IWSA NEWSLETTER

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BRANCHES

Roorkie 1979 . Hyderabad 1979 . Pune 1980 . Nagpur 1982 . Kolhapur 1982

Delhi 1987 . Kalpakkam 1987 . Baroda 1988 . Lucknow 1997. Amravati 2010

विज्ञान : आनंददायी अनुभव

From the Editor's Desk

Teaching science to children should be easy since they are naturally very curious and love to experiment. In reality teachers tend to make it a dull and difficult learning experience. Science education can sow the seeds of inquiry and cultivate the habit of logical thinking that can take them a long way. It can not only help them develop critical basic knowledge, skills and interests, but also develop habits of the mind that can be useful in understanding the subject more deeply later. Indirectly, they may use their knowledge of science in making personal and societal choices.

The years of early childhood provide a perfect opportunity to help kids develop a love for learning and especially a love for science. By providing plenty of opportunities for children to experience things in a hands-on way, IWSA aims at encouraging their curiosity, so they get in the habit of gathering knowledge kindled by the spirit of inquiry. For this reason, three activities were conducted in the last quarter aiming at science education, one was for the Teachers and the other two were for children.

विज्ञान एक आनंददायी अनुभव was the theme of the workshop conducted over two days for science teachers from Municipal schools from Navi Mumbai, having Marathi medium of education. Shri Rajeev Tambe, Prof R. Keskar and Shri Anand Ghaisas were the invited speakers who conveyed interesting ways of teaching science and mathematics to the 35 participants. Many IWSA members participated in demonstrating experiments in basic microbiology, nutrition, checking food adulteration and the eco-friendly in-house applications of composting of biodegradable waste, rainwater harvesting and solar water heaters. The program was received with great enthusiasm.

The second program was titled 'Rainbow 2012' which is an annual event held at IWSA to showcase 'Teaching Aids'. The event was a great success with 2000 students and 500 teachers from Navi Mumbai visiting the event. Two puppet shows, one in हिंदी entitled "कहा गयी मींकुकी पुंछ?" and another in English called "Cap's Journey" was well appreciated by the audience attending the shows. The activity corners that had science games saw a lot of participation.

The third event was the celebration of the National Science Day. Over 100 students (VIIIth and IXth class), boys and girls, from Sainath Hindi and English medium School attended the event along with five teachers. Simple hands on experiments were demonstrated to them along with explanation of their underlying principles and their various applications. Six IWSA representatives kept the children energised with maths and science based activities. This was followed by a lecture by Dr. Jyotish Babu, a scientist from BARC. His talk entitled "Science of music" turned out to be a highly educative experience as he explained the physics behind sound waves, how different musical instruments work, evolution and categories of various musical instruments of the world, what is noise and music to ears, how vibrations are detected by the ear and transduced into nerve impulses that are perceived by the brain etc. It all made 'sound' sense and science!

Apart from this there were nine lectures organised by IWSA under the "Popular Science Lecture" series funded by BRNS. Overall it was a quarter full of science activities.

IWSA branches have been quite active in the last months, which is highly encouraging. International Woman's Day and National Science Day were celebrated by Pune, Kolhapur, and Nagpur branch with novel programs. Amravati branch organised Cancer detection camp and Pune branch held a lecture competition for postgraduate students.

Villages are only a short distance away from cities and yet have very few opportunities and exposure to science based events. Hence the programs organised by Roorkee and Kolhapur branch to reach out to them are highly commendable.

Anjali Bhagwat
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C O N T E N T S

Executive Committee (2011 – 13)

Dr. Susan Eapen ……President
Dr. V. Sudha Rao ……...Vice President
Dr. Rita Mukhopadhyaya…Secretary
Dr. Devaki Ramnathan …..Jt. Secretary
Dr. Shubhada Nayak …….Jt. Secretary
Dr. Srirupa Mukherjee ……Treasurer
Ms. Rashmi Rastogi ..... Member
Dr. Asha Damodaran .....Member
Dr. Sushma Pradhan .....Member
Dr. Anjali Bhagwat.....Member
Dr. Nutan Khalap..... Member

An appeal to all the IWSA members

We encourage one and all to come forward and donate OLD Personal Computers and Printers in WORKING CONDITION to the IWSA computer training centre. It will help the ongoing programs immensely

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President's Message

Dr. Susan Eapen
President, IWSA

Dear Friends

As most of you are treading well in your own chosen field of expertise, I am quite sure that you are also finding time to popularise science which IWSA is all about. Educated women have proved to be changers of the society as we see today. A higher rate of literacy among women improves the quality of life both at home as well as outside because they tend to encourage and promote education of their offspring. We also see reduced infant mortality when female literacy and education level improve.

Indian education system has been one of the contributing factors in her improved economic growth. Yet a large section of the society is illiterate and we need to improve the situation. According to a survey, only 15% of Indian students reach high school and only 7% among this pass out of high school. About 25% of teaching positions nationwide are vacant and more than 50% of college professors lack a Masters or a Ph.D. degree. Teachers are not trained/motivated to nurture creativity in children.

The development of human resources needs a fresh outlook. Our present system was evolved to serve an emerging industrial society where in technological growth was at a lower pace compared to the present scenario. Most of the technologies have a shorter shelf life today and the pace at which technology is revolutionised makes our 'mass produced' graduates unable and unsuitable to cope with the changes. They form a large chunk of the underutilised productive age group of the

society and their frustrations contribute to negative influences growing in the social strata. Many of the evils can be removed if we rethink and evolve a new system where creativity is given importance and nurtured.

Since the present education system encourages memorising and scoring good marks, the young ones who have extra ordinary capacities for creativity and innovation lose it by the time they reach the second or third standard. Creativity is as important as education. We need more innovators. Therefore, we need to rise with the time and give a fresh look at our systems. Indian Women Scientists' Association can take a lead in suggesting and getting improvements so that we can encourage the present lot to be innovators of tomorrow.

