

# Nucleic Acids Function

International Workshop  
Sunday 7th September - Thu 11th September 2008  
The Towler Institute, Vallico Sotto, Tuscany

[www.vallico.net/tti/tti.html](http://www.vallico.net/tti/tti.html)

This is the programme document for the *Nucleic Acids Function* workshop to be held at the TTI monastery in Tuscany in September 2008. The purpose of this event is to review and discuss ideas concerning the structure, function and molecular intervention of nucleic acids that do not code for proteins (non-coding nucleic acids). The broader remit of the field is nucleic acids chemical biology (i.e. the elucidation and manipulation of nucleic acids function using chemical approaches). The event is organized by Prof. Shankar Balasubramanian and his group at the Department of Chemistry, University of Cambridge.

TTI aims to encourage a more relaxed and intellectually-stimulating atmosphere compared to standard venues, and people are generally given the freedom and space to think and to contemplate and discuss the issues at hand. Healthy recreational activities are to be organized in the afternoons, and it is hoped that by taking part in these whilst breathing clean mountain air and sampling fine Tuscan cuisine, the participant will be able to return home mentally and physically refreshed as well as having contributed to the betterment of mankind.

Please contact Shankar Balasubramanian (sb10031 at cam.ac.uk) or Joanne Castle (jc462 at hermes.cam.ac.uk) for further details about the scientific programme, or Mike Towler (mdt26 at cam.ac.uk) for local organization issues.

## 1 LIST OF REGISTERED PARTICIPANTS

Shankar Balasubramanian	Cambridge University	sb10031 at cam.ac.uk
Beth Ashbridge	Cambridge University	ba270 at cam.ac.uk
Mallesham Bejugam	Cambridge University	mb591 at cam.ac.uk
Anthony Bugaut	Cambridge University	ab605 at cam.ac.uk
Jyotirmayee Dash (V)	Cambridge University	jd425 at cam.ac.uk
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Debbie Sanders	Cambridge University	das1001@cam.ac.uk
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Amy Zhang	Cambridge University	amy.zhang at anu.edu.au
Mike Towler	Cambridge University and TTI	mdt26 at cam.ac.uk
Samantha Keil	TTI	sam at vallico.net
Saska Towler	ACE Nursery, Cambridge and TTI	

## 2 FLIGHTS AND TRANSPORT - GENERAL

This section gives general details on how to get to the Institute for participants flying into Galileo Galilei Airport, Pisa. It is also possible in principle to fly to Florence which is only slightly further away, but relatively few airlines use this airport. In principle one could also fly to other airports such as Perugia, Bologna, Ancona, Parma, Milano, Verona, Genova or Roma but you should count on a train ride of up to four or five hours to get to the Institute. A list of airlines flying to Pisa from destinations within Europe is given on the TTI web page (see "Flying to Italy" in the left-hand column). Americans should note that Delta Airlines now operate a direct service to Pisa from New York. Further details about transport, including how to drive to the Institute, are also given on the TTI web site.

Participants should aim to arrive at Pisa airport on Sunday 7th September and to depart from there on Thursday 11th September. Early arrivals can be accommodated if necessary - e.g. if flights from your country are irregular, but late departures cannot since we have another workshop shortly afterwards. Please let us know beforehand if you wish to do this.

*How to get to TTI from Pisa airport on Sunday 7th September:*

If you are arriving with the main party, please board the rented vehicles at the airport and drive in convoy with TTI staff to the monastery. Otherwise:

Go to Pisa Centrale train station - either by taxi in five minutes from the airport (preferable) or by a short train ride from Pisa Aeroporto station (which you get to by walking out of one end of the airport concourse - turn left as you walk into the main hall and carry on until you find it). From Pisa Centrale you then need to get a train to Barga-Galliciano. This is a small isolated station north of the city of Lucca somewhere along a branch line going up the valley of the river Serchio into the mountains (see the map on the TTI web site). Depending on the train time, you may need to change at Lucca to get the train north - the train will usually be flagged as going to "Aulla", "Minucciano", "Piazza al Serchio" or "Fivizzano". Note that on all Italian train journeys you are supposed to validate your ticket by getting it stamped in the yellow machines on the platform or you may have to pay a fine. Note also that Italian trains are very (even absurdly) cheap by international standards, particularly British ones.

At Barga-Galliciano station you should find a TTI representative who will meet each train as required and take new arrivals to the Institute. If no-one is there you can wait in the excellent station café - do call if you have to wait more than five or ten minutes. Clearly we need to know in advance the time of the train on which you intend to arrive. The timetable is linked from the TTI web site.

In emergencies it is possible to get a taxi to Vallico Sotto from the station but in general this needs to be pre-booked - see the instructions on the web site (Barga Taxi : taxibarga@libero.it Tel. 340 1669279 or 348 8106112). If you are a non-Italian speaker who hasn't pre-booked and you need to talk to the guy (Marco) on the phone you will find he doesn't speak English so just say (phonetic) "Taxi a Vallico Sotto da la stasjonay di Barga-Gallicano?" or similar down a phone at him - and then find some way to convey the time you will arrive (tapping in Morse code on the telephone receiver with a stick?). The trip should cost 30 Euro. Note that "I don't speak Italian" is "Non parlo italiano."

