



## MESSAGE FROM THE DEAN OF SCIENCES, DR. SURENDRA KULKARNI

The Department of Life Sciences holds a strategic position at CHRIST, with opportunities to collaborate with multiple disciplines for a wide variety of activities, both within the University and the society. In academics, the Department has taken a quantum jump by introducing MSc programs in three specializations, viz. Botany, Zoology and Biotechnology, last year. A further leap ahead was taken during the current academic year by introducing MPhil and PhD Programs in these specializations. Students are oriented towards research during their MSc program through projects and provided application orientation through internship, as an integral part of their curriculum.

The participation of students and faculty members in 'Green Army', for activities related to environment, is a testimony to the department's multi-dimensional contributions to the society. Overall, the department has made significant strides towards nurturing the budding scientists of tomorrow, through innovative seminars, guest lectures, etc.

This Newsletter, "Biolink", is an annual publication from the Department of Life Sciences, compiling the students' contributions to Science, through the media of art, humour and prose. The quality of this Newsletter is a result of relentless efforts by the Editorial Board that consists of both students and faculty members. A newsletter of this type provides an opportunity as well as a platform for the youth to showcase their ideas and talents in terms of contributing articles, cartoons, poems and so on.

We hope the readers will find it informative as well as intellectually stimulating and creatively satisfying. I congratulate the Faculty of Department of Life Sciences for consistently encouraging the students, and also the Editorial Board, for bringing out an informative newsletter. I convey my best wishes for all their future endeavors.

## MESSAGE FROM THE HOD OF LIFE SCIENCES, FR. JOBI XAVIER

It gives me great opportunity to present this issue of "Biolink". This internal newsletter is one of the ways in which we can disseminate information about the life science Department of CHRIST University. This academic year was blessed with various activities by the students and faculty in academic, co-curricular, extra-curricular as well as research & developments. Students were encouraged to get hands-on experience in various fields of life science through internship projects in the reputed organizations. Students were encouraged to take up mini projects to understand the beauty of science. The Department of Life science also organized several national and international conferences, faculty development programs, field studies, quality improvement programs, cultural fest and academic workshops to facilitate knowledge enrichment for the student community.

Biolink newsletter is believed to be a focus of the inside activities i.e. academics, students achievement as well as innovation occurring in the department. This newsletter will motivate the students of sharing their creativity and new ideas and will help in their overall development. A newsletter of this type provides an opportunity as well as a platform for the youth to showcase their ideas and talents in terms of contributing articles, cartoons, poems and so on. I congratulate the faculty and students of the Department for their contribution to this magazine.



# M.Sc., M.Phil and Ph.D program

## About the Department of Life Sciences

The Department of Life Sciences is a unique Department in the CHRIST (Deemed to be University) where interdisciplinary teaching and research in life sciences have established permanent roots. It is a diverse discipline that covers all branches of Biotechnology, Botany and Zoology in a dominant manner. Department of Life Science is one of the oldest Departments of CHRIST (Deemed to be University) started from the inception of the institution in 1969. Christ University academic programmes have been highly ranked by reputed external agencies and have wide public acceptance. The University is ranked No. 1 among Deemed Universities in the country.

Life Science Department has extremely competent faculty actively involved in advanced research covering infectious disease biology, bioprocess technology, structural biology, immunology, plant biotechnology, microbial biotechnology, environmental biotechnology, aquaculture, wildlife biology, animal behavior. Department has state of the art infrastructural facilities, including modern sophisticated instruments, well equipped library, access to online journals, aquaculture house facility, applied and industrial biotechnology laboratory, pharmaceutical chemistry laboratory, green house and computational facilities for carrying out multidisciplinary research in frontier areas of life science.

## Postgraduate courses offered



### M.Sc. PROGRAMMES

- M.Sc. in Zoology
- M.Sc. in Botany
- M.Sc. in Biotechnology

### M.Phil PROGRAMMES

- M.Phil in Zoology
- M.Phil in Botany
- M.Phil in Biotechnology

### Ph.D PROGRAMMES

- Ph.D in Zoology
- Ph.D in Botany
- Ph.D in Biotechnology

The core biology subjects like Cytology, Biochemistry, Microbiology, Molecular biology, Genetics etc. which are offered in first year makes the students appreciate the implications of these subjects in further research in Life Sciences. Specialized courses like Disease biology, Plant biotechnology, Animal Biotechnology, Genetic Engineering have the latest updates in the syllabus.

Modules on Taxonomy, Analytical Techniques, Plant Tissue Culture and Phytochemistry would make them acquire skills in doing research in Universities and R & D Centers and also makes them employable in herbal drug industry.

Modules on Forensic Biology, Aquaculture, Entomology, Animal physiology, Wild life biology, Developmental biology etc. would make the students ready to take up either jobs or research in those aspects.

Since the syllabus is on par with those of reputed Indian and International Universities the students get a highly competitive edge and would be competent for jobs in industries in the domains of pharmaceuticals, dairy, clinical research etc. All the courses in the program are carefully designed to equip the students for competitive exams like CSIR NET, SET etc. and also to write research proposals for grants.

