Autumn 11

NRICH annual report 10-11

Lynne McClure

NRICH Annual Report

For the year ending 31-8-11

The NRICH team

Lynne McClure	Project Director
Liz Woodham	Primary Coordinator
Bernard Bagnall (PT)	Primary Teacher Associate
Charlie Gilderdale	Secondary Coordinator
Alison Kiddle	Secondary Teacher Associate
Steve Hewson (PT)	Post 16 Coordinator
Jenny Gage (PT)	KS3/4 STEM Coordinator
Emma McCaughan (PT)	AskNRICH Teacher Associate
Jenny Knights (PT)	Stimulus Coordinator

Consultants:

Cherri Moseley	Early Years
Jenny Murray	Primary
Toni Beardon	KS5
Leo Rogers	History of Mathematics
Vicky Neale	Undergraduate mathematics

Technical support:

Mike Pearson

Owen Smith

Chris Clarke (PT)

Technical staff are employed by the MMP and have duties across all the projects

People

The number of people in the NRICH team has increased this year, and we are delighted that Dr Jenny Gage has joined us an almost full time capacity. Jenny came from the Motivate project and has expertise across the age range and across maths related subjects. She is therefore the ideal person both to work with Dr Steve Hewson on the STEM project, and with Professor David Speigelhalter on our Statistics project. In addition we are grateful for the input from Dr Vicky Neale, Director of Studies in Mathematics for Murray Edwards College, who has worked with us on the Sutton Trust Summer School and Cherri Moseley, who is known for her writing about Early Years mathematics.

The core team remains as last year; Liz Woodham is responsible for NRICH primary activity, both on the site and CPD, and is supported by Bernard Bagnall, Jenny Murray and Cherri. Charlie Gilderdale

is responsible for all secondary activity and has continued to work in partnership with Alison Kiddle. Steve Hewson, together with some input from Alison, designs the post-16 activity which includes resources for preparation for university. We have also worked, in various capacities, this year with colleagues from local schools. There is more about all of these projects below.

Again in the summer of 2011 several undergraduate students were employed to work on the site and on the production of other support materials to help us work more effectively during the year. These annual posts are proving an excellent idea and those who work with us often return in following years. We are always particularly delighted to employ graduates who are about to enter their teacher training year, and those who have completed their PGCE and are about to teach.

Our Funders

NRICH would not exist were it not for the in-kind support of the two Mathematics departments, DAMTP and DPMMS, and the Education Faculty. Our salaries are however paid by our funders:

2010 – 2011 was the second year of three of the nearly £900,000 grant from the John Templeton Foundation which funds the majority of the work of the team.

The Clothworkers' Foundation grant to the primary project ended in March and the stemNRICH grant continues for another year.

The Goldman Sachs Foundation grant which has funded the Fast Forward and Teacher Inspiration days has now come to an end but we are actively seeking continuation funding for both of these highly successful projects.

We also receive smaller amounts of funding from The Isaac Newton Trust, Transkills, and a small grant from the the Nuffield Foundation, this latter for the Maths and Sport project.

Other small but significant amounts of money have been earned from self-contained consultancy projects; Charlie is a consultant to the Heymath project in India, and for CIE in Chennai and Ahmedabad on Learner-Centred Mathematics Education. He was also lead on the 'Gifted and Talented' Independent State School Project (ISSP) in London. Alison completed the last year of the 'eNRICHing Mathematics Project' which was funded by Tower Hamlets and QMUL. Other income is derived from conference keynotes, CPD events with teachers and royalties from previously published books and resources.

The Website

The website remains our core activity. Each month a different member of the team is responsible for chairing the site meetings, for the editorial control of the site, as well as liaising with the guest editor if there is one. The themes for 2010-11 were as usual a mixture of mathematical topics, mathematical processes and pedagogy, and they reflected the core interests both of our funders and our guest editors, Dr Jenny Piggott, Alan Parr and Professors David Speigelhalter and John Mason. Next year the themes will include those that reflect the interests of Professor Malcolm Swan, (using children's solutions to develop deep thinking), Dr Tim Rowland (proof), Dr James Grime and Dr Simon Singh (codes and ciphers, linked with the Turing anniversary) and Professor John Barrow (maths and sport).