In case of problems contact Mike on his mobile phone - 3479172621. Additional assistance is available from Samantha Keil on 3479170132. The TTI has a direct phone line (0583 761706) but this should be used as a last resort as people generally need this for internet use.

## 2.1 From Pisa airport to Vallico Sotto by car



Coming from Pisa airport, you first need to get on the north-south A12 coastal motorway (follow the green 'autostrada' signs from the airport, which is about 4mm above the word 'get' at the beginning of this sentence). South is indicated by 'Livorno' and north by 'Genova' and you want to go north. This is a toll motorway and you need to take a ticket out of the automatic machine when you join the autostrada towards Genova. Head north for about 10 minutes then take a right-hand fork to join the A11 motorway which will be signposted towards 'Firenze'. When you leave the motorway at Lucca (either Lucca Est or Lucca Ovest - the former is preferable) you need to pay the toll, which should be 2 Euros 30 cents or thereabouts.

So from the A11 you've taken either of the two turn-offs for Lucca. This is a rather large city, and you need to travel through it (there is no bypass) in order to go up the valley of the River Serchio which heads into the mountains to the north. If you see any signs to Garfagnana, Bagni di Lucca, Abetone or Castelnuovo, you should follow those.. From the centre outwards Lucca consists of an ancient mediaval heart surrounded by giant walls and lawns, then a sort of ring road, then sprawling modern suburbs. Which ever

exit you took from the motorway, you will end up on the ring road directly outside the mediaeval wall. Follow it round, necessarily clockwise, until you find the turn off to the North signposted to Abetone etc. (via del Brennero, or SS12)

Once you get through Lucca you will at first be on the right of the River Serchio. Eventually you will want to be on the left. You can cross at the following places:

(1) (RECOMMENDED) After a few miles on the SS12 there is a large roundabout next to an Esselunga supermarket - cross the bridge here by taking the third exit (like turning left..). Note - if you do this you will shortly afterwards start going through tunnels. After the third tunnel a bridge takes you over the river again and then the road will narrow and bend to the left then to the right - then the road forks abruptly. Make sure you take the right fork to Castelnuovo in order to cross the river on the (new for 2007) bridge and get back on the left-hand side. I appreciate this is confusing.

(2) Ponte a Moriano.

(3) Borgo a Mozzano (where you will see the very pretty 1000 year old Devil's Bridge.

(4) at Calavorno (just after where the road to Bagni di Lucca and Abetone branches off down the Val di Lima to the right).

So after the bridge at Calavorno you must be on the left bank. Take the third turning on the left after that - which is signposted (amongst many other places) to Fabbriche di Vallico and Vallico Sotto. This is an isolated side valley off the Serchio heading into the Apuan Alps where nobody ever goes apart from locals, and you. All the roads from now on are single-track for long periods - watch out for traffic coming the other way. The road winds up into the mountains past a lake and several tunnels for about 9km before you reach the small town of Fabbriche di Vallico. Just before the centre you need to take a right hand switchback signposted to Vallico Sotto. From then on there is a very windy single track road heading up the valley wall and ever higher into the mountains. After about 3 km the road flattens out and you will see Vallico Sotto in front of you (and Vallico Sopra far above, reached by a junction to the left). The right fork descends into Vallico Sotto.

There are three parking options:

(1) on the left of the road descending into Vallico - which is the second best option if the main car park is full,

(2) in the main car park immediately after the road passes through a narrow gap between two houses,

(3) at the entrance to the above mentioned car park, there is a very steep small road descending downwards - this goes to the unpopular 'new car park'. This is so far downhill that there is a steep climb to get out of it - either on foot or for your poor little car. If overburdened with luggage this is a bad idea as you have to climb a lot anyway.

Vallico is built on a slope and the Institute is the topmost building in it. So you need to ascend on foot through the village, and there are three distinct paths - basically keep going up until you find it. The path on the left - reached from the back of the main car park - is very steep but goes straight to the Institute if you keep going up. The middle path and the right path (which both have their origin in the church square immediately after you pass through the main gate) both end up in a tiny piazza. This appears to be a dead end, but in fact you can pass through an archway under the house at the back and you will then find yourself in Orto dei Gelsi ('The Vegetable Garden of the Mulberry Trees'), from where you can see the front door of the Institute. Look for the large white church building with a cross on the front.

### 3 SPECIFIC TRAVEL PLANS

All participants to travel on the following flights:

London Luton --> Pisa, Sunday 7th Sep, dep. 12:15, arr 15:20

Pisa --> London Luton, Thursday 11th Sep, dep. 15:05, arr. 16:15

MDT to meet Cambridge group in Arrivals Hall to help with transport of luggage.

Travel from Pisa airport to TTI and back in rental vehicles organized by the Cambridge group.

