



# UCL

## ALL EARS Dec 2012: #2

### The UCL Ear Institute Newsletter

#### Contents

Getting involved	1
Jobs, courses & seminars	1
New starters	2
In the media	2
Featured papers	3
More recent publications	4
Research updates	5
Other news	9
Guess the ear competition	12

#### Getting involved

Research at the UCL Ear Institute goes beyond lab based exploratory investigations and into front line human applications. Scientists from the Ear Institute have revolutionised many aspects of modern ENT healthcare, hearing rehabilitation and diagnosis.

We have received over £8,000,000 of research funding from charities and research councils, but we need volunteers to make it count.

Ways to participate range from filling in a one off questionnaire to regular listening experiments carried out here at the UCL Ear Institute, DNA sample donations to hearing aid trials. For children we have listening games and training programmes.

If you wish to take part in one of our studies, please visit the participate section of our website:

[www.ucl.ac.uk/participate](http://www.ucl.ac.uk/participate)

#### Jobs, courses and seminars

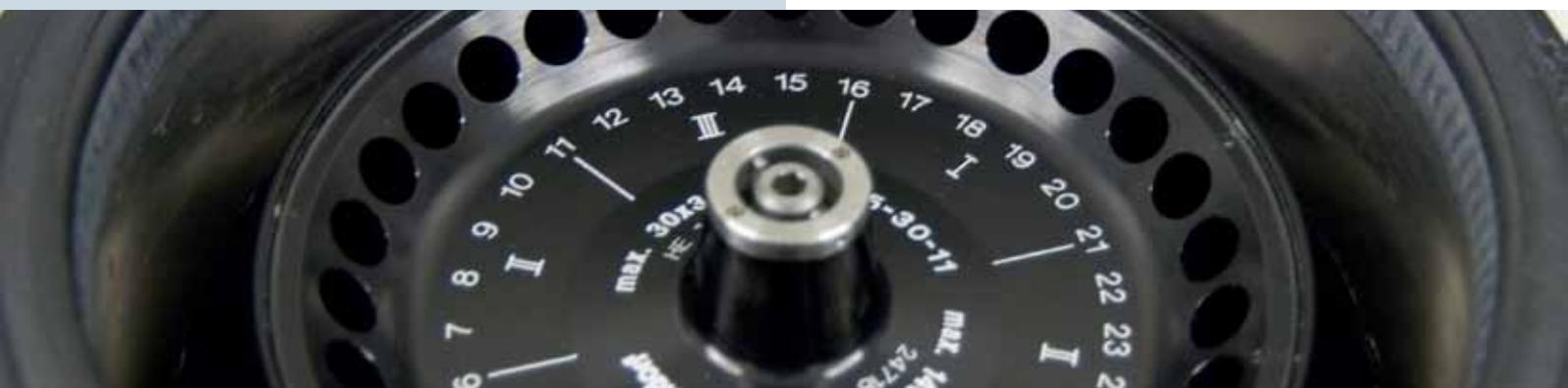
We currently have details on a number of job vacancies, Grays Inn Road Courses and Advanced Audiology Masterclasses, please visit our website to get up-to-date information:

[www.ucl.ac.uk/ear](http://www.ucl.ac.uk/ear)

Editors: Dr Debi Vickers  
Mrs Kate Faxen

[www.ucl.ac.uk/ear](http://www.ucl.ac.uk/ear)  
[facebook.com/earinstitute](https://www.facebook.com/earinstitute)  
[#uclearinstitute](https://twitter.com/uclearinstitute)

The Ear Institute Newsletter is a quarterly update on our research and teaching achievements to demonstrate our progress and activities that are impacting on the world of hearing and ENT.





## New starters

**Dr Helen Blackshaw**  
**020 7679 6348**  
[h.blackshaw@ucl.ac.uk](mailto:h.blackshaw@ucl.ac.uk)



Dr Helen Blackshaw joined UCL in August 2012 in a dual role as manager of the UCL ENT Clinical Trials Programme and co-ordinator of the NIHR CRN ENT Specialty Group (<http://www.crncc.nihr.ac.uk>). Helen is currently re-branding the ENT Clinical Trials Programme into 'evidENT'; centre of Evidence-Based ENT, to recognise the various roles performed by the team. evidENT incorporates the ENT clinical trials programme and the CRN ENT Specialty Group. It collaborates closely with the Cochrane ENT Disorders Group and the UCL CTU. In line with the expansion of the team, evidENT is due to move into a new office in the RNTNEH early in 2013. Helen will produce a new website and formally introduce evidENT to everyone.

