



# NCL Academy Outreach Programme

## Popular Talks

An initiative by NCL scientists to communicate the joys and excitement of *doing* research to school students and science teachers

- Talks by researchers and practitioners on various topics in science, technology and mathematics
- Targeted at students in class 8 - 10

# [ Motivation ]

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- To expose students to the frontiers of modern multidisciplinary science and thereby excite them about careers in research
- To try and retain students in the science stream after the 10<sup>th</sup>
- Science teachers also invited for wider impact
- Scientists communicate the work being done at NCL and its impact

# Speakers

Speakers chosen from variety of backgrounds (chemists, physicists, engineers)  
 Chosen for lecture skills and ability to passionately convey the excitement of research  
 Experiments during lecture by Guru, Mugdha, Sayam; Hands-on demos/problem-solving by Chirag, Premnath

Lecture 1	28 <sup>th</sup> September 2008	<b>Title of talk: Is P+C+M = B? : Using physics, chemistry, and mathematics to understand biology</b> <b>Profile:</b> PhD (Chemical Engineering, 2001) University of Minnesota; M. Tech IITB; B.Chem. UDCT
<b>Dr. Chetan Gadgil</b>		
Lecture 2	9 November 2008	<b>Title of talk: The most famous math textbook in history</b> <b>Profile:</b> PhD (Physics, 2006) IISc (Integrated PhD)
<b>Dr. Chirag Kalelkar</b>		
Lecture 3	30 November 2008	<b>Title of talk: Computer Modeling: The Lab in your Laptop</b> <b>Profile:</b> VK PhD (Chemistry, 2006) University of Calgary; B. Tech. IIT Kharagpur NS PhD (Chemistry, 2008) University of California, Irvine; MSc (Physics) Burdwan
<b>Dr. Vanka Kumar</b> <b>Dr Nilanjana Sengupta</b>		
Lecture 4	21 December 2008	<b>Title of talk: Frustrated States of Matter: Glasses</b> <b>Profile:</b> PhD.(Chemical Engineering, 2000) California Institute of Technology; B. Tech. IITB
<b>Dr. K. Guruswamy</b>		
Lecture 5	1 February 2009	<b>Title of talk: Science and Inventions</b> <b>Profile:</b> PhD.(Chemical Engineering, 1997) Massachusetts Institute of Technology; B. Tech. IITB
<b>Dr. V. Premnath</b>		
Lecture 6	22 February 2009	<b>Title of talk: Biomimetics</b> <b>Profile:</b> PhD (Chemical Engineering, 2004) University of Minnesota; B. Chem. UDCT
<b>Dr. Mugdha Gadgil</b>		
Lecture 7	15 March 2009	<b>Title of talk: Chemistry in everyday Life</b> <b>Profile:</b> Ph. D.(Chemistry, 2002) Carnegie Mellon University; MSc IIT Kanpur
<b>Dr. Sayam Sengupta</b>		

# [ Response from students ]

First few talks received press coverage (before the talk) – and we saw a large number of registered students.

Large number of “regulars” who come to all talks, including students from as far away as Baramati

Talks announced via yahoogroups: Currently 123 members of group

	Lecture 1	Lecture 2	Lecture 3	Lecture 4	Lecture 5	Lecture 6	Lecture 7
No of registered students	81	77	60	50	75	73	34*

Source – [www.nclacademy.org/Outreach](http://www.nclacademy.org/Outreach), internally maintained list at NCL

Number of “regular” students (viz. attended at least 3 talks) = 42

\* Attendance low due to school exams

# Schools that the students come from

- 1 Army Primary School
- 2 Bal Shikshan Mandir
- 3 Blossom English school
- 4 DAV Public School , Aundh , Pune
- 5 Delhi Public School
- 6 DES Secondary School, Pune
- 7 Dnyana Prabhodini High school
- 8 Dr.Kalmadi Shamrao High School
- 9 H.H.C.P.Huzurpaga High School
- 10 K.V Ganeshkhind
- 11 Kalmadi Shamrao High School
- 12 Loyola High School
- 13 Magarpatta City Public School
- 14 MES Boys Bhawe Highschool
- 15 Modern English Medium School
- 16 Ncl English Medium School, pune
- 17 New India School
- 18 PES Modern high school
- 19 Podar I nt'l School, Pimpri, Pune
- 20 Sinhadad Spring Dale School, Narhe
- 21 Smt. S. S. Ajmera high school
- 22 St Marys school
- 23 St. Helena's School
- 24 St. Joseph High School
- 25 St.vincents high school
- 26 V.P's Bal Vikas Mandir, **Baramati**
- 27 Vidya valley School
- 28 Vikhe Patil Memorial School.