Themes for 2010-11

Great Problems for New Classes

Patterns that lead to algebra and proof

How likely? (with Professor David Speigelhalter and Nadia Baker)

Farewell to Jenny Piggott

Thinking about solutions and solution methods

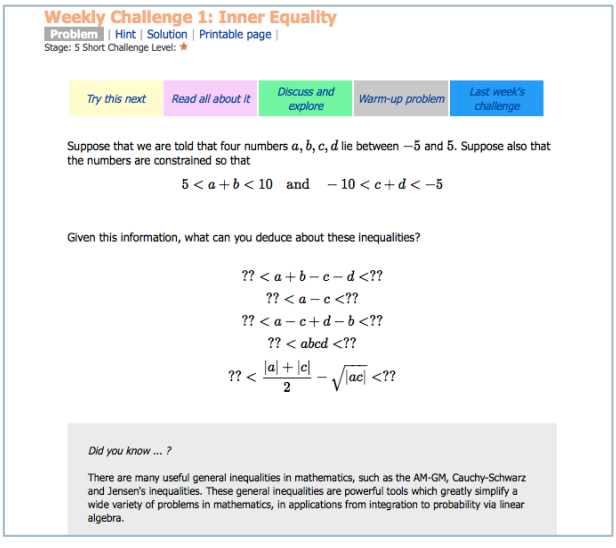
Actions on objects (with Professor John Mason)

Mathematics in Science and Technology

Mathematics in Sport (Alan Parr)

Open-ended investigations; release from curriculum

In addition to the monthly themes we continue to maintain our ties with the United Kingdom Mathematics Trust (UKMT) through the publication of weekly problems taken from their extensive bank. For keen and capable post-16 visitors, we have introduced a weekly challenge which includes linked articles for further study.



There are in excess of 6000 activities, articles or games on the site so the need to constantly develop something new is not urgent, except at KS5 where there is still a need for new material. Over the last two years we have been revisiting previously published problems at KS1,2,3 and 4 to bring them up to date. This includes rewriting the teacher notes and in some cases adding annotated video of members of the team working with students on the activity, see for example

http://nrich.maths.org/2293/note

We're grateful to our partner schools who often facilitated this. The feedback we have had from teachers is that this is very useful. We would like to do more of this, funds permitting.

The curriculum mappings http://nrich.maths.org/public/viewer.php?obj_id=5665 are regularly updated and now also include extensive A-level pages for pure, statistics and mechanics modules, see http://nrich.maths.org/6524 for example. These documents continue to be popular and we know that it is often these that encourage teachers to try that first activity that leads them further into the site.

Exceptionally Able Mathematicians

The Templeton Foundation funding has a distinct focus on students of exceptional ability, which means that we have had to ensure our inclusive nature whilst also catering in various ways for those of exceptional mathematical ability, and their teachers and parents. We have done this, in addition to our core work, through:

- adding in additional challenge to new problems where appropriate, and revisiting some recently written activities to do the same, see Stage 1&2: Four Layers http://nrich.maths.org/7300 ,Inky Cube http://nrich.maths.org/7240 , 3D Stacks http://nrich.maths.org/3473 Stage 3: What Numbers Can We Make? (originally Make 37) http://nrich.maths.org/7405 Stage 4: Attractive Tablecloths (originally Tablecloths) http://nrich.maths.org/900

- writing new and very challenging activities especially at post-16. The Stage 5 investigation *Few and Far Between* http://nrich.maths.org/7542, offers a very challenging extension to the problem *Generating Triples* http://nrich.maths.org/7282 , investigating Pythagorean Triples.

- making explicit links between stage 3, 4 and 5 problems to encourage exceptionally able students and their teachers to explore more challenging material, see for example Number Pyramids http://nrich.maths.org/2281 ,More Number Pyramids http://nrich.maths.org/2282 and Function Pyramids http://nrich.maths.org/7531.