In a knowledge based economy, where most of the fastest growing occupations this decade require scientific or technological skill, it is essential to enhance the creativity of young students who are coming out of the higher systems of education. We have to invest in our future innovators by increasing funding in basic research and providing research grants to most outstanding budding career researchers in the country. There is urgency in terms of creating innovative scientists.

Women have extra-ordinary capacity for multitasking. They can do well not only at home; but also at the work place and adapt well to the situations. When women involve themselves in social activities, it is well accepted by the society. We have to aim high and work hard to encourage our children not to lose their creative instincts. Thousands of years of history can not be changed overnight. Indian Women Scientists' Association can initiate new programmes to create innovators of tomorrow and I look forward to your valuable suggestions in this direction. Wish you all a wonderful time ahead.

Susan Eapen
eapenhome@yahoo.com

CONVENORS OF IWSA SUB-COMMITTEES

Dr. Niyati Bhattacharya (Hostel)
Dr. Bhaktaver Mahajan (Health)
Dr. Jayashree Nadkarni (Building Maintenance)
Dr. Sunita Mahajan (Computer)
Dr. V. Sudha Rao (Nursery School & Education)
Dr. Usha Thakare (Library)
Dr. Susan Eapen (Science Awareness Programme)
Dr. Srirupa Mukherjee (Membership)
Dr. Sindhu Joshi (Scholarship)
Dr. Anjali Bhagwat (Newsletter)

The special General Body Meeting of IWSA for passing the Audited Accounts for the period 2011-12 will be held on Saturday, 4th August 2012 at 3.00 p.m. at IWSA Complex, Vashi, Navi Mumbai.

IWSA News

News from Head Quarters

Report on Science Workshop-"विज्ञान एक आनंददायी अनुभव "

A two day workshop was organized on 6-7th Jan 2012 at IWSA campus, Vashi for science teachers from 35 NMMC schools. It was conducted in मराठी and was titled "विज्ञान एक आनंददायी अनुभव" The idea was to sensitize the school teachers towards newer methods of teaching, and bring science out of text books and laboratories to day-today life. Science and mathematics could both be made interesting to students through simple toys, inexpensive teaching aids and fun games. Once the basic concepts are cleared at an early age, grasp of scientific subjects and their application becomes easy for higher studies.

The inaugural talk by Shri Rajiv Tambe gave the participants a radically new way of "learning" science along with students rather than "teaching" them. Rajiv Tambe is a well

known educationist who has worked as educational consultant for UNICEF and has held a number of parent/ teacher /student/ children workshops. He has published more than 55 books and has received awards from both the Maharashtra State and Central Government. In his humorous style, he made teachers understand the importance of allowing students to make mistakes and learn to include their doubts, ideas and innovations as a learning process. He also experimented with the participants using simple props like papers.

In the second session, different activity corners were prepared for the participants. The first was nutrition and health where interesting games were arranged for the participants to learn basics about nutrients & their functions. Teachers were also taught to make very simple teaching-aids. The resource people were Ms. Rekha Pradhan, Shaheena & Snehalata Bhavsar and IWSA's Teacher Trainees. Secondly, Dr. Shubhda Nayak, IWSA member and her team gave information about harmful and helpful bacteria and demonstrated blood groups and blood cells like RBCs and neutrophils. Shri Gajanan Patil, from 'Consumer Society of India' demonstrated simple ways to detect food adulteration using lime juice and paper.

Thirdly, environmentally friendly projects run at the IWSA campus were demonstrated to the participant teachers. These included composting of biodegradable waste for manure. IWSA's green treasure was introduced by Mrs. Asha Khandkar.

Use of solar energy for water heating and rain water harvesting was observed by the fourth group. Through informative charts, Mrs. Meena Pethe, Mrs. Malathi Rao, IWSA members, conducted an educational tour of IWSA campus. Many of them expressed the view that observing the actual use of solar energy with their own eyes made a huge difference compared to learning out of text books.

On the second day, the session was opened by Prof R. Keskar, who is passionate about mathematics and teaches mathematics through Origami. Keskar's down to earth approach to address all the problems faced by the participants was commendable. Participants learnt to enjoy maths rather than being scared of it and in Prof. Keskar's words 'fell in love with mathematics'.

The post lunch session was conducted by Shri Anand Ghaisas from Homi Bhabha Centre for Science Education. He and his associate demonstrated several experiments in the class using very simple, easily available things like washing machine pipe, papers, drinking straws. He demonstrated a range of experiments for teaching Science using properties of sensory organs to children making it extremely interesting and impossible to forget. He urged the participants that to teach effectively, the teachers can make deliberate mistakes and keep the class smiling.

The valedictory function was graced by Shri Eknath Patil, Chairman, Education Committee, NMMC. Dr. V. Sudha Rao summed up the workshop while two representatives teachers presented the participants' feedback. Shri Patil distributed the certificates to the successful participants and promised financial help for future programmes of IWSA. The programme ended with vote of thanks.

Compiled by Dr. Nutan Khalap

Conclusion of Spoken English Tutorials

The spoken English tutorial classes started on 25th November 2011 with 22 children from VIII Std. and were concluded on February 28, 2012. There were more girls than boys in this class, but all the children were punctual, regular and eager to learn. The volunteers who ran this course, Dr. Srirupa Mukherjee, Ms. Malathi Rao, Ms. Mallika, Ms. Radha, and Dr. Devaki Ramanathan had to put in good effort to draw them out of their shells and make them assertive enough to talk in English, right or wrong. We had devised a list of 10

commandments to follow to speak English and to speak it correctly. At a later stage of the classes, grammar was taught, just enough to speak correct English, but not to make it scary. Every class ended with 15 minutes of games: word – building games, dictionary – usage games, learning opposites, professional words, and collective terms – all aimed to improve their vocabulary. The children adored these game session.

On the concluding day, the principal Mrs. Verma was the Chief Guest along with her English teacher. 40 children of VIII Std. (other than the tutorial students) were invited to see the performance. Dr. Sudha Rao introduced IWSA and its activities to the audience after which Dr. Devaki Ramanathan (convener of the course) summarised the entire schedule of teaching. The children showed their English speaking talents. All the children were given a chance to show off, either by participation in skits, or quiz or recitation of tongue – twisters. Mrs. Verma appreciated their performance and the improvement that was strikingly apparent after the course. She said that the school is grateful for the interest taken by IWSA in her school and would welcome repetition of such course in future as well. Dr. Srirupa concluded the session with vote of thanks.

