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Denys Wheatley
Editor

Walking on eggshells? Contribution of celebrities to the cancer scene

You may have interest in many aspects of medicine other than cancer, and have seen a book by Randy and Mason entitled "Stop Walking on Eggshells..." [1], regarding the way some people and even carers tread warily when dealing with people with mental disorders. The issue being raised is about the human habit reluctance to be open with others about difficult medical matters, and of the use of euphemisms. There was a habit in Victorian times of hiding away any mention issue related to death, and today we speak of someone "passing away" or "passing on". Is cancer still being an example of something about which many people simply do not want to deal with openly with other peoples? Is the stigma of having cancer declining, as it is slowly with mental health? The expression of treading warily has recently been used by Dermot Morgan's (Father Ted, a TV comedy) son Ben, diagnosed with multiple myeloma; however, he has decided that, rather than "walking on eggshells", he will be open and even quite blatant about his condition, to the point of joking about it. Maybe that is going a little too far, but it does suggest we might take a lighter view of one of our worst of diseases by accepting our mortality and coming to terms with it, along with all our relative and friends. We might then learn more about how to keep a positive attitude to coping with what Ben Morgan calls that most dreaded of disease.

The more that we hear and read about celebrities falling prey to cancer, the better. Although it becomes headline news when someone as internationally acclaimed as David Bowie dies of cancer, it tells the general public in no uncertain terms that the disorder can claim the lives of the rich and the poor, the celebrity and the recluse. The greater this exposure, the more we should all come to terms with cancer. Two years ago I broached this subject in an editorial "Cancer – Campaigns, Awareness and Education". Often the death of a loved one or the suffering of a "survivor" can lead to quite remarkable charitable acts whereby large amounts of money are raised that will undoubtedly support long-term research into cancer and greatly assist the care of those with it. One of the remarkable achievements has come from the tenor, José Carreras, who has so far raised 73 million euros for the Internal Leukemia Fund (ILF) since being diagnosed with the disease in 1988. We can think of many other campaigns from those which are quite small and particular to others that come closer to the scale of the ILF. The death of Bob Monkhouse (a UK top comedian) in 2003 took another approach, which was a campaign to help raise the awareness of all men to the possibility of developing prostate cancer on the basis "I died from it, but you don't have to". A more radical approach to prevention of cancer was taken by Angelina Jolie at 37 years of age to undergo a double mastectomy because of a putative 87% risk developing breast cancer, having been found to have the defective BRCA1 that runs in her family.

Victoria Wood, another British comedian (comedienne), like Bowie and quite a spate of other celebrities, recently died of cancer. The public pay more attention to these cases because the media make so much of them. There are large institutions in America, both hospitals and cancer research centres of excellence that were set up by wealthy benefactors, and much the same can also be found throughout the world. Those of us who work one way or another with cancer have to appreciate that we greatly benefit from this very generous funding that comes in from private sources or charities set up by individuals and other organisations, perhaps by celebrities in particular. This income far outweighs that being spent on any other disease. The contribution of celebrities also comes in the form of educating the public, in gaining more insight into cancer and becoming more aware of the need to take action rather than "sit on one's hands".

Other sectors of medicine are seeking much more funding. We now recognise that mental disorder is becoming a major problem in increasingly aging populations; it is much less straightforward in its treatment, requiring greater insight, much more time and a good deal of patience than many cancers. As we gain control over tumours of many different types and people survive longer as a result, one wonders whether in due course cancer funding will give way to other avenues of growing medical importance being supported to a greater extent by the public than is presently the case.

REFERENCES

1. Randy K and Mason P. *Stop Walking On Eggshells: Taking Your Life Back When Someone You Care About Has Borderline Personality Disorder*. New Harbinger; 2nd Revised edition, 2010. [ISBN-10: 1572246901]
2. Wheatley DN. *Cancer – Campaigns, Awareness and Education*. Editorial. Oncology News 2014;9(5).

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Cover image: UK Government acknowledges more must be done for brain tumour patients. See p 58 for further details.

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E: Patricia@oncologynews.biz
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Radium-223 for prostate cancer bone metastases: how research can change clinical practice

Prof Joe M O'Sullivan,
Professor of Radiation Oncology, Queen's University Belfast and Clinical Director, Northern Ireland Cancer Centre, Belfast, UK.

Correspondence to:
E: joe.osullivan@qub.ac.uk

The incidence of prostate cancer, the most common malignancy in UK men for many years, is rising. In the UK every year >40,000 men receive the diagnosis of prostate cancer and approximately 11,000 men will die from the disease. For many decades, prostate cancer was the poor relation to other cancers, in particular breast cancer, in terms of research funding, pharmaceutical industry investment (apart from castration therapies) and media interest. The reasons for this relative deprioritisation of prostate cancer are manifold, but probably include the fact that it mostly affects older men rather than breast cancer that affects younger women. However, there has been a remarkable and very welcome change in the past 20 years. There is now significant investment in prostate cancer research, the fruits of which are becoming clear with unprecedented improvements in the therapy. The results of a number of large academic randomised clinical trials have led to practice-changing developments in the treatment of prostate cancer. Of particular note are studies demonstrating significant improvements in the cure rate for locally advanced prostate cancer by a combination of radiotherapy and androgen deprivation [1], and life extension (survival) in patients diagnosed with advanced disease [2]. It has been an exciting period in drug development for the lethal variety of the disease, namely castration-resistant prostate cancer (CRPC), with six new life extending therapies licensed in the last 12 years. An excellent example of investment by pharma that has paid off in terms of new therapy is the bone-seeking radionuclide, Radium-223 (Xofigo ®, Bayer).

Bone-Seeking Radionuclides

Bone-seeking radionuclides are radioactive agents which accumulate following intravenous injection, either by direct mimicry of calcium (e.g. strontium-89, radium-223) or by virtue of attachment to a phosphate molecule (e.g. samarium-153 EDTMP, rhenium-186 HEDP). Because advanced prostate cancer has a strong predilection for spread to bone, with these metastases being characteristically associated with increased mineral activity along with the metastatic deposits, prostate cancer is an ideal disease to potentially benefit from these agents (Figure 1). Strontium-89 was the first bone-seeking radionuclide licensed in 1993 for use in metastatic prostate cancer. It is a calcium-mimetic agent that emits therapeutic β-rays. Samarium-153 EDTMP was the second bone-seeker to receive a license. Multiple randomised trials have demonstrated the benefit of these two agents in metastatic prostate cancer. There is level 1 evidence of pain responses in the order of 40-70% in men with symptomatic advanced metastasis to bone [3]. Randomised trial evidence is summarized in Table 1; all the studies evaluated the radionuclides as single agents given as a single intravenous injection, sometimes in combination with external beam radiotherapy (EBRT), and none of the trials were powered statistically for overall survival.

While attempts were made to improve the efficacy of the β-emitting radionuclides by increasing dose and intensity, the dose-limiting toxicity of bone-marrow suppression, in particular thrombocytopenia, proved insurmountable. There have also been attempts to enhance the effectiveness of β-emitting radionuclides by combination with chemotherapy and bone-marrow support. However overall the results have been disappointing [4].

While there remain enthusiasts for the use of β-emitting radionuclides, the toxicity, lack of overall survival benefit, and availability of numerous life-extending alternatives signaled the death knell of these agents in metastatic CRPC.

Radium-223

Apart from radium-223, another isotope (radium-226) was first described by Pierre and Marie Curie at the end of the 19th century. Radium-223 predominantly decays by the emission of α-particles, helium nuclei consisting of two protons and two neutrons, making them relatively massive in atomic terms compared to the β particle. They deposit significant amounts of DNA-damaging energy over a relatively short range (in the order of 10-20 cell diameters). A comparison of α- and β-particles is shown in Table 2. By mimicking calcium, radium-223 accumulates preferentially in bone, resulting in delivery of a powerful radiation source to the site of bone metastases. The short range of the energy deposition has the advantage of sparing the bone marrow from damage.

The use of the agent in patients with bone-metastases was first proposed by Oyvind Bruland and Roy Larsen in Oslo [5] and the first human trials commenced in 2005 in prostate and breast cancer. The first phase 1 trial in man

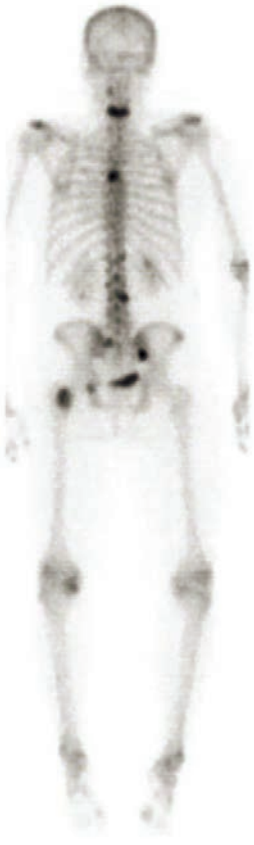

Figure 1.
Technetium-89 bone scan demonstrating typical pattern of bone metastases in a patient with prostate cancer

Table 1 RCTs of Bone Seeking Radionuclides				
Author	N	Tumour	Study design	Pain response
Porter (1993)	126	Prostate	XRT plus Sr-89 vs XRT plus placebo	CR 30-60%; longer time to new pain in Sr-89 patients
Oosterhof (2003)	203	Prostate	Sr-89 vs local XRT	CR ~35%
Quilty (1994)	284	Prostate	Sr-89 vs local XRT or HBI	PR 65%, Significantly less new pain sites
Buchali (1988)	49	Prostate	Sr-89 vs placebo	CR 37%
Lewington (1991)	32	Prostate	Sr-89 vs Sr-88 (placebo)	CR 38%
Serafini (1998)	118	Breast + prostate*	Sm-153 37 vs 18.5 MBq/kg vs placebo	PR 70%; CR 31%
Sartor (2004)	152	Prostate	Sm-153 37 MBq/kg vs placebo	CR 38%
Tian (1999)	105	Breast + prostate*	Sm-153 37 vs 18.5 MBq/kg	PR 83%
Resche (1997)	114	Breast + prostate*	Sm-153 37 vs 18.5 MBq/kg	PR 70%
Han (2002)	111	Prostate	Re-186 1295-2960 MBq vs placebo	PR 65%

Table 2 – Comparison of Alpha and Beta Emitters		
	Alpha emitters	**Beta emitters**
Example emitters	Radium 223	Strontium 89, Samarium 153
Relative particle mass	7000	1
Initial energy (MeV)	5–9	0.05–2.3
Range in tissue (μm)	40–100	50–12,000
Linear energy transfer (KeV/μm)	60–300	
Ion pairs/μm	2000–7000	5–20
DNA hits to kill cell	1–4	>1000
DNA damage	Irrepairable	Repairable

demonstrated an excellent toxicity profile for single infusions of multiple dose levels of radium-223, which led to a several of key phase 2 trials that evaluated multiple doses and a range of cycle numbers [6]. The most significant study was a phase 2 RCT in 64 patients that compared four cycles of radium-223 versus placebo in symptomatic CRPC metastatic to bone [7]. This study, while underpowered statistically for overall survival, demonstrated a clear trend for survival benefit and a low toxicity profile, thereby providing the necessary reassurance that a large RCT was warranted.