- developing a bank of weekly challenges which give short and appealing questions based on A-level content but which also link to longer problems, askNRICH and wider enrichment material http://nrich.maths.org/6497

- developing a suite of activities to support transition to university courses in mathematical sciences (see Mathmo, http://nrich.maths.org/7088, based on the core interactive workout, and stemNRICH below)

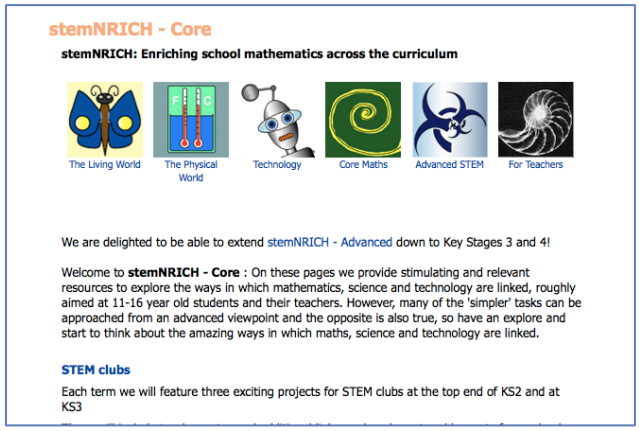
- setting up a trial of blogs http://nrich.maths.org/z/ on selected problems to allow students to comment on problems and to promote interaction with the site through discussion

- developing a library of articles for exceptional students, their teachers and parents, on exceptional ability, transition to university and career guidance http://nrich.maths.org/7741

The whole suite of activities is intended to offer opportunities both for students to work independently, and, through the accompanying teacher notes and support, for teachers to use them as suitable activities to offer their most able students. Although the Templeton Foundation grant-funded initiative is focused on students above 11 years of age, we have implemented the project ideas throughout the whole of the site, including the primary phase.

stemNRICH

stemNRICH http://nrich.maths.org/stemnrich began as a collection of NRICH problems and articles on the broad topic of scientific mathematics, embedded within the main NRICH site and designed for post-16 visitors. This large collection of activities has been popular with A-level teachers and students and now, thanks to the grant from the Clothworkers' Foundation, we have begun devising activities suitable for pupils at KS3 and 4. The original activities (now renamed stemNRICH-advanced) were created with input from various stakeholders in STEM teaching and learning, from university teaching staff to STEM school and college teachers. A similar design process is being used for stemNRICH–core, with a focus group of two teachers from each of six schools from different areas of the country who are helping to design and trial the activities. Packs of activities suitable for STEM club use are already on the site, http://nrich.maths.org/7747 and three 'Teacher Inspiration' days throughout next year are already planned to disseminate and further trial the resources and to help schools and colleges to embed some of the tasks into their schemes of work, empowering teachers with the confidence to use the materials, which might make scientific or mathematical demands outside of the teachers' present comfort zones.



Maths and Sport

Together with other members of the MMP, we are contributing to the new Maths and Sport site, http://sport.maths.org partly funded by the Nuffield Foundation and timed to be complete for the 2012 Olympics. The activities and articles are published on both the Maths and Sport and NRICH sites, and extend across the whole age range from 5 to post-16.

Early Years

The primary team has devised a small collection of Early Years activities http://nrich.maths.org/earlyyears which have been trialled extensively by our Early Years practitioner partners and redrafted as a result of their comments. We are delighted that we have just secured £10K of funding from the Ernest Cook Trust to fund further development on this new aspect of our work.

NRICH abroad

The interest from abroad continues to grow. We already carry French versions of ten of our activities http://nrich.maths.org/public/leg.php?group_id=50&code=-408#results and have this year set up a system which enables colleagues working abroad to translate a limited number of our resources under creative commons license. One particular partnership with which we are very pleased is with the University of Cyprus where the national curricula reform team is including NRICH activities both in its materials for teachers, and in a set of resources for more able pupils. In all cases we will receive reports about the usage of our resources, for our own interest and for inclusion in our reports to funders.

We also support the South African AIMSSEC project – the AIMSSEC website http://**aimssec**.aims.ac.za/ carries three selected NRICH problems each month, repackaged where necessary to make them suitable for a South African audience.

To help our foreign visitors further, we have added a 'Google translate' button on the front page of NRICH. Whilst we know that these translations are far from accurate, they do allow teachers who do not read English to at least have a sense of what is on the site.

