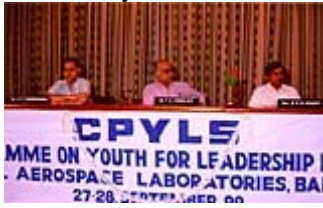


CPYLS

The full form, readers of the *Pasteboard* will [recall](#), is "CSIR Programme on Youth for Leadership in Science". The acronym is a tiresome tongue-twister, but CPYLS is still one of CSIR's best initiatives in recent times. Under this [scheme](#) a CSIR lab invites the 10+ school toppers for a two-day programme featuring lectures, visits and interactions. The idea is to tempt these talented youngsters to choose a career in science.



NAL's CPYLS debut was particularly successful, largely due to the energy and enthusiasm of Mr K V Prabhakara and his colleagues from NAL's Technical Secretariat. For some of us, who delivered lectures to these students, the experience was very satisfying (Dr P N Shankar even put off his eye surgery to be able to speak on *Fascination of Fluid Dynamics* -- Shankar couldn't always see his slides too well, but that didn't matter; he spoke, as always, with great flair and authority). Other speakers were Dr G Prathap on *Structures: Strategy and Science* (a masterly narrative featuring Archimedes, Galileo, Hooke and Young), Dr M D Deshpande on *Floods and Fluid Dynamics* (featuring a wealth of information on floods and lucidly making the point that *flood management* is probably the key issue) and K S Raman on *Science and Art of Aerobatics* (which opened with explanations of 'thrust', 'drag', 'lift' etc. and ended with some amazing visuals of formation flying). I spoke on *Lies, Damn Lies and Statistics* (with the hope that the young students wouldn't agree with Disraeli's view of statistics and, instead, marvel at how statistics can intervene successfully to solve a variety of practical problems).

The feedback from the students was very encouraging. "I am so excited; this programme makes me even more determined to study science, especially physics", wrote one student. Others were more circumspect: "please enlighten me on the career opportunities in science" wrote another. Most students felt that a two-day programme was insufficient; they wanted more time for visits and experiments. And being conscientious juniors they also asked if the programme could be organised on holidays "so that we don't miss classes".

Dr T S Prahlad, Director, who tried to spend as much time as possible with the students, invited them to visit NAL as often as possible and without any inhibitions. He also made the sporting offer to pay half the subscription cost of *Resonance* (the journal of science education published by the Indian Academy of Sciences) "if you take the trouble to subscribe".

Srinivas Bhogle

Another wonderful CPYLS programme

The CSIR Programme on Youth for Leadership in Science (CPYLS), an initiative which tries to persuade school toppers to pursue a career in science, appears to be shaping up very well.

The second CPYLS programme at NAL, featuring lectures by scientists and visits to R&D facilities, was held on 4-5 December 2000. 41 school toppers (in SSLC, ICSE and CBSE examinations) attended the programme and seemed to have enjoyed the experience. There were five lively lectures (see box) and many opportunities to soak in the atmosphere of an R&D lab.

The inaugural function, with Prof T V Ramakrishnan FRS, as the chief guest, was particularly memorable. After a well-rendered invocation by Mr Nanda Ramesh, Mr M R Narasimha Swamy, Head, TS, introduced the CPYLS programme and the distinguished chief guest. In his brief welcome address, Dr T S Prahlad, Director, said that he was delighted to see young faces in the S R Valluri Auditorium and invited the youngsters to "feel at home" at NAL and "challenge" his colleagues with difficult questions in science and technology (as in the past, there were special prizes for best questions).



Prof Ramakrishnan's inaugural address contained splendid advice on why it was worthwhile to pursue a career in science. The soft-spoken professor essentially cited four reasons: (a) in today's world you are crippled without science ("science now predominates. Notice how the departments of philosophy, humanities, literature etc. are shrinking"); (b) science education continues to be the best preparation for life ("science teaches you qualitative thinking, openness of mind, cognition, skills in instrumentation and tool making etc."); (c) science provides intellectual fulfilment and (d) science goes on and on ("problems change over time, but the scientific spirit of enquiry persists"). Prof Ramakrishnan's parting advice was to get a "good science education and then do whatever you like!".

The function ended with the vote of thanks by Mr K V Prabhakara. More than anyone else the credit for making CPYLS a successful and vibrant programme at NAL must go to Mr Prabhakara and his team.

Srinivas Bhogle

CPYLS is proving to be an excellent initiative



The CSIR Programme on Youth for Leadership in Science (CPYLS), which has now entered its third year at NAL, is turning out to be quite an excellent initiative. As in the past, 40 top ranking school children (with a parent or accompanying teacher) were invited to spend two full days at NAL on 30-31 October 2001. These two days were spent attending special lectures by eminent scientists on science-related subjects (this year's speakers included Dr S V Subramanyam of IISc, Dr T G Ramesh of NAL and Dr G Prathap of C-MMACS) and visiting NAL's major R&D facilities.

