



VOLUME 1 ISSUE 2 ; YEAR 2021



ZOO WALLERIA

Department of Zoology

EDITORS' NOTE

Working on this newsletter was a different experience. The efforts to flatten the pandemic curve forced the College gates to remain shut, leaving us in heavy debts when it comes to relishing the divine premises of Vimala. However, ZOO WALLERIA rendered happy glasses to raise a toast for vimalites and while editing, we literally felt the aura. In simple terms, ZOO WALLERIA is a revival kit. This is a captivating display of colourful yarns of creativity, activity and experience woven into a beautiful tapestry of thoughts and ideas. However, this piece would be incomplete without acknowledging the manoeuvres of those who aided us in the completion of this gallery of innovation. #Read_it_feel_it

Gratitude :

**Dr. Honey Sebastian HOD & All faculty members
PG Department of Zoology**

STUDENT EDITORS :

**AGNES JOS C & DONA VARGHESE
S2 MSC ZOOLOGY**

WHAT'S INSIDE THIS ISSUE:

- About the Department 2
- Academic Achievements 3
- Achievements in Competitions 4
- Research 5
- Departmental Activities 9
- Mental Health 13
- COVID-19 Myths and Facts 14
- COVID Timeline 16
- Creative Mind 18
- Dream High 19
- When Technology Proliferates 20

DEPARTMENT OF ZOOLOGY



The Department of Zoology became operational in 1967 and aims to provide quality education, to promote training in practical and conceptual skills in various sub-disciplines of biology and also inculcates the spirit of resource conservation and love for nature.



The department also never fails to motivate the students for self-employment in various applied branches of Zoology and to orient the students in developing research

skills. Both under graduate and post graduate courses are being offered by the Department, which is facilitated through excellent infrastructure and qualified faculty members. The Department of Zoology has one UG and two PG programmes in Zoology. Self-financing MSc Zoology with specialization in “Fishery Science” started in the academic year 2013-2014 and regular MSc Zoology with specialization in “Structure, Physiology, Development and Classification of Animals” was introduced in the academic year 2020-2021. With the aim of educating students about the fish culture techniques, the department has initiated a start-up programme “Aquaphilia” in June 2018. The department has tie up with various research organizations/institutions and has functional MoU with them. The Department is funded by DBT-STAR College scheme in 2020.

ACADEMIC ACHIEVEMENTS

BSc and MSc Zoology - Toppers (2020 pass out)

BSc Zoology



Keerthi

(CGPA 5.75 out of 6, A+, 94.8%)



Salini P

(CGPA 5.75 out of 6, A+, 94.8%)

MSc Zoology



Remya Krishna K.K

(CGPA-3.65 out of 4, A+, 91.25%)

ACHIEVEMENTS IN COMPETITIONS



Anusree N B, III DC student, won 2nd prize in intercollegiate online photography competition in connection with the observance of 'World Environment day' & won 1st prize in poster making competition organised by NSS unit of Vimala College.



Suvarnakavya, III DC student, won 2nd prize in the Mr. and Mrs. Video competition organised by Dept. of Sociology in connection with 'Onam Celebrations'.



Ananya Rajan

Intercollegiate softball championship – Third prize

Intercollegiate Kabaddi Championship – Third prize

Intercollegiate Judo Championship – Third prize

Intercollegiate Tug of War Championship – Second prize (2nd year)

Intercollegiate Tug of War Championship – First prize (3rd year)

Intercollegiate Baseball Championship – Third prize (2nd year)

Intercollegiate Baseball Championship – Third prize (3rd year)

Mr and Mrs Video competition organised by the Department of Sociology in connection with 'Onam Celebrations' - Third prize.

