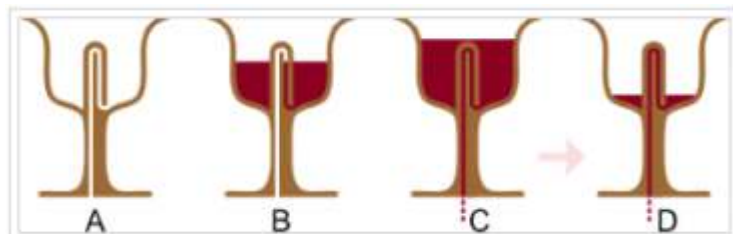
Despite the early universe being extremely dense—far denser than is usually required to form a black hole—it did not re-collapse into a black hole during the Big Bang. Models for gravitational collapse of objects of relatively constant size, such as stars, do not necessarily apply in the same way to rapidly expanding space such as the Big Bang.

Thus conclusion of black holes is difficult. Very less information is excluded till now, hope we may solve the greatest mystery of black hole in near future.

RAHUL SINGH

Pythagorean Cup

- A Pythagorean cup (also known as a Pythagoras cup, Greedy Cup, Tantalus cup) is a practical joke device in a form of a drinking cup, credited to Pythagoras of Samos. When it is filled beyond a certain point, a siphoning effect causes the cup to drain its entire contents through the base.



Cross section of a Pythagorean cup being filled: at B, it is possible to drink all the liquid in the cup; but at C, the siphon effect causes the cup to drain

UMANG JAGANI

Nutrofoils/ Nutrition Foils

In leading world, the rate of growth towards plants is been affected by some of the major effects called “pollution”. Nutrofoils are highly concentrated materials of foils can be place below the roots. Nutrofoils is used to increase the rate of growth Nutrofoils is a type of biodegradable polymer where functional group can easily convert into ionic form by reacting with moisture which makes wasy for plants to absorb nutrition in their respective embodiment (ionic forms).



SHIVANI JOSHI (Teaching Asst. - English & Soft Skills)

REPORT ON VIGYAN 1.0 – A SCIENCE DAY CELEBRATION 2019

Acknowledgments:

The “MUST-MENTION” people for the VIGYAN 1.0 are the volunteers who took up the job of making the Science Fair a big success. The event was taken in hand by Nidhikumari Patel, Ghanshyam sinh Jadeja (B.Sc. Chemistry, Sem-VI) and Nidhi Patel, Utkarsh Patel (B.Sc. Biotech, Sem-VI) under the guidance of Dr. K. Santhosh Kumar and Dr.

Saroj Shekhawat. The Student Coordinators came in the front to align the whole event; they found the volunteers to join their hands; got the faculties to

review their planning and help them in coordinating each event. All the faculties of School of Science dived into the event with enthusiasm which inspired the students to be the part of the Science Day – VIGYAN 1.0. To quote their thoughts, Ghanshaym said, “Make an event that successful that it will be remembered forever.” Their motto of leaving a legacy to the juniors, marking the benchmark of the competition level and inspiration to the future students of GSFC University was fulfilled in a true way: from the entrance, decoration, invitation, t-shirt designs to the very event, everything was filled with science and throwing back the science like Newton's 3rd law. Both the Deans, Faculties, Provost, Director Admin, CFO, Facility management Team, IT Team, Procurement Team, the Peons and last but never the least zealous students made the event a grand success. The entire event was coordinated by Dr. Poonam Sharma.

Introduction:

Who doesn't miss the excitement, the curiosity, the baking soda volcanoes of the typical school-time science fair? Everyone attending the event got a little nostalgic with recently held Vigyan 1.0– the First ever Science Fair of GSFC University held on March 30, 2019.

The students of School of Science, GSFC University came up with the zest and excitement of their first ever Science fair held on March 30th 2019. Shri P.K. Taneja, IAS (Retd.), President, GSFC



University was invited as a Chief Guest of the program. The Science Fair inauguration ribbon designed as a DNA helix and the Rangoli Design of “sub-shell electronic structure of carbon” itself speak a lot about the theme of Science. The entrance was decorated with hanging Sun, moon and planets, showcasing the solar system. The very event of Tree Plantation represents the seed sown for the growth of science among the students. The President Sir congratulated students for the arrangements of the event and also suggested the students to pour their wholehearted effort in grooming the campus which will make every corner of the university talk about science and knowledge.



The occasion of celebrating science engaged all the students and faculties in various activities throughout the day. The string of event consisted of Quiz, Debate Competition, Poster Presentation and the Working and Non-Working Model display. Not only students of School of Science but the students of School of Technology and the School of Management also participated with the same zeal in different activities.