The evidENT team are currently preparing two large multi-centre trial proposals to the HTA on tonsillectomy in adults with recurrent sore throat and grommets in children with recurrent acute middle ear infections. In addition they are collaborating on an early-phase trial in stem cell based tissue engineered laryngeal implants and a late phase trial in adults with chronic rhinosinusitis and nasal polyps. If successful, the trials will open in 2014.

As well as preparing trial proposals, the evidENT team work to identify priorities of clinical research in ENT and associated specialties in the UK. The programme

will be built on these priorities. The team are able to offer advice and help to researchers to process their trial ideas into successful applications. Engaging industry is a large priority in the future of ENT clinical research and Helen is working on forming close commercial collaborations with both UK and international companies, with the aim of increasing the number of industry-funded studies on the CRN portfolio.

Helen is a trained Molecular Cell Biologist and has previously undertaken research at Queen Mary University of London and The Royal Veterinary College. Her business experience includes working in financial management for a large US investment bank.

## In the media

### Prof David McAlpine in BBC hat-trick!

On 17th November Prof McAlpine was a guest on a special live broadcast of the BBC World Service Forum show entitled 'Celebrating Listening' alongside Carrie Gracie, Imtiaz Dharker & Davia Nelson.

<http://www.bbc.co.uk/programmes/p010c45x>

He was then interviewed on Radio 4's Today programme on 4th December documenting the life of Michael Berkeley, a prominent composer who lost his hearing two years ago. Mr John Graham of the RNTNEH also featured in this programme.

<http://www.bbc.co.uk/programmes/b01p41h6>

And to cap it all off, he's published an article in BBC News Health entitled Does Deafness Contribute to Dementia?

<http://www.bbc.co.uk/news/health-20556598>





## Featured papers

### Direct gating and mechanical integrity of *Drosophila* auditory transducers require TRPN1

In almost every field of research there are problems that have defied a solution long enough to be considered the field's Holy Grail. In hearing research, this could for example be the question about the molecular nature of the auditory transducer channels. Sensory transducer channels are the ion channels that start the process of sensation; they convert external stimulus energies (such as provided by sound) into electrical events in the membrane of a sensory cell. For many sensory modalities, these transducers have been molecularly identified. For the sense of hearing, however, we still do not know them; neither in vertebrates nor invertebrates (the two groups of animals within which hearing organs have evolved). A recent study, conducted in collaboration with Joerg Albert, now reports on progress made in the study of auditory transduction in the fruit fly *Drosophila melanogaster*. The ears of fruit flies, just as our own ears, operate with transducers that are directly mechanically opened by the pull of a molecular spring (the so called gating spring). Effertz et al. have now linked this particular mode of transducer gating to an identified ion channel, by the name of NompC (=TRPN1); their findings suggest that NompC either acts as the flies' auditory transducer channel proper or as part of its gating spring. NompC is the first ion channel that could be directly linked to the mechanical gating of an auditory transducer channel. It appears that, at least in flies, the Holy Grail is within eyesight.