RESEARCH

FACULTY AS RESEARCH GUIDES

Three Faculty members recognized as research guides at University of Calicut

Dr. Honey Sebastian (Three PhD Scholars)

Dr. Sheeba P (Four PhD Scholars)

Dr. Feeba Rani John (Two PhD Scholars)

RESEARCH PAPER PUBLICATION OF FACULTY

JOURNALS

1.**Sheeba P.** Feb 2021, Corona Virus; A Review On SARS, MERS & COVID-19, Microbiology insights,14: 1-8.Doi-10.1177/11786361211002481.UGC care listed international journal, cited in PubMed. ISSN online- 1178-6361

2.**Honey Sebastian** Feb 2021, Corona Virus; A Review On SARS, MERS & COVID-19, Microbiology insights,14: 1-8. Doi-10.1177/11786361211002481. UGC care listed international journal, cited in PubMed. ISSN online- 1178-6361

3.**Sheeba P.** Jan-Dec 2019, Diabetes Mellitus: Type 1, Type 2 & Gestational Diabetes. Scientia 15(1):22-29, ISSN-09768289

4.**Honey Sebastian**, Jan-Dec 2019, Diabetes Mellitus: Type 1, Type 2 & Gestational Diabetes. Scientia, 15(1):22-29, ISSN-09768289

5.**Indu M S.** Aug 2020, Ameliorative Effect of Neera, A Non-Fermented Coconut Inflorescence Sap (CIS) on Cisplatin Induced Renal Toxicity by Abating Oxidative Stress. Journal of Basic & Clinical Physiology & Pharmacology, 32(1):2-9. ISSN-2191-0286

6.**Indu MS.** Nov 2019, Oxidative Stress & Inflammation in Atherosclerosis. Millenium Zoology, 20:40-44. ISSN-0973-1946

7.**Meera KM.** Jan-Dec 2019, A Review of Myctophids In the World Oceans with Special Emphasis on Indian Ocean. Scientia, 15(1):22-29, ISSN-0976828

PROCEEDINGS

Freny Jacob, 2020. In Vitro Anthelmintic Activity of Aqueous Leaf Extract of *Rhinacanthus Nasutus* (L), In: Proceedings of the Virtual international conference on 'Energy, environment and Health', page-29. ISBN-9878194062707

Indu M S, 2020. Macrophage Cholesterol Efflux Assay for the Identification of the Active Fraction in the Methanolic Extract of *Desmodium Gyrans* DC. and Evaluation of its Influence on Reverse Cholesterol Transport by Gene Expression Studies, In: Proceedings of the Virtual international conference on 'Energy, environment and Health', page-30. ISBN-9878194062707

K M Meera, 2020. A Review on Harvesting and Post Harvesting Technologies of Lantern Fishes (Myctophids) from Indian Ocean with Special Emphasis on Arabian Sea for their Better Utilization, In: Proceedings of the Virtual international conference on 'Energy, Environment and Health', page-34. ISBN-9878194062707

P Sheeba, 2020 A Review on The Changing Ecology of Thrissur Kole Wetlands - A Ramsar Site, In: Proceedings of the Virtual international conference on 'Energy, environment and Health', page-35. ISBN-9878194062707

POSTER PRESENTATION OF FACULTY

Indu M S, Sr. Freny Jacob and Shilpa M S presented poster on Larvicidal Activity of Biogenic Silver Nanoparticles against *Culex quinquefasciatus* larvae- International Poster Presentation Competition (IPPC) 2020 organized by NYAB, INYAS, SLAYS and TYSA held in Sep - Oct 2020.

BOOKS PUBLISHED

1. MODERN TRENDS IN BIOLOGICAL RESEARCH- A Handbook in connection with the National Level Virtual Scientific Paper Presentation Competition organized by 'ZOOTOPIA', The Journal Club, Department of Zoology, ISBN: 978-81-7255-134-6

Published by: Vimala College Publications April 2021

2. Proceedings of the International Seminar on “Health Science Research: Opportunities and Challenges” Organised by Department of Zoology, ISBN:978-81-7255-133-9

Published by: Vimala College Publications April 2021

3. Zoologie Innovante - Series 1, ISBN: 978-81-7255-135-3

Published by: Vimala College Publications April 2021

PAPER PRESENTATION OF FACULTY

Dr. Sheeba P, Sr. Freny Jacob, Dr. Indu M.S. and Dr. Meera K.M presented paper at Virtual International Conference on 'Energy, Environment and Health' organised by Sree Ayyappa College, Chengannur, Kerala, on 11/09/2020.