The programme opened with a welcome speech by Mr M R Narasimha Swamy, Head, Technical Secretariat (who, together with Mr K V Prabhakara and his other colleagues, has been instrumental in ensuring the success of the CPYLS initiative at NAL). This was followed by the opening remarks by Dr T S Prahlad, Director, NAL, in which he explained the imperatives which led to this novel programme to cultivate a scientific temper among bright young scientists. Dr Prahlad also invited the students to pose "difficult and embarrassing" questions to the speakers (there were even prizes for the best question!).

Dr S V Subramanyam, who was this year's chief guest, delivered the first special lecture on the many faces of carbon (which contained a glowing anecdote of Sir C V Raman's kindness). Dr Ramesh's second lecture was about temperature sensors while Dr Prathap spoke on "Wandering around in a dark labyrinth -- the role of mathematics in science and engineering".

Dr S K Mallick, Head, HRD, CSIR, who was also present at this year's meeting, spoke of CSIR's proposed new initiatives under the CPYLS umbrella including a national science quiz with a grand final at Jamshedpur.

Fourth year of CPYLS

The CSIR Programme on Youth for Leadership in Science (CPYLS) has now completed four years at NAL.

The idea is interesting: a CSIR lab invites the top-ranking students in Class X exams from its region. These students (and their parents or guardians) become the lab's guest for 2-3 days. They have an opportunity to attend lectures delivered by senior scientists, visit R&D facilities, participate in science quizzes etc. The big hope is that these toppers could be "persuaded" to choose a career in science. Should they really choose science as a career option, CSIR will support them financially for the next 3-5 years.

This year's programme, organised wonderfully as always by NAL's Technical Secretariat on 9-10 December 2002, had over 30 participants with girls marginally outnumbering boys. The invited speakers were: Prof D K Subramanian ("Dominant role of science in development"), Wg Cdr P Ashoka ("An introduction to the world of aviation") and Mr K Sivasankaram ("Motive power -- man and environment").

Is the CPYLS programme succeeding? Yes and no. Yes, because participation is always earnest and enthusiastic; and because the students (and their parents) appear to really enjoy this experience. No, because this programme doesn't appear to have fully succeeded in roping in more bright students towards a career in science. Attitudes towards science continue to remain lukewarm.

Srinivas Bhogle

Fifth year of CPYLS

The CSIR Programme on Youth for Leadership in Science (CPYLS) is completing its fifth year at NAL on 18-19 November 2003. As always, 40 top ranking school children (with a parent or accompanying teacher) will spend two full days at NAL attending special lectures by eminent scientists on science-related subjects and visiting NAL's major R&D facilities. The idea is to get these youngsters hooked on to science at an impressionable age. The speakers listed in this year's programme include Prof A K Raychaudhuri, Department of Physics, IISc ("Toying with small objects: the excitement of nanosciences"), Dr V Y Mudkavi, CTFD, NAL ("Flight aerodynamics or how things fly") and Dr S R Rajagopalan ("Serendipity - accidental discoveries").

Half a decade of CPYLS



The CSIR Programme on Youth for Leadership in Science (CPYLS) for the year 2003 was held on 18-19 November 2003. The inaugural function was on the 18th morning. By 9:30 in the morning, the S R Valluri Auditorium was already fairly full with bright young boys and girls accompanied by their proud parents and teachers. Almost on the dot, the chief guest Prof A K Raychaudhuri was escorted into the auditorium by Dr B R Pai, Director, NAL. The programme began

with invocation by Mr R V Nanda Ramesh followed by a brief introduction about the CPYLS programme by Dr M N Sathyanarayana, Head, Technical Secretariat. In his opening remarks, Dr Pai congratulated the youngsters on their achievement and said that science is very exciting and that they should pursue their career in science. The inaugural lecture on "Toying with small objects: The excitement of nanosciences" was delivered next by Prof Raychaudhuri,

Department of Physics, IISc. Prof Raychaudhuri made inspiring opening remarks and said that the young students should consider themselves extremely lucky since it is an exciting time for India politically, scientifically and technologically. We should be proud that we can now fly our own aircraft and are ready to take up the challenging moon mission. India will be undergoing changes unparalleled in her history and would emerge wealthy and strong. The technical aspects on nanosciences were no



less inspiring. He spoke about how we can now manipulate molecules at will. He showed how we could change the colour of gold dye by manipulating the intermolecular distances. He also gave a bizarre example of how nanowires could be grown in the belly of bacteria, a result of advances in nano-bio technology. The lecture was full of interesting examples and exciting things that science could do in the present day. The function ended with a vote of thanks proposed by Mr K V Prabhakara, Scientist, Technical

Secretariat. Full credit must go to Technical Secretariat for the splendid arrangements.



