



## Bristol ChemLabS

Centre for Excellence in Teaching and Learning

Developing the Next Generation of Research Scientists  
April 7<sup>th</sup> and 8<sup>th</sup> 2008

Professor Nick Norman & Dr David Smith

## The beginning ...



74 HEFCE-funded  
Centres for  
Excellence in  
Teaching and  
Learning (CETLs)

## Aims

To raise standards in the teaching and learning  
of practical chemistry

To engage with, and enthuse, students of all ages

## Funding

~£5m from HEFCE

~£14m from the University of Bristol

# Overview



## Facilities

Development of state-of-the-art professional-standard teaching laboratories equipped with research-grade instrumentation

## Innovation

Development of e-learning and assessment, as well as more conventional teaching methods to improve student experience

## Outreach

A wide-ranging programme of outreach and public engagement activities for Bristol, the South West region and further afield



# Overview



## An emphasis on skills

An integrated laboratory course designed from first principles

## Changing the way students work

Ensuring understanding through supported self study

## Redressing the balance and method of assessment

Encouraging excellence as well as endeavour



# Facilities



# Facilities



# Facilities



# Facilities



# Facilities



# Facilities





**Dynamic Laboratory Manual**

An interactive on-line web-based e-learning resource to help students prepare more thoroughly for their time in the laboratory

**Dynamic Laboratory Manual**

A library of video clips of techniques  
Simulations  
Virtual instruments  
Instrument software for familiarisation and analysis  
Interactive background material, including support for maths

Formative and summative tests on material  
Pre-laboratory safety tests

Interface with a marks and absences system

**Assessment**

A greater emphasis on in-laboratory assessment, enhancing effective feedback and promoting efficiency

Formative and summative self-assessments  
A combination of marks for on-line work and actual achievement in the laboratory

**Dynamic Laboratory Manual**

Home | Blackboard | DLM | Help | Log out Administrator logged in as: chdrms

School of Chemistry - Marks and Absences

**An electrochemical glucose sensor - Chemistry 2 Laboratories**

Click on a date to set marks or absences for that date  
Show for printing/saving as pdf for Acrobat.html rtf for Word.xls for Spreadsheet.csv for Spreadsheet.Mail to students.Mail to markers.Mail all

**Markers Miss Adele Laurain Miss Kate Hanford An electrochemical glucose sensor**

Student	Date	Location	Safety	Pre-Work	In-Lab	Post-Lab	Comments	Uploads	Abs	Certified By	Mark	Student Comments
Student Name	Thu 11 Oct 8 22	88	17.1/00	25/05	27/05	0					69/100	
Student Name	Thu 11 Oct 8 24	100	17.1/00	25/05	18/05	0					60/100	
Student Name	Thu 11 Oct 8 26	100	8.6/00	28/05	18/05	0					53/100	
Student Name	Thu 11 Oct 8 28	100	15.0/00	29/05	18/05	0					56/100	

**Markers Miss Phyllis Fiazdomor Mr Jirut Wattoom An electrochemical glucose sensor**

Student	Date	Location	Safety	Pre-Work	In-Lab	Post-Lab	Comments	Uploads	Abs	Certified By	Mark	Student Comments
Student Name	Fri 12 Oct 8 22	100	8.6/00	26/05	28/05	0					63/100	
Student Name	Fri 12 Oct 8 24	100	12.9/00	30/05	31/05	0					74/100	
Student Name	Fri 12 Oct 8 26	100	12.9/00	30/05	28/05	0					71/100	
Student Name	Fri 12 Oct 8 28	100	17.1/00	30/05	31/05	0					78/100	

**Markers Miss Adele Laurain Miss Kate Hanford An electrochemical glucose sensor**

Student	Date	Location	Safety	Pre-Work	In-Lab	Post-Lab	Comments	Uploads	Abs	Certified By	Mark	Student Comments
Student Name	Thu 11 Oct 8 22	100	8.6/00	20/05	26/05	0			3		55/100	
Student Name	Thu 11 Oct 8 24	100	View/00	25/05	27/05	0	Spoke to DMS about safety	0			52/100	
Student Name	Thu 11 Oct 8 26	100	30.0/00	25/05	18/05	0			4		73/100	

**Markers Miss Phyllis Fiazdomor Mr Jirut Wattoom An electrochemical glucose sensor**

Student	Date	Location	Safety	Pre-Work	In-Lab	Post-Lab	Comments	Uploads	Abs	Certified By	Mark	Student Comments
Student Name	Fri 19 Oct 8 22	100	17.1/00	25/05	26/05	0					65/100	
Student Name	Fri 19 Oct 8 24	100	17.1/00	28/05	29/05	0					74/100	

## Outreach



## Outreach



## Sustainability



Support from stakeholders,  
commercial sponsors and alumni

## Dissemination

A Centre *for* Excellence not just a Centre *of* Excellence