ALSYMPCA

ALSYMPCA was a randomised controlled, double-blind, trial comparing best standard of care combined with either six cycles of radium-223 administered as a single iv infusion of 50kBq/kg every four weeks for six months or six injections of placebo (normal saline). Patients were randomised 2:1 radium: placebo. The main eligibility criteria for the trial were a diagnosis of CRPC with at least two bone metastases visible on an isotope bone scan, and characteristic symptoms. A patient was considered symptomatic if, at a minimum, they required regular paracetamol. At the time of recruitment, the only life-extending therapy available was Docetaxel. Patients enrolled in ALSYMPCA therefore had to either have received Docetaxel or were considered unfit for it. Best standard of care could include any therapy deemed appropriate by the treating physician apart from cytotoxic chemotherapy or other radionuclides.

The primary endpoint of the trial was overall survival; the secondary endpoints included time to symptomatic skeletal event (SSE), safety, quality of life and biochemical response. In total, 921 patients recruited in Europe and North America were randomised in the trial. There was a significant improvement in overall survival for patients receiving radium-223, with a hazard ratio for death of 0.7 and an improvement in median survival of 3.6 months [8]. There was a significant delay of almost six months to first SSE for patients receiving radium compared to placebo. A good safety profile seen in the phase 2 trials was also evident in the ALSYMPCA trial, with the most significant toxicity being grade 3/4 thrombocytopenia in 6% of radium patients compared with 2% rate in the placebo arm. There was slightly more cases of diarrhoea in radium-treated patients, but this did not affect the difference in grade 3/4 toxicity compared to placebo.

These results led to the licensing in 2014of radium-223 for use in patients with symptomatic CRPC metastatic to bone.

Early Access Programme

Following the ALSYMPCA trial results and before the drug received a license, Bayer instigated an Early Access Programme (EAP) to facilitate access to radium-223. The European part of this programme was the largest, treating 696 patients. The EAP confirmed the overall survival and good toxicity profile seen in ALSYMPCA. It is also important for a number of reasons, in particular the fact that patients were not required to be symptomatic and the availability of other drugs including Abiraterone and Enzalutimide at the time of recruitment [9].

Patients were treated with open label radium-223, six cycles at 50kBq/kg and it was left to the investigator's discretion regarding concomitant use of other therapies e.g. Abiraterone and Enzalutiamide as well as supportive therapies, such as Denosomab or Zoledronic acid. Interestingly there

appeared to be a benefit in overall survival for patients receiving concomitant Abiraterone or Enzalutamide. While not altogether unexpected in view of the known survival benefit with these drugs, we unexpectedly saw a similar increased survival in patients receiving either Zoledronic acid or Denosomab. Neither agent has ever been shown to increase survival in CRPC. At the very least, the data my lead to new hypotheses and thus merit further investigation.

Conclusions and Future Directions

Radium-223 has opened up a new era in the use of molecular radiotherapy in metastatic CRPC, giving survival benefit at a relatively minor cost in terms of toxicity. In my view, there is a lot of potential to increase the efficacy of radium-223 by earlier use, prolonged or repeated courses, and in combination with other therapies, including new hormonal therapies and bone supportive drugs. Clinical trials are underway to address these matters. In Belfast, we have recently begun recruiting to a phase 1/2 trial men with de novo bone metastases from prostate cancer combining androgen deprivation therapy, radiotherapy to the prostate and pelvis using volumetric modulated arc therapy (VMAT), and six cycles of Radium-223. The trial, called ADRRAD, will evaluate the toxicity and feasibility of this combination before hopefully proceeding with a RCT.

References

1. Wolff RF et al. *A systematic review of randomised controlled trials of radiotherapy for localised prostate cancer.* EurEur J Cancer 2015 Nov;51(16):2345-67. doi: 10.1016/j.ejca.2015.07.019. Epub 2015;Aug 5.
2. James ND et al. *Addition of docetaxel, zoledronic acid, or both to first-line long-term hormone therapy in prostate cancer (STAMPEDE): survival results from an adaptive, multiarm, multistage, platform randomised controlled trial.* Lancet 2016 Mar 19;387(10024):1163-77. doi: 10.1016/S0140-6736(15)01037-5. Epub 2015 Dec 21.
3. Turner PG, O'Sullivan JM. *(223)Ra and other bone-targeting radiopharmaceuticals-the translation of radiation biology into clinical practice.* Br J Radiol 2015 Jun;88(1050):20140752. doi: 10.1259/bjr.20140752. Epub 2015 Mar 26. Review.
4. Brady D, Parker C, O'Sullivan JM. *Bone-targeting radiopharmaceuticals including radium-223.* Cancer J 2013 Jan-Feb;19(1):71-8. doi: 10.1097/PPO.0b013e318282479b.
5. Henriksen G1, Fisher DR, Roeske JC, et al. *Targeting of osseous sites with alpha-emitting 223Ra: comparison with the beta-emitter 89Sr in mice.* J Nucl Med. 2003 Feb;44(2):252-9.
6. Nilsson S et al. *First clinical experience with alpha-emitting radium-223 in the treatment of skeletal metastases.* Clin Cancer Res 2005; Jun 15;11(12):4451-9.
7. Nilsson S. *Bone-targeted radium-223 in symptomatic, hormone-refractory prostate cancer: a randomised, multicentre, placebo-controlled phase II study.* Lancet Oncol 2007;Jul;8(7):587-94.
8. Parker C et al. *Alpha emitter radium-223 and survival in metastatic prostate cancer.* N Engl J Med 2013;Jul 18;369(3):213-23. doi: 10.1056/NEJMoa1213755.
9. O'Sullivan JM et al. *Effects of concomitant use of abiraterone and/or enzalutamide with radium-223 on safety and overall survival in metastatic castration-resistant prostate cancer (mCRPC) patients treated in an international early access program (EAP).* ECC 2015; abstract 2561.

Meet the Editorial Team

British Neuro-Oncology Society

Dear Delegate

Welcome to the 2016 BNOS meeting.


Mr David Jellinek.

BNOS seeks to rotate its conference themes and give you the delegates the opportunity to be exposed to current 'hot topics' be they scientific, medical or nursing for brain tumours. This year's meeting programme has been primarily organised by Professor Susan Short, clinical oncologist assisted by her colleagues at the University of Leeds. The themes of the meeting are – immunotherapy focussing on recent T cell research, advanced diagnostic imaging, contemporary neurosurgery for brain tumours, the forthcoming molecular based WHO tumour classification system, along with a dedicated session exploring best contemporary nursing practice. We have attracted a wide range of International invited expert speakers not only from within the UK but also from Europe, the US and Canada. The opening 'Education day' will provide you with updates on immunotherapy – Professor Richard Vile; Mayo Clinic, USA, paediatric genomics – Professor Chris Jones; Institute Cancer Research, London UK, along with updates on brain metastases, stem cell and glioma biology, and a radiotherapy imaging technical session. The day closes with an invited plenary lecture from Dr Bernhard Radlwimmer, Heidleberg, Germany representing the German cancer research center. Dr Radlwimmer's research group have a specific interest in amino acid metabolism and glioma oncogenesis tying in with IDH mutation status and the enzyme BCAT1; overexpression of which contributes to aggressiveness of glioblastoma cells. The education day will conclude with a proffered paper session.

The body of the meeting follows a traditional format with alternating proffered paper sessions and invited lectures. There will also be a dedicated nurse's session led by Ingela Oberg on the Thursday afternoon in parallel with a basic science translational invited lecture by Professor Gilbertson from Memphis, US and a proffered paper session.

The welcome reception on Wednesday evening will be held in Leeds city museum with the Thursday evening conference dinner held in the Royal armories.

Enjoy the meeting!

Mr David Jellinek
President, BNOS

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Brain Tumour Research – the Research Centre Model

Dr Kieran Breen
is Director of Research at Brain Tumour Research which supports four dedicated centres of excellence across the UK.

Correspondence to:
E: Kieran@braintumourresearch.org

When it was established as a research-funding charity, Brain Tumour Research made a strategic decision to support Centres of Research Excellence within the UK rather than funding individual project and programme grants. These Centres were chosen following a strict peer review by international research experts. At the current time, the charity supports four Centres at the University of Portsmouth, Queen Mary University of London, Imperial College Healthcare NHS Trust (London) and Plymouth University Peninsula Schools of Medicine and Dentistry.

The charity is dedicated to funding scientific research into all types of brain tumour. The establishment of a secure long-term funding partnership underpin the key salaried positions within the centres. The researchers are thus freed from the limitations and frustrations of applying for one research project grant after another. Instead they are allowed to pursue the sustainable and continuous research so desperately needed if we are to achieve our vision of finding a cure for brain tumours. The establishment of the centres also stimulates the interaction between both basic scientists and clinicians which is vital for the translation of lab-based discoveries into new cutting edge treatments, technologies, diagnostics and other interventions and bring them forward into a clinical setting. In order to be effective the centres require substantial levels of sustained funding in order that they can thrive, attract the foremost talent and ultimately produce world-class research outputs.

One of the key challenges within the current UK research infrastructure is the sparsity of opportunities for new researchers to join the "academic ladder". Too often, we support promising postgraduate and postdoctoral researchers at the beginning of their careers. Because of the shortage of further opportunities in the area of brain tumour research, they are likely either to leave the country or exit from the neuro-oncology research space to other research areas for which more opportunities and support funding exist. The development of Brain Tumour Research-funded Research Centres of Excellence provides an infrastructure within which promising young scientists are provided with an opportunity to develop specialist brain tumour research expertise and knowledge. This will ultimately help them to realise their full potential including through the application for personal research Fellowships and ultimately for tenured positions. Another key component of the research Centre model is to stimulate more junior researchers to move between centres within the network and thus encourage and facilitate the cross-pollination of the very best thinking at the cutting-edge of brain tumour research.

The funding of Centres of Excellence stimulates the development of outstanding teams of collaborative researchers within both the academic and medical communities. This facilitates the development of long-term multidisciplinary strategic plans to explore new research avenues, that will bring us closer to that key breakthrough which the brain tumour world so desperately needs. This contrasts with, but also complements, the approach of developing one discrete project after another. Sometimes a long-term goal or a new field of research needs to be broken down into smaller parts, but that greater vision must be free to be held in the knowledge that it will be achieved.

Our Centres collaborate to form a powerful network with each other as well as with other research facilities, both within the UK and internationally. This stimulates the acceleration of brain tumour research development and it will have a real clinical impact for those suffering from brain tumours, both in the shorter and the longer terms.

But, there is a stark lack of funding available for research into the area of neuro-oncology. A recent report by the House of Commons Petitions Committee on "Funding for research into brain tumours" highlighted the real impact of a general lack of support for research in this area by successive Governments. The Governments have maintained the opinion that they have no role in making a decision of the specific areas of research that are funded but rather just to agree on an overall budget. The Committee however concluded that the Governments have "failed [brain] tumour patients" and "must put this right".

One of the key problems associated with the development of new and more effective therapies for brain tumours is the ability of drugs and other therapeutic agents to cross into the brain through the blood brain barrier. While some very effective drugs have been developed for the treatment of the more common cancers, these have not been demonstrated to be effective

for brain tumours. Therefore, while the five-year survival rates for breast and prostate cancers are over 80%, this rate is less than 20% for brain tumours. It is no coincidence that there is a correlation between clinical outcome and long-term research investment and this underlines neuro-oncology as an area of great unmet clinical need. The report concluded that the Government "should use its powerful influence on funding levels to send a clear message that brain tumour research is a major priority for the UK". This can be achieved by ensuring that there is "adequate support for young people who wish to pursue a career in brain tumour research". This is very much in keeping with Brain Tumour Research's aim of establishing and nurturing new research talent. The report also highlights that the fact that the majority of research funding in this area is derived from the voluntary sector, such as Brain Tumour Research. The Government must now play its role as long term research cannot be dependent purely on public fundraising.

