



IWSA NEWSLETTER

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Science Exhibition at the Rotary Kopri Seva Utsav on January 12th, 2019.



Science Day Celebrations at IWSA on February 22nd and 23rd, 2019.



Celebration of International Women's Day at IWSA on March 9th, 2019.

BRANCHES

Roorkee 1979, Hyderabad 1979, Pune 1980, Nagpur 1982, Kolhapur 1982, Delhi 1987, Kalpakkam 1987, Baroda 1988, Amravati 2010, Bengaluru 2018, Nellore 2018.



Dr. Sanjay Gupta delivering the lecture on Epigenetics at SIES College, Sion on 5th February 2019.



Dr. Nafisa Balasinor delivering the lecture on Gene Imprinting at St. Xavier's College, on 11th February, 2019.



Dr. Bobby George delivering the lecture on Regulatory Affairs at SIES College, Sion on 20th February, 2019.



Dr. Bakhtaver Mahajan delivering lecture on Research Methodology at SIES College, Nerul on 28th February, 2019.



Dr. R.K. Varsa delivering the lecture on Mass Spectrometry at G.N. Khalsa College, Matunga on 28th February, 2019.



Dr. Nandita Madhavan delivering lecture on Chromatography at SIES College, Sion on 16th April, 2019.



UDAAN II – Handing over Teaching Aid Kit to Ms. Aruna Mugatwar, Superintendent, Byculla Jail and Dr. Vijayaraghavan, Director, PRAYAS, TISS on 5th April, 2019.

From the Editor's Desk



Dear IWSA Members,

In this issue of the Newsletter, you will find reports on the five BRNS Popular Science Lectures that were held between January and April 2019 in various colleges in Mumbai and Navi Mumbai. You will find reports on other Science Awareness activities such as participation in the Science exhibition organized by Rotary Club of Thane, Science Day celebration with exhibitions based on the theme "Water - its Uses, Conservation & Future", MERIT Science Camp for school children and several interesting activities of IWSA's Learning Garden. On 5th April 2019, IWSA had launched the Balsangopan Sevika Course under the project UDAAN II, for women jail inmates. On completion of this Course the jail inmate will be well equipped to join a Balwadi / Day Care / Preschool as an assistant teacher. We have reported the details about this program in this Newsletter. IWSA encourages girl students by annually disbursing various Scholarships under different categories. You can read about this year's scholarships in this Newsletter.

This issue also brings the interesting activities held at IWSA Branches at Amravati, Bengaluru, Delhi, Hyderabad, Kalpakkam, Pune and Roorkee. An experienced gynecologist has written an article on "Menstruation and Disorders" which will be useful to all women. The United Nations has proclaimed 2019 as the 'International Year of the Periodic Table of Chemical Elements IYPT-2019'. In view of these, I have included a cartoon which gives useful information about the chemical elements. I have also included a write up about women achievers in various fields, which I am sure you will find it interesting to read. I hope that all of you will enjoy reading about these reports and the scientific information content of this Newsletter.

With best wishes

Shyamala Bharadwaj

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Dr. Shyamala Bharadwaj (Editor)
Dr. Susan Eapen (Co-Editor)
Dr. Devaki Ramanathan
Dr. Dhanya Suresh
Dr. Nalini Bhat

President's Message



Dear IWSA Members,

This is the first issue for the year 2019. Our Editor, Dr. Shyamala Bharadwaj and the Newsletter team have put together the activities at headquarters and the branches. In addition they have brought to attention information about women achievers and some contemporary topics. The newsletter could include only those branch reports which were received before mid March 2019. The reports received thereafter will be considered for our next Newsletter.

It is heartening to note that most of our branches are making efforts to conduct activities as per the mandate of IWSA. **For the year April 2018-March 2019, IWSA has through activities at headquarters and its eleven branches reached out~ 17000 recipients.** This number is~ 6000 more than the last year. I request the Branch Conveners to help us in increasing this number by another 6000 or more recipients in the year 2019-2020. I am confident that we can meet or beat this target.

Although each of the branches is conducting events at or around their locales, I see very little effort by members from different branches to meet. We expect the Branch office bearers or representative members to attend the AGBM at Headquarters. Out of the eleven branches we see members only from three or four branches attending. This is disappointing. If any of the office bearers or IWSA branch members come to Mumbai/Navi Mumbai on personal or official visits, do consider adding an extra day to visit the IWSA campus in Vashi. Our Executive Committee members, Trustees and other subcommittee members who are often at the campus would be happy to meet with you and exchange ideas. Do write to the President at iwsahq@gmail.com and she will organize to see we have a fruitful and enjoyable meeting.

IWSA, Hyderabad Branch is hosting the XIV Triennial National Conference of IWSA during 11th to 13th December 2019. The first flier of the Triennial is given in this Newsletter. Do participate actively in this Conference which is focussing on **"Women Led, Science, Technology and Innovation"**. Encourage your friends and colleagues to take this opportunity to meet with Women who lead India's development.

In June 2019, I complete my tenure as President, IWSA (2017-2019). It has been a very meaningful two years with IWSA for me. I take this opportunity to thank all the members of IWSA for their support and encouragement during my tenure.

With Best Wishes

Dr. Surekha Zingde
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Reports from Head Quarters

Science Awareness Programs

A. IWSA – BRNS Popular Science Lectures

1. BRNS-Popular Science lecture at SIES College, Sion on 5th February, 2019

Dr. Sanjay Gupta, Senior Scientist from Advanced Centre for Treatment, Research and Education in Cancer, delivered a lecture on **Epigenetics** at the SIES College of Arts, Science and Commerce, Sion, Mumbai on 5th February, 2019. Dr. Gupta briefly revised the process from genes, to mRNA, to protein and described all the epigenetic changes that take place in the cell. He then focused on the epigenetic alterations in the histones and how these changes can be used for disease management. Dr. Gupta explained that histone variants, isoforms and their covalent modifications appear to work together in establishing and maintaining gene activity states, thus regulating a wide range of DNA-dependent cellular processes. Recent progress in the field of chromatin research has shown that alterations in histones are associated with cellular proliferation, differentiation, plasticity, DNA damage and malignancy processes. Interest in histone modifications has further grown with the discovery and use of specific inhibitors against histone-modifying enzymes in different patho-physiological states. The presentation, described the recent advances in the understanding of histone alterations and disruptions of chromatin-based mechanisms which may facilitate the development of cancer. Further, chemo-resistance nature of gastric cancer, poor response rate to chemotherapy and observed global hypoacetylation in gastric cancer tissues suggest the importance of HDAC inhibitors (HDACi) in sensitizing tumor cells to chemotherapeutic drugs. The presentation showed how HDACi treatment can be used for the better management of cancer.

The lecture was attended by 130 students from department of Biotechnology. During and after the lecture Dr. Gupta answered the questions raised by the students. At the beginning of the lecture Dr. Uma Shankar, Principal of the college addressed the students and Dr. Surekha Zingde, President, IWSA informed the students about the activities of IWSA.

2. BRNS-Popular Science Lecture at St. Xavier's College, Mumbai on 11th February, 2019

Dr. Nafisa Balasinor, Sr. Dy. Director, from ICMR-National Institute for Research in Reproductive Health, spoke on **Gene Imprinting** at St. Xavier's College, on 11th February, 2019. She explained that mammals inherit two copies of every gene, one from the mother and one from the father, through the process of sexual reproduction. These genes are bi-allelically expressed and follow the Mendelian law of inheritance. However, a subset of genes does not follow the Mendelian law and are expressed only from one specific parental allele. This phenomenon is known as Genomic Imprinting or Gene Imprinting and the

genes are called imprinted genes. Genomic imprinting can be defined as the differential expression of a gene or chromosomal region according to the parental origin of inheritance. Till date, in humans, approximately 100 imprinted genes have been identified. Gene Imprinting plays an important role during embryogenesis, behaviour, brain development and studies suggest that both paternal and maternal alleles are essential for normal embryogenesis. The parental allele specific expression is because of differential epigenetic marking on the parental allele during gametogenesis. The imprint marks are established during gametogenesis, maintained and read during embryogenesis and throughout life of an individual. Abnormal expression of imprinted genes, through genetic or epigenetic alterations can lead to a number of growth and developmental disorders like Beckwith Weidemann Syndrome and Silver-Russell Syndrome, Prader Willi Syndrome and Angelman Syndrome. Imprinting disorders could involve genetic changes, such as deletion of a chromosomal region, pathogenic gene sequence variants, copy number variants and uniparental disomy (UPD), or epigenetic changes in the form of aberrant DNA methylation that affect the regulation of imprinted loci (epimutations). Recent evidences suggest an association of assisted reproductive technologies (ARTs) with defects in imprinting leading to increase in growth disorders. Epigenetic errors related to ARTs are speculated to be caused by gamete and embryo manipulation procedures carried out at a critical time when imprint marks are erased, established, maintained and read. Alternatively, imprinting errors could be a cause of infertility that is unmasked during ART. Recent insights into the effect on environmental factors affecting the epigenome, suggest that the developmental outcomes and heritability of imprinting disorders are influenced by interactions between the genome, the epigenome and the environment in germ cells and early embryos.

The lecture was attended by 60 students from BSc and MSc classes of Biotechnology Department. A few faculty also attended the lecture. Dr. Balasinor interacted with the students and answered their queries. Prior to the lecture Dr. Surekha Zingde, President, IWSA informed the audience about IWSA.

3. BRNS-Popular science lecture at SIES College, Sion on 20th February, 2019

Dr. Bobby George, Vice President & Head, Regulatory Affairs, Reliance Life Sciences Pvt. Ltd. (RLS) delivered a lecture on **“Regulatory requirements and inherent risks & challenges in developing Biologicals”** at SIES College of Arts, Science and Commerce, Sion on 20th February 2019. Dr.George informed the students about biologics through a very interactive question-answer session and then developed the lecture to regulatory affairs. He went through the regulatory aspects and associated challenges which have to be factored by companies during R&D, preclinical, clinical trials, market launch and during post marketing phase of biological drug development life cycle.

Over 80 biologic molecules have been launched globally over the past decade, bringing new treatment options to patients across a large number of therapy areas. The global pharmaceutical market is projected to grow to \$390 bn by 2020, of which biological drugs is estimated to account for up to 28% by value, with this ratio going to get more skewed towards biologics in the years to come. With more number of originator's biologic products going off patent, there is an exciting opportunity for biosimilars, with global

biosimilar market worth projected to reach \$25.5 bn by 2020. There are inherent risks for companies entering in biologic space including regulatory challenges. Increasing number of companies are exploring opportunities of mergers, acquisitions and entering into partnership deals so as to navigate through complex processes and thereby mitigate the risks.

The lecture was attended by 80 students and several faculty from departments of Biotechnology and Biochemistry. The discussions and questions continued much after the lecture. Dr. George Abraham, Vice Principal, SIES college addressed the students before the lecture. Dr. Surekha Zingde, President, IWSA informed the students about IWSA.

4. BRNS-Popular Science Lecture at SIES College, Nerul, Navi Mumbai on 28th February, 2019

Dr. Bakhtaver Mahajan, Trustee, IWSA Board of Trustees, Navi Mumbai and former Prof. Homi Bhabha Centre for Science Education, Mumbai delivered the lecture on “Research Methodology” at the SIES College, Nerul, Navi Mumbai, on 28th February, 2019.