Events:

1. Quiz Competition:

The First event was Quiz Competition which was coordinated by Mitul Chitania (B.Sc. Biotech, Sem-II) and Siddharth Notani (B.Sc. Chemistry, Sem-II) under the guidance of Dr. Akhilesh Prajapati and Ms. Kalyani Joshi. The very event was conducted on “Quizizz”, an online platform of self-paced quizzes. The number of students dived in the competition was so high that the day before, all the participants underwent the Screening process. The selected students, on the day of the event, were allotted into the random teams of two members by picking up the chits. They underwent two rounds of screening. The questions were based on general knowledge, logic, chemistry and biology. The results were displayed on live scoreboard. Everyone speculating the result competition found it very exciting as they could see the up-downs of all the teams simultaneously.

Our First winning team consisted of Ms. Adikrishna (B.Sc. Biotech, Sem-II) and Ms. Poorvi (B.Sc. Chemistry, Sem-IV). The Second winning team had Mr. Virag (B.Sc. Biotech, Sem-II) and Ms. Aneri (B.Sc. Chemistry, Sem-II). The pairs of winning teams among all the 8 teams said a lot about collaboration of all teams coming together and conquering the challenge.

2. Debate Competition:

The day moved forward with the Debate Competition held at Auditorium. Nidhikumari Patel (B.Sc. Chemistry, Sem – VI), Utkarsh Patel (B.Sc. Biotech, Sem – VI) moderated the debate, and Nidhi Patel (B.Sc. Biotech, Sem-VI) and Ghanshyam sinh Jadeja (B.Sc. Chemistry, Sem – VI) hosted the event. Dr. Ankit Sudhir and Dr. Saroj Skekhawat aligned the student coordinators, guided them in selecting the topics and set the motion of debate. The jury consisted of Dr. B.V.Kamath, Dr. Dinesh Garg, and Prof. Vasudev Singh. The participants were divided into teams; yet the chance to speak aloud their mind was given to the individual. The option of picking up the topic gave the participant an opportunity to explore their knowledge; and the audience, to know more about various ideas

on each topic. Talented and budding orators spoke in favor and against the motion and confidently presented themselves before the judges.

The first topic was “Technology will replace teachers in the classroom.” – Siddharth Motani (B.Sc. Chemistry, Sem-II) gave it a great start with a “scientific metaphor” comparing the student with an electron who needs to be polarized by the teacher. The participants also expressed their views in favor of technology replacing the teacher. Divya (B.Sc. Chemistry, Sem-II) elaborated the benefits of E-learning, supporting technology over teacher. Pradip Rao (B.Sc. Chemistry, Sem-VI) defended his part saying that the Guru-Shishya Tradition has been surviving since ages and it will be carried forward to the ages to come.

The competition was stirring the atmosphere when it came to the next topic – “Will Artificial intelligence will bring us more benefits or create more problems?”. Ashwathy (B.Sc. Biotech, Sem-II) took the chance to open the debate with giving an example of Sophia – the human robot, who got the visa for several countries. According to her, Machines can conquer human in chess but are yet unable to control us. Manali (B.Sc. Chemistry, Sem-II) gave the supporting examples of Siri and Google Assistant. Hardik Shah (B.Sc. Chemistry, Sem-II) finds the Artificial intelligence taking the risks on behalf of human and the same avoids the human errors. The opponent team members came with some threats of Artificial Intelligence: Shreshtha (B.Sc. Biotech, Sem-II) said that AI stops human being more creative and has also made human dependent on it in every walk of life; Mayank Dave calls it the fundamental threat to the human existence as AI can be used in war for major massacre.

The third topic – “Is Eugenics ethical?” - is a major talk nowadays. Although the topic has a wide concern with the Biology, it was astonishing that the students of engineering and chemistry

participated with some rising arguments. Mansi Pandya (B.Sc. Biotech, Sem-VI) raised her point against the topic saying Eugenics will be the mutation of human and it will manipulate the genes. Harsh Thekdi (B.Tech Chemical, Sem-VI) went against the topic saying Eugenics being practiced under the name of human welfare is the injustice to the human itself as none is the decider one human gene to be superior. He put his point forward by giving an example of Stephen Hawking – arguing that we cannot call his genes inferior to anyone. Jobanpreet Singh (B.Sc. Chemistry, Sem-I) spoke against the topic with a firm voice and idea saying – “Ethics is a general thing and the idea of perfection is a perspective. It is a

massacre on a genetic level and against the natural law.” Among all Het Pandya put his point forward in favor of eugenics to be helpful for human evolution and cure of many diseases.