Dr. Devaki Ramanathan would like to place on record her sincere thanks and appreciation for the diligent efforts and hard work put in by the team. In conclusion, the team felt gratified with the improvement seen in the children's progress. The entire course has been well documented and will be made available for repeat sessions.

(Complied by Dr. Devaki Ramnathan)

Popular Science – lecture programme

BRNS funding received by IWSA for promoting 'popular science lecture' was utilised to sponsor all the lecture events organised:

I) The first lecture was held at SIES college of Arts, Science & Commerce. Sion (W), Mumbai on 4th January, 2012. Dr G Ramakrishnan,President Chromatographic Society of India spoke on How chemistry and Analytical Instrumentation Techniques change your life..Dr H Mehta, principal of SIES college spoke about the activities of the college and Dr Susan Eapen, President IWSA highlighted the various activities of IWSA and its efforts to take science to the masses..Dr Jayanthi, Head of Dept of Chemistry, SIES college proposed the vote of thanks.About 150 students attended the seminar and actively participated in the discussion which followed. It was a very down-to earth populist talk that received great ovation from the student audience.

II) IWSA collaborated with the 10th Annual Sophia – Nobel Oration programme for the first time. This was held at Sophia College, Mumbai on 2 days, Jan 7th, 2012 and Feb 1st, 2012 in 3 parts. The Jan 7th function was in 2 parts: convener for the first part was Dr. H. Subramanian who welcomed the audience and introduced the speaker of the day. Dr. Devaki Ramanathan, Jt. Secretary, IWSA gave a brief introduction of IWSA and its activities, aims and objectives. The speaker Dr. Shubadha Chiplunkar, Head, Dept. of Immunology, ACTREC, Kharghar, presented the talk on the 'Nobel Prize in Physiology & Medicine, 2011'. This was awarded jointly to Bruce A. Beutler & Jules A. Hoffmann for their discoveries concerning the activation of innate immunity

and to Ralph M. Steinmann for his discovery of the dendritic cell and its role in adaptive immunity.

For the second part held on the same day, Dr. P. Miranda was the convener who introduced the speaker Dr. M.T. Joseph, Director, Institute of Indian Culture, Andheri, Mumbai. His talk was entitled 'Icons of peace in a conflict-ridden world' and covered the life and work of the 2011 Nobel Peace Prize awardees Ellen Johnson Sirleaf, Leymah Gbowee and Tawakkol Karman for their non violent struggle, for the safety of women and for women's rights to full-participation in peace-building work. A documentary DVD on the work done by the Noble Prize winners was shown as a precursor to his talk.

The 3rd part of the Nobel Prize oration was held on 1st Feb., 2012. The convener was Dr. Gail Carnero who introduced the speaker Dr. Radha Jayaraman, Chemistry Dept., ICT, Mumbai. She talked on 'Nobel Prizes in Chemistry," spanning a century of Chemistry Nobel Laureates since its inception.

All 3 talks were very interesting and were well received. The audience comprised of students from Sophia College & other institutions such as FMR, SIES, ISC, St. Xavier's College and Mumbai University. There was a very lively interactive question-answer session at the end of each talk. Hand outs on the award winning research were prepared & distributed.

III) A lecture was arranged on Jan 12, 2012 at Karmaveer Bhawrao Patil College, Vashi. The speaker was Dr. Smitha Sivaraman, oncology researcher, Incyte Corporation, Chicago, U.S.A. The title of her talk was "Myelofibrosis : new therapies for an old disease". The Vice Principal of the college welcomed the speaker and audience and talked about the college and its programmes. Dr. Sudha Rao, vice president, IWSA briefly spoke about IWSA's aims, objectives and activities. Dr. Shubadha Nayak, lecturer and Jt. Secretary, IWSA introduced the speaker.

Dr. Smitha covered the entire history of Leukemia. She discussed her research work based on Jakafi (ruxolitinib) which is a kinase inhibitor, JAKs which mediates the signalling of a number of cytokines and growth factors that are important for haematopoiesis and immune function. JAKAFI is approved by FDA for high risk myelofibrosis. The lecture was followed by a vibrant interactive question-answer session.

IV) Two lectures were arranged at SIES college of Arts, Science & Commerce, Sion (W), Mumbai on Jan 30, 2012. The first speaker was Dr. S.F. D'souza, Associate Director, Bio-medical Gr., BARC on 'Immobilised enzymes and microbial cells for bio process development and as bio-sensors. The second speaker was Dr. Susan Eapen, President IWSA on 'Plant bio technology- Engineering plants for remediation of metal and organic pollutants".
Interactive session followed both the talks which were well received.

V) Two lectures were held at Ramnarain Ruia College, Matunga (E), Mumbai on February 25, 2012. First talk was by Jacinta D'souza (Ph.D). UM-DAE-centre for Excellence in Basic Sciences, Vidyanagar, Kalina, Mumbai on "Flagella – the cellular movers and sensors" The second talk was by Dr. Susan Eapen, President, IWSA on "Transgenic plants for environmental security". Both lectures were illustrative and interesting and were followed by interactive question – answer session.

Compiled by Dr. Susan Eapen

Workshop on Fabric Painting

A hobby development workshop was conducted by IWSA on 11th March at the IWSA complex. The training was given by Mrs. Vidya Argolkar, an authorized Pidilife teacher. Starting with the concepts of primary and secondary colour, cool and warm colour she 3) Throwing coins into bowl

in water and learn how buoyancy and refraction principles control the path of coins. (4) Math games and match stick games as brain teasers (5) Identification of IWSA trees and learning the techniques for the preparation of herbarium sheet (6) Secret decoding and messaging through invisible letterings using onion juice (7) Optical experiment and the importance of 2 eyes to have 3-d location of objects (8) Dancing moth balls in a glass reactor producing CO_2 bubbles accumulation to make the bolls lighter. The students were quite excited with these simple but effective science experiments.