Mobile NRICH

Early in the year NRICH was approached by Dr Anil Seal, the director of the Malaysian Commonwealth Studies Centre who offered funding for a project to scope platforms for presenting maths on mobile technology of different levels of sophistication, ranging from simple text messaging to tablets. As a result of this work we now have a pilot mobile version of the site, and a downloadable version of Mathmo, http://nrich.maths.org/7088, the university preparation resource, for ipad and iphone. Mike undertook this project and we are now in discussions about possible next steps.

Metrics

Our teacher registrations to the site (NRICH-SUPPORT for teachers and parents) have increased from 3000 in 2009 to 5227 in 2010 and now stand at 7530, an increase of 44% this year. http://nrich.maths.org/public/supportml.php
NRICH-TALK (for pupils) has 1553 subscribers of which 158 have subscribed between 1st Sept 2010 and now, an increase of 11%. http://nrich.maths.org/public/talkml.php

Much of this increase is the result of the personal contacts made by the team at various CPD events and conferences. At present visitors to the site do not have to register so the number of registrations does not necessarily correlate with the number of users. It does however indicate that a significant number are interested enough to want to receive our monthly newsletter.

The statistics below indicate that the number of visits to the site continues to increase, by 14.3% this year – again this is welcome but does not tell us much about who these visitors are, or what our

visitors do with what they gain from their visit. A big question for us is how we refine our information gathering so that it informs our actions.

	Site Visits 2009/10	Site Visits 2010/11
Sep	225020	261039
Oct	244140	280424
Nov	246178	298388
Dec	184932	226113
Jan	240375	279562
Feb	242359	273618
Mar	244808	319727
Apr	224971	244178
May	257969	291241
Jun	239186	255548
Jul	203028	209177
Aug	179488	192751

Year on year (Based on Webalizer statistics)

AskNRICH

Emma McCaughan continues to direct this flourishing social networking site. http://nrich.maths.org/discus/messages/board-topics.htm which continues to maintain a strong audience. The work of student volunteers continues to be a key aspect of its success. There are over 30,000 registered users altogether, of whom in the region of 900 have logged on this year, and there have been over 10,000 posts during that time. Whilst Libby's research is in progress we have put on hold possible changes to the look of the site, but a revamp of it is overdue.

Future site plans

During the year we have been thinking about what we would like the site to do, and look like, in the immediate future. One realisation is that the very time consuming preparation for the monthly themes makes us much less responsive to potential projects and we are therefore exploring whether there may be more efficient ways of organising our planning that allows us to be more reactive. We are also aware that the current site is designed largely for an audience of teachers and we are exploring possible structures that would allow all visitors, whether teachers, parents or students, to tailor their home page and view resources to their needs. We have begun this process by offering a student portal http://nrich.maths.org/forstudents

The planned restructuring of the site affords us to take the opportunity to change our registering process. We are looking at different options and trying out ideas with different groups of teachers that we meet at CPD sessions. We know that *requiring* registration might well mean a drop in visits, but it has the potential to give us a lot of information that we don't currently have, which will in turn help us to convince funders of the audience for our projects.

Professional Development Activities

Most weeks one can find a CPD event in the NRICH diary. Some of these are long projects, such as the Teacher Inspiration days or the 'Low Threshold High Ceiling in Brighton and Hove' project. Most, however, involve a visit to a school or group of schools once or twice. Over the year we have worked with over 2,000 students and over 3,150 teachers, both here at CMS and at various venues around the country. Below are a selection chosen to give a flavour of the range of our projects.

Teacher Inspiration Days

Funded by Goldman Sachs, this programme, delivered as three days over the course of an academic year, brings together a group of 120 secondary teachers at CMS to work with the NRICH team, and colleagues from our partner Cambridge secondary schools, to explore rich tasks and how to embed them in their classroom. As last year, programme participants reported a positive impact on their students' motivation, enthusiasm, confidence and engagement with mathematics as a result of the ideas they had taken from the Teacher Inspiration days and implemented in their classrooms http://nrich.maths.org/6304

NQT TI day

We are aware that nearly all of the CPD at CMS has been designed with experienced secondary teachers in mind. The NQT teacher inspiration day in June brought together NQTs from all phases from Early Years to post-16, was a highly successful day and one which we will repeat next year. http://nrich.maths.org/7560