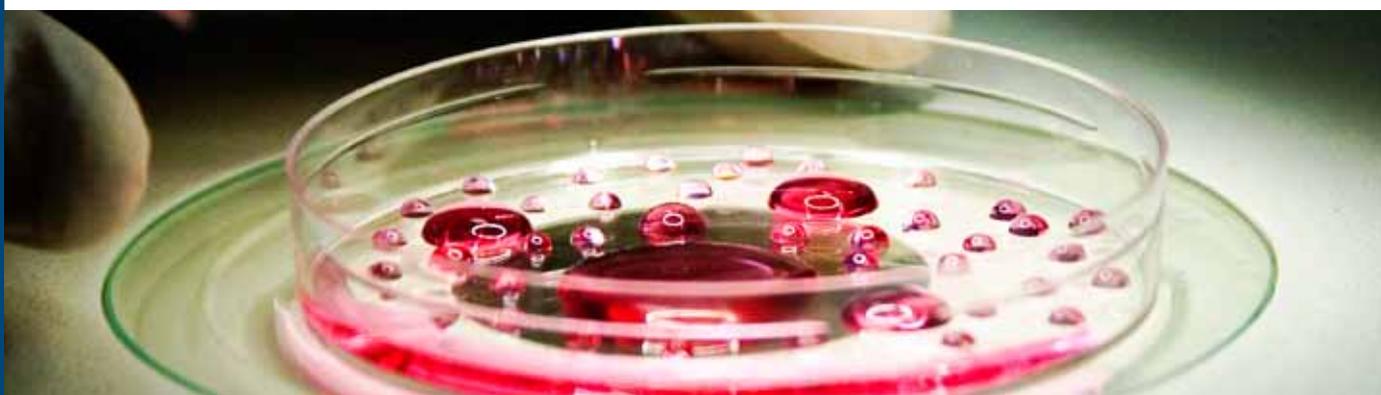
Effertz, T., Nadrowski, B., Piepenbrock, D., Albert, J.T., and Göpfert, M.C. (2012). Direct gating and mechanical integrity of *Drosophila* auditory transducers require TRPN1. *Nat Neurosci* 15, 1198-1200.

<http://www.nature.com/neuro/journal/v15/n9/full/nn.3175.html>



### World's first child stem cell organ transplant reaches landmark success, honoured in this week's *Lancet*.

UCL's hollow organ regenerative medicine group have reached yet another world-first landmark, as their latest *Lancet* paper describes. In 2010, a team including UCL scientists and Great Ormond Street and Royal National Throat Nose and Ear Hospital Surgeons saved the life of a ten-year old Northern Irish boy by employing groundbreaking stem-cell base technology. This operation, led by Professor Martin Elliott, replaced his entire diseased trachea and repaired a huge defect in his aorta, and was the first time that a stem-cell based organ transplant had been attempted in a child. The group was also steered by members of the same team that delivered the first ever stem cell based organ transplant to a woman from Spain in 2008, Professors Martin Birchall and Paolo Macchiarini (UCL Ear Institute). The acute nature of



Ciaran Finn-Lynch's problem meant that the technology had to be adapted on the spot.

A stem-cell rich suspension of bone marrow was isolated at the time of surgery by the Laboratory for Cellular Therapeutics at the Royal Free Hospital (Dr. Mark Lowdell, UCL Division of Medicine), and this was returned to the theatre for seeding onto a decellularised donor windpipe, obtained by kind permission of the Tuscan transplant authorities. Ciaran's recovery was long and tortuous, as the team learnt 'on the spot' how to manage this embryonic technology. However, he was eventually discharged from Great Ormond Street Hospital six months' later breathing well, thanks to the expertise of the extended clinical and scientific teams.

More than two years later he is breathing well, growing and recently visited the United States. He even played the drums on Irish National TV and has been back at school for over a year.

There are a number of case reports of various means of replacing the respiratory tract with tissue-engineered replacements, but this is the first long term peer-reviewed report ever published. As such, this UCL achievement represents a real landmark in science and demonstrates that stem cells and tissue engineering have genuine potential to transform the whole future of surgery.

This is the third of three publications by this dynamic research group in the *Lancet* in the last month:

Elliott MJ, DeCoppi P, Speggiorin S, Roebuck D, Butler C, Samuel E, Crowley C, McLaren C, Fierens A, Vondrys D, Cochrane L, Jephson C, Janes

S, Beaumont N, Cogan T, Bader A, Seifalian A, Hsuan J, Lowdell M, Birchall M. ***Two-year follow up of a stem cell based, tissue engineered tracheal replacement in a child.*** *Lancet*, July 27; 379: In press.

Lowdell MW, Birchall M, Thrasher AJ. ***Use of one-off, compassionate use, advanced therapy medicinal products (ATMP) as a safe and valid alternative to animal models for pre-clinical data for clinical trial submissions?*** *Lancet*, Jun 23;379(9834):2341.

Birchall M, Hamilton G. ***Tissue-engineered vascular replacements for children.*** *Lancet*. 2012 Jun 23;379(9838):197-8.