### 4 ACCOMMODATION

TTI, ATTIC - two single beds  
Mallesham Bejugam

TTI, NURSERY - one single bed  
Mike Towler

TTI, PLAYROOM - two single beds, one double bed  
Jyotirmayee Dash  
Nagaratna Hegde  
Ramla Shahid

TTI, PINK ROOM  
Samantha Keil, Saska Towler

TTI, LILAC ROOM - two single beds  
Zoe Waller  
Beth Ashbridge

TTI, TINY ROOM - one single bed  
Alessandra Polara

TTI, RED ROOM - one double bed  
Helen Lightfoot

TTI GARDEN ROOM, two single beds  
Amy Zhang  
Debbie Sanders

DOCTOR'S HOUSE, UPPER FAR ROOM - one double bed  
Professor Shankar Balasubramanian

DOCTOR'S HOUSE, UPPER MIDDLE ROOM - two single beds  
Sven Sewitz  
Keith McLuckie

DOCTOR'S HOUSE, UPPER NEAR ROOM - one double bed  
Raphael Rodriguez

DOCTOR'S HOUSE, LOWER APARTMENT - one double bed, two single bunk beds  
Sebastian Muller  
Anthony Bugaut

VOLUNTEERS FOR BEDOUIN TENT ([www.vallico.net/tti/tti\\_tent.html](http://www.vallico.net/tti/tti_tent.html)) ARE WELCOME.

## 5 SUMMER SCHOOL VEHICLES

TTI 6 seater Fiat Multipla  
2 x 7 seater rental cars

Drivers should note that they generally need to be over 25 for big cars, and that \*credit cards\* not debit cards must be presented in order to take the vehicles out. Don't forget your driving licenses.

## 6 THINGS TO BRING WITH YOU

Whatever you like, plus :

- The overheads for any talk that you intend to give - see later section for supported formats.
- Your wireless-enabled laptop, if required (though we have 15+ of them - see note in Technical Equipment section). Any large files that you need should be brought with you on hard-drive, CD, or memory stick, since download times are very long through our dialup connection.
- Summer hiking gear such as boots, socks, mini-rucsacs etc.
- Italian plug converters if you want to plug anything in (we have some spare but donations of these are gratefully accepted). Our sockets mostly have two round pins (with an optional third one between them). There are two types of thin prongs on European adaptors. You want the thinner of the two. Just to confuse things, there are also lots of English plug sockets into which English equipment can be plugged directly (though don't depend on this in your bedroom).
- Some Euros for spending in restaurants and shops. Please note that there is no easily accessible cash machine near the Institute, and although we might pass them from time to time on our afternoon trips, large numbers of people getting money out can cause considerable delays. There is a cash machine in Pisa airport to your right as you emerge into the arrivals hall. (NOTE FOR 2008 : a cash machine has now been installed in Fabbriche di Vallico a few kilometres away - this is now much less flaky than when it first appeared in 2007 but relying upon it to actually give you money would not be sensible.).
- People who intend to visit caves or canyons (most of you I hope) should bring some clothes and old shoes that you don't mind getting wet and possibly a head torch.
- Climbing equipment (harness, boots, helmet plus via ferrata gear if you have it) if you intend to take part in activities where this will be needed. We have limited supplies but probably not enough to go round.
- Blanket or light sleeping bag (if you intend to sleep in the Bedouin tent - note there are beds in the tent).
- A musical instrument, if you can play a portable one. Informal concerts are a valuable part of TTI's social calendar.
- Sunscreen

- A towel
- Swimming costume.
- Anti-allergy pills (if you are a city person who rarely comes to the countryside).

## 7 SUMMER SCHOOL SCHEDULE

This section contains a suggested schedule for the school (this is very flexible and can be changed at will - apart from the restaurants).

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 Sunday 7th September  
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ARRIVALS

EVENING - Walk up to Vallico Sopra, dinner at Canapale (BOOKED FOR 19)

Monday 8th September  
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BREAKFAST - 8:00-9:00 at Circolo  
 MORNING - 9:00-12:00 study session  
 LUNCH - 12:00-1:00 at Circolo  
 AFTERNOON - 1:00-3:00 study session  
                   - 3:15 excursion - Alta Matanna/Monte Procinto  
 EVENING - 7:30 dinner - Matanna Hotel (BOOKED FOR 19)

Tuesday 9th September  
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BREAKFAST - 8:00-9:00 at Circolo  
 MORNING - 9:00-1:00 study session  
 LUNCH - 1:00-1:30 at Circolo  
 AFTERNOON - 2:00 excursion - Lucca or Orrido di Botri/Montefegatesi  
 EVENING - 7:30 dinner - da Sandra (BOOKED FOR 19)

Wednesday 10th September  
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BREAKFAST - 8:00-9:00 at Circolo  
 MORNING - 9:00-12:00 study session  
 LUNCH - 12:00-1:00 at Circolo  
 AFTERNOON - 1:00-3:00 study session  
                   - 3:30 excursion - Cascaltendine  
 EVENING - 7:30 dinner - Eremo di Calomini (BOOKED FOR 19)

Thursday 11th September  
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BREAKFAST - 8:00-9:00 at Circolo  
 MORNING - 9:00-11:00 study session  
 LUNCH - 11:30-12:15 at TTI  
 AFTERNOON - departures around 12.30  
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## 8 TTI TECHNICAL EQUIPMENT

There are at least twelve Sony Vaio and four Acer Ferrari 4005 laptops in the Institute available for public use (plus MDT's personal laptop, which can be borrowed for short periods) almost all in dual-boot configurations running Suse Linux 9.3/10.0/10.2/10.3 and Windows XP or Vista.