Then Dr. Jyotish Babu, a scientist by profession (from BARC) and a musician by choice gave an inspiring talk to the students about the "Science of music". Dr. Babu is a veteran in Western Music, a player as well as composer who has done extensive research on music, the origin and evolution of musical instruments, both Indian and Western. Through Power Point Presentation, he showed properties of different instruments: stringed, wind-based and percussive, used all over the world. Tunes of different music were played for the students to identify. He talked on interference of sound, super positioning natural resonance, standing waves and the destructive power of sound, the physics of sound and the wonderful power of human ears with its capacity to distinguish from 20 HZ to 20 KHZ.

The talk was very educative, interesting, impressive and exciting for one and all. Dr. Rita M. introduced the speaker to the students. Dr. Srirupa ended the programme with vote of thanks. IWSA puts on record its appreciation for the hard work out put in by the volunteers and to Dr. Rita Mukhopadhyaya for bringing such an excellent speaker.

Compiled by Dr. Devaki Ramanathan

combination and shading effect. The techniques of fabric painting using stencils and also with direct strokes were demonstrated. About 25 lady participants of ages starting from 7 to 70, many from the IWSA Hostel, some TOT students, housewives and IWSA members benefited from the workshop.

Compiled by Dr. Srirupa Mukherji)

Celebration of National Science Day

Indian Women Scientists' Association (IWSA) observed and celebrated "National Science Day" on 16th March 2012 at IWSA's "ICICI" Multipurpose Hall. About 100 students (boys and girls) of VIII and IX std. of Sainath Hindi and English school attended the programme along with 3 science teachers. There were ten science-math games arranged for them. Six volunteers from EC/LM of IWSA conducted the experiments and explained the underlying scientific principles and their applications to the students.

The volunteers were Dr. D. Ramanathan, Dr. S. Mukherjee, Ms. M. Rao, Dr. L. Mittal, Ms.Mallika and Ms. Radha. Before the session started, Dr. Devaki Ramanathan talked to the students about the significance of the National Science Day, about Sir C.V. Raman and his discovery. For one and a half hours, the children were kept busy with the games that included: (1) Making fake snow and the special uses of sodium polyacrylate (2) Transfer of images using Solar photography and underlying photo emission and absorption characteristics of materials (

Report by Nursery School Education Committee

The nursery children geared up to go to formal schools have appeared for interviews and some have even secured admission in Fr. Agnel and St. Mary's. In class, the teachers have prepared them in conversational skills and other readiness activities.

On 28th January a medical check-up was conducted for 42 children by Dr. Yewale and Dr. Shankar. Also a Dental Check up was carried out by two doctors Dr. Chitan and Chaitali from IDA. Enthusiastic parents turned out in good number along with the children for the check-up. Parents also attended a lecture by Dr. Shobha Patkar, Psychiatry (BARC) on "Behavioral Problems in Pre-scholars" on the same day. It was an interactive session, where Dr. Patkar answered queries and doubts put up by the parents and trainees.

The TOT trainees have been busy taking part in extracurricular activities and attending workshops. Two trainees took part in the Inter Collegiate festival "TEJASWINI" held at S.N.D.T. college, Churchgate campus on 14 – 16 January. They reached up to the final round. Trainees from both the medium along with the teachers attended a workshop on 'Healing through Stories' at PODAR, Santacruz conducted by Dr. Kamini Rege. A participation certificate and C.D. was given by the E.C.A. Other participants at the workshop were teachers from Pratham and Muktangan .

The distribution of Scholarship was done on 17th March. Two students Bhagyalaxmi and Ashwini got Rs. 10,000/- from Madgaonkar's Trust. Three students were given partial financial aid from IWSA-Ms. Pooja received Rs. Since the present education system encourages memorising and scoring good marks, the young ones who have extra ordinary capacities for creativity and innovation lose it by the time they reach the second or third standard. Creativity is as important as education. We need more innovators. Therefore, we need to rise with the time and give a fresh look at our systems. Indian Women Scientists' Association can take a lead in suggesting and getting improvements so that we can encourage the present lot to be innovators of tomorrow.

In a knowledge based economy, where most of the fastest growing occupations this decade require scientific or technological skill, it is essential to enhance the creativity of young students who are coming out of the higher systems of education. We have to invest in our future innovators by increasing funding in basic research and providing research grants to most outstanding budding career researchers in the country. There is an urgency in terms of creating innovative scientists.

Women have extra-ordinary capacity for multitasking. They can do well not only at home; but also at the work place and adapt well to the situations. When women involve themselves in social activities, it is well accepted by the society. We have to aim high and work hard to encourage our children not to lose their creative instincts. Thousands of years of history can not be changed overnight. Indian Women Scientists' Association can initiate new programmes to create innovators of tomorrow and I look forward to your valuable suggestions in this direction. Wish you all a wonderfull time ahead. 5000/, Ms Minaz and Daljeet received Rs. 5800/- each.

RAINBOW 2012

Indian Women Scientists' Association (IWSA) hosted its 15th year of teaching aids' exhibition – 'Rainbow 2012'. IWSA conducts one year diploma in nursery/crèche teacher's training course affiliated with S.N.D.T Women's University, Mumbai for last 16 years.

Exhibition was inaugurated by our nursery toddler Ms. Arya More. It was done informally by playing with *"Bhatukli"* (Doll Playhouse). All the children from IWSA's

Daycare & nursery school were dressed traditionally and enjoyed playing the *Bhatukali*. There were around 400 small size vessels & utensils in brass, copper, wood and silver on display – an unique personal collection by Mr.Vilas Karandikar. There were copper boiler, buckets, lanterns, old games, cupboard, which now a day's nobody uses them in modern lifestyle. Children were thrilled to handle and play with the "*Bhatukali*".