Scientific Research Methodology has evolved over centuries with the evolution of sciences, from the times of Plato and Aristotle (>300 BC) to the scientific revolution (in the 17th century), which put the sciences of astronomy, physics, chemistry, biological sciences (all based on logic, reason, observations and verification with quantitative/mathematical thinking) on strong footing. Tracing, in brief the history of science, Dr. Mahajan brought out the strengths of science and its methods over other disciplines and social activities. It was also emphasized that the scientific research methodology has elements of several disciplines, like ethics, statistics and data and analytical sciences. Interacting with students, it was shown that students and all of us in school and college experiments, since the dawn of scientific revolution, used the simple and enduring version of scientific method (SM).

The simple version consists of: aim, materials, equipment, methods, results and conclusion. Elaborating the scientific research methodology, its many elements were discussed. These were: Hypothesis (after doing rigorous referencing, reading and reflecting and with some background knowledge); planning (considering the strengths and weaknesses of the researcher(s) and the laboratory set-up with its chemicals, equipment, human resources, finances, etc.), experimentation (standardized chemicals, etc), observations (actual, without biases, not ignoring the unexpected results, precision at every level, etc); results were to be noted carefully with REFLECTION at every point. (It was emphasized that unfortunately in India, many have forgotten to reflect both at historical and to think of future.) Next, interpretation/meaning of data obtained during observation was discussed. The many ways of getting the best out of the numbers (data) were discussed, touching on the importance of statistics and its many functions (data-grouping, verified to enable analysis, etc). Pitfalls in reading data and their interpretation (whether the hypothesis is supported or not) were clarified. Sampling of subjects was also discussed. Finally, the importance of publication of one's work either in the form of scientific papers, technical reports, books, etc was elaborated with the advise to teachers and students to do

writing practice right at the college level. Publication becomes imperative to get peer reviews and feedback so that one further improves on research and development.

The lecture was attended by 50 students from the department of Environmental Sciences. Dr. Jyoti Koliyar, Head of the department, welcomed the audience. Dr. Surekha Zingde, President, IWSA informed the audience about IWSA.

5. BRNS Popular Science Lecture at Guru Nanak Khalsa College of Arts, Science and Commerce, Matunga, Mumbai, on 28th March, 2019

Dr. R. K. Vatsa, Senior Scientist, Chemistry Division, Bhabha Atomic Research Centre, delivered a popular science lecture on **“Mass spectrometry: Fundamentals, Instrumentation and Structure Determination”** on 28th March (Thursday) in association with Chemistry Department of Khalsa Gurunanak College of Arts, Science and Commerce. Dr. Vatsa emphasized the utility and versatility of mass spectrometry, which has grown in an unprecedented manner over the last century with applications in physics, chemistry, biological science, electronics, material science, surfaces and coatings, forensic science, mineralogy etc. He started from basics and explained different terms used in this field, which was very useful for the beginners and also touched upon advanced techniques like MALDI. He covered the instrumentation part, which included the ion source, mass analyser and detector, concentrating on electron impact ionization and the significance of the most commonly used electron beam energy, magnetic separation, quadrupole mass filters etc.. Important rules of fragmentation were explained in a lucid manner, and the carefully selected examples made it very interesting and simple for the students. The last part of the session covered interpretation of 10 representative fragmentation patterns as an exercise. The interactive and systematic manner of the discussion helped the audience to arrive at possible molecular structures from the given mass spectra. All the students as well as staff found the lecture very useful and were highly appreciative. About 120 students, which included graduate and post graduate students of Chemistry and post graduate students of Bioinformatics attended the lecture. Dr. Meeta Rakesh welcomed and introduced the speaker, and Dr, Dhanya Suresh, IWSA, briefed the audience about IWSA and its activities. The program ended with vote of thanks.

6. BRNS Popular Science Lecture at SIES College, Sion on 16th April, 2019

Dr. Nandita Madhavan, Associate Professor, Department of Chemistry, Indian Institute of Technology, Bombay, delivered a lecture on **“Chromatography and Its Applications”** at the SIES College of Arts, Science and Commerce. Dr. Madhavan, began her lecture with a basic introduction to chromatography. She informed that the IUPAC definition of chromatography is “A physical method of separation in which the components to be separated are distributed between two phases, one of which is stationary (stationary phase) while the other (the mobile phase) moves in a definite direction”. Chromatography plays a key role in three major areas – separation, identification and quantification. Over the years, scientists have cleverly developed suitable stationary/mobile phases to separate a variety of polar, non-polar, hydrophilic, hydrophobic, solid, liquid and gaseous compounds. To help the students understand chromatography better, she compared the process to a Marathon, wherein all the participants first run together and slowly the runners segregate

depending on their ability to run. Dr. Madhavan used examples from her research to explain the principles on which decisions have to be made regarding choice of stationary and mobile phase for better separation of polar/nonpolar compounds. During her presentation she interacted with the students to elicit responses to her questions on the lecture. Dr. Madhavan gave few examples of how chromatography coupled with advanced detection methods have been used in research. After the lecture there was active discussion.

Dr. Madhavan described her academic journey from a chemistry background to her present research which is at the interface of biology and chemistry. Dr. Surekha Zingde, President, IWSA further informed the students that today's science is interdisciplinary and a student can move from one area in science to another if they are interested in learning. Dr. George Abraham, Vice Principal, SIES College and Dr. Uma Shankar, Principal of SIES College thanked Dr Madhavan for giving the lecture and they also expressed their sense of pride that she was an Alumni of the College. The lecture was attended by 43 students and faculty. Ms. Vijaya Tilak and Dr. Paramjit Anthapan, IWSA members were also present.

B. Science Exhibition at Thane on 12th January, 2019

IWSA participated in the Science exhibition organized by Rotary Club of Thane East. Following experimental set ups were demonstrated in this exhibition by the IWSA members shown in brackets.

(i) A simple demonstration of Diamagnetism of water- Physics. Through this other forms of magnetic materials were explained. (Dr. Devaki Ramanathan)

(ii) Demonstration of how light propagates through an optical fiber- Physics (Dr. Lalitha Dhareshwar)

(iii) Demonstration of Centripetal and centrifugal force through a model- Physics (Dr. Suparna Kamath)

(iv) Demostration of conservation of energy and momentum with sliding marbles from an inclined channel-Physics (Dr. Devaki Ramanathan)

(v) Disposal of Thermocol for a Cleaner Environment –Chemistry (Dr. Srirupa Mukherjee)

(vi) A Learning garden, to learn sustainability concepts- Biology (Ms. Madhu Pahwa, Dr. Priya Jacob, Ms. Ambika Janakiraman, Ms. Malathi Rao, Ms. Manashi Chakraborty, Dr. Suparna Kamath): Wild Food. Nutrition and Air Purifying segments of plants were displayed. Recipes by our IWSA members on wild edible plants were presented. Students were educated on indoor plants and how they play a role in cleaning our environment by helping in removing the toxins from air inside our homes as well. Students were explained that wild edible plants with their health benefits and nutrition could be super foods of tomorrow. Students showed great interest in knowing more about the subject and all their questions were addressed.

(vii) Science and Maths Quiz (Ms. Manashi Chakraborty, Ms. Malathi Rao and Ms. Anita Dash)

Eleven volunteers participated in this event. The IWSA exhibits and quizz were highly appreciated by the Thane Rotary club as well as the participating schools. IWSA presented

books to the 3 winners of the quiz. About 450 students from schools around Thane, participated in in the exhibition.

C. Science Day Celebrations on 22nd and 23rd February, 2019

Each year IWSA celebrates Science Day in the month of February to commemorate the Noble Laureate Shri C.V Raman's discovery. For the past three years IWSA has been holding a Science Exhibition on various themes at the IWSA HQ, Vashi. This year the theme of the Exhibition was "Water – its Uses, Conservation & Future". The exhibition had two parts. The first part was mainly for college students and was held for 2 days on the 22nd & 23rd February, 2019, wherein, Department of Atomic Energy exhibited their 25 projects on water and heavy water. Starting from the three stage nuclear program of DAE, the exhibits covered several societal applications of nuclear energy in the areas of Agriculture and Biotechnology. Production of Heavy water and its use in nuclear plants as well as several medical applications were showcased. The exhibition was organized at IWSA with major support from Dr. Ravishankar, Head, Public Awareness Division.

This Exhibition was inaugurated on the 22nd February 2019 by Dr. B.N. Jagatap, Prof. Physics Dept., I.I.T (former Director, Chemistry group, BARC, Mumbai). He delivered an excellent talk on "Water crises in India : how Science & Technology can help". In his talk, he addressed the issues related to severe depletion of ground water, river water and lake water, which would be a severe crisis in the near future. He suggested several simple techniques for conservation of water and also cleaning of polluted water. Mr. Ravishankar, Head, Public Awareness Division of DAE, also addressed the audience. He appreciated the hard work put in by the members of IWSA to make this exhibition possible. In total, more than 500 students from Navi Mumbai and Mumbai colleges and schools visited the exhibition on the two days. They showed keen interest in the projects and were curious to know about the job opportunities and recruitment procedures in DAE. The Exhibition was open between 10 a.m – 5 p.m on both days and it was a huge success.

On the second day, i.e., on 23rd February, 2019, a Science Exhibition was organized by IWSA for school students of class VII to IX from Navi Mumbai schools, on the theme – "Water – uses, conservation and future". Varied projects from the different schools pertaining to the theme mentioned above were displayed.

The exhibition was inaugurated by Dr. T. Mukherjee, former Director, Chemistry Group, Bhabha Atomic Research Centre. He addressed the students, teachers who were present, stressing the need to recognize the crisis of water shortages not only in the urban areas but also in rural sectors. This has created significant damage to agricultural sector and farmers' suicide.

The projects were evaluated by three eminent judges – Dr. Dhanya Suresh (Former Senior Scientist from Chemistry Division of BARC), Ms. Hemlata Deshpande (Head of Physics

Department, Vivekanand Education Society College of Arts, Science and Commerce) and Dr. Pritha Ray (Research Scientist from ACTREC). Judges were highly appreciative and impressed with the hard work, innovativeness and deep understanding of the subjects by the students. The First prize was won by 9th Std. students Ms. Ketaki Mahajan, Maitri Gandhi & Riya Waghe, Dr. Pillai's Global Academy School, Panvel for their project on "Water filter- Life Filter". The winning School trophy was presented to Dr. Pillai's Global Academy, Panvel.

The Second Prize was won by 8th Std. Mr. Nikhil Vishwakarma, Chandan Matho & Abhishek Yadav, Sainath, English High School, Vashi for their project on "An Ideal House" which demonstrated the various techniques, of water purification and conservation which can be incorporated in a home to conserve water and recycling of grey water. All the participants were awarded a participation certificate from IWSA.

IWSA invited a young innovator, Ms. Srushti Nerkar a ninth standard student from Nashik, (who has invented a special water nozzle for bathing showers, which can save up to 80% of water used otherwise) to give a motivational talk to the young students present at the prize distribution ceremony. She has received more than 100 accolades for her innovation, which is being processed for patents.

IWSA thanks Department of Atomic Energy, PAD and Dr. Ravishankar for providing financial support for the two day event. NMTV was the Media Partner for this event.