The development of a research centre model can also help to overcome other research barriers that exist to prevent the development of a world-class neuro-oncology infrastructure within the UK. One obstacle is associated with tumour tissue collection and biobanking. It is vital that we obtain a better understanding of the process of tumour formation at a cellular level in order to be able to identify new drug targets and ultimately develop new and more effective drugs. Therefore, it is particularly important that the appropriate infrastructure is in place to make optimal use of the tissue samples as they become available, primarily following surgery. It has been reported that while 90% of patients would be keen for their tissue to be used for research following surgery, only 30% of patients have been given this opportunity. Some local procedures, and particularly those associated with ethical permission requirements, can have a significant impact on the process. An "opt in" approach, where patients are asked whether they would be willing to donate tissue following surgery, is currently used in the vast majority of centres. However, the introduction of an "opt-out" approach would simplify the process and lead to provision of more tissue for research and thus to acquisition of new knowledge to benefit patients. This would be particularly beneficial for the study of rarer tumours for which only a small number of samples exist and it is essential that we maximize their collection. So, the development of a harmonised process is required with local ethics approval mirroring that obtained at a national level through the National Research Ethics Service. It is agreed that the process of tissue donation is a sensitive one and the appropriate staff, including research nurses, should be available to provide advice and support. This model, funded by the National Institute for Health Research, is already in existence for whole brain donation.

A further barrier is the implementation of an appropriate technical framework in order to ensure consistency between collection centres. In some, for example, the tissue is used to derive cell lines that can be cultured and stored over a longer term. This requires very specific treatment of the tissue samples. The cell lines generated by Brain Tumour Research Centres of Excellence are available to other research centres throughout the country, again highlighting how the coordination of research centres at a national level can play a key role in the biobanking process. There is currently a coordinating centre (BRAIN UK Neurosurgical biopsy extension, BATON) which is hosted by the University of Southampton and funded by three charities Brain Tumour Research, Charlie's Challenge and Brainstrust (www.brain-uk.org). To date, 26 (out of a possible 30) Neuropathology Centres throughout the UK have opted to be part of this virtual centre. For each of the samples, a pathology report can be provided. Although the tissue samples are held locally at the point of collection, the national database held at Southampton is available to researchers in order to identify both the format and location of the samples. They can request these for research use. However, this is largely supported locally by existing staff and facilities, many of whom are already overstretched due to a general increase in routine clinical requirements. In order to maintain the BATON research model, it is important to develop the appropriate infrastructure which will require investment at a national level. This will include the appropriate local pathology and clinical support. This is another area where the Government can invest into an infrastructural element that will facilitate additional research into brain tumours. A model for the development of a brain bank network has been developed within the UK and this could be used as a model for brain tumour biobanking.

"While the five-year survival rates for breast and prostate cancer are over 80%, this rate is less than 20% for brain tumours"

While a chronic underinvestment in the area brain tumour research has been highlighted by the House of Commons Petitions Committee, this increased awareness has provided a window of opportunity within which the issue can be addressed. The support of the Brain Tumour Research Centres of Research Excellence play a key role in the development of a national network which will share research expertise and best practice. The Centres can also play a key role in the establishment and maintenance of national structures such as biobanking. But the Government must also appreciate that it has its role to play by consolidating the appropriate clinical, scientific and academic infrastructure which will allow brain tumour research to develop its full potential.

Meeting the needs of teenagers and young adults with cancer

Sam Smith
MSc, BSc, RN Child – Head of Nursing and Clinical Services at Teenage Cancer Trust.

Correspondence to:
E: media@teenagecancertrust.org

Age-appropriate cancer care – the story so far

The last 25 years has seen a radical shift in how the medical profession view and treat cancer patients aged 13-24. Teenage Cancer Trust has worked with the NHS and health professionals to ensure this patient group is recognised, and Teenage and Young Adult (TYA) cancer care has been established as a speciality in its own right.

Specialist and age-appropriate care is crucial to patient wellbeing. TYA cancer professionals acknowledge that teenagers and young adults tend to cope with the experience of cancer differently from older adults or children; they are in a rapid phase of development, changing physically and in cognitive, psychological and social behaviour.

Treatment at this age can have significant psychosocial and physical impact on wellbeing, from the point of diagnosis and often well beyond active treatment. Undergoing cancer treatment disrupts school life, career and educational plans, as well as relationships and social networks.

In an experience that can be bewildering, it is important that young people understand what is happening to them and feel involved in their treatment. Effective communication can help empower TYA cancer patients through their experience. When effective, TYA cancer care allows a young person to mature through their illness, while developing coping strategies and a sense of self.

Teenage Cancer Trust has so far addressed the needs of this patient group by providing specialist care within dedicated cancer units in NHS hospitals. The charity has 28 units in Principal Treatment Centres across the UK, where young people can be treated in an environment designed specifically for them. The charity also funds specialist nursing staff and Youth Support Coordinators who have specific expertise and experience in TYA cancer care.

The result is that young people receive specialist age-appropriate care and the opportunity to gain peer support through meeting other young people with cancer. In 2005, the National Institute for Clinical Excellence endorsed Teenage Cancer Trust's philosophy of care as best practice [1].

A gap in provision

The model of care based on Teenage Cancer Trust units has been crucial in developing the specialism and allowing age-appropriate services to evolve, and the model has begun to be adopted in other countries. However, across the UK, ~50% of young people do not have access to this specialist support. This is because in some regions fewer than half of young people diagnosed with cancer are notified to a Principal Treatment Centre [2]. Many teenagers and young adults are therefore treated only in local designated hospitals, where doctors and nurses are unable to offer age-appropriate support.

This gap in provision matters, especially given a current discrepancy in the care received by teenagers and young adults compared to older patients. This has been highlighted in all four National Cancer Patient Experience Surveys (NCPES). Particularly notable are the findings on how well treatments, tests and different types of cancer are explained – with young people significantly more likely to be left feeling uncertain or excluded [3]:

- 49% of 16-25 year-olds said they completely understood what was wrong with them when it was first explained to them, compared to an average among all patients of 74%;
- 7% of young people did not understand the explanation, compared to an average of 2%;
- 58% of young people felt involved in decisions about their treatment, compared to an average of 71%.

In 2014, the Teenage Cancer Trust commissioned patient experience experts, Experience Engineers, to analyse the unmet needs of a representative sample of young people with cancer. Building on the NCPES findings, this research identified a number of key priorities for young people:

- Support to keep life as normal as possible;
- Treatment from a consistent team of people, collaborating effectively;
- Honest, straightforward communication and information;
- Acknowledgement that young people need tailored care;
- Help to feel in control and clear about what to expect.

In order to meet these needs, regardless of where young people receive their cancer treatment, we have had to develop and extend the support we offer and our methods of working with the NHS. The resulting Nursing & Support Service model extends our current services beyond our units.

Reaching all patients with the new Nursing & Support Service

The Nursing & Support Service model involves Teenage Cancer Trust nursing staff and Patient Pathway Coordinators working within individual

Teenage Cancer Trust funds specialist nurses who give young people with cancer expert care, support and advice.

regions – at Principal Treatment Centres and local designated hospitals. Within the Nursing & Support Service model, staff seek to identify all young people with cancer locally. They then offer individual age-appropriate care and support across all hospitals and at young people's homes from the point of diagnosis.

The Teenage Cancer Trust experts who make up our Nursing & Support Service teams include:

- **Clinical Nurse Specialists**, who establish our outreach services, provide direct nursing support to young people and help to minimise the disruption of cancer treatment;
- **Lead Nurses**, who lead, develop and coordinate cancer services for young people within Principal Treatment Centres and local hospitals;
- **Nurse Consultants**, who help provide senior nursing expertise and support nationally and provide mentorship to our nursing workforce;
- **Head of Nursing and Clinical Services**, who provides professional leadership to all the national funded nurses and is responsible for the development of nursing for the organisation;
- **Multi-disciplinary/Patient Pathway Coordinators**, who work with NHS staff to identify young people who had been diagnosed with cancer outside Principal Treatment Centres, then put those young people in touch with our specialist staff;
- **Youth Support Coordinators**, who ensure young people with cancer can meet other teenagers and young adults who have the disease. They also organise social activities, offer emotional support and practical advice, and help young people to stay active and socialise.

We piloted the Nursing & Support Service in the North West of England, including the Principal Treatment Centre in Manchester (The Christie Hospital) and 18 designated hospitals across the region. A range of specialist staff were put in place to support young people wherever they were treated, both at hospital and at home. These staff included one Lead Nurse, two Clinical Nurse Specialists, two Youth Support Coordinators and a Multi-disciplinary Team Coordinator

The pilot was independently evaluated by the Centre for Children and Families Research at Coventry University ,led by Professor Jane Coad. Evaluation of the new service model found that it increased collaboration between the hospitals, and entirely changed the culture and understanding of young people's support and care needs.

We estimate that close to 100% of all young people newly diagnosed in the region are being reached. In addition to the reach of this pilot, we have also addressed the needs outlined by Experience Engineers, with the result that the right age-appropriate holistic care is now available to all young people with cancer in the region. The new service was recognised in 2015 by winning the Nursing Times HRH Prince of Wales Award for Integrated Care.

What is next for TYA cancer care?

To reach every young person diagnosed with cancer in the UK, Teenage Cancer Trust now needs to extend their networks right across the country. The Nursing & Support Service puts young people and their families at the heart of their care – and its success depends on strong relationships with NHS partners nationwide.

Over the coming years, we will be working with hospitals and regions across the whole of the UK to roll out the Nursing & Support Service. We are already working to raise the £80 million estimate we will need to make this happen by 2020, whilst maintaining our current services.

These plans fit well with NHS England's Five Year Forward View for the NHS [4]; core to this is a commitment to give patients more control of their own care. Similarly, the service also closely reflects the Independent Cancer Taskforce's 'Strategy for England 2015-2020', and in particular that strategy's focus on informed choice, patient-centred, holistic care and post-treatment support [5]. These principles are at the heart of Teenage Cancer Trust's new model of care, and pave the way for a future where patient-centred care is at the heart of our healthcare system.

Sam Smith will be hosting the 1st Adolescent and Young Adult (AYA) Global Cancer Congress at the Assembly Rooms in the centre of Edinburgh from 5 to 7 December, 2016. To register for a place and download the programme, please visit www.teenagecancertrust.org/conference.

References

1. National Institute for Health and Clinical Excellence (2005), *Guidance on Cancer Services: Improving Outcomes in Children and Young People with Cancer.*
2. O'Hara C, Khan S, Flatt G. *North West Cancer Intelligence Service (2011), How many teenagers and young adults with cancer are being referred to specialist care in England?*
3. Department of Health (2010, 2012, 2013, 2014), *National Cancer Patient Experience Survey.*
4. NHS England (2014), *Five Year Forward View.*
5. Independent Cancer Taskforce (2015), *Achieving world-class cancer outcomes: a strategy for England 2015;2015-20.*

Neutral Argon Plasma in Gynaecologic Oncology Surgery

Dr Thumuluru Kavitha Madhuri,
Senior Clinical Fellow, Department of Gynaecological Oncology, Royal Surrey County Hospital NHS Foundation Trust, Faculty of Health and Medical Sciences, University of Surrey, Guildford, UK.