There were stone grinder, *chapati* roller, pounder, *chutney* grinder, cooking burner, which were kept on a floor to have hands on experience. Not only girls but boys also enjoyed doing these chores. Children from Helen Keller Institute also found these items interesting and played with them. Grandmother of Arya More was excited to see Arya in nine yards saree grinding sugar by using stone grinder.

There were two puppet shows one in Hindi "कहा गयी मिन्कुकी पुंछ? It was conceived by Ms. Snehalata Bhavsar, IWSA's Sr Teacher, enacted by IWSA trainees by using very impressive handmade puppets. Puppet shows were great hit among children because of their recreational values. The second show was called "Cap's Journey". It was about the caps which we can make with old newspaper like chef's cap, sailor's cap, money lender's cap, graduation cap. This activity teachers can perform as teaching aid and at a low cost too, remarked Mrs. Shaina Shaikh IWSA's teacher.

Around 2000 children and total 500 teachers from Fr. Agnel, St. Mary's, Toddler Kingdom, Anchorwala and Nutan Balwadi, Modern, NMMC schools, Bramhanand ashram, Arambh, Bal Mermier Ashram, etc. visited the exhibition and enjoyed the puppet show.

Three activity corners were specially designed for toddlers having games based on science and creativity. The activities were focused on creative games, which enhance small and large muscles development, eye hand coordination, cognitive development and increase attention span. The games planned were feeding the rabbit, wheel game for air, land and, water using low cost material. This corner conceptualised by Ms Mrinal Inamdar, a teacher at IWSA, caught the maximum attention of young & old people.

In the science activity corner, we tried to promote scientific attitude by simple games based on concepts of magnetism, germination, float and sink objects, sensory experience of different material, Wild vs Domestic animals. These were also appreciated by toddlers.

In the creativity corner, children enjoyed playing with natural colours, blow painting which aims at sensorial development. Preschool (2 to 6 years) is the most important stage of life and 80% of brain development takes place in these years. Igloos made with coconut shells and covered by cotton was biggest draw. This corner was guided by Ms. Snehalata Bhavsar, a senior teacher in IWSA.

Teaching aids' exhibition is held to showcase trainee's work which they learn throughout the year. Their journals on origami, paper crumpling, collage, montage, crayon and wet painting were on display. Their projects on visual discrimination, E.V.S., maths reading, science awareness and various teaching aids were also exhibited in Rainbow 2012.

Navneet books and *Pratham*'s CD's had put up their stalls to display children's books on education and recreation. Fevicryl conducted workshop at 4.00 p.m. every day.

IWSA cares for safe environment and thus promoted eco friendly natural Holi colours from plants for sale. A few small scale women entrepreneurs also showcased their products like hand embroidered clothes, stationery, jewellery etc. "The main aim of this teaching aids' exhibition is to nurture and create an environment for children & teachers to explore, enrich and enjoy the method of science" said Dr. Sudha Rao Vice President & Course Coordinator of the Teacher's Training Course.

Compiled by Dr. V. Sudha Rao

News from IWSA Branches

Amravati Branch

Rubella vaccination awareness camp

The general lack of knowledge about the importance of Rubella vaccination among women, prompted us to hold an awareness camp for the hostel inmates on 1st December 2011 in collaboration with Health Center, Sant Gadge Baba Amravati University, Amravati in the girls hostel (Old and New). Expert pediatrician of Amravati Dr. Rajesh Sherekar delivered the speech on "Importance of Rubella vaccine in women." Doctor explained about rubella infection and its transmission and informed about its infection in pregnant woman. He said that if the fetus gets infected with rubella, there are chances that the baby may die in the womb or will be born with some defects. This can be prevented simply by getting vaccinated before marriage or before planning for a child. Dr. Sherekar also invited the students in his hospital for getting vaccinated free of cost. More than 200 girl students attended the camp.

Breast Cancer Awareness and Screening Camp:

The camp was organized in collaboration with Smt. Indumati Rathi Foundation, Amravati on 17th March 2012 in the campus of Sant Gadge Baba Amravati University, Amravati at 12.00 pm in the Dept. of Botany. Breast cancer in women is rising alarmingly, especially in the urban society. There is a general reluctance among women, about checking ones own health. Taking care of the family being their primary goal they do not realize that if they get affected the whole family suffers. Another very important reason is feeling shy to get themselves examined and the worry that if they have the problem they may have to remove the breast which is very difficult to accept even by literate women. All the IWSA members of Amravati Branch as well as other ladies staff of the campus were invited for the camp. Women over 30 years were the target group. The event was inaugurated at the hands of Mrs. Monika M Khedkar, Wife of Honarable Vice Chancellor of Sant Gadge Baba Amravati University, Amravati, Dr. M K Khedkar. Dr. Usha Gajbiye, a renowned surgeon of Amravati District delivered a lecture on Breast Cancer Awareness and also guided on how to self examine for the presence of lumps in the breast. She also discussed about the various risk factors that makes a women prone to cancer. The lecture was followed by check up camp by the three doctors, Dr. Seema Sune, Dr. Babita Misar and Dr. Usha Gajbhiya. All the ladies got their check up done. Of the 56 ladies checked 15 were in the risk group and two of them were recommended for further tests. Mr. Rathi and the team of doctors from Smt. Indumati Rathi Foundation, Amravati regularly organizes such diagnostic camps at various places.

Kolhapur Branch

Science Day

IWSA Kolhapur Branch celebrated 'National Science Day' by conducting an interschool essay writing competition on 24/25 Feb.2012 for students from 8thand 9th standard from CBSE. The subject was '**New Energy Sources in Future: It's technology and applications'.** 200 students from different CBSE Schools participated. The Prize distribution ceremony was conducted on 28th Feb. 2012. The Chief Guest for the function was Mrs.

Chhaya Sale, Executive Engineer, Maharashtra Electricity Transmission Company, Kolhapur. The essays were judged by two physicists, Dr. Mansigh Takle and Dr. Ashwini Salunkhe.

The activity in charge Mrs. Kalpana Savant, explained the importance and objective of IWSA. Mrs. Dhanashri Patil introduced the guest, Mrs. Tejswini Patil proposed the vote of thanks and the event was anchored by Ms. Padmashri Awate.