D. MERIT Science Camp at IWSA on 17th April, 2019

On 17th April, 2019, a one day science camp was organized at IWSA in collaboration with MUMBAI, EDUCATION, RESEARCH, INNOVATION AND TRAINING (MERIT),- *A field action project of Tata Institute of Social Sciences*. Sixty five students of VII, VIII and IX std from three different schools participated in this camp. They were Modern school, Lokmanya Tilak International school and Sacred Heart High school. The morning session included a talk on Rectilinear propagation of light followed by 6 experiments conducted by the volunteers of MERIT. These were:-

- 1. Flower dissection, 2.Tyndall effect 3.Surface tension**
- 4. Simple pendulum, 5.Magnetism, 6.Focal length of convex lens**

Afternoon session commenced with two talks on- "**The Language of Chemistry**" and "**3D Printing**". This was followed by a set of 6 experiments on-

- 1. Animal Cell, 2. Polymerisation, 3. Robotics**
- 4. Zero Waste, 5. Electrolysis, 6. Lemon Battery**

The science camp was enjoyed by all and participation certificates were distributed to all.

E. IWSA's Learning Garden

Mrs. Goloo Katrak, Mr. Dinshaw Katrak & Dr. Katrak visited IWSA on 16th January 2019. The Learning Garden had been facilitated by initial funds from Mrs Katrak. The Katrak family went around the Learning Garden and showed a keen interest in several sections especially Desert and Coastal Landscape, Western Ghats, Deccan Plateau, Butterfly, Sensory, Arboretum and Wild food sections. They planted saplings of Mehendi, Jaswand and Panphuti.

On 9th and 10th February, 2019, IWSA took part in the prestigious Friends of Trees (FOT) Flower and Vegetable Show at Ruparel College, Mumbai. In an exhibition of mammoth proportions, the IWSA stall could excite the interest of several visitors, young and old. This was partly because IWSA stall educated the people about plants which are host and food for butterflies, sensory aspects of plants, air purifier plants to combat indoor pollution, availability of wild food plants that help fight micronutrient deficiencies and conservative nature of our festival practices with respect to plants. The Display at the Show conveyed the message of working out ways to connect children and youth with nature. An informative talk on the health and social benefits of living close with nature was given by Ms. Vijaya Chakravarty, IWSA member and a poem was recited by Mrs. Snehalata Bhavsar, IWSA member. A memento was given by the organizers of the event, National Society of the Friends of the Trees, to IWSA for their contribution and participation in the Show.

On 14th February 2019, a National Seminar on "Climate, River and Vegetation" was held at St. Xavier College in collaboration with the National Society of the Friends of the Trees. Both Dr. Rajendra Shinde, Principal of St. Xavier College, Mumbai and Dr. Pheroza Godrej, President Emeritus, NSFOT were happy to note that IWSA was well represented at the Seminar. A few standees of the Learning Garden were exhibited.

On 8th April 2019, Garden day was celebrated with a talk on "Australian Landscapes", by Dr. Sushma Lehri and plantation of Fiddle leaf fig, Srilankan Tagar, Iresine bloodleaf, Coleus and a miniature croton by Dr. Niyati Bhattacharya, Dr. Lalitha Dhareshwar, Dr. Devaki Ramanathan, Dr. Sushma Lehri, Ms. Sakina Gadiwala, Ms. Kalpana Sathe and Ms. Priya Jacob.

Members of IWSA joined members of Friends of Trees (FOT) on 10th April 2019 for a visit to the Dattaji Salvi Botanical Garden located at Kopri, Thane east. This garden is one of the city's prime green lungs. It is a joint venture of Thane Municipal Corporation and the Forest Department. Initially a dumping ground, it is now packed with a multitude of plants. It is spread across 4600 sq. metres area and has many exotic trees, herbs, shrubs, creepers and cacti. It attracts several species of butterflies. The eminent botanists Dr. C.S. Lattoo, Mr. Ranade and Mr. Vijay Patil accompanied the team. Practical knowledge of members was thus enriched.

Nursery School and Education Committee

1. Udaan II

Indian Women Scientists' Association (IWSA), Vashi is an NGO with a primary objective to spread Science to the Masses and work towards empowering women from all sections of society to become self sufficient.

On 5th April 2019, IWSA has taken one more such initiative by launching the Balsangopan Sevika Course under the project UDAAN II, for women jail inmates. The course was launched in the presence of Dr Sudha Rao – Trustee, IWSA Board of Trustees, Dr Vijay Raghavan, Director TISS (Prayaas) , Mrs Aruna Mugutrao. Superintendent at Byculla Jail and the entire IWSA Team. As the first initiative under the Balsangopan Course a comprehensive kit of Innovative Teaching Aids for children in the age group of 2 years to 6 years were made by the ECCE Students of IWSA and donated to Byculla Jail. The aids cover all preschool topics including Language, Maths, EVS, Readiness, Science, Creativity, Story Telling and look at the holistic development of a child. This program will also give the trainees an insight on Child Development and help them understand how to handle and nurture children, both emotionally as well as intellectually. It will train them how to use the Play Way method to teach children. All participants would be given a Certificate post final assessment at the end of the course.

Dr Sudha Rao informed that the ECCE Team from IWSA headed by Mrs Shaheena Shaikh would be conducting a training program for the Byculla jail inmates from 8th April 2019 to equip them on usage of the kit. On completion of the Balsangopan Sevika Course the inmate will be well equipped to join a Balwadi / Day Care / Preschool as an assistant teacher. The unique feature of the course is that, it is activity based and even if an inmate has not taken any formal education she will be able to easily learn, understand and implement what is taught. The Balsangopan Sevika course will give inmates an opportunity to live a life of dignity and respect on completion of their term in jail.

All Teaching Aids were kept on display for pre primary teachers across schools in Navi Mumbai. The ECCE students had also organised a puppet show “Prithvi Ko Aaya Bukhar” which explained harmful effects of pollution to children in a very interesting manner.

Dr Vijay Raghavan who graced the occasion said “This project has been started in collaboration with IWSA. The objective of this course is women who are in jail while learning through this course will also gain understanding about child development and how to work with their own children as many of the women have children living with them inside the jail”

Byculla Jail Superintendent Mrs Aruna Mugutrao who was extremely delighted with the entire initiative said these kind of programs will go a long way in helping the children learn and develop in the first 6 years of their life which are very critical for their overall development.

IWSA thanks Dr. Sharad Kale and Chetna Memorial Trust who have donated whole heartedly for this cause

2. Other Activities

- i. The two batches of Nursery school are running smoothly. Children celebrated '**Sankranti**' by making kites. They celebrated 'Republic Day' on 26th January, 2019 which was a part of a group lesson by the ECCE students.
- ii. Miss Zarin Marwah gave a lecture on "Montessori Method of Teaching" to ECCE students on 13th February, 2019.
- iii. The ECCE students took part in intercollegiate puppet competition at SNTD, Ghatkopar. The puppets and props were prepared by the students. They won the 3rd prize.
- iv. On 7th March 2019, a group lesson was conducted by the ECCE students on science for pre-schoolers. This was conducted for IWSA's nursery kids.
- v. On 12th March 2019, Nutrition Competition was held for ECCE students. The topic was "Crunchy Munchy Greens". Three external judges were invited. Three prizes and two consolation prizes were declared by the judges.
- vi. Mumbai Autonomous Board for Early Childhood Education (MABECE) organized a National Conference on "Positive Childhood – Healthy Adulthood" on 16th March 2019 at Bandra. ECCE students along with Ms. Shakeena Shaikh and Ms. Naseema Varawala attended this conference.
- vii. Display board competition was held on 4th April 2019.

IWSA's Murli Laj Chugani Health Care Centre

Free Dental Camp: A (nearly) free dental camp for the auxiliary staff of IWSA was organized during January 2019 to March 2019. This was made possible thanks to the generous donation from the Murali Laj Chugani (MLC) trust.

Dental hygiene is greatly neglected by our economically weaker sections, more due to the high costs involved, rather than any other reason. The response of the staff was good. The results of the varied treatments rendered by our dedicated dentist, Dr. Raichel Thomas, were revealing with many having root canal or decayed teeth. This was observed even among the younger members. Two of the staff in the age group of 60 years, could not be treated as their jaw bones were affected and completely shrunk. IWSA is grateful to the MLC trust for this noble gesture.

Scholarship Committee

Disbursement of Scholarships at IWSA

Disbursement of scholarships at IWSA, an annual event, was held for 2018-19 at IWSA's ICICI Multipurpose Hall, Vashi, on **19th January, 2019** at 4.00 p.m. Dr. Sangeeta,

Secretary, BRNS, DAE was the Chief Guest for this occasion and Mr. Shashikant Rasal, Trustee, Majgaonkar Trust, Mumbai was the Guest of Honour.

There were 8 different categories of scholarships instituted at IWSA (from the different donations received) right from XII Std to B.Sc, M.Sc & Ph. D. levels, all given on merit-cum –means basis to girl students pursuing Science / Life Science in their studies. There was a special prize instituted for a girl student topping in the XII grade science stream from Navi Mumbai. There were scholarships for IWSA's teachers' training program (Diploma in Early Childhood Care & Education) and for IWSA's computer courses. This year, in addition, there were 2 special awards for two differently abled girl students who topped the X std from Navi Mumbai.

The function started with a brief introduction to IWSA & its varied activities by the Vice President, Dr. Lalitha Dharieshear. Dr. Devaki Ramnathan, Convener, Scholarship subcommittee, briefed the audience about the scholarship categories, the objectives & the criteria of selection etc.

Dr. Ramanathan introduced the chief Guest and Dr. Nootan Bhakal, Secretary to the Scholarship subcommittee, introduced the guest of honour. Dr. Sudha Padhye, Founder Member & Dr. Sunita Mahajan, Trustee, felicitated the Chief Guest & Guest of honour with a Tulsi Sapling & a small gift from IWSA.

Many of our scholarships are named after distinguished scientists & teachers who have contributed significantly to Science & Education. A brief description of the name was given for each for the awards so that the awardees could benefit from this knowledge & try to emulate the Excellence that the name bears, The awardees' names were announced; and the Chief Guest and Guest of honour shared the distribution of the awards & certificates. There were 21 scholarships in all. Only 2 candidates could not be present to receive the award in person Dr. Sangeeta addressed the audience. She talked about how Science can be learnt from the home environment, right from the kitchen and all effects of daily routines and chores. Mr. Rasal then gave a brief talk about the status of women in earlier times and how women have emancipated from those secondary roles to equality rights of today.

The program was concluded with Dr. Nootan Bhakal's vote of thanks to all the participants, scholarship recipients, the donors, the Chief Guest & Guest of honour, IWSA committee members and staff, who have helped to make the event smooth & successful. There was high tea for all after the event.

Other Events

IWSA Celebrated International Women's Day on 9th March 2019

International Women's Day is celebrated globally on March 8 to bring to focus the social, economic, cultural and political achievements of women. The day also marks a call to action for accelerating gender parity. The theme set by the United Nations for the International Women's Day 2019 is "Think equal, build smart and innovate for change".

Keeping these points in mind, IWSA invited five women achievers from different walks of life: 1) Women who can empower other women; 2) Women who have brought about a change in the lives of impoverished children and women; 3) Women who have taken jobs earlier considered only for men, thereby building inclusive systems.

These women achievers were requested to share their experiences, how they decided to do what they do, the challenges they faced and finally the sense of excitement and exhilaration on achieving their goals.

The event started with a brief welcome by Dr. Surekha Zingde, President, IWSA in English and an address by Dr. Sudha Padhye, Founder member, IWSA in Marathi. The speakers of the day and Dr. Padhye were welcomed with flowers. Dr. Lalitha Dhareshwar, Vice President, then spoke on the various activities of IWSA.