### More recent publications

Bizley JK, Shinn-Cunningham BG, Lee AK. (2012) ***Nothing Is Irrelevant in a Noisy World: Sensory Illusions Reveal Obligatory within-and across-Modality Integration.*** *J Neurosci*. 2012 Sep 26;32(39):13402-10.

de Cheveigné, A., Edeline, J.M. Gaucher, Q., Gourévitch, B. (2012), ***Component analysis reveals sharp tuning of the local field potential in the guinea pig auditory cortex.*** *J. Neurophysiol.*, in press.





## Research updates

### Advanced Bilateral Cochlear Implant Technology

**Prof David Mcalpine**

020 7679 8938

[d.mcalpine@ucl.ac.uk](mailto:d.mcalpine@ucl.ac.uk)

Following a successful application to the European Union's 'FP7-HEALTH-2012-INNOVATION-2' funding programme, September saw the launch of the 3-year research project Advanced Bilateral Cochlear Implant Technology, or ABCIT. This €4M project, co-ordinated by the Ear Institute, and incorporating academic partners at Oldenburg University, Germany (and their technology spin-out group Hörtech), and the French cochlear implant company Neurelec. The project aims to enhance the spatial listening abilities of cochlear implant users, particularly those who receive the Neurelec binaural device that stimulates both implanted ears synchronously. Binaural (two-eared) hearing is critical to locating the source of a sound, and to hearing in noisy environments.

### Lefkothea-Vasiliki Andreou (with Dr. Maria Chait)

020 7679 8887

[l.andreou@ucl.ac.uk](mailto:l.andreou@ucl.ac.uk)

The ability to predict when an expected event would occur (and preparing accordingly) is crucial for effective interaction with the world around us. As an example, think about preparing to hit a tennis ball - in order to execute a successful hit, one must be able to predict the location and timing of the ball. The ability to predict event timing is especially important in the context of sound, as changes in sound pattern often indicate important, potentially life threatening, events in our surroundings.

The optimal means for detecting such events is learning the time structure of on-going sounds and responding as soon as possible when a predicted event fails to occur (or else when an event occurs earlier than expected). We know that human listeners are very sensitive to timing in sound. This manifests itself in our ability to tap along to quite complex rhythms, rapidly detect rhythm violations and predict patterns in music and speech. In an experiment that is currently on-going in the lab, we are trying to understand the extent to which listeners continue to learn the time structure of acoustic sequences even when they are outside the focus of attention. To probe such brain mechanisms we measure responses from the auditory cortex to sounds while listeners are performing other, non-related tasks. For this purpose, we use Magnetoencephalography (MEG), a technique that allows real-time recording of the brain activity by measuring magnetic fields produced by electrical currents occurring naturally in the brain. The time patterns of auditory cortical responses can help shed light on the mechanisms by which listeners learn sound sequences and the degree to which attention (active listening) is required for this. Uncovering these processes is important for understanding how the human brain makes sense of complex acoustic environments. This Project is funded by Deafness Research UK and the Wellcome Trust.

deafness research uk



wellcome trust





## Research updates

### Metrology for a universal ear simulator and the perception of non-audible sound

Torsten Marquardt

020 7679 8933

[t.marquardt@ucl.ac.uk](mailto:t.marquardt@ucl.ac.uk)

In September, Torsten Marquardt started supplementary research for the Jointed Research Project JRP HLT01 Ears: "Metrology for a universal ear simulator and the perception of non-audible sound". The project is part of the European Metrology Research Program (EMRP) and jointly funded by the European Union and the participating countries within the European Association of National Metrology Institutes (EURAMET). The JRP aims to support preventative strategies to hearing conservation through two major interdisciplinary research and development activities. The first aims to establish new understanding of human perception of non-audible sound as well as the metrology infrastructure necessary to put in place effective safety criteria based on establishing perception thresholds. The second aims to improve the relevance of metrology in modern audiological practices, to bring about improved quality and reliability of results by development of a universal ear simulator. Amongst the JRP Partners, Torsten Marquardt collaborates most closely with the Physikalisch-Technische Bundesanstalt (PTB) in Germany and the National Physics Laboratory (NPL) in the UK. He will bring his expertise in low-frequency hearing to the JRP and develop models, as well as, subjective and objective measurement procedures to study the perception of so-called "non-audible sound" that lies

outside the typically-thought human frequency range of 20 – 20,000 Hz. He is funded three days a week by a EMRP Researcher Excellence Grant that will run for 30 months.