International Women's Day Celebration

The Kolhapur Branch of IWSA celebrated 'International Women's Day' in a special way by felicitating Women in **बचत गट** from Malvan area. **बचत गट** is a small group of (10-15) individuals living in close proximity who undertake income generating activities, through their own savings deposited into a common bank account which then enables them to borrow bank loans on a very nominal interest rate. Their collective bargaining power with banks helps them to undertake bigger projects and gain better income in course of time without collateral security. Mrs. Harshlata Siddharth Kadam-Kitchen Gardner and*Mrs. Manali Madan Karangutkar- Mango processing were felicitated. Agriculture officer Mr. Ashtekar gave information of agri-tourism, spice garden etc. 30 ladies from different area participated and enjoyed Women's Day with a different approach. The activity incharge was Mrs. Dhanashree Patil, womens felicitation was organized by Mrs. Kalpana Savant. Mrs. Padmshree Awate , Mrs. Neeta Shinde and Mrs. Deepa Taywade – Patil assisted the program. The Eco-learning activity included exploring mother Earth's live treasures at Malvan -Ghumad Village, to study Mangrove Ecosystem, Eco-Spice Garden, Snorkeling adventure to understand the life beneath the sea and Rock garden under experts' guidance. IWSA members participated & benefited.

PUNE BRANCH

Lecture competition for post graduate students 18 Feb 12

IWSA, Pune branch in association with Department of Environmental Science, University of Pune organized lecture competition for M. Sc. Environmental Science students on "Environment and its Conservation" There was overwhelming response from different colleges.

Prof N. S. Rajurkar, Head, Department of Environmental Science and Convener, IWSA, Pune Branch inaugurated the competition. Prof. Madhurima Dikshit, former Head, Chemistry Department, University of Pune and Dr. Smita Nilegaokar, Scientist, ARI, Pune were the judges for it. Dr. Suvarna Tikle compered the whole day programme.

First Prize was won by Mr. Niranjan Parulekar, Dept of Environmental Science, University of Pune spoke on "Biomining", the **Second Prize** was awarded to Mr. Patil Nitin Abaji, KTHM College, Nashik, who spoke on "Environmental Pollution" and the **Third Prize went to** Mr. Ajay R. Unde, New Arts, Science and Commerce College, Ahmednagar.

Women's Day celebration 8th March 12

Indian Women Scientists' Association, Pune branch in association with Department of Environmental Science,University of Pune organized a seminar on the theme "Science and Society" in order to celebrate the International women's day on 8th March 2012.

Prof. Pandit Vidyasagar, Head, Physics Department and Former Director, BCUD, Pune University inaugurated the seminar. In his inaugural address he presented an overall review of the 'Role of Women' in the development of 'Science and Society' right from historical period to present world. Prof. Rajurkar, convener of the seminar and Head, department of environmental Science briefed about the importance of women's day. During the programme Dr. Pradnya Kanekar, Emeritus scientist from Agharkar Research Institute and Prof. Nilima Rajurkar from Pune University were felicitated for their achievements in the year 2011-12. Prof. D.D. Dhavale, Head Chemistry Department gave his remarks. Prof. Madhurima Dikshit proposed vote of thanks.

Four speakers delivered the lectures. D**r. K. M. Paknikar**, Agharkar Research Institute, Pune spoke on 'Metal microbe interaction, nanotechnology and beyond', **Dr. Anita Kar,** University of Pune spoke about 'Arguments for initiating a birth defects prevention programme in India.', **Dr. P. P. Kanekar**, ARI, spoke on 'Exploring extremophilic microorganisms for betterment of human life' and **Prof. (Mrs.) N.S. Rajurkar**, University of Pune, elaborated the 'Role of radiopharmaceuticals in diagnosis and therapy'and Ms. Smita Nilegaokar compered this programme.

World Water day Celebration 22 March 12

Indian Women Scientists' Association, Pune branch in association with Institution of Engineers , Pune local centre and other Institutes organized a programme on world water day on 22nd March 12. Special sessions were organized for youth, farmer and ladies forum. The programme for ladies forum was conducted by Prof. (Mrs.) N.S. Rajurkar and Pradnya Thakur.

NAGPUR Branch

21st Jan 2012: Annual Inter-collegiate Event

An intercollegiate Quiz competition: **Explore (Science In Every Day Life)** was 0rganised by IWSA in collaboration with Somalwar Nikalas Mahila Mahavidhalaya, at the Annasaheb Somalwar Nikalas Sabagruha, Khamla, Nagpur. The competition, a team event with two members per team, was conducted exclusively for the college students between the age group of 15-21 yrs. The Quiz comprised of 5 Rounds comprising Direct Questions, Multiple questions, Eco – Q Round, Visual Round and Rapid Fire Round

The Event got a huge response from the participating colleges. A number of entries were received of which 6 teams were short listed by a preliminary written test conducted on the same day. The arbitrators were Dr Pradnya Bhalerao & Dr Seema Ubale, both active IWSA members. The Quiz Masters were Dr Dipti Andhare, Secretary IWSA and Dr Bharati Ganu, Faculty from Somalwar Nikalas Mahila Mahavidhalaya.
The winning teams (Ist & 2nd) were from Rajiv Gandhi Biotechnology Centre and the Consolation prize went to the home team, i.e. Somalwar Nikalas Mahila Mahavidhalaya. The prizes were sponsored by IWSA. There was a special round for audience which saw the participation of one and all.

The efforts put in by Dr Seema Somalwar, Dr Shubhangi Chande and the whole team were praiseworthy and the programme was well appreciated by the audience.

31st Jan 2012: A talk on "Tackling Media & Internet Influence on Adolescent Behaviour"

Today we live in an era, where our world has shrunk into a global village, thanks to the 'Information Explosion'. This has led to some problems especially concerning the young generation. To address this issue IWSA, in collaboration with Rotary Club of Nagpur North Hills arranged a talk on '**Tackling Media & Internet Influence on Adolescent Behaviour' -** a novel and an innovative project by **Dishayein**, at the

National Civil Defence Academy premises at Nagpur. The talk covered various aspects of life for children, especially Adolescents who are constantly bombarded by the media, Internet & Social Networking sites and the ways to handle it in a healthy way.