### How to Apply & Important Dates:

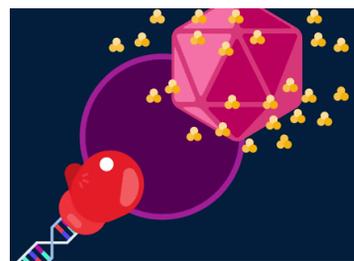
Online Application for Masters Program opens from December 8, 2018

Online application for PhD Program (2019 batch) opens from March 2019



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## FROM THE EDITOR'S DESK

The science of life, Biology, is eternal, the 'resistance' of the ancient with the 'infectiousness' of youth. The recent H7N9 genetically mixing with H5N8, dengue piggybacking on Zika and a fungus mutating right before our eyes keeps us on our toes. *"You Blink I EVOLVE!"*

In order to keep up with the changing environment, one must always stay curious. This is what we, on the editorial board hope to bring to you! A diverse set of articles, brilliantly designed comic strips and artwork, alumni testimonies and even the infamous crossword section to rack your brain – curated by the very students who sit beside you in class everyday.

It is our pleasure to present the FEBRUARY 2019 issue of Biolink and hope it intrigues you to keep questioning every aspect of life as we know it!



## THE BIOLINK TEAM

### STAFF EDITORS:

Dr. Paari K A  
Dr. Joseph K S

### STUDENT EDITORS:

Ms. Priyanjali Dias (6BCZ)  
Mr. Godson (6CBZ)

# FOCUS ON RESISTANCE TO HIV OFFERS INSIGHT INTO HOW TO FIGHT THE VIRUS

Researchers from the Centre de Recherche du Centre Hospitalier de l'Université du Montréal (CRCHUM) and laboratory of Antiviral Immunity of Université du Québec à Trois-Rivières (UQTR) have found that genetic mutations affecting the capsid has made it possible for a protein called TRIM5a to trigger the immune system of elite controllers.

“In most infected individuals, TRIM5a’s triggering ability is so weak that it has no effect on the virus, but in elite controllers, TRIM5a seems to play a role in naturally inhibiting HIV – 1,” Said Natacha Merindol, a post – doctoral researcher at the UQTR lab.

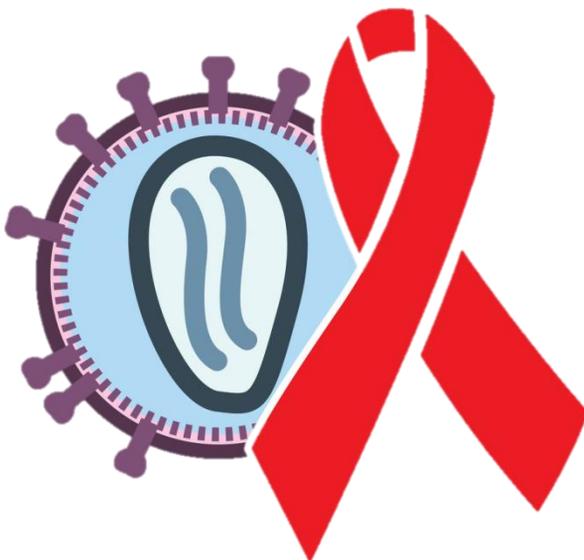
Elite controllers have immune system performing better than majority of HIV – infected patients at fighting HIV – 1. Though they are infected with HIV, the extent of infection is lesser or weaker than usual. Even when they aren’t receiving treatment, their immune system is so strong that its as if they are receiving treatment.

Previous studies suggested that TRIM5a helps in protection against HIV – 1, prompting the researchers to analyze the virus found in many elite controllers of HIV. They compared blood samples of patients from two cohorts i.e., elite controllers and normal progressors who weren’t undergoing retroviral treatment.

The virus coat, the capsid, protects the virus’ ribonucleic acid (RNA), where its genetic information is stored. The immune system of the body attacks it through a variety of mechanisms. These attacks can lead to mutation of virus and the mutations help them escape some of the immune mechanisms. It was observed that the capsid’s gene carries a high amount of mutations, but these mutations made HIV – 1 sensitive to TRIM5a’s activity, leading them to wonder about the effects of a TRIM5a attack on the capsid in elite controllers.

They found that, in these patients, the interaction between TRIM5a and the capsid triggers an antiviral state that reduces cellular sensitivity to HIV – 1. In elite controllers, TRIM5a’s signal is strong enough for the cells to become resistant, whereas the signal is not as strong in normal patients.

This mechanism could help to develop immunity strategies to inhibit HIV – 1. One possible therapeutic strategy would be to genetically modify TRIM5a to increase its triggering ability and its capacity to target HIV – 1, in normal as well as elite patients, which would ultimately protect people from HIV.



- Lalrintluanga, 4CBZ

# BIOAURA – AMALGAMATING THEORY WITH CREATIVITY!

Have you ever witnessed the creation of life?  
Not by Nature, but by amalgamation of creativity and intelligence!  
When infertile parents lost all hopes to happily survive,  
There came Patrick Streptoe, to rescue everyone with his hard work and brilliance.

With the advent of *in vitro* fertilisation and the induction of superovulation,  
He replaced the Almighty not just for the infertile, but also for rest of the population!

As decided by Nature, the XY gave the sperm-Anastomosing with egg by XX, curtailed all harm;  
What nobody could ever imagine in the wildest of a dream,  
Wonders of biotechnology could outdo, proving itself the supreme.