Mr Simon Butler-Manuel,
Consultant Gynaecological Oncologist, Department of Gynaecological Oncology, Royal Surrey County Hospital NHS Foundation Trust, Guildford, UK.

Correspondence to:
Dr Madhuri
E: docmadhuri231@gmail.com

Argon plasma is a highly energised form of the noble gas, which is very unstable that quickly changes back to its stable form. In doing so it emits light, heat and kinetic energy that are extremely rapidly dissipated. Technology developed on this basis has for many years be used to accurately adjust the position of satellites in space using small precision jets, and has now been miniaturised for use in surgery. The Plasmajet® (PJ) system consists of a console with a service trolley (Figure 1) and disposable hand-pieces (Figure 2). It is fully CE marked by the Notified Body, KEMA (0344), and has been cleared for marketing in the USA by the FDA through the 510(k) route.

The PJ produces a fine jet of hot argon plasma by passing a jet of pressurised gas through a small aperture and a series of bipolar electrodes. The resulting highly energised and unstable argon plasma emerges as a fine jet that can be used for very precise work on tissues, including cutting, surface vaporisation, and the desiccation on both soft and hard tissues. The light emitted illuminates the operative field and helps to indicate the position and depth of the jet. The kinetic energy released is sufficient to blow away any fluid or debris from the tissue surface, allowing wet or bleeding surfaces to be treated effectively, and also facilitating tissue plane separation. Small capillaries are cauterised as they are cut, leaving a very dry bloodless operative field. These properties are particularly useful in cases pre-treated with chemotherapy, where there is often distortion of the anatomy and dense fibrosis, or cases repeat surgery. The thermal energy produced by the argon plasma also has unusual properties due to the rapid loss of energy from the particles within the plasma; thus the resulting tissue effects are superficial and lateral thermal effects are minimised. Typical lateral heat spread is 15 microns, which is ~10% of that generated by most electrosurgical devices. It is therefore a very promising surgical tool for ablation of surface tumour nodules, and this property has been used in the treatment of advanced stage ovarian cancer as well as benign endometriosis

The PJ device was initially introduced in gynecological surgery, being suitable for procedures in both benign (Table 1) and oncology conditions (Table 2) [1]. This is due to its inherent ability to cut, coagulate and vaporise, depending on the power settings and duration of use.
In surgery related to reproductive medicine, particularly for women with endometriosis and ovarian endometriomas, the use of the PJ device for ablative techniques rather than cystectomy reduced destruction of ovarian reserve, with improved fertility as a consequence [2].

Figure 1. The device console with the foot pedal

Figure 2. The hand piece with each coloured portion of the light having an individual function of cutting, ablating and coagulating from orange to dark blue respectively.

The PJ device has been used in other specialties as well including bariatric surgery, thoracic, liver and colorectal surgery. It has been introduced in colorectal surgery [3], where it shows very promising results for adhesiolysis, particularly in inflammatory bowel disease or any repeat surgical dissections; and it appears to be of use for lung resection in thoracic surgery because it seals the alveolae as it cuts through the lung tissue. The PJ has been explored in hepatic resections, where it has a definite place [4]. In bariatric surgery, it has been found to reduce post-operative complications in procedures, such as abdominoplasty where the wide surface area of dissection results in seroma and hematoma formation [5].

Our experience with the PJ in Guildford has been developing since 2008, where initially it was used for simpler benign indications [1]. Evidence now suggests that it can be significant in reducing the side effects of lymphocyst and lymphedema formation following groin node dissection as part of treatment for gynecological malignancy. We have pioneered the use of the PJ device in vulvar cancer for bilateral groin node dissection following success in a patient that gave positive results [6]. It appears to be a useful

Table 1: Some Applications of PJ in Benign Gynecological Surgery	
Vulva dysplasia (VIN)	Ablation
Vulval warts	Excision
Uterine myomas	Myomectomy
Ovarian cysts	Ablation rather than cystectomy to preserve ovarian function
Tubo-ovarian disease	Ovarian cystectomy
	Adhesiolysis
	Tubal surgery
Endometriosis	Ablation and excision of endometriotic nodules

Table 2: Principal Indications of PJ in gynecological oncology	
Ovarian Cancer	Diaphragmatic stripping
	Node dissection
	Omentectomy
	Excision and ablation of tumour nodules
	Peritoneal stripping
	Tumour ablation on viscera (liver, bowel serosa)
Vulvar cancer	Groin node dissection
	Sealing of lymphatics

adjunct in achieving complete cytoreduction in ovarian cancer surgery, thereby improving survival [7]. We are also assessing the device in achieving complete cytoreduction in surgery of ovarian cancer [8]. It seems to be particularly useful in bowel surgery where a reduction in the number of stoma rates has been noted because one can evaporate tumour nodules from the bowel surface (Figure 3); well-designed studies with long-term follow up data are required to clarify its role.

Like any new technology, the PJ has advantages and disadvantages. While it may not be useful in every indication, it has a role in both open and minimally invasive surgery, and should be a very useful adjunct to every surgeon's techniques.

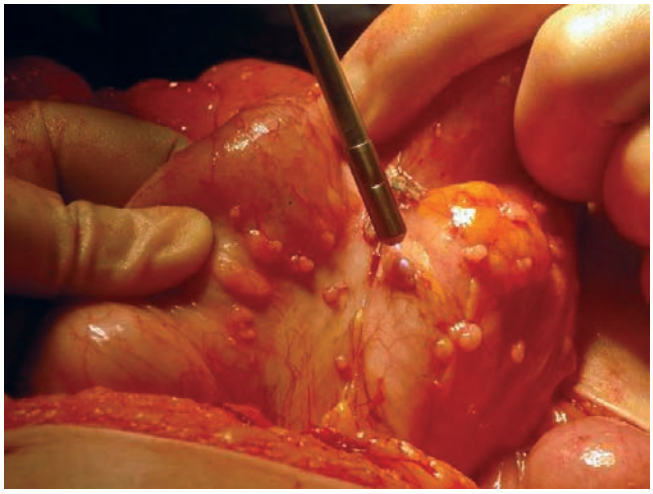


Figure 3. Vaporisation of tumour nodules from bowel surface.

References

1. Madhuri TK, Papatheodorou D, Tailor A, et al. *First clinical experience of argon neutral plasma energy in gynecological surgery in the UK.* Gynecol Surg 2010:7(4):423-5.
2. Roman H, Quibel S, Auber M, et al. *Recurrences and fertility after endometrioma ablation in women with and without colorectal endometriosis: a prospective cohort study.* Hum Reprod 2015 Mar;30(3):558-68.
3. Chan CL, Hotouras A, Chaudry O. *The Use of PlasmaJet as a Novel Technique for Tissue Dissection in Complex Abdominal Surgery.* Dis Colon Rectum 2015 Jul;58(7):e402-3.
4. Gugenheim J, Bredt LC, Iannelli A. *A randomized controlled trial comparing fibrin glue and PlasmaJet on the raw surface of the liver after hepatic resection.* Hepatogastroenterology 2011 May-Jun;58(107-108):922-5.
5. Iannelli A, Bafghi AR, Patrono D, et al. *Use of PlasmaJet system in patients undergoing abdominal lipectomy following massive weight loss resulting from bariatric surgery: early experience.* Obes Surg 2006;16(11):1504–1507.
6. Madhuri TK, Tailor A, Butler-Manuel S. *Use of neutral plasma coagulation in groin node dissection for vulvar malignancy: a novel technique.* Cancer Manag Res 2011;3:253-5.
7. Butler-Manuel S, Lippiatt J, Madhuri TK. *Interval debulking surgery following neo-adjuvant chemotherapy for stage IVB ovarian cancer using neutral argon plasma (PlasmaJet™).* Gynecol Oncol 2014 Dec;135(3):622-3.
8. http://www.isrctn.com/ISRCTN26261491.

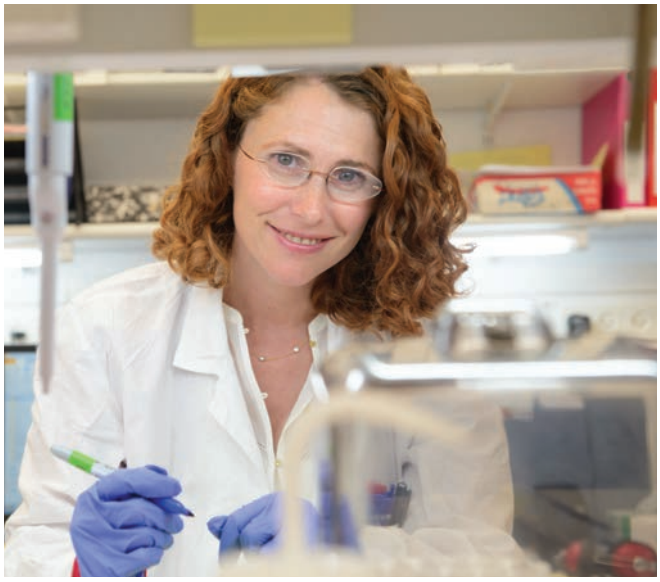
Announcing the winner of The Pezcoller Foundation – EACR Cancer Researcher Award

The EACR and the Pezcoller Foundation are delighted to announce that the Pezcoller Foundation – EACR Cancer Researcher Award will be awarded to Professor Yardena Samuels (Department of Molecular Cell Biology and Director, Ekard Institute for Cancer Diagnosis Research, MICC, Israel).

The Samuels laboratory uses various sequencing approaches to identify the genetic changes that underlie melanoma. Once these mutations are identified, her group focuses on characterising the biochemical, functional, and clinical aspects of the most highly mutated genes.

The Pezcoller Foundation – EACR Cancer Researcher Award celebrates academic excellence and achievements in the field of cancer research. The award is presented biennially to a researcher of excellence with no more than 15 years post-doctoral experience.

Professor Samuels will give the Pezcoller Foundation – EACR Cancer Researcher Award Lecture at the EACR24 Congress in Manchester, 9-12 July 2016 and receive an unrestricted honorarium of €10,000.



Professor Yardena Samuels.

Blue Faery grants liver cancer research award to Dr Alan Venook

Blue Faery: The Adrienne Wilson Liver Cancer Association is proud to announce the sixth annual Blue Faery Award (BFA) for Excellence in Liver Cancer Research. Primary liver cancer, also known as Hepatocellular Carcinoma (HCC), is the second leading cause of cancer deaths worldwide. Blue Faery created the award to recognize medical professionals who develop innovative research in the fight against HCC, which has no cure.

This year's recipient of the Blue Faery Award is Dr Alan Venook, the leader of the gastrointestinal oncology clinical program and the Madden Family Distinguished Professor of Medical Oncology and Translational Research at the University of California, San Francisco. A nationally recognized expert in colorectal and liver cancers, Dr. Venook has published more than 70 original articles, chapters or books dealing with gastrointestinal malignancies. He has chaired the Scientific Program for ASCO 2015 and the National Cancer Institute's (NCI) Hepatobiliary Task Force. He is a member of NCI's Gastrointestinal Cancer Steering Committee and currently chairs the Gastrointestinal Committee of the Alliance for Clinical Trials in Oncology, where he oversees an extensive clinical trial portfolio.