Speech & Debate really does “Engage, Inspire, and Empower”. The much difficult task of choosing the winner was done by the jury where 2 students bagged Gold Medal and the three bagged Silver Medal. They were chosen on various criteria – like relevance to topic, the strength of argument, confidence and defence; the students won the Medal for putting their arguments “Against the Topic” as well as “In favor of Topic”. The Gold Medal was earned by Het Pandya and the Silver Medal was earned by Jobanpreet Singh.





3. Poster Presentation:

Following the debate competition, excellent poster presentations on various concepts of Science and technology were displayed on the First Floor of School of Science building. A must mention decoration of the staircase towards the poster competition also said a lot about the path leading towards. The side walls of the stairs were filled with the cardboard displaying the sayings, memes and the facts related to science. The objective behind the competition was to provide the students to communicate their research or understanding of a topic in a short and concise format. The competition took its place in the corridor of the School of Science Building. Dr. Darshan Desai and Ms. Heena Sheikh encouraged the student coordinators – Kriva (B.Sc. Biotech, Sem-IV) and Prajwal Shilote (B.Sc. Chemistry, Sem-VI) to bring the maximum participation by providing them the liberty of digging out the topics of participants' own choice from the treasure of science. The whole corridor was overflowing with the various posters on variety of topics. The judges enquired about the inspiration and objective behind their creative presentation. With a view to develop the curiosity amongst the school students, the students of GSFC School were encouraged to attend the Poster Presentation and Working – Non-Working Model display. The very thought bringing school students turned out to be successful as not only the students got inspired but the school management was inspired to conduct such event on school level with intermediate level of competition. . Posters entitled “Human Brain” by Adikrishna and Drashti (B.Sc. Biotech, Sem-II); “Ideonella Sakaiensis” by Nisha and Sweta (B.Sc. Biotech, Sem-IV); and “Millikan's oil drop experiment” by Bhaumik and Manan (B.Sc. Chemistry, Sem-IV) were the highlights of the day.

The Gold Medal was fetched by Hardik Shah (B.Sc. Chemistry, Sem-II) who presented the poster on “Time” with a non-working model to elaborate his thoughts. Hardik has his interest in cosmology which helped him in digging out the topic in depth. “Vibrational Bonds” by Jobanpreet Singh earned him the Silver Medal. The poster he came up with belonged to the Chemistry genre and is least considered in schools and colleges which he thought of bringing on the stage; even the professors found his poster very informative and interesting. The Vibrational bond is a bond between larger molecules and smaller atoms on temporary basis. His research was purely visible in the competition.

4. Model Display Competition:

The heart of the day was the Second Floor of School of Science building. The entrance was decorated indicating ground level to sky – there were cardboard cuts of vehicles, industries, buildings and the birds and plane – expansion of science. The selfie stand with scientific props, the wall dedicatedly decorated with chart papers and designed with equation cut-outs, the beaker and the test-tube cutouts was adding an essence into the atmosphere. Every beat of the day was throbbing and screaming science. The model display competition had its commencement on the very thought of the event being organized; students started their research, preparing own budget, getting help from parents, peers, seniors and the teachers – the enthusiasm had surrounded the university on the announcement of the event itself.



Ms Rajni Pania and Dr Parin Kanaiya – the faculty coordinators drive out the spirit of participation among the students to display 'Working' and 'Non-working' models. Student coordinators Jagani Umang (B.Sc. Biotech, Sem-VI) and his companions put their efforts in all the arrangements – couple of days before they noted down the requirements of chairs, tables, electricity, and other accessories to project their models. The Working Models prepared for the exhibition reflected the innovative ideas, creativity and the talent of the students. The non-working models and related posters, their explanation and justification for the questions posed by the jury was highly appreciated.

The Models drawing everyone's attention was “Non-Newtonian Fluid” by Siddharth, Riya, Aneri and their classmates (B.Sc. Chemistry, Sem-II) – A mixture of a corn starch and a water was a fun activity; the model was an instant thought after the failure of desired Robo model. The another group of students – Parth Bariya, Hetvi Joshi, Shivashrit, Aakansha and Anniruddhsinh (B.Sc. Chemistry, Sem-II) successfully caught everyone's attention with their “Water-Bottle Rocket”. They rose the cheering and giggling in the whole building; the school students were amazed to see that. Both the group although did not won the competition, but won the hearts. They also displayed their passion and dedication to the team and the event as both the teams had their initial project failed on the last moment which left them with few hours of preparation. Apart from these, the models like - “Bioplastic” by Padmini, Shashwat, Vaishakhi, Kavya Shah, Het Pandya (B.Sc. Biology, Sem-II); “Smart Dustbin” by Akhilesh Shah and Divy Sharma (B.Sc. Biotech, Sem-II); “Biofuel” by Husaina Bedgum, Hirvi, Kajal, Isha, Roma (B.Sc. Biotech, Sem-II) - were the example of innovative ideas the students carry along.