This brought the new life to sustenance,  
To help grow, we had to also take care of its immunological maintenance.

Again the world of life created magic,  
This time, vaccination came to end all sufferings which were tragic.

For the new born, Hepatitis B was administered,  
While the two month aged one got Diphtheria, Tetanus, Pertussis filtered!

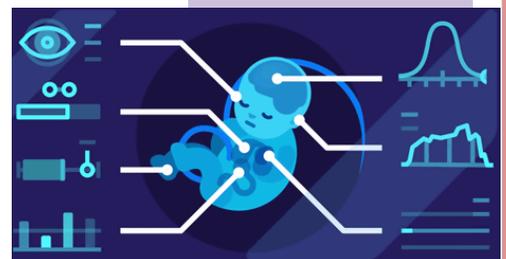
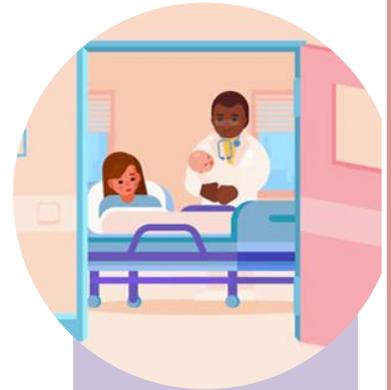
The Poliomyelitis monster could also be handled well,  
Thereby reducing chances for entry of cancer later, as a tale.  
Little did we know that a greater invention of mankind in Life Science was awaiting,  
Establishment of Monoclonal Antibodies was positively and amazingly shocking.

The power to heal super calamities arose like AIDS,  
Production at large scale, diagnosis and therapeutic uses brought comfort to gates,  
DNA vaccines were another marvel in this field,  
From impossible to difficult, man let almost no obstacle, to further build.

In the same way as experimented positively before,  
We hope to overcome prevailing hurdles too using determination and temperament of scientific score.  
It is science that has helped man cross all boundaries,  
The aura of attaching imagination with theory is happening after centuries.

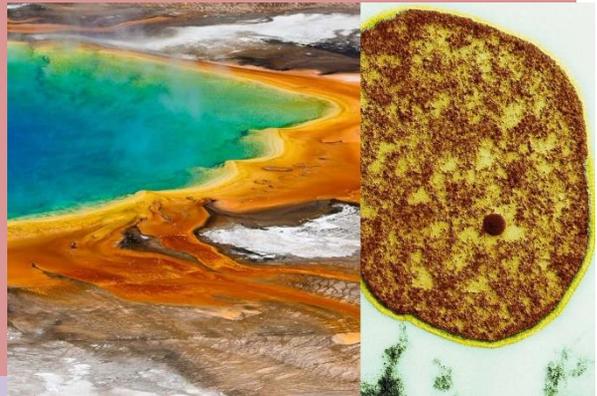
To prove that science is a part of abstract thinking and imagination,

It has proved itself capable of even a complete human creation!



# A MICROBE'S MEMBRANE HELPS IT TO SURVIVE EXTREME ENVIRONMENTS

In harsh environment like hot springs, volcanic craters and deep sea hydrothermal -vents by most life forms microscopic organisms are thriving. Scientists have known that the group of microbes called Achaea was surrounded by a membrane made of different chemical components than those of made of bacteria , plants, or animals. They had long hypothesized that it could be what provides protection in extreme habitats; they later proved this idea by identifying the protein that creates the unusual membrane structure in the species, *Sulfolobus acidocaldarius*.

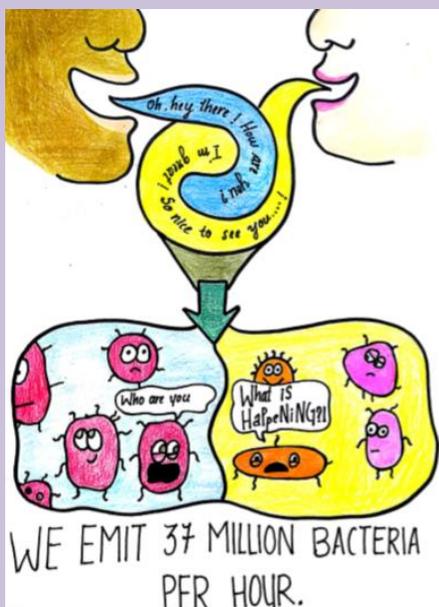


The microbe uses protein to bubble wrap its DNA, avoids being boiled alive

The structure of some organisms membrane are retained in the fossils in the future, record and can serve as molecular fossils or biomarkers , leaving hints of what lived in the environment long ago. Finding preserved membrane lipids for example, could suggest when an organisms evolved and how that have been the circumstance of its environmental. Being able to show how this protective membrane is created could help researchers understand other molecular fossils in the future, offering new evidence about evolution of life on earth.