Andrea Wilson started Blue Faery in honor of her sister Adrienne, who died of HCC only 145 days after her diagnosis at the age of 15. Blue Faery announces the recipient of the BFA on April 8 — Adrienne's birthday. She would have been 30 years old this year. Dr. Venook will receive $3,000 and a custom Blue Faery plaque to commemorate his achievement.

Founded in 2002, Blue Faery is the only nonprofit organization in the United States solely devoted to fighting HCC. The mission of Blue Faery is to prevent, treat and cure primary liver cancer, specifically Hepatocellular Carcinoma, through research, education and advocacy. Blue Faery has developed an HCC patient education brochure for liver cancer patients, their families and their healthcare providers. The FREE brochure, which has been translated into Chinese and Spanish, has been distributed in over 35 treatment centers across the nation.

Dr Alan Venook.

For more information on how to apply for the BFA, visit www.bluefaery.org.
To learn more about liver cancer, sign up for the Blue Faery quarterly e-newsletter.

The Johns Hopkins Greenberg Bladder Cancer Institute awards $500,000 in research grants to ten bladder cancer projects

A total of $500,000 has been awarded to ten bladder cancer projects by The Johns Hopkins Greenberg Bladder Cancer Institute. A study of obesity and related metabolic changes on bladder cancer incidence and deaths, and a plan to use stem cells to grow novel urinary tubes are the research projects awarded funding. Awardees include researchers from University of Leeds, UK to the University of Chicago to the Johns Hopkins School of Medicine.

The institute is a collaborative initiative of the Johns Hopkins Kimmel Cancer Center, the Brady Urological Institute, the Bloomberg School of Public Health and the School of Medicine, aims to develop new clinical strategies for combating bladder cancer through intensive, collaborative and innovative research, awards individual grants of up to $50,000 each to encourage young investigators to take on research that advances the science and treatment of bladder cancer and to leverage existing resources and expertise. The grants, renewable for up to three years, are awarded in the following areas: genetic and epigenetic approaches; immunotherapy; targeted therapies; patient care, prevention and screening; and pioneering studies. This is the second year of grant awards for the institute.

The awardees include six new projects and four renewed projects. The new recipients and their projects are:

- **Margaret Knowles**, PhD, professor of experimental cancer research at the University of Leeds, United Kingdom, for "Characterization of Gender-Related Mutation of KDM6A/UTY in Bladder Cancer". Knowles will look to identify gender-related molecular features of bladder cancers and develop relevant in vitro models. Her group already has identified mutations in the tumour suppressor gene KDM6A in more than one-half of low-grade stage Ta bladder tumours, and data suggest that bladder cancer in females has distinct epigenetic features. Now, she will conduct a more comprehensive analysis of mutations and alterations in KDM6A in tumours of all grades and stages from both men and women, and in a related gene, UTY, in males.

- **Corinne Joshu**, PhD, MPH, assistant professor of epidemiology at the Johns Hopkins Bloomberg School of Public Health and assistant professor of oncology at the Johns Hopkins Kimmel Cancer Center, for "Investigating the Influence of Obesity and Metabolic Perturbations on Bladder Cancer Risk".

- **Anirudha Singh**, PhD, assistant professor of urology at the Johns Hopkins University School of Medicine, for "Regenerative Urology: From Micro Ureters to Mini Bladders".

- **Alexander Baras**, MD, PhD, assistant professor of pathology and urology at the Johns Hopkins University School of Medicine, for "Characterization of Neoadjuvant Chemotherapy Response Predictors and the Immunological Microenvironment in Muscle Invasive Urothelial Carcinoma of the Bladder".

Margaret Knowles.

- **Shawn E Lupold**, PhD, associate professor of urology, oncology, and radiation oncology and molecular radiation sciences at the Johns Hopkins University School of Medicine, for "Identification and Characterization of Genetic Factors That Contribute to Exceptional Therapeutic Responses in Locally Advanced Bladder Cancer".

- **Michael Johnson**, MD, instructor of urology at the Johns Hopkins University School of Medicine, for "Rapid Lymphocyte Enrichment and Expansion Using Tumour-Specific Neoantigens in Urothelial Cell Carcinoma".

- **Trinity Bivalacqua**, MD, PhD, associate professor of urology, surgery and oncology at the Johns Hopkins University School of Medicine and director of urologic oncology at the Johns Hopkins Kimmel Cancer Center, for "Nanoparticle Approaches to Improving the Immunologic Response to Intravesical Therapy for NMIBC (Nonmuscle-Invasive Bladder Cancer)".

- **George Netto**, MD, professor of pathology, urology and oncology at the Johns Hopkins University School of Medicine, for "TERT-Promoter Mutations Assay for Early Detection and Monitoring of Bladder Cancer".

- **Peter O'Donnell**, MD, assistant professor of medicine at the University of Chicago, for "Genetic Diversity of T Cell Receptors Impacting Anti-Tumour Effects in Bladder Cancer".

- **Armine Smith**, MD, assistant professor of urology at the Johns Hopkins University School of Medicine, for "Pilot Study of TRAIL and BCG Combination Therapy in Bladder Cancer".

Applications will be made available online this summer for the next round of funding, Isaacs says. The URL is http://pilotprojects.onc.jhmi.edu.

Eminent cancer researchers elected to Royal Society Fellowship

Two world-leading scientists at The Institute of Cancer Research, London, have been made Fellows of the Royal Society – one of the greatest honours in UK science.

Professor Paul Workman (pictured top), Chief Executive of the ICR, and Professor Jonathon Pines (pictured bottom), Head of Cancer Biology, have been elected for their outstanding contributions to cancer research.

Election to the Royal Society Fellowship is one of the highest accolades a researcher can receive and recognises individuals for their scientific excellence and substantial contributions to research endeavours.

The election of two Fellows in one year is also a reflection of the quality of the ICR's research – ranging from the fundamentals of cancer biology, led by Professor Pines, to the discovery of new treatments, which is Professor Workman's expertise.

Professor Workman is the ICR's Chief Executive. He has been a pioneer in the field of targeted cancer drugs, is a passionate advocate of personalised molecular medicine, and is an enthusiastic practitioner of multidisciplinary cancer drug discovery and team science.

He has successfully built drug discovery teams in the academic, pharmaceutical and biotechnology sectors, and has driven the discovery of numerous drugs and chemical probes, including inhibitors of protein kinases, PI3 kinase and the molecular chaperone Hsp90.

Professor Workman said: "This is a wonderful recognition of the work of members of my lab team at the ICR, together with the contributions made by numerous colleagues and collaborators who have worked with me over my career. I'd also like to thank the admin and facilities staff whose contribution to science often goes unrecognised, and all those who have funded and supported the ICR and my own research. Most importantly, thanks to my wife and family for their invaluable support.

"I'm also very happy to see this recognition of the science of drug discovery, and the importance of multidisciplinary team science."

Professor Pines is Head of the ICR's Division of Cancer Biology. His research focuses on understanding how cells divide – in particular how the machinery that controls cell division is regulated in different parts of the cell over time.

He was the first to clone cyclin B – an essential protein that regulates how cells divide – and has rigorously explored how cells regulate cell division to find new ways to target cancer.

Professor Pines said: "I am deeply honoured to be elected to the Royal Society. Reflecting on this, I am exceedingly grateful to my mentors who set me on my scientific path and continued to offer their critical but generous guidance, my colleagues who helped and encouraged me to strike out in new directions, and my team, whose achievements this honour recognises. It also highlights the vital contribution that fundamental science makes to cancer research."

Luke Johnson, Chairman of the ICR, said: "These two elections to the Royal Society Fellowship in one year highlight outstanding scientific achievement, and are an endorsement of the ICR's excellence across the breadth of cancer research, from fundamental cancer biology to the discovery of novel cancer treatments.

"Both of these scientists are driving forces behind our next research strategy, Professor Workman as our Chief Executive and Professor Pines as the leader of our programme of fundamental cancer research. It bodes well for our aim to exploit our knowledge of cancer biology to create innovative treatments for patients."

The Fellowship of the Royal Society is made up of the most eminent scientists, engineers and technology experts across the UK and the Commonwealth. Each year, the Royal Society elects up to 52 new Fellows chosen from all sectors of science.

The ICR now has four Fellows of the Royal Society among current staff, with Professor Mel Greaves, Director of the Centre for Evolution and Cancer, and Professor Julian Downward, who has a joint post between the ICR and The Francis Crick Institute, being the others. In addition, Professor Peter Rigby, the ICR's Professor Emeritus of Developmental Biology, is also a Fellow.

Professor Paul Workman.

"This is a wonderful recognition of the work of members of my lab team at the ICR, together with the contributions made by numerous colleagues and collaborators who have worked with me over my career"

Professor Jonathon Pines.

"I am deeply honoured to be elected to the Royal Society. Reflecting on this, I am exceedingly grateful to my mentors who set me on my scientific path and continued to offer their critical but generous guidance..."

Are you organising an annual meeting or conference which you would like to tell our readers about?
Or would you like to write a report on a meeting or conference of particular interest?
If so, contact Patricia McDonnell at Oncology News on T/F: +44 (0)288 289 7023, E: patricia@oncologynews.biz

11th Palliative Care Congress: Rediscovering Holism – the future for palliative care

Date: 9-11 March 2016. **Venue:** Glasgow, UK.

The Eleventh Palliative Care Congress took place in Glasgow at the Scottish Exhibition and Conference Centre from the 9th-11th March. The theme of the Congress was 'Rediscovering Holism' and aimed to look at the various aspects involved in caring for and treating those with life limiting illnesses. The Congress attracted its largest number of delegates to date, with delegates travelling from as far afield as New Zealand, the United Arab Emirates, Saudi Arabia and China, proving that the speakers and theme of Congress struck a chord with many people. There was a real buzz of interest, excitement and much comment and discussion was raised by Professor Arthur Frank, our headline speaker. Professor Frank challenged us to view illness as part of a person's on going story and to look at the way a person may respond to illness. Such responses and 'stories' are not in and of themselves wrong or bad but demand different things form the people caring for them.

The Twitter feed saw one delegate stating that there was so much to … 'think and aspire to'.

Revd Dr John Bell challenged us to think of patients as having a spiritual aspect, however they might describe it and Dr Nigel Warburton encouraged us to look at what philosophers could teach us about facing death. Baroness Onora O'Neill told us we did not need to be ethical superheroes but trustworthy doctors and Professors Sam Ahmedzai and David Clark encouraged us to look for more evidence for what we did.

With the very best in research and speakers who made us think – Congress this year was memorable both for its content and its location. All in all, the Chair ended up being a very happy man!

Derek Willis,
Chair, The 11th Palliative Care Congress.

To have your event listed in the Oncology News diary, E: patricia@oncologynews.biz by June 4th 2016.