FACULTY AS RESOURCE PERSON

Dr. Indu M.S - Resource person in the webinar organized by Dept of Zoology, KKTM, Govt College, Pullut on the topic “The good and bad cholesterol and cardiovascular diseases” on 26/08/2020.

Dr. Meera K.M - Resource person in the ‘Enwenarr session 90’ organized by Alappuzha Natural History Society and Kottayam Natural Society on the topic “Lantern fishes of the Indian ocean” on 12/09/2020.

Dr. Meera K.M delivered a talk in All India Radio on the topic “Lantern fishes of deep sea” on 16/02/2021.

EXTENSION LECTURE OF FACULTY

Dr. Honey Sebastian engaged with class for pre-marital course at Family Apostolate Centre of Thrissur Archdiocese, on the topic “Responsible parenthood with special emphasis on Natural Family Planning methods” for nine years.

Dr. Feeba Rani John delivered a talk on “Water Conservation” for students at St. Paul’s public school Kuriachiara.

RESEARCH PUBLICATION OF STUDENTS



Nihala Naseefa C H.
Jan-Dec 2019, Diabetes
mellitus: Type 1, Type 2
and gestational diabetes.
Scientia, 15(1):22-29,

ISSN-09768289

Nihala Naseefa Chathappady House.
Feb 2021- Corona virus; A review on
SARS, MERS and COVID-19
Microbiology insights, 14: 1-8. Doi-
10.1177/11786361211002481. UGC
care listed international journal cited
in PubMed. ISSN online- 1178-6361

POSTER PRESENTATION OF STUDENTS



Shilpa M S. Larvicidal
Activity of Biogenic
Silver Nano Particles
against *Culex*

quinquefasciatus larvae –
International Poster Presentation
Competition 2020 organized by
NYAB, INYAS, SLAYS and TYSA
held in Sep – Oct 2020.

DEPARTMENTAL ACTIVITIES

COVID COMBAT

2nd year UG students prepared a video for spreading the message on taking precautions against the Covid-19 pandemic on 23rd April 2020.

The department organized an international webinar on 'Covid-19 co - existence' on 5th September 2020.

INTERCOLLEGIATE COMPETITIONS

A series of inter-collegiate online competitions in connection with the observance of 'World Ocean Day' celebrations, 'Thalassophile- the lover of the ocean' from 28th may to 02 June 2020.

DEPARTMENT ORGANIZED WEBINARS

Department of Zoology organized a regional webinar on the topics 'Environment, Biochemistry and Toxicology' on 6th June 2020.

DBT-STAR College funded National webinar on 'Biodiversity Conservation' on 30th June 2020.

DBT-STAR College funded National webinar on 'Recent trends in biological research' in association with with the Department of Botany on 9th and 29th September 2020.

DBT-STAR College funded National online workshop on 'Tools and techniques in biological research' on 6th and 7th October 2020.

STUDENT ORGANIZED WEBINAR

UG and PG students organized Regional webinars 'SYNERGY 2020' Series 1 & 2 on the topics: 'Taxonomy and Diversity of Echinoderms in Indian Waters', 'Basic Tools and Techniques in Molecular Biology', 'Mammals of India', 'Diversity of Marine Zooplankton and an Introduction to Marine Benthos'.

STUDENT INTERNSHIP

In association with the State Zoo and Museum, Thrissur, UG and PG students gathered information about the eco-biological aspects of animals kept in the zoo and published it as a handbook for Zoo visitors 'ZOO FABLE' with ISBN.

COLLABORATIONS

Marine Centre for Advanced Research, St. Mary's College Thrissur for projects of PG students (with functional MoU)

Kerala State Museum and Zoo, Thrissur for student internship (with functional MoU)

Central Plantation and Crop Research Institute- ICAR, Kasargod (with functional MoU)

Kerala State Horticulture Product Development Corporation, Alappuzha for value added course on Apiculture.

QUIZZES AND DAY CELEBRATIONS

Students organized various day celebrations and conducted programmes through online platforms.