“Our model is that this organisms evolved the ability to make these membranes because it lives in environment where the acidity changes”

- Pallavi S, 4CBZ



Artwork by Joe Paul, 6CBZ



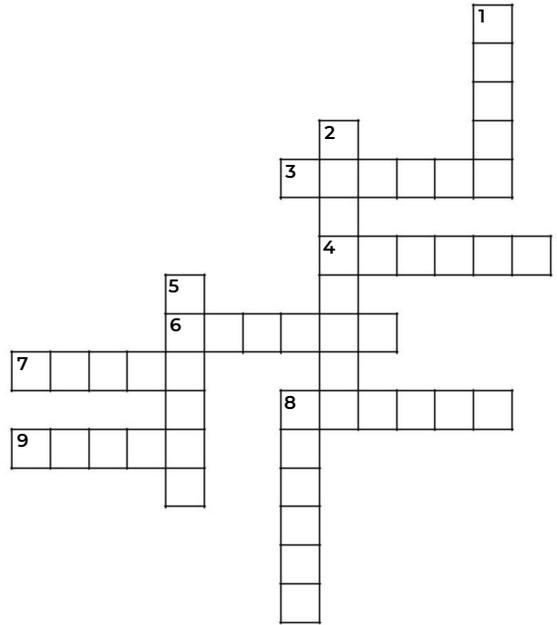
Artwork by Kishore Raj D, 6CBZ

# CROSS-TECH

How well do you know your Plant Parts?

## ACROSS

- 3. The female reproductive structure of flowers
- 4. The part of the stamen that contain pollen
- 6. The rounded base of a pistil that contains one or more ovules
- 7. Broad, flat, thin leaf-like parts of a flower
- 8. The male reproductive structure of flowers
- 9. The narrow elongated part of the pistil between the ovary and the stigma.



## DOWN

- 1. Modified leaves that make up the outermost ring of flower parts and protect the bud
- 2. A thin stalk of the stamen
- 5. The part of the stamen that contains pollen
- 8. The tip of the pistil.

- Amal K V & Joe Paul, 6CBZ

# WHAT MISSES THE EYE

Intricate details captured by our department's very own.



Stream Ruby  
(*Heliocypha bisignata*)-  
Male



Common Fivering  
(*Ypthima baldus*)  
butterflies mating



Catseye Ladybird beetle  
(*Coccinella* species)



Harlequin moth  
(*Campylotes histrionicus*)  
mating



Tuft-bearing Longhorn beetle  
(*Approximator aristobia*)  
from Meghalaya

- Rachit Pratap Singh, 6BCZ

## ALL ABOUT

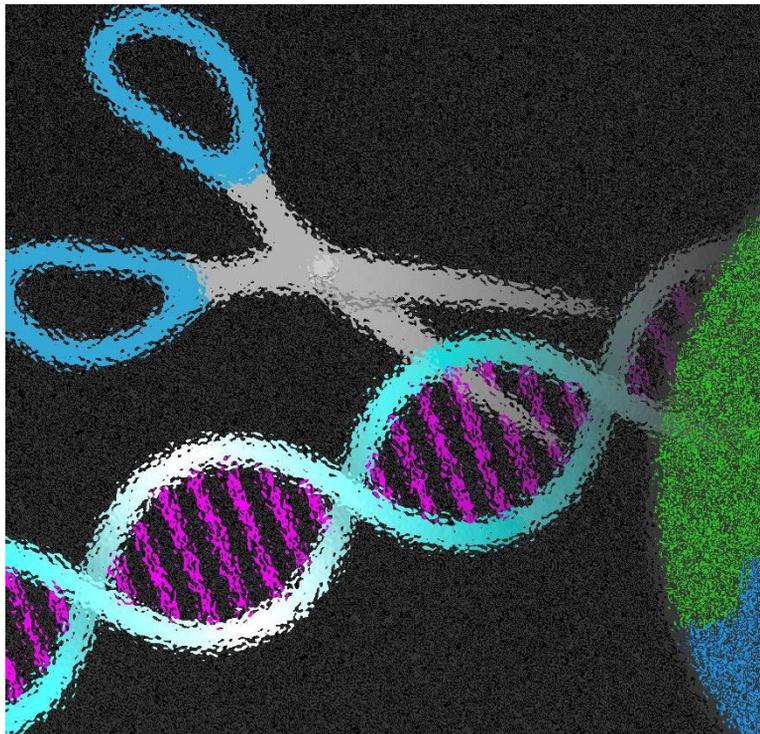
# THE CRISPR/CAS9 BABY CONTROVERSY

From the moment human beings first started to walk upon planet Earth, life would never be the same. We quickly became the dominant species in a rich and thriving ecosystem. Since then, we have become the primary factor in determining the state of the planet. Doing so, we have also shaped the course of evolution and propagation of species.

Now, it seems we have taken the next step. On November 28, 2018, He Jiankui, a Chinese researcher from the Southern University Of Science And Technology, Shenzhen, China, shocked the world when he revealed that he had successfully created the world's first genetically edited babies using CRISPR/Cas 9 technology. He claims that the babies are immune to HIV, even though their father had it. Not only did he break international scientific taboo and violate several codes of ethical conduct, his work is yet to be verified or even published. At the Human Genome Editing Conference at Hong Kong, He said that he had the consent of the parents before proceeding with the CRISPR process.

CRISPR – short for Cluster Regularly Interspaced Short Palindromic Repeats, is a family of DNA sequences found within the genomes of prokaryotic organisms such as bacteria. Cas9 is an RNA-guided DNA endonuclease enzyme associated with the CRISPR adaptive immunity system in *Streptococcus pyogenes*. The Cas9 protein has been heavily utilized as a genome engineering tool to induce site-directed double strand breaks in DNA. These breaks can lead to gene inactivation or can allow the introduction of new genes.