ISSP

Teachers from eight inner London secondary schools, both private and state, were funded by London Gifted and Talented to work with NRICH to develop lessons to support the most able year 10 and 11 students in following the examination syllabuses. Charlie then visited each school and worked with individual teachers before bring them all back together to reflect and share experiences. http://nrich.maths.org/6336

Brighton and Hove

Twenty primary schools in the Brighton and Hove area took part in this 'Low threshold High ceiling project. http://nrich.maths.org/7444 Two teachers from each school met for an introductory day, then Liz and Lynne visited each school to give individual support before the teachers came together again to reflect on successes and challenges and plan next steps. Over three years we have now worked in nearly all the primary schools in this local authority. The project was seen to be highly successful and was quoted by Ofsted as making a significant contribution to the raising of standards.

Maths and Creativity Project in Bristol

This involves three primary schools, is funded by Creative Partnerships and includes a research aspect with UWE. The enquiry question for this extensive project was *How does a more creative approach impact upon the mathematical skills of higher-attaining children?* The team are continuing the project into 2012, enquiring into a new question which has arisen *How do we draw on real-life experiences to develop activities that engage children in thinking mathematically whilst achieving identified targets?* You can read a full report here http://nrich.maths.org/7766

Future CPD plans

Most of our CPD activity is bespoke, i.e. designed in partnership with the organisers to meet the needs of the specific group of teachers. We evaluate these activities at the end of the day or project, but have little idea how successful they are in the long term. In order to obtain more information we are putting in place an automated email system through which we will contact all participants three months after the end of the activity, and ask them to compete a short questionnaire. Of those who reply we will select a subset to send a further email after another three months, and, depending on responses, perhaps after a year.

In order to evaluate our effectiveness we need to be very clear about the intention of our activity. CPD will be our own professional focus for the year 2011-12 and we hope to work with contacts made at the ISSDE conference to further pursue our own understanding of models of design and evaluation.

In the meantime the team will also work on producing some 'off the peg' packages that can be adapted where necessary. This will help our administration team who support us in the organisation of many of our events.

We also want to make more explicit links between the site content and CPD activity. We already upload specific webpages for large projects, and are considering how we can make these links more explicit for specific groups of teachers, eg those who complete their MaST courses this year.

We will organise a second NQT Teacher Inspiration day and hope this year to pilot three Primary TI days with a focus on challenging all pupils.

Working with students

Fast Forward

40 year 9 students from under-achieving schools met three times during the year for a residential course in mathematical thinking. An independent evaluation of the impact of the Fast Forward pupil project is being undertaken by Dr. Wai Yi Feng. Responses from questionnaires and interviews to date indicate that the project is well on the way to meeting its core aims, which are;

- to develop pupils' mathematical and general problem solving and reasoning skills;
- to support students' classroom mathematics;
- to increase students' academic achievement;
- to raise students' aspirations and encourage and enable students to continue into further/ higher education.

The final evaluation will be published in 2012. http://nrich.maths.org/6351

Tower Hamlets

The eNRICHing project in Tower Hamlets, in its eighth and last year, was managed and delivered by Alison who met with 45 year 8 students and some of their teachers weekly over two terms. This big commitment was recognised by the local authority who found limited funding to continue for this year. http://nrich.maths.org/6327

The National Young Mathematician Award

The NRICH Primary team are working in partnership with Explore Learning and have launched a new maths competition for all primary schools in the UK. Schools nationwide enter their top four mathematicians (top two boys and top two girls) to represent their school in this prestigious award, at an event in one of the 41 Explore Learning centres across the UK. Bernard and Liz devise the group problem-solving activities for the local, regional and national rounds, the last being held here at CMS.

Other professional development events and conferences

In addition to these projects, the team have spoken at numerous conferences, either as keynote speakers or as workshop leaders. Many of these are organised by local authorities or clusters of schools but we have also worked with other national associations in this capacity including: NCETM, MA, ATM, NANAMIC, NAMA, AMET, MEI, UKMT, BEAM, STEMNET, JMC, and the RI.