All connections are made through a WiFi wireless network (802.11b or 802.11g). If you wish to bring your own laptop then it therefore needs to be wireless-enabled if you wish to log into the network. Three spare wireless network cards that you can plug into your laptop PC card slot are available - but note this can be tedious to set up on some machines so clearly it is better to wireless-enable it before you come. The Institute SSID is 'titi' and the network is completely unencrypted due to the total absence of hackers, or indeed computers, in remote mountain villages.

I'm afraid that for the moment the Institute is still on dialup (the wireless network plugs straight into the telephone through a Wiflyer router). Large files should thus be brought with you on your laptop rather than downloaded when you get there. The connection is certainly fast enough for multiple people to do remote logins and terminal-based email. Viewing graphical internet pages is OK when only one person is doing it so try to do this sparingly. Finally, please turn off things like Microsoft's Automatic Update feature - downloading Gb of files to patch all the security holes in your machine over a slow phone line is not a good idea.

The TTI management is very sorry about the slow connection but would like to stress how difficult it is to get a decent broadband connection in rural Italy. Italian fast connections are almost all ADSL and this is never going to get to such a remote area. It is possible to get satellite equipment but this is currently beyond our financial means and apparently subject to time delay typing problems anyway. We seem to be only a year or two from having appropriate technology to wire the Institute properly with the outside world - such as Wimax or floating giant airships sailing over Europe and so on. In the meantime, all suggestions for improving connectivity will be gratefully received (A RECENT ARTICLE IN THE LOCAL NEWSPAPER STATED THAT THE FABBRICHE DI VALLICO COMMUNE WILL BE CONVERTED FOR BROADBAND INTERNET SOMETIME IN LATE 2008/EARLY 2009.).

Apart from computers and networking devices, we also have the following equipment available for summer school participants to use:

- Canon Pixma ip4000 colour inkjet printer (on a wireless print server, so one can print from anywhere in the Institute)
- Hi-Ti Transphotable photo printer for instant printing of your photographs (you can plug in your camera directly - no need to go through a laptop - accepts all memory card formats that I am aware of).
- Epson Perfection 4990 scanner
- A3 laminator
- Guillotine.
- Finepix F455 digital camera
- Two memory sticks
- Driver disks for most of the above.
- A supply of writeable CD-Rs, CD-RWs and DVD-Rs.
- the usual stationery and staples etc..

A technical guide to the TTI computer systems will be available in time for the school. There is also a good selection of scientific reference books.



## 9 INTERNET USE

Until the local broadband is enabled in 2009, it is very heartily recommended that you do not use your own laptop to access the internet at TTI. Previous experience has shown that people always have some setting enabled which snarls things up or confuses the router or downloads Gb worth of Microsoft updates over our slow phone line. Note that at certain times of day getting any sort of response at all will be difficult as too many people try to access the internet at the same time - reading your email in the middle of the night is normally a good idea.

We therefore recommend that if you wish to use your own computer at TTI you bring one of those nice USB dongles which allow your laptop to plug into the local mobile phone network.

The basic method of accessing the internet through TTI's systems is to turn on the wireless network by plugging in the two cables into the back of the small grey plastic 'WiFlyer' which is near the telephone on the right-hand side of the middle floor antiquarian library. In practice someone else will normally have done this. If there is a lightning storm, it is imperative that you unplug both cables from this or it will blow (this is already the fourth one I've had, they cost more than a hundred quid each, and the company has now gone out of business!).

Turn on a TTI laptop - you will get a menu asking to choose between Linux and Windows - Linux is much better set up for the monastery because it's what we use. The home page for the Firefox browser should be already set to go to the Wiflyer home page (address for this is 192.168.7.77) - Press 'Home' or the picture of a house or whatever it is. Once there you can - if the network is not running - press 'Dial' and the thing will connect to the internet. Don't press 'Disconnect' since someone else may be using it - it is perfectly OK to leave the network running all the time as we don't pay by the minute. There should be fourteen or so laptops distributed around the building - either Sony Vaios or Acer Ferraris (note the difference in power supplies - the ones for the Ferraris have yellow ends, the Sony machines have black ones). They are all set up with static IP addresses 192.168.7.2x (where 2x is 20 plus the number of the machine - a red plastic label saying e.g. tti\_laptop 9 implies 192.168.7.29) so they can all talk to each other via ssh or ftp etc).