2016

May

NEW
13th International Conference of the International Mesothelioma Interest Group
1-4 May 2016; Birmingham, UK
W: iMig2016.org

UK Gynaecological Brachytherapy Forum
5 May 2016; Manchester, UK
E: education.events@christie.nhs.uk
W: www.christie.nhs.uk/school-of-oncology/education-and-training.aspx

NEW
Foundations Oncology Skills for Nurses new to working in Paediatric and Adolescent Cancer Care
5-6 May 2016; London, UK
E: conferenceteam@rmh.nhs.uk
T: +44 (0)20 7808 2921
W: www.royalmarsden.nhs.uk/studydays

NEW
Risk Reducing Strategies (RRS) ORBS Iceland 2016
5-6 May 2016; Reykjavik, Iceland
www.orbsmeetings.com

NEW
BGCS Annual Scientific Meeting
12-13 May 2016; Birmingham, UK
http://bgcsconference.com/

NEW
BAHNO Annual Scientfic Meeting
13 May 2016; London, UK
BAHNO Secretariat
T: 01730 813700
E: secretariat@bahno.org.uk
W: www.bahno.org.uk

Biological Basis of Cancer: Medical Physics
16-20 May 2016; Manchester, UK
E: education.events@christie.nhs.uk
W: www.christie.nhs.uk/school-of-oncology/education-and-training.aspx

NEW
Radiographer Digital Breast Tomosynthesis Study Day
18 May 2016; Nottingham, UK
W: www.nuh.nhs.uk

Advances in Nutritional Care of the Cancer Patient
18 May 2016; London, UK
E: conferenceteam@rmh.nhs.uk
T: +44 (0)20 7808 2921
W: www.royalmarsden.nhs.uk/studydays

NEW
Applied therapeutics for palliative medicine: An intensive update for consultants, other senior doctors and senior nurses
20 May 2016; London, UK
W: www.rsm.ac.uk

NEW
The Emergency Management of Cancer Patients
24 May 2016; Liverpool, UK
Joanna Henderson
E: joanneh@liverpool.ac.uk
T: +44 (0)151 795 4355

NEW
Targeted Treatments for Breast Cancer
24 May 2016; Manchester; UK
E: education.events@christie.nhs.uk
T: +44 (0)161 918 7409

NEW
Myeloma Academy Roadshows – doctors
25 May 2016; Edinburgh, UK
E: academy@myeloma.org.uk
T: +44 (0)131 557 3332
W: myeloma-academy.org.uk

NEW
ESSO Course on Diagnosis and Treatment of Pancreatic NeuroEndocrine Tunours (PNETs)
26-27 May 2016; London, UK
E: ana.galan@essoweb.org

Paediatric Neuro-Oncology Study Day Patient
26 May 2016; London, UK
E: conferenceteam@rmh.nhs.uk
T: +44 (0)20 7808 2921
W: www.royalmarsden.nhs.uk/studydays

NEW
Myeloma Academy Roadshows – nurses
26 May 2016; Edinburgh, UK
E: academy@myeloma.org.uk
T: +44 (0)131 557 3332
W: myeloma-academy.org.uk

June

NEW
5th Introductional course to Head & Neck Surgery
2-4 June 2016; Utrecht, the Netherlands
W: www.umcutrecht.nl

17th International Symposium on Pediatric Neuro-Oncology (ISPNO)
12-15 June 2016; Liverpool, UK
http://ispno2016.com/

NEW
Radiographers Post Graduate Award in Mammography
13-16 June 2016; Nottingham, UK
W: www.nuh.nhs.uk

NEW
Cancer screening: Making the right choices
14 June 2016, Cardiff, UK
W: www.rsm.ac.uk

NEW
Ovarian cancer, the Leah Lederman lecture and Sylvia Lawler prize meeting
15 June 2016; London, UK
W: www.rsm.ac.uk

NEW
IX Congress of Oncologists and Radiologist from the ex-USSR countries
15-17 Jun 2016; Belarus, Minsk
W: www.cis-oncology2016.org/

NEW
Radiologists Specialist Course
16-17 June 2016; Nottingham, UK
W: www.nuh.nhs.uk

NEW
RCOG World Congress 2016
19-22 June 2016; Birmingham, UK
W: http://rcog2016.com/

NEW
The transition from children's to adult services for young people with life-limiting illnesses
24 June 2016; Birmingham, UK
T: +44 (0)1489 565 475
E: sales@compleatconference.co.uk
W: www.apmonline.org/events

NEW
WIN Symposium 2016
27-28 June 2016; Paris, France
www.winsymposium.org/

NEW
British Neuro-oncology Society 2016
29 June -1 July 2016; Leeds, UK
W: http://www.bnos.org.uk/

July

NEW
7th International Workshop on Advances in the Molecular Pharmacology and Therapeutics of Bone and other Musculoskeletal Diseases
2-5 July 2016; Oxford, UK
W: www.molpharmworkshop.org

NEW
Beatson International Cancer Conference
3-6 July 2016; Glasgow, UK
W: www.beatson.gla.ac.uk/conf

NEW
Liverpool Hands-on Transoral Laser Microsurgery for Head & Neck Cancer course
4-5 July 2016; Liverpool, UK
E: shonagh.nugent@aintree.nhs.uk

Targeted Treatments of Haematological Cancers
5 July 2016; London, UK
E: conferenceteam@rmh.nhs.uk
T: +44 (0)20 7808 2921
W: www.royalmarsden.nhs.uk/studydays

NEW
Oncoplastic Breast Surgery and ADM Reconstruction
7-9 July 2016; London, UK
E: PA-surgicaloncology@kcl.ac.uk
T: +44 (0)207 188 6380

NEW
The Christie Advanced Radiotherapy Summer School
11-14 July 2016; Manchester; UK
E: education.events@christie.nhs.uk
T: +44 (0)161 918 7409

Trachaeostomy Study Day
18 July 2016; London, UK
E: conferenceteam@rmh.nhs.uk
T: +44 (0)20 7808 2921
W: www.royalmarsden.nhs.uk/studydays

NEW
BACR & ECMC Joint Meeting, Therapeutic interventions for cancer prevention – the way forward
18-19 July 2016; Bristol, UK
http://bacr.org.uk/events/30

NEW
UK Breast Cancer Research Symposium 2016
22–23 July 2016; London, UK
www.breastcancerconference.org

August

Managing Complex Lymphoedema (Level 4 and M)
29 August 2016; Glasgow, UK
Margaret Sneddon
T: +44 (0)141 330 2072
E: lymph@glasgow.ac.uk

September

NEW
Future horizons in lung cancer
1 September 2016; London, UK
W: www.rsm.ac.uk

Medicine Management Study Day
6 September 2016; London, UK
E: conferenceteam@rmh.nhs.uk
T: +44 (0)20 7808 2921
W: www.royalmarsden.nhs.uk/studydays

NEW
Introduction to Cancer Biology and Personalised Cancer Treatments
6-7 September 2016; Manchester; UK
E: education.events@christie.nhs.uk
T: +44 (0)161 918 7409

NEW
7th European Congress of Head & Neck Oncology
7-10 September 2016; Budapest, Hungary
W: http://echno2016.org

23rd Congress of the European Association for Crano Maxillo-Facial Surgery
13-16 September 2016; London, UK
W: www.eacmfscongress.org

NEW
Royal College of Radiologists Annual Scientific Meeting 2016
14 September 2016; London, UK
W: www.rcr.ac.uk/asm

NEW
Myeloma Academy Roadshows – doctors
14 September 2016; Birmingham, UK
E: academy@myeloma.org.uk
T: +44 (0)131 557 3332
W: myeloma-academy.org.uk

NEW
Myeloma Academy Roadshows – nurses
15 September 2016; Birmingham, UK
E: academy@myeloma.org.uk
T: +44 (0)131 557 3332
W: myeloma-academy.org.uk

Targeted Treatments of Paediatric Cancers
15 September 2016; London, UK
E: conferenceteam@rmh.nhs.uk
T: +44 (0)20 7808 2921
W: www.royalmarsden.nhs.uk/studydays

Lymphoedema: Core Skills and Knowledge (Level 3)
16 September 2016; Glasgow, UK
Margaret Sneddon
T: +44(0)141 330 2072
E: lymph@glasgow.ac.uk

NEW
Cancer in low and middle income countries: A call for a global fund - the evidence
21 September 2016; London, UK
W: www.rsm.ac.uk

NEW
Foundations Oncology Skills for Nurses new to working in Paediatric and Adolescent Cancer Care
22-23 September 2016; London, UK
E: conferenceteam@rmh.nhs.uk
T: +44 (0)20 7808 2921
W: www.royalmarsden.nhs.uk/studydays

EUSOBI Annual Scientific Meeting 2016
23-24 September 2016; Paris, France
W: www.eusobi.org/

Foundations Oncology Skills for Nurses New to Working in Paediatric and Adolescent Cancer Care
22-23 September 2016; London, UK
E: conferenceteam@rmh.nhs.uk
T: +44 (0)20 7808 2921
W: www.royalmarsden.nhs.uk/studydays

Orbs 'Live' 2016
29–30 September 2016; Nottingham, UK
W: www.orbsmeetings.com

October

Cytotoxic Medication Study Day for Nurses New to Cytotoxic Treatment Care
4 October 2016; London, UK
E: conferenceteam@rmh.nhs.uk
T: +44 (0)20 7808 2921
W: www.royalmarsden.nhs.uk/studydays

NEW
9th European Head and Neck Course
5-7 October 2016; Amsterdam, The Netherlands
W: http://eurohnc.com

ESMO 2016 – 41st ESMO Congress
7-11 October 2016; Copenhagen, Denmark
W: www.esmo.org/Conferences/ESMO-2016-Congress
T: +41 (0)91 973 19 00
E: esmo@esmo.org

9th Annual Royal Marsden Breast Cancer Meeting: Hot Topics in Breast Cancer
7 October 2016; London, UK
E: conferenceteam@rmh.nhs.uk
T: +44 (0)20 7808 2921
W: www.royalmarsden.nhs.uk/conferences

Royal Brompton Chest X-Ray Study Day
8 October 2016; London, UK
E: conferenceteam@rmh.nhs.uk
T: +44 (0)20 7808 2921
W: www.royalmarsden.nhs.uk/studydays

NEW
Minimally Invasive Head and Neck Surgery Symposium
10 October 2016; London, UK
T: +44 (0)1114 225 9143
E: academia.bbmuk@bbraun.com

NEW
4th ESSO Advanced Course on the Management of Colorectal Liver Metastases
10-11 October 2016; Bordeaux, France
E: ana.galan@essoweb.org

The Royal Marsden Palliative Care Update Day
12 October 2016; London, UK
E: conferenceteam@rmh.nhs.uk
T: +44 (0)20 7808 2921
W: www.royalmarsden.nhs.uk/studydays

Genetics for Health Professionals in Cancer Care From Principles to Practice

Edited by: Chris Jacobs, Patricia Webb and Lorraine Robinson. Published by: Oxford University Press. ISBN: 978-0-19-967284-4. Price: £39.99

This 344 page paperback book is based on the course run by King's College London and St. George's, University of London in partnership with the London regional genetics centres. It has contributions from 44 specialists in genetics and cancer care; all UK based. The book is aimed at health professionals who deal with cancer patients, and those with a family history of cancer. This book hopes to provide the non-geneticist professional with the knowledge of how to manage such patients. It demonstrates how to take and manage a cancer family history, drawing a cancer family tree; understanding cancer biology as well as the genes involved in breast, ovarian, prostate and other common malignancies. It assesses cancer risk and discusses how to communicate risk information as well as early detection and, measures available to reduce the risk of cancer and managing those with hereditary cancer.