Observance of 'Hiroshima Nagasaki Day' under the banner 'Science for Peace' was done by 2nd year PG students in November 2020. YouTube link: <https://youtu.be/-saXAroCDQY>

1st year PG students prepared a video presentation to convey the message of 'conservation of forest and biodiversity' in connection with the observance of 'World Forest Day' on 21st March 2021. YouTube link: <https://youtu.be/vdUFzERkpz8>

They also prepared a video to depict the awareness about the climate change and its mitigation measures in connection with the observance of 'World Metrological Day' on 23rd March 2021. YouTube link: <https://youtu.be/AMzLoEUXD0g>

1st year UG students prepared a video highlighting the care and concern we should extend towards the birds of our locality in connection with the observance of 'world sparrow day on 20th March 2021. They bring forth the requisite to safeguard and ensure a healthy habitat for sparrows. YouTube link: <https://youtu.be/Nz3bMA-HH1A>

2nd year UG students prepared a video presentation to convey the message of 'conservation of water and water sources' in connection with the observance of 'World Water Day' on 22nd March 2021. YouTube link: <https://youtu.be/gKu2X2-tUkw>

3rd year UG students prepared a video presentation to depict the awareness about the importance of biodiversity conservation in connection with the observance of 'International Biodiversity Day' on 22nd May 2021. YouTube link: <https://youtu.be/UtViAWcLnxw>

'Zoodiverse' an online quiz series was organized in connection with the observance of World Mosquito Day, National Wildlife Ecology Day, Wildlife week, National animal shelter and rescue appreciation week.

TALKS AND LECTURES

As a part of the 'Health and Wellness' program, the department organized lectures on the topics 'Responsible Parenthood - with emphasis on reproductive health', and 'Breast Cancer - early detection' in association with WDC.

INFRASTRUCTURE DEVELOPMENT

Construction of a new instrument room and renovation of computer lab were done using the RUSA fund and additional classrooms were allotted for new PG regular program, instruments worth Rs 10 Lakhs, chemicals, glasswares, and books worth Rs 3 Lakhs were purchased under DBT- STAR College scheme.

DEPARTMENT ASSOCIATION

Vimala Zoological Society, a departmental association, consisting UG and PG students organized various seminars and competitions, and also publishes a newsletter every year. 'Zoowalleria Volume 1 Issue 1' was published by 1st year PG students. 2nd year UG students published an E-magazine including their literary and artistic works. Link: <https://online.fliphtml5.com/wktve/act/?1617880530691#p=1>

THE JOURNAL CLUB ZOOTOPIA

A National - level virtual scientific paper presentation competition was organized on 9th January 2021, under three focal themes, 'Health and Disease', 'Biodiversity and Environment', 'Biotechnology and Pharmacology'.

ZOORESEARCH

Fourth semester PG students presented their project report before an expert committee consisting of research guides and other faculty members of the department on 5th June 2021.

ALUMNAE ACTIVITIES

ZOOALUMNAR

An alumnae lecture series, 'Zooalumnar', motivational talk was organized by Sherin Varghese, 2019 PG pass out student, on 23.09.2020. Motivational talk on 'Prospects of Academia' by UG 2013 pass out students; Priyanka NP, PhD Scholar, Sastra University, Thanjavoor, TN and Athulya Girish K, PhD Scholar, National Centre for Biological Sciences, Bangalore on 27.09.2020.

With the support of our alumnae, coaching for NET – JRF examinations was conducted for UG and PG students.

Alumnae of our Department contributed Rs. 3000 for 'VIMALARDRAM PROGRAM' organized by the alumnae association of the college.

START UP – 'AQUAPHILIA'

With the aim of educating students about the fish culture techniques, the department has initiated a start-up programme "Aquaphilia" in June 2018.



VALUE ADDED COURSES

Two value added courses were introduced. 'Apiculture' for 2nd year UG students and 'Women and Health' for 1st year UG students.

ZOOERA

'Zooera- A series for bioenthusiasts', involves presentations of students on various topics of current biological importance. Students who presented are: Haritha H on 'Autism Spectrum Disorders' and Silla Anton on 'Introduction to Biomedical Nanotechnology' of S3 MSc Zoology, Adithya Girijavallabhan on 'Breast Cancer - Causes and Risk Factors' and Anvitha Joy on 'How Endometriosis Disrupts Women's Lives' of S6 BSc Zoology and Aditi K P on 'The Amazing World of Corals' and Aysha Hyrin Najeeb on 'The mystery of sponges' of S2 BSc Zoology.