HIV is a deadly disease indeed, but it is highly curable today. Meddling with the human genome is a serious issue that, thanks to this incident, need to be resolved right away. If a random researcher can break norms and alter human gene sequences at his discretion, then there's no saying what may be happening in other parts of the world. There are innumerable ethical flags that will be raised from various communities from all over the world. Religious sentiments will be hurt. And it will take long, serious discussion before mankind can come to an unambiguous agreement over the fate and use of such technology. As for the rebel He Jiankui, his government ordered him to stop his research and his current whereabouts are unknown.



# T CRISPR

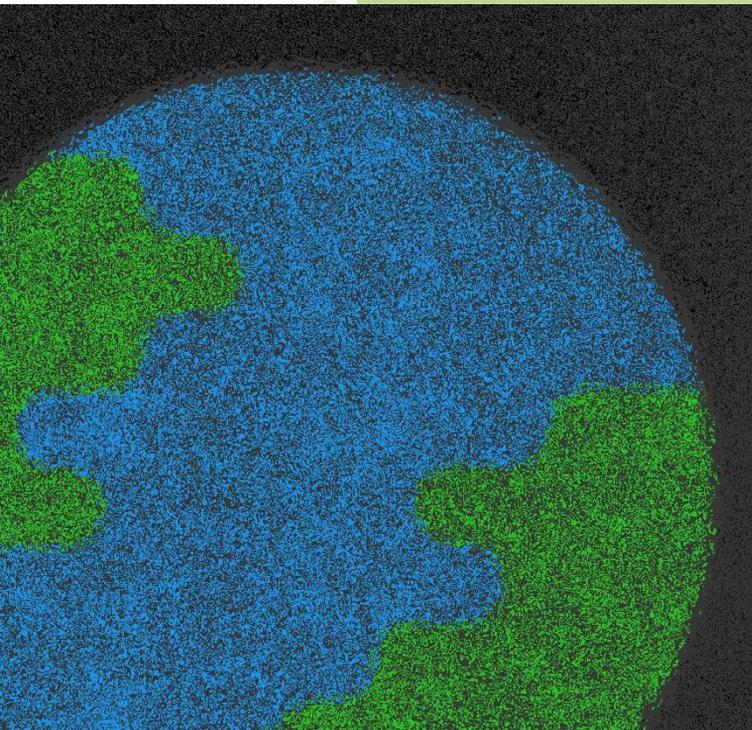
The scientific community as a whole has not shunned him though. There are some who say that He was well within his rights, considering he had parental consent. His work is yet to be evaluated by an independent third party.

Should the research be found to be sound, one might wonder what causes this enormous backlash against He's breakthrough. The plain and simple reason is this; human experimentation on children. The risk, to human lives, human children and the human genome, is great. CRISPR has been known for some time as tool that allows germline mutations to be effected. The only reason why more scientists have not already tried to use CRISPR to edit genes is the same reason Steven Spielberg has made so many dinosaur and monster-animal movies (to explain): life cannot be contained, life breaks free, life will find a way.

Creating designer babies and evolving new species comes dangerously close to playing God. If the boundaries are not set in place soon, we may have already gone beyond the point of no return.

- Ahmad Abdul Qadir Bukhari, 4BCZ

## NEW RESEARCH COULD FINE-TUNE THE GENE SCISSORS CRISPR



The introduction of the tool for gene editing called CRISPER gene scissors was a revolution in medical field and cell biology in 2007. The launch of CRISPER has been followed by debate focusing on ethical issues and the technologies degree of accuracy and side effects.

The studies from the Novo Nordisk Foundation Center for Protein Research described how one of the CRISPER technologies called Cas12a works all the way down to the molecular level. This makes it possible to fine-tune the gene-editing process to achieve the desired effects.

The researchers has used cryo-electron microscope to map the technology.

So this enables the researchers to take the photographs of different shapes of the molecule when CRISPER-Cas12a cuts up the DNA strand. They combined it with a fluorescent microscopy technique called 'single molecule FRET' that directly observes the motions of the molecules and the sequence of events for each individual protein.

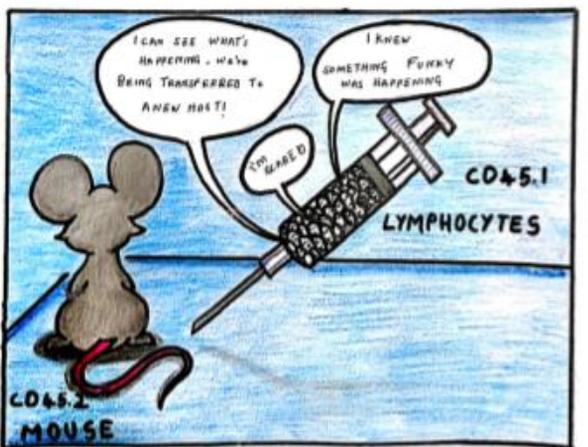
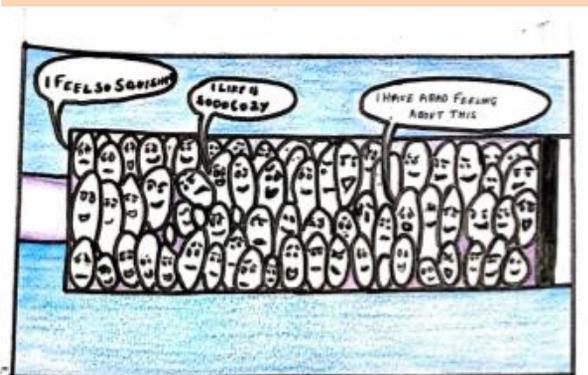
Among other things, the sequence of events revealed to researchers that 'three pieces' of CRISPER tools must change to form for the DNA to cut properly. The new study shows that the series of events in genome leading to gene editing. These three "pieces" that change, work like airport security checks.