25th Feb. 2012: National Science Day

National Science Day was celebrated in collaboration with Dr. Ambedkar College, Deekshabhoomi, Nagpur. The highlights of the program were:

1. Talk on **"Disaster Management- with reference to Earthquakes and Tsunamis"** by Dr. Yashawant Katpatal, Department of Civil Engineering, VNIT, Nagpur. He gave a brilliant presentation with an insight to the apt definition of Tsunami, its origin , the area covered & the causes of Tsunami & earthquakes , the time length it takes to create a havoc, the devices to measure the impact they have on life & surroundings and the things to be avoided by us to prevent these natural disasters. He spoke at length about the Constructive drift hypothesis, mid oceanic ridge and the Tsunami alarm system which can be established. He showed the clippings of Tsunami that hit Indonesia in 2001, Indian Ocean in 2004 & Japan in 2011 and how with the advancement in Technology the magnitude of the damage has been curbed.
2. Slogan competition on the subject: **"Science: a way of life"** in English, Hindi or Marathi for women and college students (girls only) The best three slogan entries were awarded prizes by IWSA.

17th March 2012: International Women's Day was celebrated by IWSA, Nagpur branch in collaboration with Shivaji Science College, Congress Nagar, Nagpur. Dr D K Burghate, Principal Shivaji Science College, Nagpur was the chief guest and Dr. Alka Chaturvedi, HOD, PGTD, Botany, RTMNU was the Guest of Honour.

In order to commemorate the Women's Day as an Annual event, IWSA organized two competitions for women and girls. Essays and Project proposals were earlier invited by IWSA under the theme **Women in Science & Technology** and after the preliminary Screening, the best Essays and Project Proposals were selected for final presentation on Women's DAY.

The suggested topics for **Essay competition** (500-600 words) were: Work of various Women Scientists, Biotechnology & Women, Waste Management, Science in Everyday Life, Conservation of Energy, Organic farming and Environment.

Project proposals involving **Women in Science and Technology"** (250-300 words). The proposal had to be put up as a team work comprising of a team Leader & two students. The suggested subjects were: Waste Management in the kitchen, Vermiculture, Biogas, Save Power; Energy conservation (kitchen/house/surroundings); Nutritive food - a balanced Diet for Good Health.

The competition was open for the Women from all strata of society, Housewives, College Students and Working Women. The program evoked a very good response and one project proposal was received from a rural school Teacher. Also the essays were received from young, enthusiastic students from a rural school at Mahadula village. The best entries in both the categories were awarded and participation gifts were given to all the participants including the school children.

Roorkee branch

A workshop was organized on 30th of March by IWSA, Roorkee members, Dr. Rama Mehta, Mrs. Kiran Handa and Mrs. Suman Tyagi in one of the villages surrounding Roorkee town, named Manubas. Mrs. Kiran Handa delivered a talk to school children and their parents on the causes and cure of acquired deafness. Several people attended the same. Mrs. Tyagi gave useful hints regarding girls' health. Competitions on drawing, poetry and patriotic songs were also held. Prizes were given away. Later every one was served lunch.

Mrs. Kiran Handa
Convener, IWSA Roorkee

Meet an Eminent Scientist

Born in 1953 Dr. Vijayalakshmi Ravindranathan graduated in 1972 followed by post graduation in 1974 from Andhra University. She obtained her Ph.D from Central Food Technology Research Institute (University of Mysore) in 1981. In 1986, after completing her Post-Doctoral training at the National Cancer Institute, National Institutes of Health, USA, she joined the Department of Neurochemistry at National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore. In 1999, the Dept. of Biotechnology (DBT), Government of India sought her help to establish the National Brain Research Centre (NBRC), an autonomous institution of DBT, Ministry of Science and Technology as a centre of excellence and to co-ordinate and network neuroscience research groups in the country. She continued as Director, NBRC till May 2009, when she returned to Bangalore at the Indian Institute of Science as Professor and Chairman of the newly created Centre for Neuroscience.

During her tenure as Director she provided visionary leadership at NBRC, which in a very short period attained a position of being an internationally acclaimed centre of excellence havning a holistic approach to understand the human brain. In a short span of five years she established a state-of-art institute in a rather remote location and created a new paradigm for research by integrating mathematical and computational science into understanding of the complex biological systems. NBRC was granted deemed University status in May 2002 to help promote human resource development in an inter-disciplinary manner. She networked 45 institutions around the country with NBRC with a goal to share resources and promote neuroscience.

The unifying goal of her laboratory is to understand pathogenic mechanisms underlying neurodegenerative disorders with a goal to discover drug targets that can be used to develop disease-modifying therapies. To this effect, she adopts a combinatorial approach to elucidate important cellular pathways involved in the disease pathways in animal models of Parkinson's and Alzheimer's disease. From the therapeutic angle, she is also involved in defining and identifying the active entities and the mode of action of traditional medicinal preparations used in the treatment of neurodegenerative disorders, particularly senile dementia.

Recently, she has identified and characterized a partially purified active herbal extract that has the capability to reverse the deficits seen in Alzheirmer's disease. Oral administration of the semi-purified extract for 30 days reversed behavioral deficits and pathology seen in Alzheimer's disease (AD) models. A patent application for the same has been filed (*PCT/IN2009/000430)* and currently she is engaged in isolating the active principles with a goal to reduce the dosage. This extract has several unique properties in that it ameliorates the symptoms and pathology in very old animals, a phenomenon not reported so far. Secondly, the main mechanism of action is through the periphery, thus indicating that targeting the periphery rather than the brain can be an effective method for AD therapy.

Drug targets alone do not ensure successful therapeutic strategies, as in situ drug metabolism in the brain is critical for drug action. In this regard, she is identifying and characterizing brain cytochrome P450

enzymes with particular emphasis on brain-specific biotransformation pathways of both drugs and endogenous compounds that play a role in pathogenic phenomena, such as inflammation in the brain.