MENTAL HEALTH

Mental health, includes our emotional, psychological, and social well-being. It affects how we think, feel, act and is the foundation for individual's well-being and the effective functioning of a community. Even in the present days, mental health is one of the most neglected areas of health globally. It is an underserved cause in international aid for the same reasons. In addition to that, it still is a taboo topic in most of the countries. The reasons why people don't seek treatment are vast. The stigma and shame around receiving treatment can keep people from getting help. The second, is the perception of mental health disorders as a "luxury good", rather than those being actual illnesses.

Current challenges brought about by COVID-19 has further worsened the status of mental health. The lockdown and quarantine restrictions are unprecedented and challenging in many ways. Fear of catching COVID, health issues, stress, disruptions, social isolation and so on have been cumbersome. The

lockdown also forced many to lose their job, work for longer hours in ways they weren't used to, stay away from friends, family and live life in a different way. Many people who suffer from depression don't realize they're suffering from treatable illness and seeking help may not even enter their mind. Suffering from depression is involuntary, just like cancer or diabetes, but it's a treatable illness that can be managed. If you or someone you know is going through something difficult or struggling with depression you are not alone. Helplines can provide free, confidential and immediate support.



COVID: MYTHS AND FACTS

	<p>MYTH: A person can be infected by COVID-19 by eating eggs, chicken, and meat.</p>	<p>FACT: There is NO evidence for COVID-19 transmission due to eating eggs, chicken and meat. It's important to follow good hygiene practices.</p>
	<p>MYTH: COVID-19 can be transmitted from pets.</p>	<p>FACT: There is no evidence that companion animals/pets such as dog or cat are spreading disease to humans.</p>
	<p>MYTH: Corona virus cannot survive in high temperature.</p>	<p>FACT: The virus can spread in all areas including areas with hot and humid climates.</p>
	<p>MYTH: Taking hot bath can prevent COVID-19 infection.</p>	<p>FACT: Hot baths cannot prevent you from catching COVID-19. Your normal body temperature remains around 36.5 degree Celsius regardless of bath.</p>

	<p>MYTH: COVID-19 can be transmitted through mosquito bites.</p>	<p>FACT: There is currently no evidence of transmission of COVID-19 by mosquito.</p>
	<p>MYTH: Eating garlic can help prevent COVID-19 infection.</p>	<p>FACT: There is no evidence that eating garlic can protect from COVID-19.</p>
	<p>MYTH: COVID-19 affects older people and not younger.</p>	<p>FACT: People of all ages are infected by COVID-19.</p>
	<p>MYTH: Consuming alcohol can protect from COVID-19.</p>	<p>FACT: Drinking alcohol does not kill virus.</p>
	<p>MYTH: Antibiotics are effective in preventing and treating the novel Corona virus.</p>	<p>FACT: Taking antibiotics will not prevent or treat COVID-19. Antibiotics do not work against virus.</p>

COVID TIMELINE

JANUARY 9, 2020: WHO announces mysterious corona virus – related to pneumonia in Wuhan, China.

JANUARY 20, 2020: CDC confirms that 3 US airports will begin screening for corona virus.

JANUARY 21, 2020: Chinese scientist confirms COVID -19 corona virus case. Chinese scientist confirms COVID -19 human transmission.

JANUARY 23, 2020: Wuhan under quarantine.

JANUARY 31, 2020: WHO issues global health emergency.

FEBRUARY 2, 2020: Global air travel is restricted.

FEBRUARY 25, 2020: CDC says COVID- 19 is heading towards pandemic status.

MARCH 6, 2020: Passengers on California cruise ship test positive for corona virus.

MARCH 11, 2020: WHO declares novel corona virus outbreak a pandemic.

MARCH 18, 2020: Family's first corona virus response act signed into law.

MARCH 19, 2020: Governor of California announces executive 'stay home except for essential needs' order.

MARCH 29, 2020: Stay at home guidelines extended.