According to researchers, their new findings could explain why CRISPER technology had side effects on the genome. Once the DNA has been cut, the three 'security checks' remains open. So it would cause the process to last longer than wanted, because the machinery behind gene editing continues to run and could cause genetic changes.

Now researchers expect their knowledge to put an end into this. They believe that it could be used to fine-tune the gene-editing technology right away.

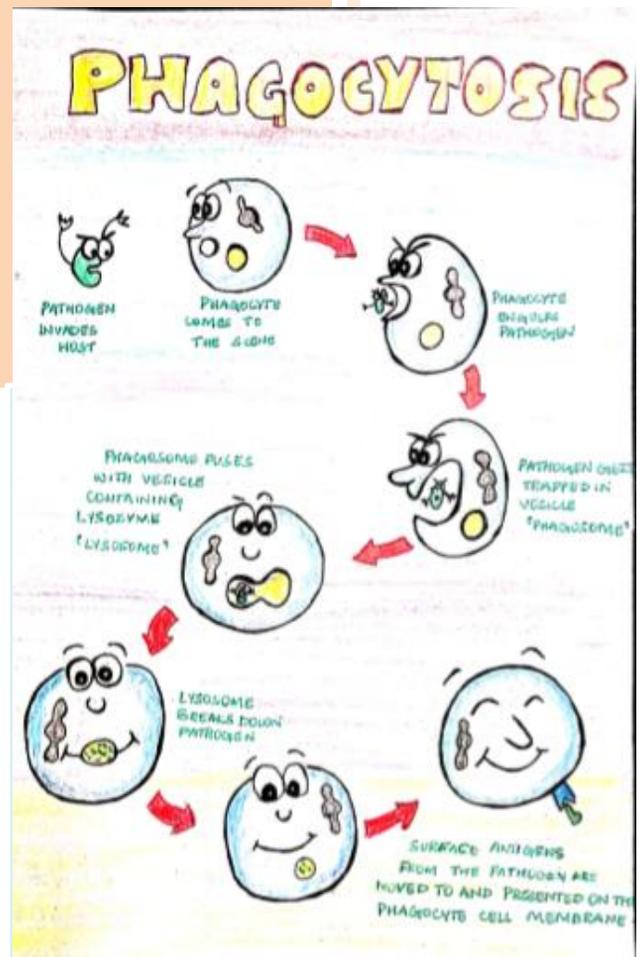
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- Esther Biju Mathew, 4BCZ



ADOPTIVE CELL TRANSFER V. ILAVARASAN 19/05/04

Artwork by V. Ilavarasan, 6CBZ



Artwork by Tenzin Dawa, 6CBZ

# MOLECULAR BASIS OF AGE

*Is growing old mandatory?*

## What is aging?

The process of becoming older, a process that is genetically determined and environmentally modulated. The wear and tear of the body is caused by trillions of different physical processes such as oxygen, radiation from the sun and our metabolism. Our bodies have mechanisms to combat this, which becomes less effective with time.

## Aging at a molecular level

Research shows that 3 major reasons for aging are:

- **Cell senescence:** Each cell has an expiration date. Each time a cell divides they copy their chromosomes. During which they lose a bit of their DNA at the ends. To prevent this telomeres are present at the end of each chromosome. But they shrink with every division. After the telomeres are gone the cells become a senescent cell. Most cells have proteins that tell them when to die. Senescent cells under produce this protein and therefore remain in the body harming tissue around them. As age increases so do the number of these cells.
- **Decline in the amount of coenzyme NAD<sup>+</sup>:** Cells are made up of hundreds of millions of parts which have to be constantly destroyed, cleaned and rebuilt. This process becomes less effective as age increases. NAD<sup>+</sup> is a coenzyme that tells our cells to take care of themselves. This is under produced as we age. Low amounts of this chemical are associated with diseases like Alzheimer's, cancer and cardiovascular diseases.
- **Decline in the number of stem cells:** Stem cells are like cell blueprints that copy themselves to form fresh, new cells. As we age they decline and without new cells our bodies breakdown. As stem cells decline development of diseases occur Can aging be Cured? Right now aging and death is a disease that affects 100% of the human population. There are several ongoing research studies that work on retarding aging. There is no single cure for aging and requires a complex array of therapies. Most of the studies are carried out mostly on mice and there is no guarantee they'll work on humans



## Can aging be Cured?

Right now aging and death is a disease that affects 100% of the human population. There are several ongoing research studies that work on retarding aging. There is no single cure for aging and requires a complex array of therapies. Most of the studies are carried out mostly on mice and there is no guarantee they'll work on humans.