Please use text-based email programs from an xterm if you can rather than using the browser.

## 10 PRESENTATION EQUIPMENT

The church is equipped with a good quality NEC MT1075 projector and an auxiliary Toshiba DPD TDP-T250U projector with DVI and regular RGB cabling . There is a giant 16' by 12' main screen, a 7'8 x 5'9 electric auxiliary screen, an Avervision document camera, a dual projection stand, a laptop, a DVD player with decent speakers, and various wireless control devices. There is a giant blackboard in the church and a smaller one in the main corridor stolen from the TCM Seminar room in the Cavendish Laboratory.

The NEC projector is wireless capable, so you can beam your talk from your laptop straight to it from anywhere in the room, as well as with old-fashioned direct connection (technical specs on the TTI website). If you don't want to bring your laptop, the projector also allows PCMCIA card Mobile disks to be plugged into it. The Institute laptops - each equipped with some Linux distribution (choose from Suse Linux 9.3/10.0/10.2/10.3) and Windows XP/Vista - will of course also take CDs and memory sticks and have the usual software such as Acroread and Powerpoint. On balance it is probably best to bring your talk on a CD or USB device or email it to Mike beforehand and he will ensure that it is on the relevant machine ready for your talk.

The Avervision document camera is a sort of fancy overhead projector. It will display any printed document, photo, slides, X-ray film or 3D object straight through the projector, with the intention that biology teachers can dissect a frog live on the wall. There is a Victorian microscope with an attachment that allows it to be connected to the Avervision, so biological people can further project the microworld on the big screen. Although we have a table with a white square painted on it, non-electronic talks are probably

better on white pieces of paper rather than on transparencies..

You can of course ignore all the technology and use the blackboard.

## 11 EXCURSIONS AND ACTIVITIES

The various excursions and activities are divided into categories according to the physical effort involved. What normally happens is that each day the group split into at least two, with young and virile people doing the strenuous excursions, and the lazy, old and corpulent doing the more relaxed activities. However as this is a very short workshop and you are all young and healthy we have picked some fun activities for you mainly taken from the more strenuous end of the list. However, I include the main list here for reference in case you want to do anything else.

### 11.1 Very strenuous activities

- Climb the peak of Monte Procinto. This is a huge cylindrical rock tower with a belt of trees around its middle from which rise 500-foot walls, overhanging on every side. Michelangelo apparently had the idea of carving it into a gigantic sculpture along the lines of Mount Rushmore. He didn't in the end, but you can see the current state of the mountain here: [www.vallico.net/procinto.jpg](http://www.vallico.net/procinto.jpg) . Yes - the walls are more or less vertical, but there is a *via ferrata* to clip yourself onto. Instruction, assistance, and the necessary equipment can usually be supplied.
- Reach the high peak of Pania della Croce from Pigionico (described as 'The finest peak in the whole of Italy' in *Below the Snow Line* - one of the 19th century books in the TTI Antiquarian Library). Also features in Dante's *Divine Comedy*. This defeated some of TTI finest mountaineers for several years before they finally succeeded in 2007 (note - it isn't that hard if you move quickly).
- Find the spectacular natural rock bridge of Monte Forato (under which someone once flew a bi-plane). See [www.vallico.net/tti/forato.jpg](http://www.vallico.net/tti/forato.jpg) . Start from Fornovolasco (lots of up) or from Matanna (much easier) or even have two groups that meet in the middle and exchange car keys.
- TTI management are translating the book *The ninety caves of Fornovolasco* into English. These caves litter the slopes of Pania della Croce and the various other mountains surrounding the little village of Fornovolasco in the next valley along from ours. How many of these can you find? Dare you enter the 'Garfagnana Abyss'?
- *Orrido di Botri* canyon walk. The Orrido is a giant canyon created by the Pelago river in the Appenines (about an hour's drive from the Institute) with deep steep walls as high as 200 metres and in some places only a few metres apart. This is a geologists' and naturalists' paradise. It can only be visited with helmets (supplied) and suitable clothing you don't mind getting wet.
- Morning workout. Run from the Institute each morning at 6am to the spectacular summit of Monte Palodina in order to tone up your thigh muscles and pep yourself up in preparation for the morning's talks. Mad people only.
- Complete the Cinque Terre coastal walk, a four-hour excursion through some of Italy's most spectacular scenery.
- There are of course any number of spectacular high mountain expeditions in the Apuan Alps and the Institute has a library of guidebooks which you can browse through. Let me know if you want to try anything else (that will fit in the clearly limited amount of time). There is also the TTI Antiquarian library (Mountaineering section) to inspire you.

### 11.2 Quite strenuous activities

- Go to Alta Matanna at the end of the Turrite Cava valley and visit the beautiful nineteenth-century hunting lodge that was once the destination for travellers in Rosetta the Balloon on her aerostatic cableway. See the old balloon station at Foce del Pallone and the extraordinary view. On clear days

you can see Elba - 100 miles to the South - and sometimes the even more distant Corsica and the French Alps. Come back over the top of Monte Matanna and descend back to the lodge. Take one of the Institute's antique telescopes with you..