V Y Mudkavi

Seven years of CPYLS



It was the seventh year of this admirable CSIR programme to tempt top-ranking Class X students to choose a career in science. 37 students (below the NAL average of 45, but this was because some students couldn't make it because of exams) turned up for this year's programme held on 28-29 November 2005.

The CPYLS programme includes popular lectures, visits to R&D divisions and facilities, and a lively Q&A session (with prizes for the best five questions).

This year's lecture programme was excellent: Prof M K Surappa, Secretary, KSCST and Professor of Metallurgy at IISc spoke on *Metals, Alloys and Composites*, Dr Abhay Pashilkar of the Flight Mechanics and Control Division on *Model Based Design of Complex Control Systems* (that contained a delightful account of developing flight control laws for aircraft), Dr T G Ramesh, Materials Science Division on *Einstein and the Indian Connection* (with a wonderful commentary on the scientific



exchanges between Einstein and Satyendra Nath Bose that culminated in Bose-Einstein statistics) and Dr J J Isaac, Propulsion Division on *Doing Experiments in Science* (featuring a very interesting classification of different types of experiments and that intriguing question: why is there a hole in the *vada?*).



The students enjoyed the sessions and asked a lot of very interesting questions (when and why does this curiosity disappear in later life?). They also received valuable advice: "Search for the unknown, make early beginnings and think big", Dr A R Upadhyya, Director, advised them. "Take a closer look at the mysteries of Mother Nature, and always think creatively", Dr M R Nayak, Head ALSD and TS and Adviser (M&A), added.



As always, Dr M N Sathyanarayana and other colleagues from the Technical Secretariat did a commendable job with the organization and the logistics, but, as the sessions ended, one wondered how many students would really be tempted into a career in science because of the CPYLS experience; some openly said that the many attractions of an IT career appeared much more tempting. Such reactions are a cause for real concern. Where's that glitter that lit up Indian science half a century ago? There are no easy

solutions, but CSIR's CPYLS is certainly a laudable effort to stem this worrying tide.

Gomathy Sankaran and A Somanarayanan with SB

CSIR Programme on Youth for Leadership in Science



The CSIR Programme on Youth for Leadership in Science (CPYLS) is an initiative to expose the young minds to the exciting world of science. The programme helps in building a scientific temper in students at an early age and instilling a sense of pride in the achievements of Indian science.

Every year, top fifty students at the secondary school examination X class are invited, at CSIR's expense, to visit the nearest CSIR laboratory for 'two Open days'.

This year 35 top ranking school children spent two full days at NAL on 9-10 November 2006. These two days were spent attending special lectures by eminent scientists on science related subjects (this year's speakers included Dr K T Madhavan and Dr S Viswanath of NAL) and visiting NAL's major R&D facilities.

The inauguration programme opened with a welcome speech by Dr Ranjan Moodithaya, Head, KTMD. While introducing the distinguished chief guest Prof Sarala Upadhyya, (Chairperson, Department of Mechanical Engineering, UVCE, Bangalore). Dr Ranjan said that the topic of the day's lecture "Which came first – Seed or Tree?" is both philosophical and intriguing.

Dr A R Upadhyya, Director, NAL, in his opening remarks said that he was delighted to be with youngsters. Dr Upadhyya said that in today's world, the opportunities being plenty, students should spot a niche area for leadership and work towards that. He further added that youth is a time when one has a lot of strength and energy which can go astray due to weaknesses. Parents and teachers should channelise the energies in the correct path and build youth power for the nation's advantage.



Prof Sarala Upadhyya, was this year's chief guest to give the inaugural address. Who could be a better choice than Prof Upadhyya to give an inspiring talk to the toppers? Prof Upadhyya, an engineer from Indian Institute of Science, Bangalore and Masters from Cranfield Institute of Technology, UK has been teaching since 1985. With her vast experience in interacting with a large number of student community as a professor she could do full justice in igniting the minds of young achievers to take up research in science for constructive purpose. She spoke at large about certain issues in science that does not have answers like, what was before the big bang? what is time? what is number? etc.... She gave an insight into science, youth and leadership in a well laid out presentation.

Summing up, she wished "some of you may answer the question like "which came first..." but at least grow like a tree, spreading branches into space..." She said that the answer to the question "Which came first - the seed or tree" is not important but the attitude of questioning is. The quest for knowledge is the backbone of science and humanity.

The programme ended with a well articulated vote of thanks by Dr M N Sathyanarayana, Joint Head, KTMD.

Ranjan and Shailaja