- Harini V, 6CBZ

# RESEARCH ON AFLATOXINS

Aflatoxins are a class of toxic carcinogenic substances produced by certain fungi, mainly *Aspergillus flavus* and *Aspergillus parasiticus*. These fungi grow in soil, vegetation etc. Improper storage and processing of agricultural crops like chilli peppers, wheat, millet, rice and peanuts may lead to ingestion of food containing aflatoxins. They can also permeate through skin, so farmers are also at risk of exposure to aflatoxins. Aflatoxins can cause liver cancer and in children, stunted growth and development. Around the world, around 25% of the crops are contaminated with aflatoxins. They are unavoidable contaminants of plant and animal products.

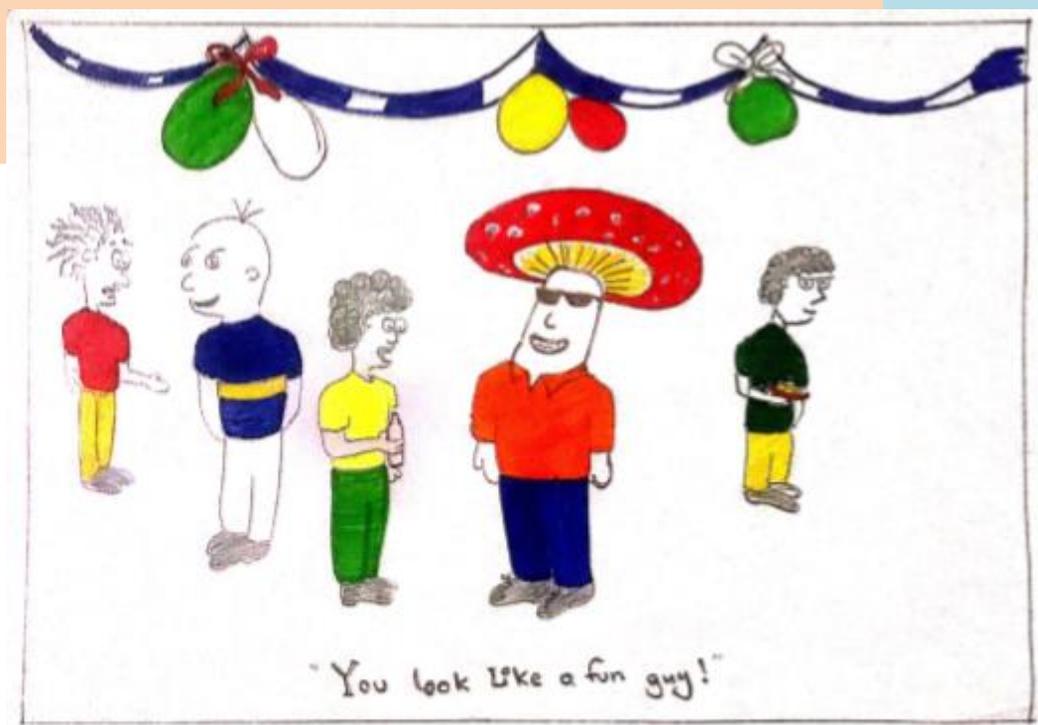
There is great research into aflatoxins and several strategies are being developed to reduce the contamination of food through aflatoxins:

- 1) Biological control by using a non toxic strain of *A. flavus* to outcompete and displace toxic strains. A recent study demonstrates the use of food grade *Aspergillus oryzae* as bio control agent as being effective against aflatoxin production.
- 2) Another research details the use of protein synthesis inhibitors in the bio control of aflatoxins. BlastocidinA (BcA), an antibiotic produced by *Streptomyces cerevisiae* is being researched to combat aflatoxin production.



*Aspergillus* spore forming Aflatoxin

- Sangavi M, 6CBZ



Artwork by Tashi Wangdu, 6CBZ

# 10 FACTS ABOUT THE ANIMAL KINGDOM

1. Dolphins communicate with each other by clicking, whistling and by other sounds.
2. Both female and male African elephants have tusks but only the male Asian elephants have tusks. They use their tusks for digging and finding food.
3. The common pond frog is ready to breed when it is only 3 years old.
4. Cats have flexible bodies and teeth adapted for hunting small animals such as mice and rats.
5. Lionesses are better hunters than males and do most of the hunting for the pride.
6. Dogs perform many useful tasks for humans including hunting, farm work and security as well as assisting those with disabilities such as blind.
7. Gorillas are considered to be very intelligent animals. They are known for their use of tools and their varied communication.
8. A cheetah can accelerate from 0-113km in just a few seconds.
9. A group of tigers are known as "Ambush" or "Streak".
10. Leopards protect their food from other animals by dragging it high up into the trees. A Leopard will often leave their prey up in the tree for days and return only when they are hungry.

- Haritha Babu & Jerin James, 6CBZ

## "EVOLUTION"

The evolutionists,  
Piercing beneath the show of momentary  
stability  
Discovered,  
Hidden in the rudimentary organs,  
The discarded rubbish of the past.  
The detached the reptile under the lifted  
feathers of bird,  
The lost terrestrial limbs dwindling beneath  
cetaceans.