This book provides practical advice and insight as a patient follows the pathway through genetic counselling and testing and examines the psychological, social and ethical problems encountered along the way. It also gives practical guidance on how to set up a cancer family history clinic.

I found this book to be well presented. It is divided into 9 sections; each section includes an introductory chapter, chapters on a particular cancer or area of expertise and a summary chapter which draws together the key learning points across the section, with suggestions for reading and exercises to consolidate learning. Throughout the text are boxes containing pertinent points, tables and black and white diagrams. A list of references is given for each chapter. I found this book informative and pleasurable to read; it did not assume any prior knowledge of genetics and the fundamentals were explained well. I found that the authors went into sufficient depth and detail to discuss each area and achieved the correct balance within a huge subject matter.

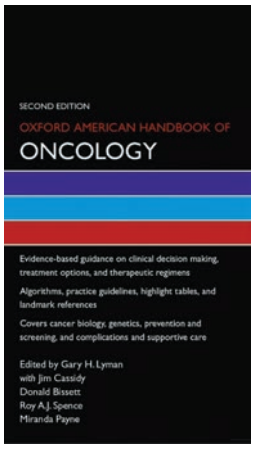
There were little in the way of omissions: how genetics impacts on cancer treatments could be explored. For example increased radio sensitivity noted with the cancer prone syndromes such as Ataxia Telangiectasia and how genetic variants may influence the response of normal tissues to chemotherapy and or radiotherapy.

Overall, I found this book to be very useful and reasonably priced at about £37.

Dr Karin Baria, Retired Consultant Oncologist.

The Oxford American Handbook of Oncology – 2nd Edition

Edited by: Gary H Lyman with Jim Cassidy, Donald Bissett, Roy A Spence and Miranda Payne. Published by: Oxford University Press. ISBN: 978-0-19-992278-9. Price: £40.49



The American handbook is written for the benefit of medical students, trainees and specialists, by contributors from the Fred Hutchinson Cancer Research Center, the University of Washington, the Duke University and the Duke Cancer Institute, USA. The book is based on the Oxford Handbook of Oncology. Most of the contributors are Medical Oncologists and the book has a strong bias towards medical oncology.

It is hoped that it will provide a reliable source of knowledge for those practitioners who treat cancer patients. The handbook is of a small format and comprises 846 pages. The initial chapters cover the background to cancer; molecular biology, aetiology, epidemiology, cancer prevention and screening. There are several chapters covering "Principles of management" where individual chapters are devoted to specific modalities of treatments. This second edition includes new information on biologic therapies, therapeutic regimens and clinical trial information.

Part IV "Complications and supportive care" details presentation, pathogenesis, diagnosis and management of the complications of cancer and its treatment. The vast majority of the text of the book consists of bullet point lists which are quite easy to read. Tables and boxes are also used to display important points. Chapters also included the vital information on pain control, end of life care, management of oncological emergencies useful for day to day management of in-patients.

Part V "Specific Cancers" covers individual tumours; epidemiology, aetiology, presenting symptoms, pathology, investigations and management. The information was up to date, though I felt that the management was often skewed towards medical oncology. Although radiotherapy is a curable treatment modality for some tumour groups it was under represented in the book.

The opportunity to describe the full indications of it uses was not often presented, nor was the idea of a dose prescription. For instance a dose of 50Gy may be described there was no mention of the number of fractions and overall duration of treatment in many cases. The reader was not informed of the many potential uses of radiotherapy especially in the palliative setting, nor of its side effects and how to manage these side effects. Overall the information cited was evidence based, clearly displayed, and easy to understand.

In summary I felt that this book would be most valuable to medical students and trainees rather than to fully trained specialists.

Dr Karin Baria, Retired Consultant Oncologist.

Journal of Clinical Oncology

Adjuvant Fluorouracil, Leucovorin, and Oxaliplatin in Stage II to III colon cancer: Updated 10-Year Survival and Outcomes According to BRAF mutation and Mismatch Repair Status of the MOSAIC study

André T, de Gramont A, Vernerey D, et al.
Journal of Clinical Oncology
2015; Dec 10; 33(35): 4176-87.

Purpose: The MOSAIC (Multicenter International Study of Oxaliplatin/Fluorouracil/Leucovorin in the Adjuvant Treatment of Colon Cancer) study has demonstrated three-year disease-free survival (DFS) and six-year overall survival (OS) benefit of adjuvant oxaliplatin in stage II to III resected colon cancer. This update presents 10-year OS and OS and DFS by mismatch repair (MMR) status and BRAF mutation.

Methods: Survival actualization after 10-year follow-up was performed in 2,246 patients with resected stage II to III colon cancer. We assessed MMR status and BRAF mutation in 1,008 formalin-fixed paraffin-embedded specimens.

Results: After a median follow-up of 9.5 years, 10-year OS rates in the bolus/infusional fluorouracil plus leucovorin (LV5FU2) and LV5FU2 plus oxaliplatin (FOLFOX4) arms were 67.1% versus 71.7% (hazard ratio [HR], 0.85; P=0.043) in the whole population, 79.5% versus 78.4% for stage II (HR, 1.00; P=0.980), and 59.0% versus 67.1% for stage III (HR, 0.80; P=0.016) disease. Ninety-five patients (9.4%) had MMR-deficient (dMMR) tumours, and 94 (10.4%) had BRAF mutation. BRAF mutation was not prognostic for OS (P=0.965), but dMMR was an independent prognostic factor (HR, 2.02; 95% CI, 1.15 to 3.55; P=0.014). HRs for DFS and OS benefit in the FOLFOX4 arm were 0.48 (95% CI, 0.20 to 1.12) and 0.41 (95% CI, 0.16 to 1.07), respectively, in patients with stage II to III dMMR and 0.50 (95% CI, 0.25 to 1.00) and 0.66 (95% CI, 0.31 to 1.42), respectively, in those with BRAF mutation.

Conclusion: The OS benefit of oxaliplatin-based adjuvant chemotherapy, increasing over time and with the disease severity, was confirmed at 10 years in patients with stage II to III colon cancer. These updated results support the use of FOLFOX in patients with stage III disease, including those with dMMR or BRAF mutation.

Reviewer's comments: The likelihood of long-term disease-free survival after resection of colorectal cancer is improved by six months of post-operative adjuvant fluoropyrimidine-based chemotherapy. 5-FU or capecitabine and oxaliplatin is accepted standard therapy for Stage III colorectal cancer (local lymph node positive) but uncertainties remains regarding treatment of mismatch-repair deficient tumours, the definition of high-risk Stage II tumours and the effect of adjuvant chemotherapy in molecularly-defined subgroups such as BRAF mutant cancers. This translational study builds on the findings of the MOSAIC trial, a large (over 2000 patients) randomised study with almost 10 years of follow-up. In stage III patients as a whole, the addition of oxaliplatin led to an 8.4 and 8.1% improvement in the likelihood of 10 year disease-free and overall survival, although the survival benefit was largely accounted for by the Stage III N2 subgroup (i.e more than three involved lymph nodes). There was a modest effect in 'high-risk' Stage II patients (pT4, tumour perforation, inadequate nodal harvest) that was not statistically significant. 9.4% of tumours had a defective mismatch repair (MMR) status (assessed by immunohistochemistry and polymerase chain reaction) and 10.4% were BRAF codon 600 mutation positive, with a higher frequency of BRAF mutations in the defective MMR subgroup. Patients with MMR proficient tumour had inferior cancer-specific survival than those with MMR deficient tumours but a similar effect was not discernible for BRAF mutant cancers. In contrast, the presence of the BRAF mutation in advanced colorectal cancer portends a poor prognosis with little chemotherapy responsiveness. Although limited by small numbers and lack of statistical power, the addition of oxaliplatin to 5-FU was associated with recurrence free and overall survival benefits in MMR deficient and BRAF mutant cancers. Further efforts should be made to individualise adjuvant therapy for Stage II cancers, although these should probably be offered single-agent fluoropyrimidine rather than combination therapy and to identify patients with limited nodal involvement who could be spared the (neuro)toxicity of oxaliplatin without detrimental effects on survival. – AR

New England Journal of Medicine

CDX2 as a Prognostic Biomarker in Stage II and Stage III Colon Cancer

Piero Dalerba, Debashis Sahoo, Soonmyung Paik, et al
New England Journal of Med
2016; 374:211-222, January 21, 2016DOI: 10.1056/NEJMoa1506597

Background: The identification of high-risk stage II colon cancers is key to the selection of patients who require adjuvant treatment after surgery. Microarray-based multigene-expression signatures derived from stem cells and progenitor cells hold promise, but they are difficult to use in clinical practice.

Methods: We used a new bioinformatics approach to search for biomarkers of colon epithelial differentiation across gene-expression arrays and then ranked candidate genes according to the availability of clinical-grade diagnostic assays. With the use of subgroup analysis involving independent and retrospective cohorts of patients with stage II or stage III colon cancer, the top candidate gene was tested for its association with disease-free survival and a benefit from adjuvant chemotherapy.

Results: The transcription factor CDX2 ranked first in our screening test. A group of 87 of 2115 tumour samples

(4.1%) lacked CDX2 expression. In the discovery data set, which included 466 patients, the rate of five-year disease-free survival was lower among the 32 patients (6.9%) with CDX2-negative colon cancers than among the 434 (93.1%) with CDX2-positive colon cancers (hazard ratio for disease recurrence, 3.44; 95% confidence interval [CI], 1.60 to 7.38; P=0.002). In the validation data set, which included 314 patients, the rate of five-year disease-free survival was lower among the 38 patients (12.1%) with CDX2 protein–negative colon cancers than among the 276 (87.9%) with CDX2 protein–positive colon cancers (hazard ratio, 2.42; 95% CI, 1.36 to 4.29; P=0.003). In both these groups, these findings were independent of the patient's age, sex, and tumour stage and grade. Among patients with stage II cancer, the difference in five-year disease-free survival was significant both in the discovery data set (49% among 15 patients with CDX2-negative tumours vs. 87% among 191 patients with CDX2-positive tumours, P=0.003) and in the validation data set (51% among 15 patients with CDX2-negative tumours vs. 80% among 106 patients with CDX2-positive tumours, P=0.004). In a pooled database of all patient cohorts, the rate of five-year disease-free survival was higher among 23 patients with stage II CDX2-negative tumours who were treated with adjuvant chemotherapy than among 25 who were not treated with adjuvant chemotherapy (91% vs. 56%, P=0.006).

Conclusion: Lack of CDX2 expression identified a subgroup of patients with high-risk stage II colon cancer who appeared to benefit from adjuvant chemotherapy. (Funded by the National Comprehensive Cancer Network, the National Institutes of Health and others).

Reviewer's comments: The era of molecular profiling and patient selection for the optimum personalised therapy is taking the oncology world by a storm. Multiple pharmaceutical and biotech organisations are developing tumour profiling tools and new agents which could lead to the discovery of new approaches to the management of various cancers. The genetic profiling to classify tumours in to different subgroups has raised the importance of biology over anatomy. Breast cancer has been leading the field of prognostic sub-grouping by genetic profiling but other tumour sites are not far behind.