Research

Templeton

Strand 1 of the Tracking Initiative, led by Dr Wai Yi Feng involves an accelerated longitudinal study of exceptionally gifted students.

Since the last report, good progress has been made in Phase 2 of the research in Strand 1 (Data Collection & Analysis):

- The second round of interviews is close to completion. Seven of the nine exceptionally mathematically-able young people being tracked by the project have been interviewed for a second time.
- Transcription of interviews is being undertaken in parallel with data collection. Half of the interviews from the second round have already been completely transcribed.
- Coding and analysis of interviews from the first and second round are continuing apace. The emerging life stories, including the exceptionally mathematically-gifted research participants' experience of mathematics and use of NRICH resources will be tracked in forthcoming interviews.

The third round of interviews is expected to take place in December 2011/January 2012.

Strand 2 involves a "tracking back" study analysing the mathematical learning experiences of an identified group of highly gifted students, led by Dr Stephen Hewson, NRICH.

An initial pilot survey questionnaire gathered data from 750 current University of Cambridge students from a broad cross-section of mathematics and science subjects and year-groups, including 23% of first-year mathematicians and 25% of first-year engineers. The survey was designed to gain a snapshot of the mathematical education factors leading to success in university science, engineering and mathematics courses for exceptionally gifted students, along with the associated perceptions of mathematics and mathematics interventions held by such students. The survey incorporated questions covering many aspects of students' experiences and views of mathematics and mathematics education from primary school level through to the mathematics involved in their university courses. The responses from this questionnaire have now been analysed and a detailed report on interim findings from the first phase of the "tracking back" study is available.

Strand 3 of the tracking initiative involves analysis of the usage of the AskNRICH discussion boards, and is led by Mrs Libby Jared. There are three foci.

A. Substantial work has been undertaken on categorising posts and tracking AskNRICH users. All posts were allocated to a category: Asking for Help (2 codes), Helping (4 codes) and General (5

codes). At the time of writing final analysis of these is on-going. From findings to date we infer that the data shows that AskNRICH is not only a place where people ask for help and give help; there is also other activity such as giving and receiving feedback, clarifying one's own and each others' statements, and simply commenting.

B It was intended to carry out detailed analyses of individuals posts. However this has proved impractical not least because of the randomness of posters posting. Instead the work has focused on capturing opinions of posters at various stages of their engagement with ASkNRICH.

C Individual interviews have been undertaken with two posters who began their involvement with NRICH before the age of 16, and who have become AskNRICH team members, both completing their undergraduate degrees in June 2011. The interviews will be transcribed and analysed.

A full report of the whole tracking research project will be available at the end of 2012.

All three main strands are supported by research assistant Carol Sparke.

Other research grants

A HEIF 4 (Knowledge Transfer Projects) grant of £10,593 was awarded to us to produce a single multimedia resource pack to support and enrich school mathematics learning at the Key Stage 2/3 transfer, which educational research has identified as a frequent stumbling block for student academic progress. The multimedia resource pack focuses on Babylonian Mathematics, and is aimed at students aged 10-12. It presents resources developed jointly by Jenny Gage and Dr Eleanor Robson of the Department of the History and Philosophy of Science.

https://**motivate**.maths.org/content/**Babylonian**Maths

In July The National HE STEM Programme - Mathematical Sciences Strand HE Curriculum Innovation Fund awarded us, in partnership with Liverpool Hope University, a grant to design and develop a cohesive problem solving package which supports HE colleagues in embedding problem solving into their undergraduate mathematics courses. The materials will be linked into and sit in parallel with the NRICH site. Dr Vicky Neale is leading the Cambridge part of this work.

Steve and Alison have directed a series of lunch-time seminars at which they have shared aspects of their Masters level courses with the team. As they move into their second year and the development of their theses we hope to be able to support them in their thinking.

Partnerships with CMS and Education

In December 2010 we held an open seminar to explain the work of NRICH to members of the Maths Faculty, and to offer an opportunity for questions and suggestions. We have set up a notice board to display the content of each current month on NRICH and any of our activity which involves visitors to CMS is displayed on the electronic noticeboards.