- From the Matanna hotel, climb up to the cross on the adjacent ridge for a spectacular view of Monte Procinto, Stazzema and the Apuan Alps. From there you can climb Monte Matanna the other way around, or visit the donkey and his little horse friends who live on the top of Monte Nona. Or you could go on a longer walk below the Giant West Wall of Nona, threading past Monte Procinto, and round the back of Monte Nona which will take several hours. Finish up the day with a fabulous dinner in the Matanna hotel.
- Take part in the latest expedition to the ancient cave known as the *Tana di Cascaltendine* which is the subject of Pietro Magri's 1880 book *An expedition to Mount Gragno and the Cave of Cascaltendine* as translated by MDT and available on the TTI web site (click the Local History Projects link). The 2007 QMC summer school crew were able to photograph the result of the following quote : '*Before coming down from the cavern we used a chisel to inscribe our initials and the year 1880 on both walls of the passage near the entrance.*'. This was done in the "Palace of Ismeno" which was the name Magri's group gave to an extensive cave whose entrance is a 6 foot hole about forty feet up a cliff - the full story is on the News from the Towler Institute blog. It is also known that the cave continues for a kilometre beyond where we have penetrated before and this remains to be explored (note that in summer 2007, MDT and Evans went up the big wall in the final chamber with the dangling rope - a place many TTI visitors have visited before - with somewhat amusing consequences - see the blog story 'Bronze Hermaphrodites and the Fat Boy Filter'). Expedition to be followed by cold beers and refreshments in the lovely village of Cardoso, or a circuit of Monte Penna hunting for the lost Cave of the Fairies..
- TTI management has discovered that there is a secret underground tunnel in Vallico which starts from the Doctor's House next door to the Institute (a fifteenth-century former barracks) and which goes up to the Rocchetta above the village (the site of an old castle on the summit of a little hill, where we now pitch the Bedouin Tent). This was used in mediaeval times for escape from the frequent warfare so common in these parts. The supposed entrance to the tunnel was bricked up (we think) in the 1930s - there are a couple of elderly men in the village who vaguely remember it. This summer we hope to unblock the entrance and explore. We also wish to find the upper entrance, so if you know anyone who has a ground-penetrating radar set we can borrow, let us know. This will probably be one of the next thrilling tales in "News from the Towler Institute".
- Explore the Vallico Sotto mule trail and the spectacular forgotten waterfall of Cascata Pendolina - one of the highest in Italy. Vallico was only connected by road to the outside world in the 1960s - before then people went up and down the *mule trail*. This has now been forgotten and is a little overgrown (though less so following TTI clearing activities) but is still very beautiful. Once we reach the bottom of the valley we will head over the river to the site of the Cascata Pendolina where we will take lunch. On the way back the bravest people will try to ascend the *Canyon of the Pili* carved by the Rio Selvano (you will get wet!).
- Explore the *Buca della Freddana* cave near the mule trail from Vallico Sopra to San Luigi. This was (re-)discovered by MDT in Easter 2007 following conflicting and confusing advice from several local old ladies who remembered its existence from 40 years ago. He has also found the upper entrance of the same cave on the summit of Monte Penna - the two are apparently connected by a 1 kilometre passage. The old ladies have advised us not to go inside because of the evil monsters and dark pits that lurk within, but then again, they always say that. Dare you explore?
- Five a side-football (a new fenced pitch was constructed in Vallico a couple of years ago) or regular football (on the local full-sized pitch).
- Rock climbing or low-level bouldering - the Institute should have some ropes and climbing equipment. Don't forget to bring climbing boots and a harness that fits if you want to do this seriously.
- Pietro Magri in his 1880 book mentioned above states that there are two other caves in Monte Gragno besides the Tana di Cascaltendine. Today no-one seems to know where they are. Hav-

ing found the Buca della Freddana, MDT has narrowed down the lost “Cave of the Fairies” to a relatively small area. Can you find it?

- Traverse from Santa Luigi via Monte Palodina and the cliffs of Monte Gragno past the giant karst depression of Pian di Lago to the spectacular Rocca Estense fortress of Trassilico.
- Explore the *Tana che urla* (the Cave that Screams..) - first explored and scientifically described by Vallisneri in 1726 - off the footpath to Foce di Petrosciano from Fornoalasco. This isn't a tourist cave - so bring some appropriate clothes and torches. The Institute should have some proper speleological equipment to hand round. If you can read Italian, have a look at [www.buffardello.it/attivita/pubblicazioni/di\\_alcune\\_grotte.pdf](http://www.buffardello.it/attivita/pubblicazioni/di_alcune_grotte.pdf).
- Go on a ravishingly beautiful walk over the highest stone railway bridge in Europe to the church in Sambuca.
- Go wild boar hunting.
- Learn to play local sport *palla elastica* (elastic ball) with the village youths.
- Go kayaking on the Turrice Cava. Bring your own canoe.
- Explore the ancient *Vasaio di Motrone* cave in the nearby village of Motrone (see [www.apuane2007.it/italiano/vasaio/zona\\_vasaio.php](http://www.apuane2007.it/italiano/vasaio/zona_vasaio.php)).

