



# CHaOS SCIENCE ROADSHOW

## "CRASH, BANG, SQUELCH!" 2011

### A SUMMARY IN WORDS AND PICTURES

**Saturday 19th March 2011, 10am - 5pm**

Welcome to the summary of "Crash, Bang, Squelch!" 2011 - a day filled with lots of experiments, families, and fun!

#### What is "Crash, Bang, Squelch!"?

"Crash, Bang, Squelch!" is a day of hands-on science experiments that takes place in the University of Cambridge Dept of Zoology each March, and is run by the student society Cambridge Hands-On Science - more fondly known as CHaOS. On one Saturday in March we take over the large teaching labs, filling them full of fun, interactive science experiments, each of which is demonstrated by a friendly student volunteer. The first "Crash, Bang, Squelch!" took place in 1998 and we've continued to develop the event each year. We said last year that 2010 was our busiest ever event, but this was also true this year, as we opened our doors for an extra hour to let more people in! We also ran extra talks in the lecture theatre too.

#### What's inside "Crash, Bang, Squelch!"?

Over 50 different hands-on experiments make an appearance at "Crash, Bang, Squelch!" - these are from all areas of science, and we group them into the themes of: living things, the human body, light, chemistry, physics/engineering, and stuff that's sturdy enough to go outside. Each of these experiments is staffed by a student volunteer, who will explain the scientific ideas behind the fun demonstration. Our volunteers do their best to explain the science at a level that fits the child or family who's getting involved- so each visitor to our event will get their own unique experience!



#### 2011: a grand opening!

Just before we were ready to open the doors at 10am, hundreds of people were queuing to get in outside the doors of the department on a gloriously sunny spring day. This year "Crash, Bang, Squelch!" was opened with a bang fuelled by making water molecules from hydrogen and oxygen, set off by local MP Julian Huppert. We were delighted to be able to give our VIP guest a tour of the event- Julian Huppert was in fact one of the students that was involved in setting up "Crash, Bang, Squelch!" in 1998. We were pleased to be able to introduce Julian to Fiona, one of the CHaOS organisers, who came to the first events as a child living in the local area. As far as we know, Fiona is the only person to have been to every event! (And we're glad to have her as part of our team!). New for 2011 were printed leaflets that included a map of the department and a timetable for the talks.

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## "CRASH, BANG, SQUELCH!" IN NUMBERS:

- Around 2,000 people (mainly families) visited the hands-on activities. That's our total capacity- we were full and had to turn lots of people away!
- Around 500 people came to our 5 talks (see box at the bottom of this page)
- Around 120 student volunteers demonstrated over 50 different experiments
- Around 25 students were involved as part of the organising committee



Electromagnetism experiment: wind the handle, and learn about how the forces of electricity and magnetism are linked!



Look closely: surface tension leads to crazy patterns in our psychedelic milk experiment!



Reversible flow: spin the syrup in our reversible flow experiment, to see how fluids move!

## CHAOS TALKS: EXPANDED FOR 2011!

This year we ran 5 different interactive talks - each presented by a member of the CHaOS committee.

"Seeing the science of light and colour" and "The shocking science of electricity" were explained by Dave Ansell; a CHaOS fanatic who is also known for his work with the Naked Scientists. "Plants: Powering the world" by Sonja Dunbar, a recent Cambridge graduate, explored the biology of photosynthesis. "Water: chemistry of the wet stuff" was given by David Bebb, also a recent graduate, and included some bangs! "What are genes made of?" was a talk about DNA given by Lia Chappell, a PhD student.

These talks were all well attended, and included enthusiastic volunteers in the audiences!

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## WHAT DID THE VISITORS THINK?

As well as talking to some of our visitors on the day, we gathered feedback via written questionnaires. We obtained questionnaires from 110 family groups, representing the views of at least 440 visitors. This revealed that:

- 96% of our visitors enjoyed the event, and gave us very positive feedback - most of these were the maximum 5/5 for enjoyment
- 80% of our visitors described the level of detail in our experiment explanations as "about right" – which is great when our visitors range from under 5 to 60+
- 86% of our visitor groups gave us 4 /5 or 5 /5 when we asked how much they learnt, corresponding to "we learnt a lot" on the questionnaire
- 45% of our visitors stayed 1-3 hours, while 33% of groups stayed for more than 3 hours!

Here's what some of our visitors said:

"It is excellent- just perfect!"

"We come every year (5 years so far)!"

"Lots of diverse experiments/activities and lots of knowledgeable helpers"

"Informative, friendly staff. Both of my children (and the grandparents!) have really enjoyed the event. Thank you!" "Brilliant. Fantastic!"



## WHAT DID THE VOLUNTEERS THINK?

"We're really pleased with how well this year's event went- walking round inside there was a fantastic buzz, and lots of happy faces. The planning for this event started in October 2010, and we're glad that everyone seemed to be enjoying themselves. The reactions from kids and families make it all worthwhile, and ensure that the student committee will make the event happen again (even bigger and better) in 2012!"

*Lia Chappell, CHaOS president 2010-11*

"It's great fun to demonstrate at CBS! It's really rewarding to see how enthusiastic the hundreds of kids (and slightly bigger kids) can be about learning science. Furthermore, learning to communicate how fascinating science is, in a manner that is accessible to everyone, is a great skill to develop. I'll be back again next year!"

*David Brooks, CHaOS demonstrator (Medical Student)*



Top: there are lots of big concepts in our angular momentum experiment- more fondly known as the spinny chair! Bottom: why does the beach ball stay up when the air is blasted at 45 degrees? Our airstreams experiment will give you some ideas!

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## THE CHAOS COMMITTEE WOULD LIKE TO THANK:

- The University of Cambridge Department of Zoology for allowing us to take over the labs
- Neal Maskell, Nanna Evers, Ian Goldstone, Barry Fuller and Susan Rolfe in the Dept of Zoology
- John Route in the Genetics Dept and Harry Druiff in the Physics Dept for help with experiments
- Neil Stanford and Roger Badcock for electrical safety testing all the CHaOS kit
- The Cambridge Science Festival team for all their help with organisation and publicity
- The stewards who helped us keep visitor numbers steady all day
- All of the student volunteers who gave up their time to take part in the event
- Everyone who came as a visitor!



## "CRASH, BANG, SQUELCH!" 2011 WAS KINDLY SPONSORED BY:

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