Our first speaker was Ms. Vidya Guha, Founder and Team Leader of Navi Mumbai Moms (NMM). NMM is a group of moms who share news, views, queries, events, joys and sorrows. It was started by Vidya Guha on 20th September, 2013, to bring together the friends she knew through her children's school and those who lived in the same apartment complex. Vidya along with three other MOMS, Ms. Sangeeta Vyas, Ms. Renu Sharma and Ms. Pallavi Prakash have worked hard together and in a short span of 5 years, NMM has grown from 20 to almost 5000 members. NMM is not a business group but one that encourages its members to follow their passion. If that translates into earnings, all the better. Together, as a team, they aspire to make women achieve their dreams. Vidya invited each of her team members and some of the members of NMM to describe how they have each benefited from the organization. The audience was overwhelmed by the activities of NMM and how Vidya and her team members have managed to engage, enthuse and motivate homemakers to utilize their time and skills for their own benefit and that of others. After the presentation, Dr. Dhareshwar felicitated Vidya with a small token of appreciation from IWSA.

The second speaker was Ms. Shobha Murthy. Dr. V. Sudha Rao, Trustee, IWSA introduced Ms. Murthy to the audience. Ms. Shobha Murthy is the Founder and Trustee of AARAMBH which is a non-profit charity organization based and working in Navi Mumbai..

This non-government organization (NGO) was created as a Community Service Center for the most marginalized families living in urban slum communities and rural areas. Ms. Murthy has worked with several national and international corporates and non-profits like Lakme, CRY, USAID, and others. She left the corporate sector when she saw how tribals and other oppressed communities were exploited by the rich and powerful. She was drawn towards serving society and empowering people with education. She completed her study in Social work from Tata Institute of Social Sciences and plunged into social work on a full time basis. In 1997 with a small group of professionals Aarambh was set up, to bring hope and happiness into the lives of underprivileged communities. She has brought to Aarambh, her wealth of experience and talent.

Aarambh provides quality education to children of migrant workers, rag pickers and others who live in slums and shanties of Navi Mumbai and landless farmers who live in rural areas of Maharashtra. Aarambh works in several slum areas of Navi Mumbai and villages of Latur, Nanded, Mahad, Satara & Murbad

From Community Science labs, Computer labs, midday meals and scholarships Aarambh has ensured that every child who comes to them has access to quality education. Women of these families are taught various skills that help the women to become self employed and self reliant. The papads, masalas, cushion covers, bags, etc made by these rural women are put up for sale in several corporate offices and various exhibitions. Today Aarambh reaches out to over 6000 children, 700 women and 300 youth. Because of her total involvement with the community, she is literally worshiped by all those who have benefitted from her help, guidance and support. We at IWSA are very proud that Ms. Murthy is an IWSA member. The audience warmly appreciated, acknowledged and lauded her efforts. Dr. Sudha Rao felicitated Ms. Murthy on behalf of IWSA.

The third invitee was Ms. Chitra Shelke, first woman bus driver. Unfortunately, Chitra could not attend the function as she met with an accident on the way. Ms Madhu Pahwa, Jt. Secretary, IWSA-EC introduced Chitra with some beautiful poems in Hindi. These verses extolled the achievements of women working in domains which are generally considered only meant for men. Ms. Shelke started her career as first woman auto riksha driver. She was encouraged to learn driving by her husband and an elder muslim gentleman from her neighbourhood. She then moved on to be the first woman bus conductor. Chitra had informed us that as a conductor she always wished she could be the driver. She learnt driving heavy vehicles and she is now the first woman driver for the NMMT buses- Tejaswini. For all these firsts in her life, Chitra has been accorded several recognitions and felicitations. She has full support and admiration of her husband for the job she does. We at IWSA were proud to felicitate her for showing the way to women to undertake jobs which are generally done by men. The audience appreciated the efforts of young women to beat the odds and follow their passion.

The fourth speaker of the evening was Ms. Suchita Bhingarde, a postwoman from the Vashi, post office. Dr. Nootan Bhakal, member IWSA-EC introduced Suchita and praised her achievements in Hindi. Suchita joined the postal services in 1982 after completing her SSC examination and coming to Vashi. She received a permanent post only in 1992 after

10 years of service. She has served for 36 years as a postwoman. This is an achievement considering that in the early eighties, there were very few or no postwoman. Suchita has educated her two sons well. Her elder son is a chartered accountant and the younger son has completed MA in social work. He now works for the benefit of blind children. Mr. Bhingarde who had accompanied his wife spoke on his wife, Chitra's achievements. He in fact participates in the delivery of post by taking his wife door to door on his scooter. It was indeed wonderful to note the support and encouragement received by her family for a job which is generally done by men. Chitra has been delivering post to IWSA for several years and we were indeed honoured to felicitate her on Women's Day. The audience applauded Chitra's achievements. Dr. Bhakal felicitated her with a token of appreciation from IWSA.

The fifth speaker was Ms. Vrushali Magdum, Chairperson of Stree Mukti Sanghatana, Navi Mumbai. Ms. Magdum was an English teacher in Modern College for over 20y. She took voluntary retirement and joined the Stree Mukti Sanghatana. She had been recently felicitated by Navi Mumbai Municipal Corporation for the important contribution she has made to the Swachata Abhiyan through the Rag picker's Association which she heads. Ms. Magdum has been associated with IWSA and is presently a member of IWSA's vigilance committee. IWSA is happy to have her guidance on several other matters related to NGO's. The audience congratulated Ms. Magdum for her achievements. Dr. Sudha Rao felicitated her on behalf of IWSA.

Ms. Snehalata Bhavsar, acknowledged the speakers and the audience and thanked them all for being present on this occasion. She recited short poems in Hindi which she had written for each of the speakers. The event was attended by 90 women. Everyone present were then invited for refreshments.

Reports from Branches

Amravati Branch

1. Yoga and Meditation Training Programme for Students

To cope with the stress of examination, improve the concentration and stay fit a meditation and yoga training programme was arranged for the students of Bharatiya Mahavidyalaya, Amravati on **5th March, 2019** in the Conference Hall of Bharatiya Mahavidhyalala. The programme was jointly arranged by Department of Zoology, B.M.V., IWSA, Amravati Branch and Bharatiya Yogabhyasi Mandal, (B.Y.M) Amravati.

The programme was presided over by Mr. D.G. Sohoni, founder of B.Y.M. and Yoga expert. Office bearers and members of B.Y.M. gave demo of 'Surya namaskar', 'Shavasan', 'Pranayama' and meditation to the students. Students practised the kapalbharati and anulom-vilom activity under the supervision of the yoga teachers. Students were satisfied with this meditation and yoga workshop.

Members of IWSA, Amravati branch, Dr. S.R. Kadu, Dr. M.V. Dawande, Dr.A. P. Wasnik helped in arranging this programme. Dr. D.S. Kulkarni, Convener, IWSA Amravati branch,

introduced and welcomed the guests, Ms. Switi Sontakke conducted the function. Around 75 students were benefitted by this workshop.

2. Women's Day Celebrations- Guest Lectures

IWSA, Amravati branch celebrated World Women's Day in association with G.S. Tompe College, Chandur Bajar on **7th March, 2019**. On this occasion Guest lectures were arranged for the girl students. Speakers Mrs. Rachana Sirsat delivered a lecture on 'Calcium deficiency', Dr. Dhole spoke about 'Importance of meditation', while Dr. Daya Pande talked on 'Inner Power of Women'. Around 90 girl students were benefitted by these motivational lectures.

Mrs. Sirsat described the various causes of Calcium deficiency and their effects. She explained food sources of calcium that advised that girls should be very cautious about the nutrient contents of the food they eat. While speaking on this occasion Dr. Dhole shared her experiences and said that the regular practice of meditation helps us to improve concentration and stay emotionally balanced. Dr. Pande advised girls to develop and maintain the bond of "sister hood".

Principal Dr. Rajendra Ramteke, Dr. D.S. Kulkarni, Dr. Reena Laharia and all the women staff members of G.S. Tompe college were present on the dais. Dr. Yuandhara Gulhane conducted the programme and welcomed the guests. A vending Machine was also inaugurated on this occasion.

3. Awareness and Felicitation Programme

On the occasion of World Women's Day, an awareness Programme on "Sexual Harassment of Women and Children" was organised at "Vidyarthi Bhavan", Sant Gadge Baba Amravati University, Amravati on **8th March, 2019**. The programme was jointly organised by Sant Gadge Baba Amravati University Women Studies Centre, Women's Facility Centre, Internal Complaint Committee, University Health Centre and Indian Women Scientist's Association Amravati Branch.

The programme was presided over by Hon'ble V.C. Dr. Muridhar Chandekar. Pro-V.C. Dr. Rajesh Jaipurkar, Inaugurator ex-deputy Mayor Mrs. Sandya Tikale, Chief Guest Adv. Laxmi Pangarkar and Dean Dr. Manisha Kale were present on the dais.

Women have made their own identity in every sector but the ratio is very less. They have to use their legal rights and all their potential for development, said the V.C. Dr. Chandekar. Speaking on this occasion Dr. Jaipurkar said that the percentage of girl students in the merit list during convocation is high but their representation is less in later career path. He advised girl students to pursue their career and develop the skills to be in competition. Mrs. Tikale emphasized the good health of women and said that women must stay fit. Adv. Laxmi Pahgarkar narrated the history of Women's Day and appealed the audience to always remember the struggle of women for her rights. She stated that women must use all her legal rights and stand with dignity even in unfavourable condition.

Four successful women from different fields, who struggled for their rights and achieved their goals despite adverse situations were felicitated on this occasion. The ladies who were felicitated were, Mrs. Saroj Sirsat, Mrs. Priti Saoji, Mrs. Deepa Deshmukh and Mrs. Shabana Parveen.

Over 150 girl students, staff and invitees were present for the function. IWSA, Amravati branch Convener Dr. D.S. Kulkarni, treasurer Dr. Sujata Kale, joint treasurer Dr. Ambika Jaiswal, members Dr. Mona Chimote, Dr. Vaishali Gudadhe, Dr. Dhanvijay, Dr. Sherekar, Dr. Wadegaokar, Dr. Deshmukh, Dr. Ghanwate were present on this occasion.

Bengaluru Branch

International Women's Day

(i) Dr. Srimani, Promoter consultant Gynecologist, Bangalore Hospital, Bengaluru delivered a talk during International Women's Day on **8th March, 2019** at Department of Biotechnology, BMS College of engineering and BMS College for Women students. About 60 students participated for the lecture session. Dr. Srimani spoke about several factors such as diet, exercise, meditation, yoga and biological factors such as hormones that effect the life directly. She also exposed students to days when the stress was not the part of life and women had time for themselves leading to lesser complications and how the life has changed today. Her talk excited students and she cleared many doubts the students had. She also invited female students for regular health check-up in her clinic.