### 11.3 Relaxed activities

- Retired former Cambridge physics professor Elisabeth Marseglia who lives nearby has been known to pop in to lead Pilates classes in the TTI church.
- Look in the latest issue of “Grapevine” magazine for local cultural activities and concerts etc.. - in English..
- Play with the Institute’s Victorian Scientific Instrument Collection.
- Spend the afternoon bathing in the outdoor hot pool at the ancient thermal baths of Bagni di Lucca (one of the most fashionable spots in Europe in Lord Byron’s time - the Switzerland of Tuscany!). Followed by shopping, sightseeing and coffee in the town centre.
- Samantha has two other favourite open-air pools at Galliciano and Barga. These are like little beach resorts where one lazes about on deckchairs and has the occasional dip.
- Watch the night sky through the Institute’s astronomical telescope.
- Visit the ancient city of Barga ([www.barganews.com](http://www.barganews.com)) for an afternoon’s relaxed sightseeing, shopping and culture.
- Visit the beautiful city of Lucca.
- Visit Castelnuovo di Garfagnana, where you can find Andrea’s (the ‘Indiana Jones of the Garfagnana’) famous Osteria, where all day you can sample fabulous local wines, cheeses and snacks.
- Follow in the footsteps of Michaelangelo, and visit some of the Apuan Alps famous marble quarries.
- Day trip to Florence.
- Drive to the next valley along from ours over a spectacular high mountain road where the eagles live. Visit the Grotta del Vento - the Cave of the Winds ([www.grottadelvento.com](http://www.grottadelvento.com)). This is the most famous cave system in Tuscany and the visitor will enjoy a spectacular and bizarre landscape of caverns and lakes. Take a pullover as the temperature is a reliable 10 degrees the whole year round. Then head down the valley to visit the *Eremo di Calomini* - an ancient monastery built into a high steep cliff.

- Table football and drinking in Fabbriche di Vallico.
- Horse riding at La Fornace.
- Various mild short walks around the Institute.
- Digging the Institute garden and doing little DIY things like restoring the church or clearing paths (I say this merely in hope..).

#### 11.4 Very relaxed activities

- The requirements of modern science presentations means the Institute church is also the only cinema in the whole of the Apuan Alps - a fact that local people very much enjoy (since the opening presentation of *Cinema Paradiso* in August 2005). During the school you are welcome to use the projectors and it is expected that movies will be shown one some evenings. The Institute has an extensive DVD library which you are welcome to browse. Feel free also to bring your own movies that you think we might enjoy.
- TTI now has a high-definition video camera. Make a film of your visit.
- Budding archaeologists may use the TTI metal detector - bought following last year's spooky event when Evans and MDT were digging a hole in the ground for the satellite dish (we're really not making this up): MDT: Hey Evans, watch out for crucifixes when you're digging that hole. This used to be a monastery you know. EVANS (REACHING INTO THE HOLE) What, like this one? (HOLDS UP A THOUSAND YEAR OLD BRONZE CRUCIFIX FROM FIVE FEET DOWN).
- Spend all day in the TTI garden relaxing in one of the Institute's three hammocks, drinking wine, snoozing or reading one of the books from the TTI library.
- The Institute has a variety of board games, jigsaws, and similar entertainments together with a number of Victorian books with titles like "What To Do On Cold Winter Evenings Given That We Haven't Invented Television Yet".
- Debate physics with the help of the Institute blackboards.
- Listen to one of MDT's tedious lectures inspired by the contents of the TTI Antiquarian Library such as *Richard Burton and the Source of the Nile* (Burton the Victorian explorer and polymath, not the one out of *Where Eagles Dare*..) or *Up The Orinoco with Alexander von Humboldt*.
- Spa treatments in the Bagni di Lucca "Thermal resort".
- MDT is translating some chapters of a book on the history of Vallico Sotto. If he's finished it by the time you visit, then walk around the village looking at the buildings and places it describes. He has also taken to writing stories about events at the Institute and publishing them on our blog at the local Barga News website. See [www.barganews.com](http://www.barganews.com) and the "News from the Towler Institute" blog (or go to the TTI web site [www.vallico.net/tti/tti.html](http://www.vallico.net/tti/tti.html) and click on the relevant link in the left-hand column). So far these are mainly about cave explorations and similar adventures. However, MDT doesn't have a monopoly on this. If you wish to contribute your literary efforts then please send your stories about your adventures in Italy to him, and they will be published on the blog.

#### 11.5 General

- The Institute has a wildlife photography notice board. Prizes for the best entries, particularly if you can take a picture of one of the eagles that regular soar above Vallico or of the elusive *marmite*.
- The Towler Institute Exploration Society also has a photographic competition running - see the web site for details.