# Press coverage

- a few of the articles covering these lectures that have appeared in Times of India, Sakal, Indian express

## Lectures for child scientists

The National Chemical Laboratory (NCL) has invited students of classes VIII and XI to participate in its outreach programme. Sessions will be held on the NCL campus on Pashan Road once a month on Sundays, between 10 am and 11.30am. The first talk on September 28 will see Dr Chetan Gadgil speaking. Students can write to <mailto:outreach@nd.res.in> > or call up 020-25902132. Further information is available on [www.nclacademy.org/outreach/](http://www.nclacademy.org/outreach/)

## विद्यार्थ्यांसाठी विज्ञान

# 'एनसीएल'चा विज्ञानप्रसार

## संस्थांसाठी प्रेरणादायी : संशोधन सर्वसामान्यांपर्यंत पोचविण्यासाठी कार्यक्रम

मद्रेश प्रभुणे : सकाळ वृत्तसेवा

पुणे, ता. २७ : विद्यार्थ्यांना मूलभूत विज्ञानाकडे आकर्षित करण्यासाठी 'आयुका' पाठोपाठ आता राष्ट्रीय रसायनिक प्रयोगशाळा (एनसीएल) 'विज्ञान विस्तार कार्यक्रम' (कम्युनिटी आउटरीच प्रोग्रॅम)च्या माध्यमातून विशेष प्रयत्न करणार आहे. जागतिक दर्जाच्या संशोधन संस्थांकडून वर्षातील मोजकेच दिवस विज्ञान प्रदर्शन, व्याख्यानांचे आयोजन करून औपचारिकता साधली जात असताना, प्रयोगशाळातील संशोधन सर्वसामान्यांपर्यंत पोचविण्यासाठी 'एनसीएल'चा हा पुढाकार इतर संशोधन संस्थांसाठी प्रेरणादायी ठरणार आहे.

मूलभूत विज्ञानाविषयी विद्यार्थी आणि पालकांमध्ये विशेष जागृती नसल्यामुळे करियरसाठी त्यांचा इतर

### प्रत्येक महिन्याला व्याख्यान

'एनसीएल'मधील तज्ज्ञांची महिन्यातून एका रविवारी अशी आठ व्याख्याने प्रारंभी होतील. विज्ञान विस्तार कार्यक्रमातील 'भौतिकशास्त्र, रसायनशास्त्र आणि गणिताच्या साहाय्याने जीवशास्त्राचा अभ्यास' या विषयावर डॉ. चेतन गाडगीळ यांचे पहिले व्याख्यान होणार आहे. पाषाण रस्त्यावरील संस्थेच्या 'इनोव्हेशन पार्क'मध्ये हे कार्यक्रम होतील, या कार्यक्रमात विद्यार्थ्यांना तज्ज्ञांशी संवाद साधता येईल.

शाळांकडेच कळ असल्याचे दिसून आले आहे. मूलभूत संशोधन करणाऱ्या संस्थांनी त्यांच्या प्रयोगशाळातील विज्ञान विद्यार्थ्यांपर्यंत रंजक पद्धतीने पोचवले, तर त्या संस्थांकडे अधिकाधिक विद्यार्थी आकर्षित होतील. यासाठी सर्व संशोधन संस्थांमधून स्वतंत्र विज्ञान प्रसार कार्यक्रम सुरू करावा, अशी सूचना अनेक

तज्ज्ञांकडून, तसेच विज्ञान परिषदांमधून करण्यात येते. मात्र, संशोधकांची कमतरता भेडसावत असतानाही अनेक संस्थांनी या सूचनेचे गांभीर्य लक्षात घेतलेले नाही. पुण्यात 'आयुका', मुंबईतील 'भाभा अणु संशोधन केंद्र' (बीएआरसी), 'टाटा मूलभूत संशोधन संस्था' (टीआयएफआर), बेंगळूर

येथील 'इंडियन इन्स्टिट्यूट ऑफ अ‍ॅन्ट्रोफिजिक्स' आदी मोजक्याच संशोधन संस्थांकडून स्वतंत्र विज्ञान प्रसार कार्यक्रम राबवला जातो.