Dr. Vijayalakshmi Ravindranath has more than 110 publications in peer reviewed journals. Her scientific and academic contributions have been recognized by prestigious organizations making her an elected Fellow of all the three science academies in the country, namely Indian National Science Academy, Indian Academy of Sciences, National Academy of Sciences, India. She is also a Fellow of the National Academy of Medical Sciences, India, Indian Academy of Neurosciences, International College of Neuropsycho-pharmacology and Third World Academy of Sciences. She is a member of the editorial board of two American journals 'Neurotoxicity Research' and 'Progress in Neurobiology'.

She is a recipient of the prestigious S.S. Bhatnagar award (1996), Omprakash Bhasin Award (2001) and the J.C. Bose National Fellowship (2006) and Padma Shri (2010).

Rita Levi Montalcini (1909-): The Oldest Living Nobel Laureate

Italian neurophysiologist, Rita Levi Montalcini enjoys a unique distinction of being the oldest living Nobel laureate. She celebrated her 103rd birthday on April 22nd. She was awarded the Noble prize for Physiology /Medicine in 1986 together with Stanley Cohen for discovering the nerve growth factor. On the occasion of her 100th birthday, the journal Nature quoted "*Italy - and quite possibly the world -has never seen a scientist quite like her*".

The story of Levi-Montalcini is incredible and inspiring. She was born on April 22nd 1909 in a well-to-do Jewish family in Turin, Italy, with her twin sister Paola. Her father Adamo Levi was an electrical engineer and a gifted mathematician, and her mother Adele Montalcini, a talented painter. At twenty, she realized that she could not possibly adjust to a feminine role as conceived by her father. Three years after leaving high school and witnessing the death of a close family friend from cancer, she persuaded her father and enrolled at the University of Turin to study medicine. Levi-Montalcini undertook her first research under a well-known histologist and embryologist Giuseppe Levi who introduced her to research on the nervous system. In 1936, she graduated in Medicine and Surgery and enrolled in a three year course with specialization in neurology and psychiatry. Her academic career in Italy was cut short by the proclamation of Benito Mussolini's racial laws which ejected Jews from academic and professional careers. She moved to Belgium and spent a short period as a guest at a neurological institute. In 1940s, when Belgium was on the verge of invasion by the German army, she moved back to Turin. In secrecy, she set up a small laboratory in her bedroom and conducted research on chicken embryos. In 1943, she fled to Florence and lived underground with her family and did experiments on chicken embryos to study the mechanisms of nerve cell differentiation and specialization. Here, conditions for research were even more primitive, and her experimental eggs were often consumed after they had yielded up their results. She also worked as a nurse and a doctor treating war refugees with infectious diseases. In 1945, after the death of Mussolini and end of World War II, she returned back to Turin and resumed her academic position at the university.

Two years later, an invitation by Professor Viktor Hamburger, Washington University, St Louis (Missouri, USA) to join his group changed her life forever. This temporary position ultimately lasted over

three decades. During this period, she did her award-winning work: isolating the nerve growth factor (NGF), a protein that plays a key role in the growth and homeostasis of nerve cells. The discovery earned her the 1986 Nobel Award in physiology/medicine together with her colleague Dr. Stanley Cohen. This discovery was huge - it opened up a whole field in the understanding of how cells, also cancer cells, talk and listen to each other. She showed, for example, that NGF had major effects on the immune system, yet another unexpected finding which became a major turning point in biology" - says neuroscientist Bill Mobley of Stanford University (California, USA), her admirer for more than 30 years. In 1962, she established a research unit in Rome, dividing the rest of her time between St. Louis and Rome. In 1969, she settled permanently in Italy to assume the directorship of the Institute of Cell Biology at the Consiglio Nazionale delle Ricerche (CNR) or National Research Council in Rome. The latter part of Levi-Montalcini's life consists of a long list of scientific prizes and honours. Levi-Montalcini was nominated as Goodwill Ambassador of the United Nations Food and Agriculture Organization (FAO) in 1999. She was appointed as '*Senator for Life*' in Italy's senate in 2001, by the President of the Italian Republic, Carlo Azeglio Ciampi. She periodically takes part in the chamber's deliberations expressing progressive views on different aspects including budget for science funding and improvement of general conditions of researchers in Italy.

Rita Levi-Montalcini follows a strict routine: she gets up at five in the morning, eats just once a day at lunchtime to keep her brain active, and go to bed at 11pm. She says: "I might allow myself a bowl of soup or an orange in the evening, but that's about it." On her 100th birthday celebrations, she claimed that her brain was more vigorous today than it was four decades ago. "If I'm not mistaken, I can say my mental capacity is greater than when I was 20 because it has been enriched by so many experiences, in the same way that my curiosity and desire to be close to those who suffer has not diminished." Despite her age, Levi-Montalcini has an erect carriage; she is enviably slim, a sassy dresser with stylishly coiffed hairs. She is as sharp as a tack and still works every day. In the mornings, she visits her namesake European Brain Research Institute (EBRI)–Rita Levi-Montalcini, Rome. In the afternoons, she attends offices of an educational foundation for African women that she created in 1992. She is deeply engaged in social issues such as ethics and women in science.

She is planning yet another book on top of the 21 she has already published. Her autobiography '*In Praise of Imperfection: My Life and Work*' was published in 1988. The real secret of her longevity, she said, is work. "I should thank Mussolini for having declared me to be of an inferior race. This led me to the joy of working, not any more unfortunately, in university institutes but in a bedroom. I tell young people: Do not think of yourself, think of others. Think of the future that awaits you, think about what you can do and do not fear anything. Above all, don't fear difficult moments, the best comes from them"- Rita Levi-Montalcini.

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Compiled by Dr. Sonia Chadha

Science is built up of facts as a house is of stones, but a collection of facts is no more a science than a pile of stones is a house.
Henri Poincare, *La Science et l'Hypothese* (1908)

Activities by Roorkee branch

Activities by Kolhapur branch

Activities at Head Office

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