<http://www.ptb.de/emrp/ears-home.html>



### New PhD: Turning Stem Cells into Hair Cells

Stephanie Juniat

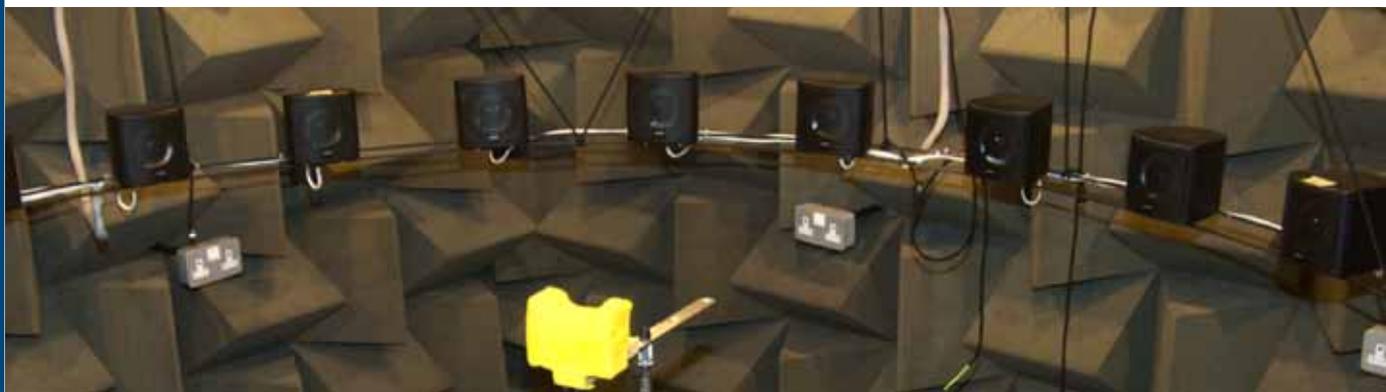
[s.juniat.11@ucl.ac.uk](mailto:s.juniat.11@ucl.ac.uk)

Our senses of hearing and balance rely on sensory hair cells in the inner ear. These cells are fragile and are easily lost, for example by ageing, exposure to loud noises or head trauma, resulting in hearing or balance impairment that is permanent.

The most common treatments for hearing loss are by use of hearing aids or cochlear implants, neither of which restore normal hearing. An alternative could be to replace the lost hair cells using regenerative approaches. This could be done by using drugs to induce cells inside the ear to replace the lost hair cells.

Hair cells are difficult to obtain because of their small numbers and their fragility, and so this PhD project aims to use stem cells to derive a hair cell epithelium. These cells can then be used to test drug candidates which can promote regeneration or protect hair cells from damaging agents.

This project is funded by UCL and AstraZeneca as part of the UCL Impact Award scheme.





## Research updates

### Designing a tacrolimus-eluting nanocomposite nerve guidance conduit

Ed Toll

[edtoll@gmail.com](mailto:edtoll@gmail.com)

Edward Toll is a Clinical Research Associate/MD(Res) student based jointly between the UCL Ear Institute and London Centre for Nanotechnology and Regenerative Medicine and is being supervised by Prof Martin Birchall and Prof Alex Seifalian.

Tacrolimus is an effective immunosuppressant and it also has potent neurotrophic effects (i.e. stimulates nerve growth). One of the challenges with peripheral nerve regeneration is ensuring that the growth of nerve fibres is directed towards the target muscles.

Nerve guidance conduits can be constructed from a variety of biomaterials to enhance peripheral nerve regeneration. Artificial materials are increasingly used for such devices, and a novel family of polymers known as polymeric nanocomposites have demonstrated excellent biocompatibility and biomechanical properties in other applications. We are exploring whether a biodegradable polymeric nanocomposite nerve conduit (BPNNC) that slowly releases tacrolimus will enhance peripheral and cranial nerve regeneration following nerve injury, with improved resultant motor function.

The manufacturing process and drug release profile of the nerve conduits is being optimised. Tests of viability using a Schwann cell line have demonstrated

cell compatibility of the BPNNC (fig 1).

Further tests of compatibility and efficacy will be conducted, following which early clinical trials will be conducted.

Additionally, the use of neural stem cell lines in combination with the BPNNC will be investigated using human neural stem cells which are currently in phase II clinical trials for the treatment of cerebrovascular events.