(ii) Departments of Mathematics, Chemistry and Physics, Dayananda Sagar College of Engineering (DSCE), in association with IWSA, Bengaluru Branch, celebrated International Women's Day on **March 21st 2019** to honor womanhood and acknowledge all women in the world for making this world a better place for everyone to live in. About 100 participants registered for the event. Dr. Radha Gupta, HOD, Department of Mathematics welcomed the honorable guest Padmashri Rohini Godbole, Professor, Centre for High Energy Physics, Indian Institute of Science, Bengaluru, Principal, DSCE, Dr. C. P.S. Prakash, Dr. Savithri Bhat, Convener, IWSA, Bengaluru branch, HOD's of all the departments and the gathering. The speaker Padmashri Rohini Godbole delivered the talk on "Women in Mathematics and Physics" which reflected how much has been done and what more needs to be done in the field of gender equality. She took the audience through the real-life inspiring stories of women in science and gave an insight on bridging the gender gap in the scientific community. She concluded with a strongly felt opinion that India could be a role model for the world if the female participation in science increases.

Prior to the beginning of the main events, an introductory session on the technique of Acupressure and the health benefits was organized. Mrs. Latha.S and Mrs. Pushpa.S, well-known Acupressure experts enlightened the audience about the acupoints on the body's meridians. The experts distributed the study material and simple tools which may be additional help for acupressure therapy. Prizes were distributed by the honorable guest to the winners of various events conducted on 20th March 2019 for the women faculty of

DSCE. Dr. Savithri Bhat, Prof, Department of Biotechnology, B.M.S.C.E Bengaluru, Convener of Indian Women's Scientist's Association (IWSA) introduced the audience to the activities of the association and encouraged all the women faculty to be members.

Delhi Branch

Celebration of International Women's Day

International Women's Day is a time to reflect on progress made, to call for change and to celebrate acts of courage and determination by ordinary women who have played an extraordinary role. With the objective to create health awareness among women on the occasion of International Women's Day 2019, IWSA in collaboration with CSIR-NISCAIR organized two lectures on **8th March 2019**:

- **Stress Management and Lifestyle** by **Mrs. Neha Dutt**, Counsellor & Special Educator, New Delhi
- **Awareness on Breast Cancer** by **Mrs. Opel Rawat**, Nursing Officer, Aruna Asaf Ali Govt. Hospital, New Delhi

The program coordinator was IWSA member Dr. Kanika Malik, Principal Scientist, CSIR-NISCAIR, who welcomed the speakers and the audience and briefly talked about IWSA.

The first speaker, Mrs Neha Dutt talked about how stress has become a part of modern life and although stress cannot be totally eliminated from the individual's life it can be minimized and managed. Mrs. Dutt emphasized that there is no single method for stress management; the individuals themselves have to figure out what works best for them out of all the options available. She elaborated on few coping strategies to lower the stress levels in our daily life along with having a positive attitude in every situation. This soon became an interactive session where audience also shared their experiences as to how they managed day to day stress and also managed stress in the long run.

Ms. Dutt also spoke about an interesting side of the stress i.e. good stress also called eustress'. She added that eustress provides challenges that motivate individuals to work hard and meet their goals with enthusiasm.

The second speaker of the day was Ms Opel Rawat. Ms. Rawat started the talk by citing her own example when she was diagnosed with an advanced stage breast cancer as initially inspite of being told that the lump might be a sign of cancer, she didn't get her mammography done. She demonstrated the actual procedure of self examination of the breasts on daily basis to recognise the symptoms of breast cancer. She suggested that in case such symptoms arise, we must visit a specialist instead of gynaecologist, which is normal practice found in case of females. She also made all aware that breast cancer can also occur in males.

The other thing that she emphasized was that generally women pay least attention to

their own health while taking utmost care in the health issues of their family members. She emphasized that instead of #MeToo, ladies should say #MeFirst. Because nothing is more important than the health of the lady of the family who is the backbone of the whole family.

The program was attended by approximately 75 participants from CSIR-NISCAIR, CSIR-NPL, CSIR-NISTADS, IIT Delhi and NIC, Govt. of India. Both the lectures were found to be very informative and interactive by the participants. It was well appreciated effort of IWSA on the occasion of International Women's Day 2019. The program ended with presenting mementoes to the speakers and vote of thanks.

Hyderabad Branch

International Women's Day

One Day Workshop on “**Balance for Better – Equal Opportunities for Better Future**” was organised by IWSA, Hyderabad Branch in collaboration with Women Cell and Study Centre, UCW on **7th March, 2019** at University College for Women, Koti, Hyderabad. The program included motivational talks by Prof. A. Roja Rani, Principal, UCW and Dr. Saritha Reddy, Vice-Principal, UCW. The Chief Guest was Mrs. Deepika Reddy, renowned Kuchipudi Exponent, and the Guest of Honor was Mrs. Y. Sridevi, Director and Principal, Pinnacle Institute of Hotel Management and Catering Technology.

Session – I: Dr. A. Malathi Syamala, Director, Vemana Yoga Research Institute spoke on the significance of various treatments of Naturopathy, importance of Yoga, and the principles of Naturopathy and their role in improvement of women health.

Session – II was conducted by Dr. S. Bhavani, Chief Medical Officer, Nature Cure Hospital on Theme - 'Mobility of life' and demonstrated the sustainable practices of exercises and importance of Pranayama.

Session – III: Dr. Sheela, Deputy Chief Executive, Nuclear Fuel Complex (NFC), Hyderabad spoke on the Theme – “Atomic Energy serving the society – Role of engineers to meet the challenges “ and its uses in the fields of medicine, agriculture, sterilization of medical products, etc.

Session – IV : Mrs. N. Vijayasree, Practising Advocate, Hyderabad spoke on Gender inequality prevailing in the society and various constitutional provisions providing equal rights to women viz., right to life, right to freedom, etc.

Session – V: Dr. M. Sujatha, Former Head and Senior Consultant, Department of Clinical Genetics, Institute of Genetics, Hyderabad, gave information on Women Health and various gynaecological issues of women, types of abnormalities, changes to be made in our lifestyle to keep them under control.

The Chief Guest of the valedictory program Dr. D. Shailaja, Sr. Principal Scientist, IICT explained about the various developmental activities undertaken by IICT. The Guest of Honour of the valedictory program Mrs. Deepthi Ravula, Chief Executive Officer (CEO),

WE-HUB inspired the audience and narrated about her journey to being a successful entrepreneur from an engineering graduate. About 300 participants took part in this event.

Kalpakkam Branch

1. National Science Day

A Lecture-cum-Quiz event was conducted in the Government Higher Secondary School, Vengampakkam on **15th February 2019**. The lecture pitched at the level of class IX, commemorating the “**International Year of Periodic Table**” was delivered in Tamil by Dr. N. Ramanathan, Senior Scientific Officer, Chemical Group, IGCAR. The lecture was followed by a quiz in which questions were based on the lecture. Students from Government Higher Secondary School, Vengampakkam, Sadras, Pudupattinam, Vayalore and Anaikkattu took part in the event. The Anaikkattu students bagged the first prize in the event.

IWSA, Kalpakkam Branch also organized the National Science day Lecture in AECS 1, Kalpakkam on **28th February 2019**. Dr. Deepika Janakiraman, Faculty, Department of Chemistry, IIT Madras delivered an interesting talk on the topic “**Summer is Coming: What is temperature really?**” which was well received by the students. The lecture was followed by a prize distribution for the winners of the Interschool Science Quiz Competition. Around 200 students and teachers participated in the event.

2. International Women’s Day

International Women’s Day was celebrated by IWSA, Kalpakkam Branch on **20th March 2019** with two achievers in their respective fields. About 300 men and women scientists, Engineers, Scientific assistants, Administration and accounts staff and research Scholars attended the event. Dr. Shubashree Desikan, DST National award winner for outstanding contribution to science communication in print media spoke about her role as the science editor in The Hindu under the title “Inhabiting intersections: My experience as a science journalist”. Dr. Sathya Jagannathan, MD, D.C.H., Pediatrician and Neonatal specialist, Government Hospital, Chengalpattu recipient of the Outstanding Woman Achiever Award by the Tamil Nadu MGR Medical University elaborated on “Challenges in child rearing in modern times”. It was amazing to see 3-D image processed pictures showing emotional expressions of the foetus in the womb.

Pune Branch

1. Workshop on “Women Entrepreneurs in Science and Technology”

On the occasion of the International Women’s day the IWSA Pune chapter in association with Department of Microbiology, Savitribai Phule Pune University (SPPU) had organized one day workshop on “Women Entrepreneurs in Science and Technology” on **8th March, 2019**. The topic was selected in view of promoting scientific temperament in the corporate world. Eight speakers, all women entrepreneurs, who had previous or present association

with Pune, were invited to speak about their experiences and activities of their business. The workshop was held in the Seminar Hall, Department of Microbiology, SPPU.

The workshop started at 10.00 am. It was inaugurated by Dr. (Mrs) Apoorva Palkar, Director of Innovation, Incubation and Linkages at Savitribai Phule Pune University. Dr.(Ms) S.A. Gangal, Convener, IWSA, Pune Branch, Dr. (Mrs) S.V. Bhoraskar, Convener, One day workshop, Prof. (Mrs) Smita Zinjarde, Head, Dept of Microbiology who were on the dais. After lightning of the lamp, Dr. (Ms) Gangal welcomed the participants and explained the activities of IWSA HQ, Mumbai and IWSA, Pune Branch. Then, Dr. (Mrs) Zinjarde welcomed and addressed the participants. Dr. (Mrs) Bhoraskar explained the workshop details. In her inaugural speech, Dr. (Mrs) Apoorva Palkar, encouraged women to be bold and smart to face the problems and take up the challenges in the corporate field if they want to be successful entrepreneurs. Dr. (Mrs) Deeti Sidhaye compared the inauguration program. Dr. (Mrs) Karishma Pardesi proposed vote of thanks.

The first technical session had three lectures. **Ms. Medha Tadpatrikar** who heads the firm “RUDRA” Environmental Solutions India Pvt. Ltd. Pune, spoke about her initiative work carried out in the field of “Waste Plastic to Fuel”. She described the process of pyrolysis of all the kinds of plastics at around 250°C in the boiler which is designed so as to emit no carbon footprint. They produce fuel which is closer to kerosene and is sold like a poly- fuel which can be used in generators and also for cooking purpose. This product is also used in their own plant to save the additional cost of fuel. They have already sold 6 similar plants in Maharashtra. Mrs Megha is herself from a nonscientific field but because of her perseverance and hard work she has learned science and has been very successful in marketing the device.

The second speaker, **Dr. Renuka Diwan** gave a very interesting picture of her start up procedure. She has formed a company: Bio Prime Agri Solutions Pvt. Ltd., which provides services to farmers so as to improve and transform agricultural procedures. She has been providing solutions to farmers who were struggling with crop-loss, temperature fluctuations, drought and insect diseases. To achieve this, the company is developing effective and affordable next generation agri-solutions. Dr Renuka’s company has been awarded with prestigious Biotechnology Ignition Grant.

Mrs. Asha Salunke, who was a past student of Microbiology in the Pune University, spoke about her endeavour to start Bio-Era along with her husband Siddharth Salunke who is an engineer by profession. The company was started in 2009 and during these nine years it has reached amazing heights. The company once started by Asha Salunke has now multiple facilities in India, Malaysia and China. The company works on other verticals which include Technical Services, workshop, training and research.

In the second technical session, after lunch, **Ms Shilpa Narayanan** spoke about her experience as a director of “Appa Patwardhan Safai and Paryavaran Tantraniketan” at Dehu near Pune. She has been in this socio-economic entrepreneurship since 2015. Her institute works on the UNICEF supported projects on strengthening water, sanitation and hygiene (WASH) in 20 district-hospitals of Maharashtra. She projected the initiatives taken

by her to promote public health in the rural health centers. The audience noted the strength of her initiatives and achievements.