मात्र, 'एनसीएल'ने विज्ञान विस्तार कार्यक्रम सुरू करून ही कमतरता दूर करण्याच्या दिशेने टोस पाऊल उचलले आहे. आठवी, नववीच्या विद्यार्थ्यांसाठी येत्या २८ सप्टेंबरपासून विज्ञान व्याख्यानमालेने त्याची सुरवात होत आहे. विद्यार्थ्यांचा प्रतिसाद पाहून पुढील उफळंम राबवणार असल्याचे डॉ. पी. के. इंगळे यांनी सांगितले. व्याख्यानमालेसाठी मर्यादित विद्यार्थ्यांना प्रवेश असून, नावनोंदणीसाठी (०२०) २५९०२१३२ या क्रमांकावर किंवा [outreach@nd.res.in](mailto:outreach@nd.res.in) या ई-मेलवर संपर्क साधण्याचे आवाहन त्यांनी केले आहे.

## NCL to organise science lectures for students

**Pune:** To popularise science and engineering among youngsters, the National Chemical Laboratory (NCL) has launched a new community outreach programme for schoolchildren. Accordingly, talks by researchers and practitioners will be organised for students between class VIII and std X.

First such talk will be held at the NCL Innovation Park on Sunday. Chetan Gadgil, a scientist with NCL, will speak on "how physics, chemistry and mathematics can be used to understand biology". The other lectures will include topics such as the most famous math textbook in history, science and inventions and chemistry in everyday life, TN

# Speakers scheduled for 2009

Lecture 8	26 April 2009	<b>Title of talk: How Giant Molecules Wiggle</b> <b>Profile:</b> PhD.(Chemical Engineering, 1993) University of Delaware; B. Chem. Eng.(UDCT)
<b>Dr. Ashish Lele</b>		
Lecture 9	31 May 2009	<b>Title of talk: Bubbles and Drops: Stories from Disney Land, ice cream, laptops and petrol</b> <b>Profile:</b> PhD.(Chemical Engineering, 2003); B. Chem. Eng.(UDCT)
<b>Dr. Amol Kulkarni</b>		
Lecture 10	28 June 2009	<b>Title of talk: Chemical and Biological Analysis: Lets go fishing “molecules”</b> <b>Profile:</b> PhD.(Chemistry, 2005) University of Connecticut; M.Sc.(University of Hyderabad)
<b>Dr Venkat Panchagnula</b>		
Lecture 11	26 July 2009	<b>Title of talk: Can we get unlimited energy from sun or wind?</b> <b>Profile:</b> PhD.(Materials, 1990) IISc; M.Sc.(Chemistry) University of Kerala
<b>Dr. K. Vijayamohan</b>		
Lecture 12	30 August 2009	<b>Title of talk: Ligands: Tools for a nanogoldsmith</b> <b>Profile:</b> PhD.(Chemistry, 1997); MSc University of Hyderabad
<b>Dr. BLV Prasad</b>		
Lecture 13	27 September 2009	<b>Title of talk: Chemistry and Magic</b> <b>Profile:</b> PhD (Chemistry, 1995) IISc; MSc IIT Delhi
<b>Prof. Anil Kumar (IIT Bombay)</b>		
Lecture 14	25 October 2009	<b>Title of talk: TBA</b> <b>Profile:</b> PhD (Physics, XXXX) IISc; MSc
<b>Dr. T. G. Ajithkumar</b>		
Lecture 15	29 November 2009	<b>Title of talk: How Cancer Begins</b> <b>Profile:</b> PhD (Biochemistry, XXXX) IIT Madras
<b>Dr Chitra Manikandan (Dow Chemicals)</b>		
Lecture 16	20 December 2009	<b>Title of talk: Getting to Know Solids: How are they Built?</b> <b>Profile:</b> PhD (Chemistry, XXXX) IIT Madras
<b>Dr. Nandini Devi</b>		