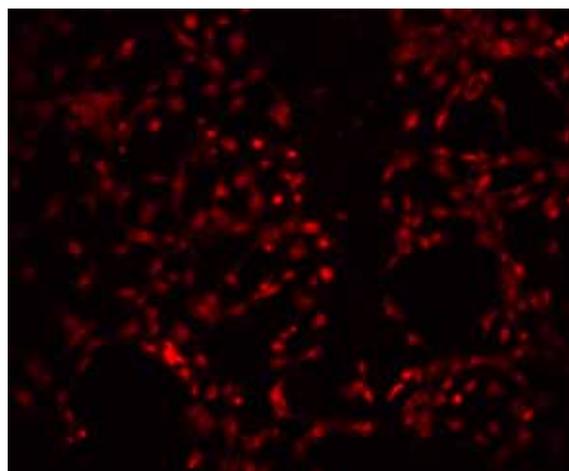


Figure 1: Propidium-Iodide staining of rat Schwann cells seeded onto tacrolimus-releasing nanocomposite polymer (POSS-PCL) (original magnification x40)

hAPPY  
hOLLIDAYS

### Submissions

If you would like to submit something for the next newsletter please email:

- [kate.faxen@ucl.ac.uk](mailto:kate.faxen@ucl.ac.uk) and
- [d.vickers@ucl.ac.uk](mailto:d.vickers@ucl.ac.uk)

by 28<sup>th</sup> February 2013 please.



### Research updates

#### Talks within the inner ear

**Piotr Sirko**

020 7679 8961

[piotr.sirko.10@ucl.ac.uk](mailto:piotr.sirko.10@ucl.ac.uk)

The sensory receptors of the auditory system are the hair cells. These lie within the organ of Corti in the cochlea of the inner ear. At their apical end hair cells possess actin containing membrane projections dubbed stereocilia. Sound vibrations deflect stereocilia opening mechanosensitive channels at their tips, allowing potassium to flood into the hair cell and depolarise it. This initiates a chain reaction. Calcium channels at the hair cells base open leading to release of neurotransmitter and transmission of sound stimuli further on to our brain.

One of the themes we study in our laboratory is the regulation of calcium channels present in hair cells. In many different tissues the properties of how much and how fast such calcium channels open can be extensively regulated by the cell. More importantly we can change their function by using pharmacological substances. Perhaps the most famous regulator of calcium channel function is Viagra.

In hair cells regulation of the calcium channels could not only have a large impact on our perception of sound, but could also protect the hair cells and the neurons they stimulate from damage induced by loud noise. Furthermore, it might play a role in the development of tinnitus, a persistent perception of “ringing”, which if pronounced can cause major discomfort.

The hair cells are surrounded by a lot of different types of “supporting” cells. These play an important role during the development and maturation of the organ of Corti. Later on it is suspected they take on an important role as regulators of the extracellular environment and help shield the hair cells from noise induced damage. Furthermore, there exists evidence for intimate crosstalk between sensory cells and supporting cells. However how this happens and to what extent remains a mystery. We are currently trying to elucidate this subject further by looking at how these cells react to extracellular signals and how damage of the sensory cells affects the supporting cells function.

Much still remains to be done before we fully understand hearing even only at the level of the cochlea. The benefits of this research go beyond hearing though. Many believe the future lies in merging silicon based technology with our own neural circuits to enhance the way we perceive reality and enhance our cognition. For many people who have lost their sense of hearing this is happening already, as new implants are designed to replace damaged hair cells by stimulating the neurons directly. Research on the function of the cochlea will help advance knowledge about cochlear implant design and thus in general about brain computer interfaces which might lead us one day to enhancing or otherwise augmenting our own perception of reality.