They saw life rushing outwards  
From an unknown center,  
Just as today the astronomers sense the  
galaxies feeling into the  
Infinity of darkness.  
As the spinning galactic clouds hurl stars and  
worlds across the night.

So life,  
Equally impelled by the centrifugal powers  
Lurking in the germ cell,  
Scatters the splintered radiance of  
Consciousness.

- Nishita Prakash, 6CBZ



# ALUMNI TALK

## AATRAYI DAS

Batch of 2014

Currently pursuing - Internship at WWF India

Where - Assam

I took a year off to consider my options in life sciences and/or other fields. Now that I have graduated and I am preparing for entrance exams, I realize that overall, the topics have been covered in the syllabus. It would have been nice if we were given time off to prepare for entrance exams as the schedule at Christ is too hectic to properly do so.

Christ truly builds you up for life. It made me slog (not enough) and tested my patience. More importantly, it helped me grow as a person and handle all situations without throwing a tantrum. We are Christites after all!



## PALAK MENGHANI

Batch of 2015

Currently pursuing - MSc. Biotechnology

Where - Amity University, Uttar Pradesh

Pursuing bachelors degree in Christ has been an expanded experience in all areas, rather than being only an education in the field of life sciences. The focus on all round development had been clear from day one, and all activities, no matter how rigorous, have helped me to mature in various aspects, and turned me into a confident

person, with a clear view of things that matter.

There's no doubt that the faculty and environment in Christ has pushed us to bring out the best in ourselves. Events here have taught me to question things, which I believe is the basic skill required for a person aspiring to be a research scientist.

Life during my undergrads has been completely enriching. I left the college with a bucket load of memories, along with the determination of achieving my goals and dreams.

## ASHISH CHAND RAJWAR

Batch of 2015

Currently pursuing - MSc. Material Science

Where - Christian-Albrechts-Universität zu Kiel, Germany

I will always be very grateful towards Christ university, the place where I not only understood my passion but realized the tools I needed to achieve it. Moreover, everytime I think of Christ I can't help but smile, remembering the most amazing people, teachers and experiences I've had.



## KAVYA NARAYANAN

Batch of 2015

Currently pursuing - MSc. Fundamental Neuroscience

Where - Maastricht University, Netherlands

I did the BCZ major in Christ University, Bangalore. Christ provides a unique student experience that I personally consider hard to come by in many colleges these days. Learning the fundamentals of biology, and chemistry under the guidance of the faculty of Life Sciences, I began to define my own interests, in the vast labyrinths of molecular biology, genetics and organic syntheses. I could then expand this knowledge to encompass other beings of our shared ecosystem, from simple, unicellular organisms to complex primates that have evolved and established themselves in their habitats through the various courses offered in Zoology. I've been constantly supported and inspired by the dedicated staff of the life science department, who take the time out to walk students through the complex mechanisms of cellular dynamics, along with anecdotes from their own academic journey. I would recommend this program to anybody interested in learning and conducting their own research in Life sciences. Christ has made me a scientist armed with a broad perspective to view the world from and the true spirit of scientific enquiry.



## JINCY GEORGE

Batch of 2014

Currently pursuing - MSc. Zoology

Where - CHRIST (Deemed to be University)

My life in Christ has been a roller coaster with a lot of twists and turns. Being a Christite is the best thing that has ever occurred in my life. It has taught me a lot of life lessons and imbibed qualities like discipline, punctuality and finally the strength to face the world outside. The memories I have made here are some that I will cherish forever!

## JOEL JOSE

Batch of 2014

Currently pursuing - MSc. Botany

Where - CHRIST (Deemed to be University)

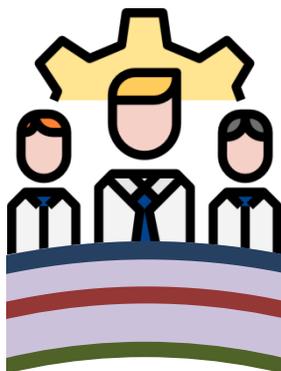
Days in Christ helped in the transition of my overall perspective towards life. It moulded me in such a way that I actually broke the shell and came out to the limelight. This transformation was due to the opportunities that Christ has offered me all throughout these years.



# DEPARTMENTAL ACTIVITIES 2018-2019



**Life Science faculty interaction with Prof. George Cobb, Chair, Environmental Sciences, BAYLOR COLLEGE, Texas, USA**  
29 May 2018



**Inauguration of Applied and Industrial Biotechnology Research Laboratory**  
12 July 2018



**Celebration of National Moth Week by Green Army**  
23-28 July 2018



**National Conference on Emerging Trends in Production of Biofuels and their Impact on Global Economy**  
27-28 July 2018



**Stem Cell Awareness and Donor Registration Drive**  
03 August 2018



**Signing of MoU with Bionivid Technology Pvt. Ltd.**  
4 September 2018



**Marine Arctic Peace Sanctuary (MAPS) India Video Conference & Save Arctic Drive**  
31 August & 15 September 2018



**National Seminar on Development and Ecological Sustainability: Issues in Emerging India**  
06-07 December 2018



**BIOGALA**  
21-22 January 2019