The next speaker of the day was **Mrs Pradya Deshpande** who is a graduate in Microbiology and a postgraduate in Sociology. She has gained 17 years of experience in working in the area of Ayurvedic medicines, support system for industrial micro-organism development, testing and media preparation. She is the founder Director of Krishi Clean Tech Private Limited (KCPL) and is responsible for the development of business in the area of clean technology. She narrated her experiences and challenges she faced being a woman while changing her field of work.

Dr. Mrs Sujata Virdhe, an ex- senior scientist from ISRO, presented her struggle in the field of scientific development for society and explained how she won the respect, courage, monetary benefit as well as honours in popularization of science all over the southern zone of India. Stationed at Bangalore, she has started creating “Sunday science school” for school children and has trained several teachers from various parts of the country. She prepares scientific toys and experimental kits for children.

Ms. Vidula Tokekar, an MBA in finance started her profession in book writing and later was successful in setting-up her own BPO centers for back office language services. She also practices in the field of e-learning and e-teaching for voice matched domains. She also mentioned that translation – both literature and scientific – is a very good field especially for women in which entrepreneurship can be developed. **Dr. Priyadarshini Karve** was the last but not the least speaker. She explained how her company has succeeded in lowering the carbon foot prints through developing scientifically modified cooking stoves for rural applications under her own company at Pune: “Samuchit Enviro Technology Pvt. Ltd. She analyses the carbon footprints under the Climate Change Program in Pune.

Total of 41 participants, that included teachers, research students, postgraduate and undergraduate students attended the workshop. Some of the participants were from outside Pune. This very interesting workshop was concluded by organizing the Valedictory Function, which was chaired by Dr. (Ms.) S.A. Gangal, the Convener-IWSA Pune branch,. At the start, three participants of the workshop gave their feedback. The participants were very happy that they could get sufficient information on entrepreneurship. The technical report of the workshop was presented by Dr. (Mrs.) S.V. Bhoraskar (Convener-workshop). Dr. (Mrs) Karishma Pardesi proposed vote of thanks. Certificates were distributed to the participants.

2. A workshop on “Sujok Therapy”

A workshop on Sujok therapy was organized by IWSA, Pune branch and Prof. H.J. Arnikaar Trust at Abasaheb Garware College, Pune on **27 March 2019** between 10 a.m. to 1 p.m.

Dr. Shilpa Narayanan Director and Secretary, Appa Patwardhan safai and Paryawaran Tantra Niketan, Dehu conducted the workshop. She explained the concept and principles of Sujok therapy, a Korean technique introduced by Prof. Park Jae Woo. Similarities and correlation of various organs of body on hand and feet were projected along with yin yang

concept. Diseases related to digestive system, respiratory system, excretory system, endocrine system and their therapy with simple tools were explained with demonstration. About 70 participants attended the workshop. Some of them were also treated during the workshop. The workshop was well appreciated by all the participants and several questions were asked which were answered by Dr. Shilpa in details with demonstration.

Roorkee Branch

Vijaya Agarwal Memorial Maths Olympiad - 2019 (VAMMO – 3)

IWSA, Roorkee Branch, for the third time organized the Maths Olympiad (VAMMO-3) on **January 27, 2019** in the memory of Dr Vijaya Agarwal, one of the founder members of IWSA, Roorkee Branch. This year VAMMO- 3 was extended to Haridwar for the first time. The event was open to the students of classes 6th to 9th. About 700 students from 16 schools in Roorkee and almost the same number of students from the nine schools in Haridwar participated in the event. The Maths quiz was simultaneously held in Greenways School-1 Roorkee, and Ma Saraswati School Haridwar. The event coordinators Dr. Rama Mehta in Roorkee and Ms. Manika Saraswat in Haridwar along with IWSA members meticulously planned and executed the test. Research Scholars, M Tech Students, School and College teachers, and professionals from different walks of life rendered their services to make the event a grand success. The coordinators were of the view that the event could not have been successfully managed without the selfless help given by the volunteers. The participants who have excelled in their performance will be awarded. The award function was held on **February 16, 2019** in Roorkee.

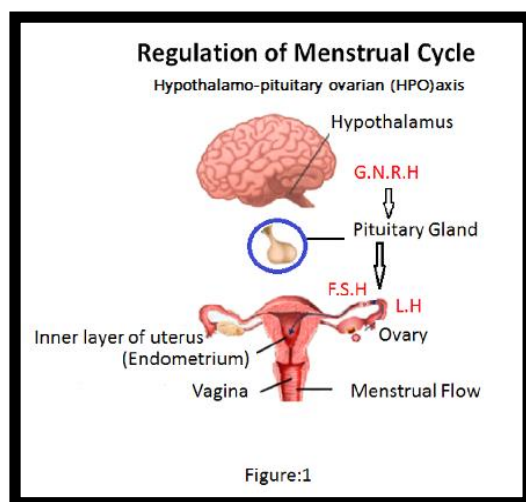
ARTICLES

Menstruation and common menstrual disorders

Dr Santoshi Prabhu, Gynaecologist, Bhabha Atomic Research Centre Hospital, Mumbai.
Email:santoshi.prabhu@yahoo.co.in

It is said that- 'The hand that rocks the cradle rules the world.' But this efficient woman often tends to ignore her own health in the bargain of being a loving daughter, sister, wife, mother and a grandmother. As a result, serious complications await in later life due to lack of adequate attention at the right age and right time. In this article, normal menstruation and common menstrual disorders are dealt with. **Menstruation** is a physiological process in which the inner lining of the uterus (endometrium) along with blood is shed cyclically every month. Menstrual cycle occurs throughout reproductive life, i.e. from menarche (first menses) till menopause (complete stoppage of menses) except during pregnancy and lactation. Usually, Menarche occurs between 12 to 14 years. Geographical conditions, nutritional standards, environmental influences and indulgence in strenuous physical activity can affect the age of menarche.

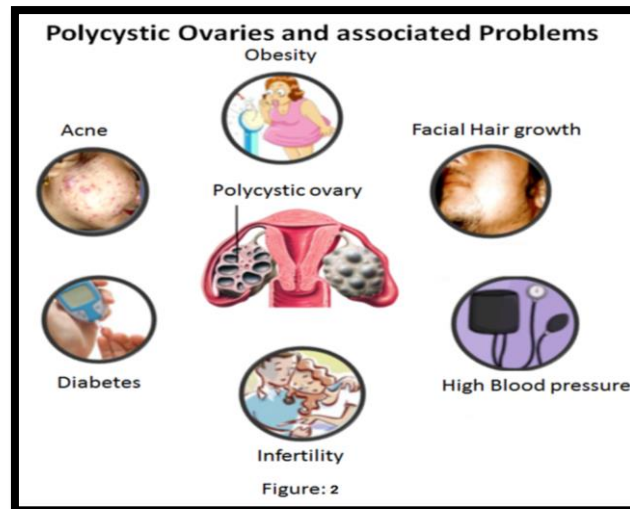
After puberty, hypothalamus in the brain starts secreting Gonadotrophin releasing hormone (GnRH), Fig.1. Under the influence of this hormone, pituitary gland secretes 3 important hormones, viz- Growth Hormone (GH), Follicular stimulating Hormone (FSH) and Luteinizing Hormone (LH).



Growth hormone is responsible for growth spurt in adolescent girls. FSH causes gradual growth of follicles in the ovary. These growing follicles secrete hormone oestrogen which acts on the endometrium, making it thicker. One dominant ovarian follicle ruptures at mid cycle (around day 14) to liberate the ovum. This is called as **ovulation**. After ovulation, a hormone, progesterone is secreted by the remnants of the ruptured ovarian follicle. This progesterone makes the oestrogen primed endometrium receptive for pregnancy. In absence of pregnancy, the levels of oestrogen and progesterone in the woman's body gradually start declining and the endometrium sheds off as menstrual discharge. At the time of ovulation (mid cycle), sometimes lower abdominal discomfort or spotting may be experienced by some women and this is considered physiological and is no reason to worry. The average duration of a menstrual cycle is 28 days, the discharge lasts for 4-6 days and expected blood loss is 50-80 ml per cycle.

Polycystic Ovarian Syndrome (PCOS)

Due to changing life style, exorbitant fast food consumption and lack of physical activity; many young women experience **Polycystic Ovarian Syndrome**. In PCOS, due to delayed or absent ovulation, menses become irregular and may show associated obesity, acne, hirsutism (excessive hair growth on the face, chest), hair loss and infertility. Due to insulin resistance, they are also prone to metabolic syndrome like diabetes and ischemic heart disease in later life. (Fig.2)



PCOS is diagnosed by clinical presentation, evidence of polycystic ovaries on pelvic ultrasonography and/or by hormonal tests. Living a healthier lifestyle by avoiding fast food, adopting balanced diet, regular exercising and most importantly, weight reduction holds the key in management of PCOS. Insulin sensitivity can be improved with medications. Ovulation inducing drugs are given in cases of infertility. Sometimes, via laparoscopy, polycystic ovaries are drilled with thin needles. This helps in correcting the hormonal imbalance and anovulation (absence of ovulation). In PCOS, anovulation causes Progesterone deficiency. This results in unopposed Oestrogen action on endometrium leading to endometrial hyperplasia. If untreated, this can lead to uterine endometrial cancer in the long run. To prevent this long term complication, women with PCOS despite of not being desirous of bearing a child, must get their menses cyclically.

Heavy menstrual bleeding

Menstrual blood loss of more than 100 ml or passing clots in menses is considered to be heavy and called as **menorrhagia**. Uterine fibroids, thyroid disease, defective blood clotting system, side effects of some medications etc. are few causes of heavy bleeding. Management depends on treating the underlying cause, woman's age and desire for future child bearing.

Menopause and transition

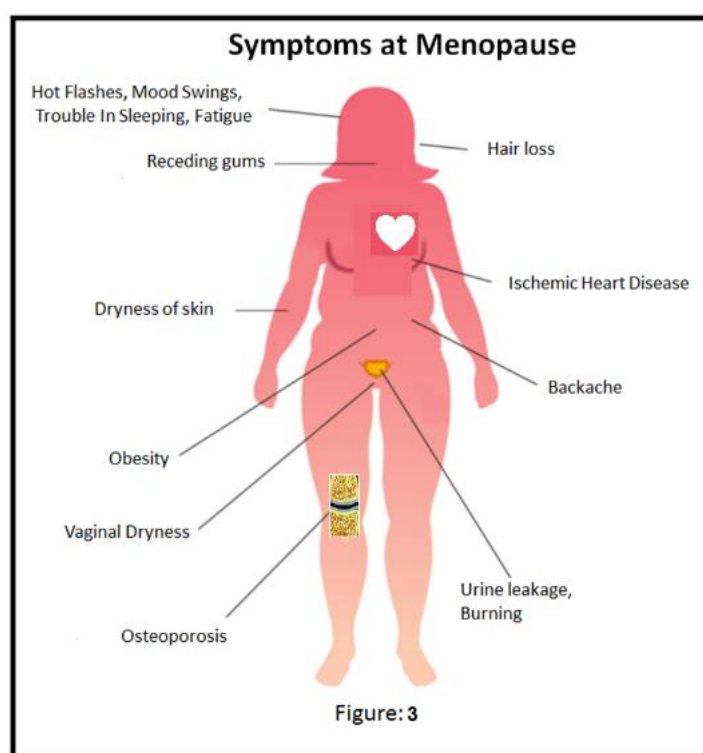
Usually, by the age of 45 to 55 years, due to natural depletion of oocytes because of aging, the woman's menstruation stops completely. This is called as **menopause**. The diagnosis of menopause is retrospective. If a woman has missed menses for 12 consecutive months it is considered that she has reached menopause. If menopause is achieved before the age of 40 years it is considered to be **premature**.