## Other news

### Dr Dan Jagger is awarded grant by Action on Hearing Loss

Congratulations to Dr Dan Jagger who's been awarded a grant by Action on Hearing Loss to fund a three year post doc position. Details on how to apply for the position can be found on the Ear Institute Website:

<http://www.ucl.ac.uk/ear/jobs>

### Prof Jonathan Ashmore presents at the RS memorial to Sir Andrew Huxley

You can watch Prof Jonathan Ashmore's lecture at the Royal Society Memorial to Sir Andrew Huxley online, his presentation starts 52 minutes in:

<http://royalsociety.tv/rsPlayer.aspx?presentationid=1068>

### Microtia research fund raising pledge

UCL Philosophy and Economics Alumna Ms Hana Thalova has just made a very generous gift to the UCL Ear Institute, supporting research into finding a new synthetic scaffold material for reconstructing the external ear of patients with Microtia, a condition describing people with underdeveloped ears. Her motivation comes from being a parent of a child with Microtia, and wishing to support the development of new and improved treatments for the condition. The research team headed up by Prof Martin Birchall at UCL is now looking into new materials and techniques to reduce the risks involved in using patients' own rib cartilages or the synthetic material Medpor, such as invasive surgery, scarring and infection.

Hana is very keen to raise further funds for the research, and if you wish to learn more please visit the website where you will also be able to make donations:

<http://www.ucl.ac.uk/ear/microtia>

## PhD Success for Dorothy Kuipers

We'd all like to congratulate Dr Dorothy Kuipers on her recent PhD success! Her thesis title is 'Imaging and modelling to investigate the tissue mechanics during cell death in a simple epithelium'. Dorothy has been a student on the 4-year PhD programme run by CoMPLEX and has been jointly supervised by Dr Jonathan Gale (UCL Ear Institute) and Dr Guillaume Charras (London Centre for Nanotechnology). Well done Dorothy!

## Other PhD news

Congratulations to Drs John Kelly, Susan Aylott and Jenny Loo who were all awarded their PhD this past year, and Deena Al-Mana, recently awarded PhD subject to confirmation from UCL Registry.

The number of students registered for research degrees at the Ear Institute continues to grow. This academic year eight new MPhil/MD Res students have registered for research degrees, bringing the number of research students to 33. We welcome Huriye Atligan, Lucile Belliveau, Panagiotis Dimitriadis, Nick Hamilton, Stephanie Juniat, Jane Mattley, Kinjal Mehta and Nish Mehta.

Over the course of 2012 seven PhD students upgraded from MPhil to PhD (Francis Ajiboye, Ghada Al-Malky, Stefano Cosentino, Miriam Gomez, David Greenberg, Marina Mat Baki and Joanna Ziff), with another five students expected to upgrade in January 2013 (Nicolas Barascud, Susanna Griffin, Peggy Lange, Anahita Mehta and Katherine Wood). A further 3 students (Warren Bakay, Karim Kabineh and Amal Sheiksulaiman (tbc)) are expected to upgrade in first quarter of 2013.





## BSc Student Joel Joseph was part of the London 2012 Olympic Games Opening Ceremony

Joel Joseph, one of our Year 4 Audiology students, took part in the hugely spectacular Olympic games opening ceremony viewed by an estimated one billion people worldwide!

He played one of Brunel's men in the industrial revolution part of the performance.

Joel said, "Being part of the opening ceremony was a privilege and a great honour. Being from East-London I was delighted to be selected for a role in the opening sequence. I was able to work with professional actors and dancers to create a great show for the world to see. It was one of the greatest spectacles that London has produced."



## Jennifer Linden promoted to Reader

We're thrilled to hear that Dr Jennifer Linden has been promoted to Reader! Congratulations!

## Double Congratulations to Jonathan Fishman

Since the last issue of All Ears, Jonathan Fishman has been awarded two prestigious awards!

First he received the MRC Centenary Award, which was launched this year to mark 100 years of the MRC, supporting the very best of its early career researchers to accelerate their research and career development. The award of £44,612 will serve as a top-up grant for his existing MRC Clinical Research Training Fellowship that was awarded last year for his project: "A tissue engineered approach to skeletal muscle regeneration and repair"

Jonathan also received the Royal Society of Medicine (RSM) Laryngology research prize this year and was subsequently short listed for and won the RSM-Wesleyan Young Trainee of the Year 2013! Five people were short listed from all the RSM specialty sections for the prize which is awarded annually for the most outstanding published paper reporting original research work by the principal author in the last year.

Jonathan gave his PhD research presentation to an audience at the Royal Society of Medicine and to a panel of judges that included Professors Sir Mark Wolpert and Sir Michael Rawlins.