In August 2011, on behalf of the Mathematics Faculty and working with Dr Stephen Siklos and Dr Vicky Neale, Steve designed and delivered the content of a Mathematics Sutton Trust Summer School

for year 12 students. This was a high profile university event and was very successful. We hope that we will be able to assist the mathematics faculty with the design and delivery of similar events in the future.

As part of the project to encourage Part 3 maths undergraduates to widen their experience, STIMULUS colleagues are hoping to work with those at CMS to train and then place students in A-level classes for an extended period during the summer term.

At the Faculty of Education, team members contribute to primary and secondary PGCE courses in Maths and Science. Following the STEM session, one of the students on the course attended the STEM teacher forum and based her 1C assignment on tasks from stemNRICH. We attend STEM academic meetings and Maths colloquia whenever possible. We support the Cambridge Primary Network by providing maths CPD to partner schools.

Wider representation

Other related activities

The team have contributed to PGCE, BEd and MaST programmes at various HEIs and we are hoping to make more connections this year.

All members of the team are active in one or more subject associations and we see this as an important part of our work. In 2010-11 Lynne and Liz were both post-holders of the MA/ATM primary sub-committee, sat on the ATM General Council and the MA Council. Liz also chaired on the MA CPD committee and Lynne edited the MA Primary Mathematics journal, as well as sitting on ACME in a private capacity.

Various members of the team also sit on advisory boards or groups for:

Primas Project, Fibonacci Project, Cambridge Classics Project, NCETM advisory group and local network, the OCR/CIE Mathematical Council and the OCR/CIE Mathematics Consultative Committee.

STIMULUS

We continue to support the very successful STIMULUS Project http://stimulus.maths.org/local in which undergraduates are placed for school experience with local primary and secondary schools. Last year 260 placements were made in local schools. Mrs Jenny Knights has now retired and we have been fortunate to recruit Rob Percival, a secondary teacher and previous Stimulus volunteer, to direct this project from September, which will be the 25th year of Stimulus. Rob is employed by the Faculty of Education with funds from participating departments, colleges and other philanthropic donations.

Publications

Bagnall B. (2011) "Not always what it seems" Primary Maths Summer 2011 Vol 15 Issue 2
Bagnall B. (2011) "Some of the further work of the NRICH Primary Team" – PM. Autumn 2011 issue 3
Bagnall B. (2011) "Consecutive Numbers" Mathematics Teaching 222 May 2011.
Feng W.Y., Hewson S., Jared L., McClure L. (2011) Key Moments in Mathematics Education; poster presented at CERME conference February 2011, Rzeszow, Poland
McClure et al (in press) Heinemann Active Maths Ireland (fully resourced scheme for primary schools in Ireland)
Woodham, L. (2011) More for Less Place Your Counters *Equals*, Volume 17. Number 1 Leicester: Mathematical Association.
Woodham, L. (2010) More for Less Squaring It *Equals*, Volume 16. Number 3 Leicester: Mathematical Association.

Marketing and Publicity

We continue to promote our work on Twitter and Facebook; the NRICH Facebook page http://www.facebook.com/nrichmaths has a current total of 1,123 subscribers and the NRICH Twitter feed http://twitter.com/#!/nrichmaths currently has 1,251 followers. As well as being instant publicity, we are finding that Twitter is being used effectively to share links to problems in the development stage for users to offer feedback, and also to give our followers "previews" of our problems before they are featured on the website. Some team members also write NRICH blogs.

During the summer of 2011 Alison and Chris devised a social networking strategy for communication which we will be evaluating at the end of the year. We also continue to publicise ourselves though the very popular postcards and posters, and have now designed NRICH guide leaflets, for Stages 1 and 2, 3 and 4, and 5, which can be given to teachers or downloaded directly from the site. http://nrich.maths.org/help

Into the future

We have been very fortunate to replace Liz Woodham, who is taking maternity leave, by Dr Jenni Back and Ms Jennie Pennant for the academic year 2011-12. They both bring a great deal of experience and expertise to the team.

Other future plans are itemised under the appropriate sections above. We are pleased that we have had a very busy year with many successes, and this has been possible because of the hard work of a creative and thoughtful team, to whom I owe my thanks for making my first year as Director enjoyable, challenging, and never dull.

Lynne McClure

NRICH Project Director