Prior to menopause as ovaries gradually begin to make less oestrogen due to less frequent ovulation, women normally experience delayed and scanty menses. This period is known as **perimenopause or menopausal transition**, which begins several years before menopause.

If a perimenopausal or postmenopausal woman experiences abnormal frequent or heavy bleeding, it can be a sign of uterine disease. This needs medical evaluation. Perimenopausal bleeding is managed by hormonal treatment in indicated cases. If it fails or is contraindicated (as in patients prone to thrombotic phenomena) or in presence of large fibroids, adenomyosis (presence of ectopic endometrium in the muscle of the uterus) or if there is risk of endometrial cancer, removal of the uterus (Hysterectomy) is advised. Hysterectomy can be performed via vaginal/abdominal route or by laparoscopy. The route of surgery depends upon women's clinical evaluation. If major surgery is risky due to associated illness, then other conservative management like Levonorgestrel hormone impregnated Intrauterine System (LNG-IUS) insertion, Trans-cervical Resection of Endometrium (TCRE) or balloon ablation therapy can be offered as an option to hysterectomy.

Menopause:

At menopausal transition, women experience physiological changes due to oestrogen deficiency, to which the body gets acclimatised gradually. These include: hot flushes, mood swings, trouble in sleeping, fatigue, hair loss, receding gums, dryness of skin, obesity, backache. Sometimes, they may present genitourinary symptoms like vaginal dryness, discomfort during sex, urine leak on coughing or sneezing or sometimes urinary urgency (Fig. 3).



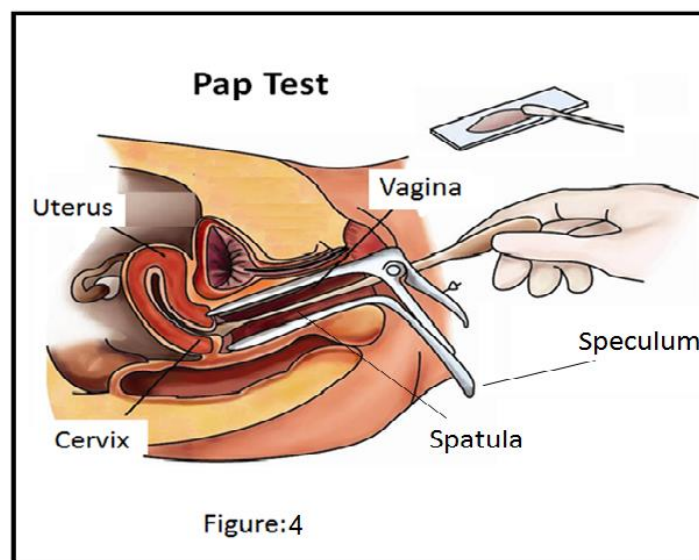
These genitourinary symptoms are relieved with local vaginal application of oestrogen cream after medical advice. Oestrogen deficiency also increases the risk of ischemic heart disease and osteoporosis leading to fractures. Osteoporosis can be prevented by consuming a Calcium rich diet and supplementation at young age especially during

pregnancy and lactation. If the woman has menopausal symptoms which are unbearable or if both the ovaries are removed due to disease at young age or in cases of severe osteoporosis the oestrogen deficiency in body is treated with **Hormone Replacement Therapy (HRT)**. Due to possible life threatening side effects like venous thrombosis and possibility of developing endometrial, ovarian, breast cancer after prolonged use this medication is recommended for selected group of patients for minimum required period only under medical supervision.

Preventive Gynaecological Check Up:

Cervical cancer screening

The Papanicolaou (Pap) smear test is performed for screening for cervical cancer. In this test the cells from the mouth of the uterus (i.e.cervix) are spread on a glass slide with the help of a spatula and examined under microscope after staining to rule out cervical cancer. With help of Pap smear test, cervical cancer can be picked up at the very early stage or even at precancerous stage and hence can be treated completely.(Fig.4)

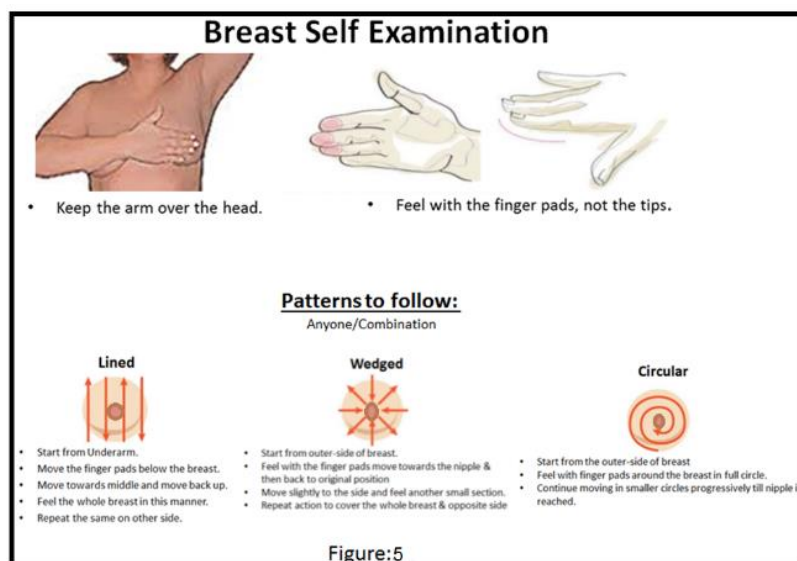


This test is performed in Out Patient Department (OPD) and does not need any anaesthesia. It should not be done during periods as presence of blood may interfere with results. Vaginal medications, contraceptive jellies, foams and intercourse should be avoided for at least 2 days prior to the test. Cervical cancer screening is recommended for sexually active women in age group 30-65 years, every 3 years with pap test or every 5 years with HPV co-test (Pap+HPV test) . Vaccines for prevention of cervical cancer are available but vaccination does not eliminate the need for regular screening in later life.

Other preventive check-up

Pelvic sonography is performed for uterine endometrial thickness and ovaries to rule out endometrial and ovarian pathology in asymptomatic women.

Women's breast examination is performed by the doctor and emphasis is given on breast self-examination (Figure: 5).



All adult women should examine their own breast. Breast examination should be performed every month at the end of the menses as the breasts are least likely to be swollen and tender at this time. It should be performed monthly on a fixed day even after menopause. Any change in the size and shape of the breast, pain in any area of breast, thickening, lump in the breast or axilla, discharge (milky/blood stained) through the nipple needs to be reported. Breast lumps are evaluated with the help of sonography, mammography and by fine needle aspiration cytology in indicated cases. Women underlying in following categories are considered to be high risk for Breast Cancer:-

- Early onset menarche (before 12 years)
- Late menopause (after 55 years)
- Nulliparous
- Never breastfed their children
- History of any other gynaecological cancer
- History of hormone replacement therapy (HRT) for prolonged period
- Family history of breast cancer in mother, maternal aunt or sister.

Sono-mammography is recommended for such women. Screening in low risk women should start at 40 years and high risk should start even earlier. First child birth before 30 years of age as well as breast feeding protects against breast cancer.

Health awareness is essential. One should adopt healthy life style with balanced diet and regular exercise. Sound physical as well as mental health improves quality of life and is essential for adding life to years rather than adding years to life. Vigilance regarding health check-ups can help detect serious problems at the earliest and thereby manage them efficiently and successfully.

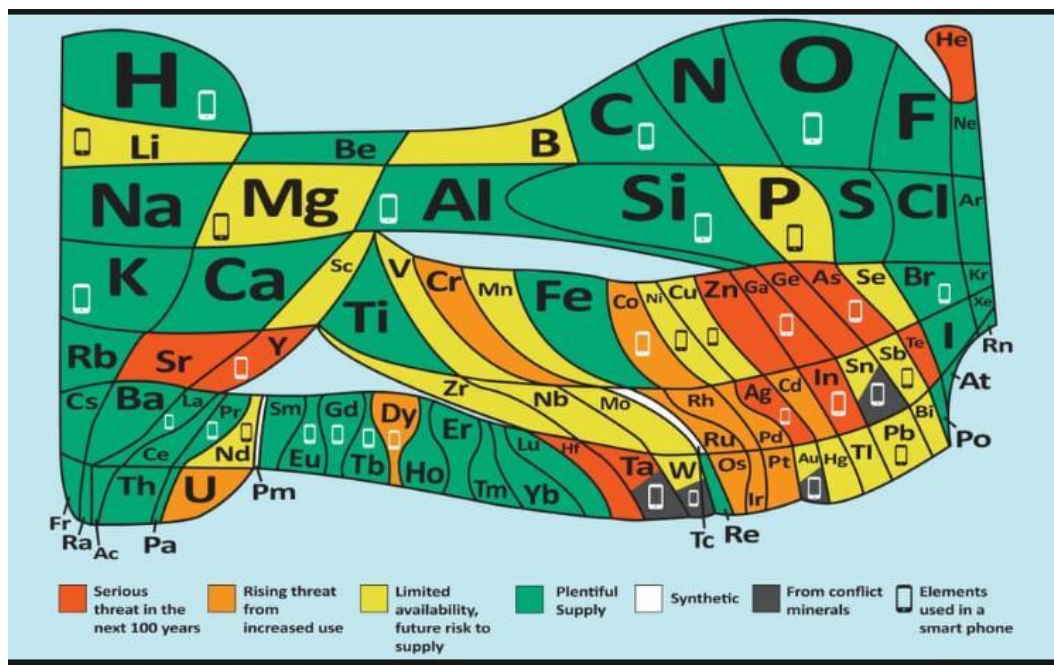


Dr. Santoshi R. Prabhu, MBBS, MD, DGO, FICOG. is Senior Consultant Gynaecologist and Obstetrician, Post Graduate teacher and Guide for Diplomate of National Board (DNB) Delhi, at Bhabha Atomic Research Centre Hospital, Mumbai since April, 2005. Prior to that she was Associate Professor at the K.J. Somaiya Medical College, Mumbai and Asst. Professor at Dr. D.Y. Patil Medical College, Lokmanya Tilak Medical College and Sion Hospital, Seth G.S. Medical College and KEM Hospital, Mumbai. Dr. Prabhu is Final MBBS Examiner for MUHS, Post Graduate Appraiser for National board of Examinations at various teaching institutes. She actively organizes and participates in various health camps.

International Year of the Periodic Table of Chemical Elements IYPT-2019

The United Nations has proclaimed 2019 as the 'International Year of the Periodic Table of Chemical Elements IYPT-2019'. This is in celebration of the 150th anniversary of the classic announcement of the system by the Russian chemist, Dmitry Ivanovich Mendeleev. The amazing alchemy of the universe is captured by scientists and has been cryptically encapsulated. That wonder capsule is a catalogue of the basic stuff of matter and is known as the Periodic Table of Chemical Elements. On this occasion, we present to the readers of IWSA Newsletter, a Periodic Table with interesting facts about the chemical elements.