The event had a winning team from the IIT and GTU. Team FEWKS consisting of Jayraj Singh, Stavan and Zaid Khan (B.Tech –Chemical 1st year) who also represented GSFC University at IIT displayed their “Chem Car”. The Team FLASH – Dhariya Sharma and Aman Jaiswal; Mitanshu Bhaita; and Ashwin Sharma and Vaibhav Kapoor (from 1st year Mechanical, Chemical and BBA respectively) – had a “Laser Following Robot”. Team FLASH won the 2nd prize at TechFest held at IIT Bombay. These models showed the very talent of the University students; they also inspired the emerging generation of school.

The non-working models were also attractive as well as informative. “Human vs Cell Phone” by Rohan Rathawa, Jay Patel, Aayushi Patel and Mitul Chitania (B.Sc. Biotech, Sem-II)

evoke the awareness amongst the visitor regarding the effects of radiation of mobile phones on human body. Zeel Joshi (B.Sc. Biotech, Sem-II) displayed the chart and the detailed design of the DNA model of the EBOLA Virus; the information provided was really awakening. Aayushi Parikh, Dhruv Patel and Vaidik Adhyaru (B.Sc. Chemistry, Sem-II) displayed the model of “Rutherford's Gold Foil Experiment” showcasing the atom inside the model.

Among all the fascinating models, a tough task was given to the jury – choosing the models that deserve the Gold and the Silver Medal in each category – working model and non-working model. Our excellent jury form by – names of the judges – carried out their duty excellently. Manan Shah, Hardik Katara, Kakshil Asodariya (B.Sc. Chemistry, Sem-II) won the Gold Medal for working model of “Li-Fi” – wireless communication technology, which utilizes light to transmit data and position between devices. Nishi Soni, Utkarsh Patel, Mansi Pandya and Nidhi Patel (B.Sc. Biotech, Sem-VI) fetch the Silver Medal for their working model of “Fermenter”.

Kakshil, Harshil Gadhiya, Rakshit, Kaushal Talavia and Umang (B.Sc. Chemistry, Sem-II & Sem-VI) won the Gold Medal for their non-working Model – “Highway Wind Energy”. The model has got its idea from a wind mill: when a vehicles on the highway pass from both the lanes, it will run a windmill to produce energy. The live project has already been established in Norway. Following the footsteps of the seniors, Rahul Singh and Samveerpratap Singh Rajput (B.Sc. Chemistry, Sem-II) got the Silver Medal for non-working Model – “Dissipation in Computer and Laptop”. The winners said that the winning does not require an artistic or big projects – it just requires the proper knowledge of the topic.

Prize Distribution:

The Science Day ran throughout the day and the most awaited time came of prize distribution and announcing the winners. Our President Shri P. K. Taneja addressed the gathering; he was very happy with the event. It was the very first event of the School of Science and it ran so smooth that not a single break in the chain was seen. The President Sir inspired the faculties and the students to stay back on the college campus for the longer period during the regular days and keep the campus alive till late evenings with various activities. Sir also quoted an anecdote of his younger days when he received the award from the collector which turned out to be his inspiration of joining the Civil Services. The motivated speech led us to the moment of revelation. The Crowd was eager to hear their name form the stage. The winners were felicitated by the President Sir. All the dignitaries were gifted the Saplings as a token of love and the respect form the students. The saplings gifted was symbolizing the rearing of university in the best hands. Het Pandya (B.Sc. Biotech, Sem-II) took an opportunity of showing gratitude towards everyone who participated and the volunteers who supported the event at their best way. The gathering dispersed after the National Anthem

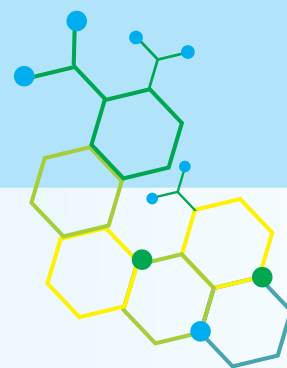
Conclusion:

The Fair exhibited the celebration of science; challenging students to expand their knowledge and present their thought and ideas to the judges, peers and the students of GSFC School. Savvy students, especially those who worked their way up to higher levels of competition, learnt even more about soft skills. They learnt the importance of selecting topics and fine-tuning their Presentations in ways that made them most likely to impress science fair judges. GSFC University in accordance with School of Science set an excellent example of “active learning” and paved a path to STEM education.



Buckle up as you will be
Intrigued with
Opportunities
Thrilled
Empowered yet
Compassionate
Healing the world but
Never
Obstinate
Logical but not
Obsessive for the power to tinker with life is
Gift and we all must
Yearn to leave our footprints in the sand of science.

- Dr. Saroj Shekhawat!!



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