APRIL 28, 2020: U.S. becomes first country with 1 million confirmed cases of covid 19.

MAY 1, 2020: Lockdown extended till May 17 in India.

MAY 17, 2020: Lockdown extended till May 31 in India.

MAY 31, 2020: India records 5,000 deaths.

JUNE 1, 2020: India is now the 7th most infected country.

JUNE 11, 2020: India surpasses the UK to become the fourth worst hit nation.

JUNE 17, 2020: India registers the highest ever spike of 2,003 COVID-19 deaths as Maharashtra and Delhi.

JULY 1, 2020: Government announces guidelines for unlock 2.0.

JULY 6, 2020: India overtakes Russia to become third worst hit country.

AUGUST 26, 2020: Serum institute of India starts trials of covishield.

OCTOBER 26, 2020: Government asked state to prepare 3-tier system for vaccine rollout.

NOVEMBER 9, 2020: Pfizer and BioNtech said that, in vaccine candidates, the vaccine proved to be effective upto 90%.

NOVEMBER 28, 2020: Vaccine trial participants demand Rs 5 CR in damages

DECEMBER 21, 2020: India bans flights from UK.

DECEMBER 29, 2020: Six arrivals from UK tested positive for new strain.

JANUARY 16, 2021: India began its vaccination programme.

JANUARY 26, 2021: India reported a record a low case count of around 9,100 new cases.

APRIL 1, 2021: Vaccinations were made available to all Indians over the age of 45.

APRIL 29, 2021: India surpassed 18 million causes three days after passing 17 India reported a new record of 379,257 new infections and 386,453 new deaths.

MAY 6, 2021: The country reported 412,262 new confirmed cases, the most for a single day for any country after the pandemic began.

CREATIVE MIND



VISMAYA V V



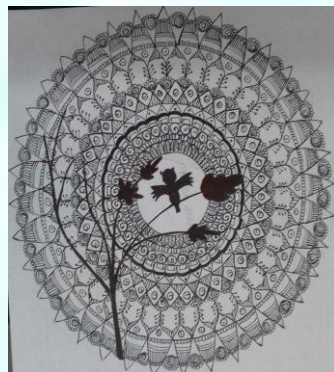
ANISHMA P A



ANISHMA P A



AGNES JOS C



NAYANA VARGHESE



SWALIHA P A



ANEENA BIJU



HEMA JOEMON

DREAM HIGH

TIFR Entrance Test (JGEEBILS)

(JOINT GRADUATE ENTRANCE EXAMINATION FOR BIOLOGY AND INTERDISCIPLINARY LIFE SCIENCES)

Organizing body: Tata Institute of Fundamental Research

Programmes: Biology (PhD, Integrated PhD and MSc programmes)

Eligibility: Biology- Candidates will be shortlisted for interview based on written test marks. For PhD, Masters in Basic Science or a 4-year degree programme (MBBS, BDS).

For I- PhD/ MSc - Bachelor's in any Science or any 4-year degree programme (Candidates in the final year of qualifying degree can also be apply).

Application procedure: Submit online application at <http://univ.tifr.res>

IIT JAM

(JOINT ADMISSION TEST FOR MASTERS)

Organizing body: Indian Institute of Technology

Programmes: MSc, MSc- PhD

Eligibility: in the qualifying degree, the aggregate marks or CGPT /CPI without rounding off should be atleast 55%

About JAM: National test for admission to MSc at IITs. JAM score is used by IISc Bangalore for admission to integrated PhD programmes and also used by NITs, IEST Shibpur and IISEEs for admission

Application procedure: <https://jam.iitk.ac.in/>

CUCET

(CENTRAL UNIVERSITIES COMMON ENTRANCE TEST)

Organizing body: Central university

Programmes: MSc, PhD

Eligibility: PG- Candidates must possess a bachelor's degree from a recognized university with 55% of marks. PhD -Master's degree from a recognized university. If a candidate cleared UGC-CRI, GATE or any nation examination they need not appear for test. Application procedure:

<https://www.cucetexam.in>

JNU EE

Organizing body: Jawaharlal Nehru University, Delhi

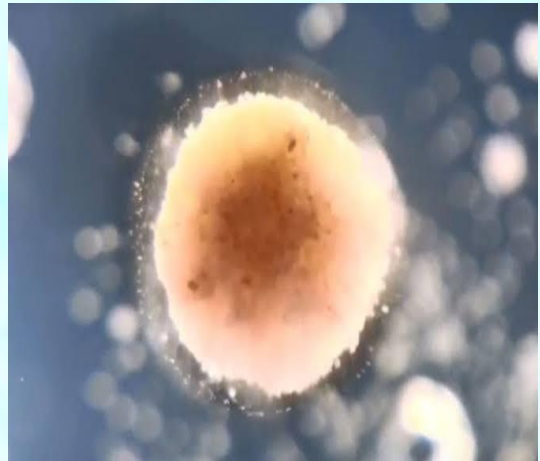
Programmes: MSc, PhD

Eligibility: Candidates must have obtained at least 55% in qualifying degree. Application procedure: <https://www.jnu.ac.in>

WHEN TECHNOLOGY PROLIFERATES

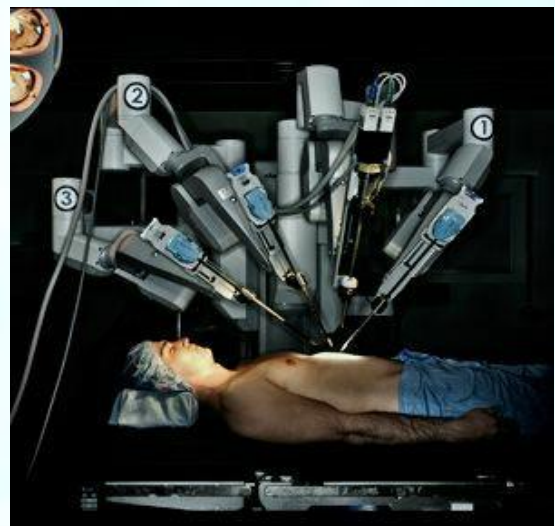
Meet the Xenobots

World's first living machine was created using frog cell and artificial intelligence. Even though the original stem cells came from frogs – the African clawed frog *Xenopus laevis* – these so-called Xenobots don't resemble any known amphibians. The tiny blobs measure only 0.04 inches in width and are made of living tissue that biologists assembled into bodies designed by computer models, according to a new study. These mobile organisms can move independently and collectively, can self-heal wounds and survive for weeks at a time, and could potentially be used to transport medicines inside the patients' body.



When your surgeon is a robot

Robotic or Robot-assisted surgery integrates advanced computer technology with the experience of the skilled surgeons. A robot is enabled to participate in the surgical process. It is a computer-controlled device that is programmed in such a way that it aids the positioning and manipulation of surgical instruments. Such devices enable the surgeon to carry out tasks that are complex in nature. These devices do not act independently (i.e., replacing human surgeons), but instead work as remote extensions that are governed by the surgeon-in-charge. The working of the robotic devices alongside the surgeon is quite often called “master-slave manipulators”. Till date, there are two such master-slave robotic systems that have received approval from the US Food and Drug Administration (FDA): 1. da Vinci Surgical System 2. ZEUS system.



Brain computer interface

What if we could link our mind directly with artificial intelligence, robots and other devices? Brain-Computer Interface (BCI) is intended to achieve this. It enables users to interact with computers by the means of brain activity. The signal directly goes from the brain to the computer, rather than going from the brain through the neuromuscular system to the finger on a mouse. They are of two types: non invasive and invasive. In non invasive, an electroencephalography is placed outside the scalp that help to communicate and receive brain wave signals. In invasive, a sensor is introduced into the head by a surgery and it helps for the communication.



Bioprinting

Bioprinting is the practice of using 3D printing technology to generate organic cell structures. The technology uses a material known as bioink to create these structures in a layer-by-layer manner. This makes it possible to print functional tissue, which can then be used in medical research, or for transplant purposes. Resulting tissue-like structures mimic the actual micro and macro environment of human tissues and organs. This is critical in drug testing and clinical trials with the potential, for example, to drastically reduce the need for animal trials.