- Revitalize the economy of Vallico Sotto. It's barely 40 years since 450 people lived here. Now less than 100 do so. Just because modern lazy teenagers want to be fashion models smoking drugs in Milan rather than having a nice healthy outdoor life, the population of rural Italy has been denuded. Let's bring back the time when all the mountain terraces were in production, packs of nice mules helped carry things, teams of volunteers kept paths and bridges open, and everyone knew how to bake chestnut cakes. All serious suggestions gratefully received.

## 12 DINNER

In general breakfast and lunch will be provided at Il Circolo - the little bar in Vallico Sotto (below the main church square). This is run by the very friendly Monica (from 8:00 to 9:00 for breakfast, and from 12.00 to 1.00 or possible 1:30 for lunch). If you want to buy your own food, there are two food shops in Fabbriche di Vallico - 5 minutes drive downhill, and a giant Leclerc supermarket in Galliciano (25 minutes drive). (Note that people in local shops - or indeed anywhere round here - tend not to speak English, so learning some basic Italian food words before you come will help : *pane* = bread, *formaggio* = cheese, *prosciutto* = ham, *pomodori*=tomatoes, *birra* = beer, *vino* = wine, *caffè* = coffee, *latte* = milk, *grazie!* = thank you!).

You are of course welcome to make use of the Institute's cooking facilities whenever you want; in fact why not cook a lovely dinner for four demonstrating the delicious cuisine of Kazakhstan, or wherever you come from? There is a big downstairs kitchen in the main building with a total of 10 rings formerly run by a proper cook, and a small upstairs kitchen. The Institute even has its very own *Il Collegio Cookbook* written and published by former owner Leonie Whitton whose recipes you are encouraged to try. There are also two kitchens in the adjacent Doctor's house which will be rented for the duration of the conference.

Dinner will be taken in local restaurants. Expect to pay between 12 and 20 Euros per head (not very much at all) for a many course dinner with wine.

Finally, if you are a vegetarian, you need to be aware that the locals will consider you quite mad and will feel very sorry that you are unable to enjoy their passion for delicious animal products of all kinds. Don't worry about this. Following several years of TTI activities, they are now used to us bringing curious foreigners to their restaurants and most are now able to supply vegetarian meals of some kind.

### LIST OF LOCAL RESTAURANTS

- Mulino Biologico (3280 707037, Fabbriche di Vallico)
- Da Sandra (0583 761289 on the road between Fabbriche di Vallico and Vallico Sotto).
- Il Canapale (0583 761829, Vallico Sopra)
- Al Laghetto (0583 75798, near the lake at the entrance to the Turrtecava valley)
- La Rondine (0583 761751 Fabbriche di Vallico, open Fri evening, plus all day Sat/Sun)
- Alta Matanna (0584 776005, Matanna)
- Ristorante Rita e Rinaldo (0583 357728 or 333-6126029, Focchia)

### RESTAURANTS SLIGHTLY FURTHER AFIELD

- Circolo dei Forestieri, Bagni di Lucca
- Antica Trattoria dell'Eremita, Vergemoli
- Il Garfagnino, on the main road near Turrtecava.
- LOTS MORE - ASK

## SPECIAL RESTAURANTS

- La Buca di Sant' Antonio, Lucca
- La Mora, Ponte a Moriano
- Butterfly, Lucca

## 13 CINEMA VALLICO

The requirements of modern science presentations means the Institute church is also the only cinema in the whole of the Apuan Alps - a fact that local people very much enjoy (since the opening presentation of *Cinema Paradiso* in August 2005). During the conference you are welcome to use the projectors and it is expected that movies will be shown on several nights. The Institute has an extensive DVD library which you are welcome to browse. Feel free also to bring your own movies that you think we might enjoy.

## 14 NEWS FROM THE TOWLER INSTITUTE

MDT has taken to writing stories about events at the Institute and publishing them on his blog at the local Barga News website. See [www.barganews.com](http://www.barganews.com) and the "News from the Towler Institute" blog (or go to the TTI web site [www.vallico.net/tti/tti.html](http://www.vallico.net/tti/tti.html) and click on the relevant link in the left-hand column). So far these are mainly about cave explorations and similar adventures. However, Mike doesn't have a monopoly on this. If you wish to contribute your literary efforts then please send your stories about your adventures in Italy to him, and they will be published on the blog.

## 15 FINANCE

TTI is a philanthropic organization, and there is thus no charge either for participation at the workshop or for accommodation.

## 16 HEALTH AND SAFETY

We should all recognise that climbing and mountaineering are activities with a danger of personal injury or death. Participants in these activities during their stay at TTI are asked to be aware of and accept these risks and be responsible for their own actions.

## 17 FINAL WORD

Please address all queries to Mike Towler whose email address is [mdt26@cam.ac.uk](mailto:mdt26@cam.ac.uk).

Have fun during your stay at TTI.