Abridged from: <https://www.livescience.com/64596-new-periodic-table-shows-helium-scarcity.html>



We Salute these Women Achievers

1. IWSA's Trustee Dr. Sunita Mahajan Conferred Women of the Year 2019 Award by Zonda International organization

On Monday 11th February 2019, Zonta International Club celebrated its centennial year and on that occasion, felicitated Dr. Sunita Mahajan, one of the Trustees of IWSA, with "Woman of the Year Award 2019". It is a rotating trophy given to women who have done notable work in varied fields. Women who have been recipient of this award are noted social worker Mrs Anutai Wagh, Dr Indumati Parekh, Mrs Awabai Wadia etc. The award was given to Dr. Mahajan for her contribution in the field of IT and Education. The award function was graced by two Zontian dignitaries Ms Dilriha Ahmad and Ms Fahmida Karim.

Zonta International Organization is doing great work in uplifting women, focussing on their problems and setting them on the right path to achieve their full potential. Zonta International was formed in 1919 in Buffalo, New York, USA. 'Zonta' is derived from the Sioux Indian word and signifies the quality of being honest and trustworthy.

2. Wing Commander Abhinandan's "bravery DNA" came from his mother

While entire India was euphoric with IAF fighter pilot Wing Commander Abhinandan's valour, probably very few people outside the flying formation know that a large portion of his "bravery genes" came from his mother.

His mother, Dr. Shobha Varthaman, served humanity amidst cataclysmic violence, healed the wounded in some of the worst conflict zones around the world, including Liberia, Iraq, Ivory Coast, Papua New Guinea, Haiti and Laos. While playing the pro-active role of giving the "fighting spirit" to her brave warrior son, Abhinandan, Dr. Shobha ensured that mothers survive post-delivery complications in the high-intensity conflict zones, gifted smiles to hundreds of children worldwide, and redefined the paragon of social service.

A graduate from Madras Medical College, and a post-graduate in Anaesthesiology from the Royal College of Surgeons of England, Dr. Shobha was a volunteer to serve gratis on the world stage as a member of Médecins Sans Frontières (MSF), literally translated 'Doctors Without Borders'. MSF work exposed her to some of the most troubled places in recent times.

During the Second Gulf War, in Sulemaniyah, Iraq, Dr. Shobha encountered life-threatening experience of a suicide-bomb blast. In Iran, she taught Pranayama to her patients for promoting healing, the uniqueness of which found a good following.

As the Chief Medical Coordinator, three vastly different projects – surgical, sexual violence and an HIV project – had to be overseen by her. Women often got raped and did not get medical aid, suffering HIV infections or STD unnecessarily and projects to alleviate their sufferings was one of her onerous tasks.

But the biggest of them, amongst all her mercy missions, was in Haiti. When nearly 300,000 died and an equal number got injured in 2010 Haiti earthquake, Dr. Shobha was there offering healthcare services and hopes amidst rubbles and despair. Abridged from <https://nenow.in/north-east news March 2019>

3. Padma Shri Awardees (2019) : Dr. Rohini Godbole and Dr. Sharada Srinivasan

Dr. Rohini Godbole is a professor at the Centre for High Energy Physics, Indian Institute of Science, Bangalore - 560012. She has worked extensively on different aspects of particle phenomenology over the past three decades, in particular on exploring different aspects of the Standard Model of Particle Physics (SM) and the physics beyond it (BSM). Her work regarding hadronic structure of high-energy photons outlined a variety of ways in which to study it and has had implications for the design of next generation electron positron colliders. She is one of the editors of the book "Leelavati's daughters" on women in science, published by Indian Academy of Sciences (IAS). She is also a member of the committee "Women in Science" under IAS. She is a member of IWSA and she came to IWSA in December 2015 to give a lecture during our 15 day Refresher course on "Foundations of Physics" supported by the Joint Education panel of the three science academies.

Dr. Sharada Srinivasan is an archaeologist specializing in the scientific study of art, archaeology, archaemetallurgy and culture. She is associated with the National Institute of Advanced Studies, Bangalore, India, and an Honorary University Fellow at the University of Exeter, UK. Srinivasan is also an exponent of classical Bharata Natyam dance. She is first author of the book 'India's Legendary Wootz Steel: An advanced material of the ancient world'. Prof. Sharada Srinivasan is a Fellow of the Royal Asiatic Society of Great Britain and World Academy of Art and Science. Abridged from <https://researchmatters.in/news January 2019>

4. Dr. Gagandeep Kang, First Indian Woman Scientist FRS

Dr. Gagandeep Kang is a clinician scientist, former Professor in the Department of Gastrointestinal Sciences at the Christian Medical College, Vellore, India and currently the executive director of the Translational Health Science and Technology Institute, Faridabad, an autonomous institute of the Department of Biotechnology, Ministry of Science and Technology, Government of India. She is a leading researcher with a major research focus on viral infections in children, and the testing of rotaviral vaccines. She also works on other enteric infections and their consequences when children are infected in early life, sanitation and water safety. She was awarded the prestigious Infosys Prize in Life Sciences in 2016 for her contributions to understanding the natural history of rotavirus and other infectious diseases.

She is the first Indian woman scientist to be elected a Fellow of the Royal Society (FRS) in 359 years of history of this prestigious scientific academy. She was the ninth woman to be awarded the Infosys Prize. She is the first Indian and the first woman to edit Manson's Textbook of Tropical Medicine. Abridged from https://e.wikipedia.org/wiki/Gagandeep_Kang

5. Dr. Katie Bouman, the Woman Behind the Black Hole Image

Dr. Katherine Louise Bouman is an American computer scientist working in the field of imaging. She led the development of an algorithm for imaging black holes, known as Continuous High-resolution Image Reconstruction using Patch priors (CHIRP), and was a member of the Event Horizon Telescope team that captured the first image of a black hole in April 2019. She is expected to join the faculty of California Institute of Technology in June 2019 as an assistant professor of computing and mathematical sciences. Abridged from https://en.wikipedia.org/wiki/Katie_bouman



Dr. Sunita Mahajan receiving the Zonda International Award.



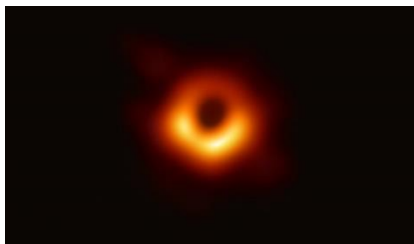
Wing Commander Abhinandan and his mother Dr. Shobha.



Padma Shri Awardees (2019) : Dr. Rohini Godbole and Dr. Sharada Srinivasan.



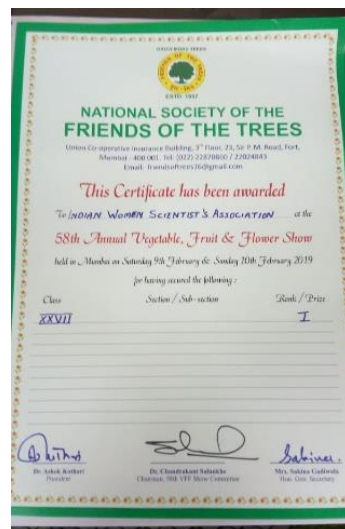
Dr. Gagandeep Kang, the First Indian Woman to be elected a Fellow of Royal Society.



Dr. Katie Bouman and the Black Hole Image.



Left: Winners of Scholarship Awards at IWSA for the year 2018-2019 on 19th January, 2019
Right: Dr. Sudha Padhye, Founder Member, felicitating Chief Guest, Dr. Sangeeta.



Participation of IWSA at Friends of Trees (FOT) Flower and Vegetable Show at Ruparel College, Mumbai on 9th and 10th February, 2019.

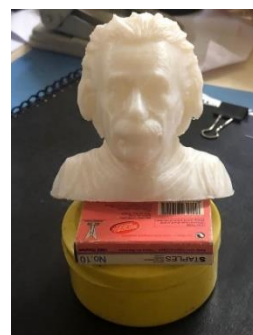


Day Care Children Planting Potatoes in the Garden on 16th March, 2019.



Day Care and Nursery Children celebrating Holi on 20th March, 2019.

Left: Participants and faculty of the MERIT Camp held at IWSA on 17th April 2019.
Right: The 3D printed bust of Einstein made at the Camp.





Students practicing Yoga at the Meditation and Yoga Training Program conducted by Amravati Branch on 5th March, 2019.



Celebration of International Women's Day by Amravati Branch on 8th March, 2019.



Celebration of International Women's Day by Bengaluru Branch on 8th March, 2019: Lecture by Dr. Srimani, a noted Gynaecologist.



Celebration of International Women's Day by Bengaluru Branch on 21st March, 2019: Lecture by Padmashri. Dr. Rohini Godbole.



Celebration of International Women's Day by Delhi Branch on 8th March, 2019: Talks on Stress Management and Breast Cancer.



Workshop on "Balance for Better – Equal Opportunities for Better Future" by Hyderabad Branch on 7th March, 2019.



Celebration of National Science Day (Science Quiz) (15th February, 2019) and International Women's Day (Lectures by Eminent Women) (20th March, 2019) by Kalpakkam Branch.



INDIAN WOMEN SCIENTISTS' ASSOCIATION (IWSA)

Hyderabad Branch

Organises

XIV TRIENNIAL NATIONAL CONFERENCE of IWSA

11th to 13th December 2019

at ICMR - National Institute of Nutrition, Tarnaka
Hyderabad-500 007 Telangana

Conference theme:

"Women Led Science, Technology and Innovation"

FIRST
Announcement

Technical Sessions

- Health, Pharma and Biotechnology
- Food, Agriculture and Nutrition
- Physical and Chemical Sciences, and Technology
- Environment and Climate Change
- Innovation and Entrepreneurship
- Panel Discussion : Role of Women in Science and Technology for National Development

Registration Fee :

Delegate category	Early Bird Before 31 st Aug. 2019	After 31 st Aug. 2019	Spot Registration
1) Corporate Delegates	Rs. 3000/-	Rs. 3500/-	Rs. 5000/-
2) IWSA Members	Rs. 1500/-	Rs. 2000/-	Rs. 2500/-
3) General Delegates	Rs. 2000/-	Rs. 2500/-	Rs. 4000/-
4) Students/ Research Scholars	Rs. 1000/-	Rs. 1500/-	Rs. 2000/-

CALL FOR ABSTRACTS

The Abstract should be
submitted on or before
31st August 2019

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9959444933

Organising Secretary

Dr. Vijayalakshmi Venkatesan

9246109383

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Co-Convener

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Joint Secretary

Dr. C. Anjali Devi

9849663643

e-mail : iwsa.h.tnc@gmail.com

Registration Fee can be
paid in DD / on line transfer
in favor of
"Indian Women Scientists' Association"

Bank Name: State Bank of India
Branch: Lallaguda, Secunderabad - 500 017
Account No.52020522880
IFSC Code:SBIN0020082
Branch Code:20082
MICR: 500002329

For IWSA membership log on to www.iwsa.net



One Day Workshop on “Women Entrepreneurs in Science and Technology” by Pune Branch on 8th March, 2019



Workshop on “Sujok Therapy “ by Dr. Shilpa Narayanan held by Pune Branch on 27th March, 2019



Winners and Organisers of Vijaya Agarwal Memorial Maths Olympiad - 2019 (VAMMO – 3)

Roorkee Branch: Olympiad on 27th January, 2019 and Prize Distribution on 16th February, 2019

To

From

IWSA Head Office

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