**Stefano Cosentino, Torsten Marquardt and David McAlpine were awarded best conference paper at the ISSPA Conference**

At the 2012 conference on Information Science, Signal Processing and their Applications (ISSPA) held in Montreal in July, the three researchers from UCL Ear Institute and Quebec based collaborator Professor Tiago Falk, received the best paper prize for their work on the effect of reverberation on speech intelligibility of cochlear implant (CI) users concluding that a reverberation time as small as 300ms - e.g. found in a dry classroom - is enough to cause a drop of 30 percentage points in speech intelligibility.

Several dereverberation algorithms have been proposed and their performance will be evaluated via subjective tests on CI users, or via simulated CI-hearing softwares known as vocoders. Such testing, however, is time consuming, costly and often hindered by the high inter- and intra-subject variability. Another option is potentially available: the use of objective measures applied to the vocoded signal.

In this study, existing and newly-developed objective quality and intelligibility metrics, were applied directly to vocoded speech degraded by room reverberation. Eight objective speech intelligibility predictors (SIPs) were investigated which belonged to one of three categories: (1) non-intrusive (i.e. did not require a reference signal, aka blind) audio quality measures; (2) intrusive audio quality measures, and (3) intrusive speech intelligibility indexes. Different types of vocoders were also considered to take into account different CI device processing.

Experimental results showed that several intrusive quality and intelligibility measures were highly correlated with exponentially fit CI intelligibility data.

On the other hand, only a recently-developed non-intrusive measure (SRMR) showed high correlations.

This is particularly interesting; since non-intrusive metrics provide the advantage of not requiring a clean reference signal, they lend themselves nicely to intelligibility-aware speech enhancement algorithms.

Ideally, these measures could be implemented in real-time on a CI device, and guide speech enhancement algorithm towards optimal settings based on the acoustic degradations captured.

The results of this study also suggested that CI intelligibility may be accurately predicted via objective metrics applied to vocoded speech, and thus may reduce the need for expensive and time-consuming listening tests.





## Marie & Jack Shapiro Prize Winner 2012 announced as Dr Roland Schaette and Prof David McAlpine

The British Tinnitus Association (BTA) has presented the Marie & Jack Shapiro Prize, to clinical researchers Dr Roland Schaette and Professor David McAlpine for their paper 'Tinnitus with a Normal Audiogram: Physiological Evidence for Hidden Hearing Loss and Computational Model.' The prize and £250 cash was awarded at the charity's 19th annual Conference on 26 September 2012.

The Marie & Jack Shapiro Prize is given each year at the BTA Conference to the piece of published research, by a UK based author, 'most likely to result in improved treatment or public awareness of tinnitus,' that was published in the last calendar year.

Schaette and McAlpine's paper was one of eighteen shortlisted for the prize, making 2012 a record year in terms of the number of papers shortlisted. The judging panel was formed of the BTA's Professional Advisers' Committee. The judges considered that it is "a significant piece of research which illuminates a logical model of tinnitus generation and stability and gives an explanation for tinnitus without hearing loss."

Schaette and McAlpine's paper identified that in tinnitus patients with a normal audiogram – ie no recordable hearing loss – auditory brainstem responses show a reduced signal generated by the primary auditory nerve fibres whilst still showing a normal response of the more centrally generated signals. This provides direct physiological evidence of "hidden hearing loss".

## Guess the ear

Congratulations to the winner of last issue's prize of a box of chocolates, Matthew Holley from Sheffield University who correctly guessed that it was Dr Dan Jagger's ear pictured! It's on it's way!

Below is a picture of one of the Ear Institute's Principal Investigators' ears... but whose?

If you think you know then why not email [kate.faxen@ucl.ac.uk](mailto:kate.faxen@ucl.ac.uk) before 28<sup>th</sup> Feb 2013 to be entered into a prize draw. The winner will be announced in the next newsletter.



## Donate

Donations can be made to the Ear Institute from our website or via the following link:

[https://www.ucl.ac.uk/online-giving/giving-to?PROJECT\\_CODE=18](https://www.ucl.ac.uk/online-giving/giving-to?PROJECT_CODE=18)

Or make donations specifically for microtia research at the Ear Institute via this link:

[https://www.ucl.ac.uk/online-giving/giving-to?PROJECT\\_CODE=23](https://www.ucl.ac.uk/online-giving/giving-to?PROJECT_CODE=23)