The mortality of early stage colon cancer has improved considerably over the past decade, in part because of the use of effective adjuvant therapies following successful surgical resection. Thousands of patients are routinely treated with intensive, sometimes prolonged adjuvant chemotherapy, which can be unpleasant, expensive and hazardous. We know that many of these patients may not require adjuvant chemotherapy and others do not benefit because their tumour biology makes them less sensitive to chemotherapy. A Subset of patients are not treated by adjuvant therapy and relapse. Therefore, there is an urgent need to improve patient selection, so that adjuvant chemotherapy is restricted to those patients who will benefit from it. Multi-parameter genomic tests could identify a population of patients who do not significantly benefit from adjuvant chemotherapy despite traditionally thought to be at a high risk of relapse, based on current guidelines.

The above trial data on CDX2 expression seeks to advance the development of personalised treatment of localised stage II colon cancer by the prospective evaluation of biomarkers of colon epithelial differentiation across gene-expression arrays and then rank candidate gene according to the availability of clinical-grade diagnostic assays. The investigators believe that the presence of a stem-cell-like state would be associated with more aggressive tumours. They found 16 genes in which expression was inversely related to the stem-cell-like state and the CDX2 gene product was the most clinically actionable gene, which is suitable for detection by means of immunohistochemistry. They discovered that CDX2 negative colon tumours were associated with significantly lower rates of five year disease free survival. Subsequently, by the use of expanded database, they found that the administration of adjuvant chemotherapy in CDX2 negative subgroup considerably increases the disease free survival in patients with stage II as well as III colon cancer. However, in this study the number of stage II colon cancer and CDX2 negative tumour was small. Moreover, the immunochemical analysis was performed on tissue microarrays that facilitated rapid though put but may have underestimated the heterogeneity of CDX2 expression throughout the tumour.

These results provide an opportunity for oncologists to move beyond what has been an inadequate method of selecting patients with stage II colon cancer for adjuvant chemotherapy. In addition to genetic targets, hyper-methylation of the gene encoding transcription factor AP-2 epsilon (TFAP2E) and altered expression of specific microRNAs are among the growing list of DNA-based and epigenetic biomarkers that could provide prognostic and predictive promise in early stage colon cancer. – SU

Latest developments on products and services from the industry. To have your news included contact Patricia McDonnell at Oncology News on T/F: +44 (0)288 289 7023, E: patricia@oncologynews.biz

Leading Oncologist appointed as new Chair of charity medical board

Beating Bowel Cancer is delighted to announce the appointment of Consultant Oncologist at The Christie, Dr Mark Saunders, MBBS MRCP FRCR PhD, as Chair of their Medical Board.

Mark Flannagan, Chief Executive of the charity, said: "Mark has been a valued medical advisor and keen supporter of the charity since 2008 and we couldn't be more pleased that he has agreed to become the new chair of our Medical Board. We welcome his continued contribution to the charity and look forward to working with him to realise the full potential of the Medical Board."

Dr Saunders' main area of interest in his role at The Christie is running clinical trials evaluating novel agents with associated response/toxicity biomarkers and radiology. He has written a series of protocols for clinical trials that have been funded, completed and published.

Talking about his new appointment with the charity, he says: "I am excited about the opportunity of chairing the Medical Board and working with everyone at Beating Bowel Cancer to maximise the impact the charity can make on the health and wellbeing of everyone affected by bowel cancer.

"Even though quality treatment of bowel cancer is paramount, it goes-without-saying that preventing it would be preferable. Again Beating Bowel Cancer rightly leads this by highlighting the national screening programmes."

For further information visit: www.beatingbowelcancer.org

Provectus Biopharmaceuticals reports trials in progress abstract accepted for poster presentation at ASCO Annual Meeting

Presentation Scheduled for June 4, 2016, 1:00-4:30 PM CDT. Provectus Biopharmaceuticals, Inc have announced that an abstract titled 'Intralesional rose bengal for treatment of melanoma' has been accepted for a poster presentation at the annual meeting of the American Society of Clinical Oncology being held in Chicago June 3-7, 2016. The poster for the abstract, ID: TPS9600, is scheduled for presentation June 4, 2015, running from 1:00-4:30 Central Daylight Time.

For further details, visit http:///iplanner.asco.org/am2016/#/ and enter "9600" in the search box. The complete press release is available at www.pvct.com/pressrelease.html?article=20160420.1

PROVECTUS BIOPHARMACEUTICALS, INC.

Provectus Biopharmaceuticals amends protocol for Phase 3 Study of PV-10 in treatment of locally advanced cutaneous melanoma

Provectus Biopharmaceuticals, Inc has announced that the protocol for its phase 3 clinical trial for PV-10 as an investigational treatment for melanoma has been amended to reflect current and evolving standards of care and applicable patient population for a global study in melanoma.

Major amendments to the protocol include the addition of talimogene laherparepvec (Imlygic™) as an option for use as comparator. The amended protocol also extends eligibility to include Stage IV M1a patients having no active nodal or distant cutaneous or subcutaneous metastatic disease. These patients have disease characteristics and prognosis similar to that of the Stage IIIB and IIIC patients that initially defined the study patient population.

Dr Eric Wachter, CTO of Provectus, said, "These kinds of amendments are commonplace in phase 3 studies and serve to fine-tune the patient population and study procedures to match changing care standards for a large global study. They are the direct result of current and emerging options for these patients and have been developed with extensive input from global leading melanoma investigators. In particular, the most obvious amendment addresses approval in late October of Imlygic by the FDA as the first and only oncolytic viral therapy. As we implement the amended protocol we will assess potential impact on study timelines."

For further information visit https://clinicaltrials.gov/ct2/show/NCT02288897.

PROVECTUS BIOPHARMACEUTICALS, INC.

Provectus Biopharmaceuticals reports data on PV-10 in combination therapy and T Cell mediated immunity presented at AACR 2016

Provectus Biopharmaceuticals, Inc announced today that researchers from Moffitt Cancer Center in Tampa, Florida, presented a poster titled, "T cell Mediated Immunity After Combination Therapy with Intralesional PV-10 and Co-Inhibitory Blockade in a Melanoma Model," at the American Association for Cancer Research (AACR) Annual Meeting 2016, held at the Ernest N. Morial Convention Center in New Orleans, Louisiana.

In the poster, authors Amy M Weber, Hao Liu, Krithika Kodumudi, Amod A Sarnaik and Shari Pilon-Thomas state that "treatment with IL PV-10 and anti-PD-1 antibody results in a delay in tumour growth and enhanced T cell activation in the M05 tumour model." They also conclude that "the effect of combination therapy with IL PV-10 and PD-1 blockade is mediated by CD8+ T cells, and depletion of either CD4+ T cells or CD25+ Tregs enhances anti-tumour immunity in the M05 melanoma model." The abstract of the poster (number 4978) may be viewed at http://www.abstractsonline.com/4978.

Shari Pilon-Thomas, PhD, who leads the research team at Moffitt, noted, "Our results show that combining intralesional PV-10 with anti-PD-1 co-inhibitory blockade not only suppresses tumour growth vs. either agent alone but also yields marked increases in tumour-specific T cell activation against injected tumour."

Provectus is currently enrolling patients in a phase 3 study of PV-10 as a single agent therapy for patients with locally advanced cutaneous melanoma (Clinical Trials ID NCT02288897) and in a phase 1b study of PV-10 in combination with the immune checkpoint inhibitor pembrolizumab in patients with metastatic melanoma (Clinical Trials ID NCT02557321).

For further information visit: www.pvct.com

UK Government acknowledges more must be done for brain tumour patients

The UK Government has acknowledged more needs to be done for brain tumour patients and their families.

Health Minister George Freeman announced a package of measures at a Westminster Hall debate in April which was prompted by an e-petition launched by the family of Stephen Realf, lost to a brain tumour at the age of 26, and backed by the charity Brain Tumour Research.

The Government will set up a "Task and Finish" working group at the Department of Health, ask the NIHR to produce a national register on how public funds are spent on research, and include brain cancer in the Genomics England programme.

Sue Farrington Smith, Chief Executive of Brain Tumour Research, said: "I am immensely proud that, with the support of thousands of patients, families and activists, the woeful underfunding of this dreadful disease has finally been acknowledged. Our voices have been heard and the work of the past 15 years has not been in vain."

For further information please contact Brain Tumour Research on 01296 867200 or go to www.braintumourresearch.org

An e-petition was set up in memory of Stephen Realf whose sister Maria Lester (centre) joined their father Peter Realf and Brain Tumour Research Chief Executive Sue Farrington Smith, to campaign at Westminster.

Provectus Biopharmaceuticals announces publication of two abstracts on research into IL PV-10 for melanoma in special issue of *ANZ Journal of Surgery*

Provectus Biopharmaceuticals, Inc has announced that two abstracts related to research into IL PV-10 for treatment for melanoma have been published in a special issue of the *ANZ Journal of Surgery* detailing the Royal Australasian College of Surgeons 85th Annual Scientific Congress, 2-6 May 2016, in Queensland, Australia.

The first abstract, titled "Intralesional PV-10 for In-Transit Melanoma – A Single Centre Experience," notes that "Intralesional PV-10 has been used at Peter MacCallum Cancer Centre since 2010, and the current report presents a retrospective analysis of patient outcomes, reporting the response rates, durability of responses and observed toxicities."

The Peter MacCallum Cancer Centre, in East Melbourne, Victoria, Australia, is Australia's only public hospital solely dedicated to cancer treatment, research and education. The abstract was authored by Jocelyn Lippey et al. and examined data from nineteen patients receiving PV-10 at the center.

The second abstract, titled "Intralesional PV-10 Chemoablation Therapy for the Treatment of Cutaneous Melanoma Metastases – Results of a Prospective, Non-Randomised, Single Centre Study,' summarises work done at the Princess Alexandra Hospital in Brisbane, Queensland, Australia. The authors, Tavis Read et al., set out "to assess the clinical efficacy and treatment outcomes of patients receiving intralesional (IL) PV-10 chemoablation therapy for the treatment of cutaneous melanoma metastases." This report examined data from forty five patients receiving PV-10 at the hospital.

For more information about the special issue of the ANZ Journal of Surgery where the abstracts appear, visit http://onlinelibrary.wiley.com/doi/10.1111/ans.2016.86.issue-S1/issuetoc ("Abstract Journal for Surgical Oncology," pages 157-160) or http://onlinelibrary.wiley.com/doi/10.1111/ans.13574/epdf (abstracts SO006 and SO007).
For more information about the RACS Annual Scientific Congress, visit: https://asc.surgeons.org.

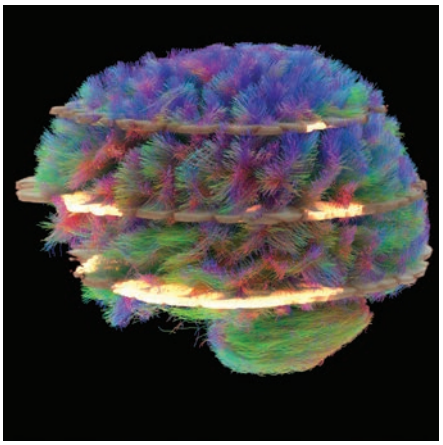
Siemens presented new Dual Source computer tomograph Somatom Drive

Siemens Healthcare is strengthening its Dual Source portfolio and presented its latest model at the European Congress of Radiology (ECR) in Vienna: Somatom Drive. Thanks to diverse innovative technologies, Somatom Drive is suitable for all clinical fields. Patients benefit from precise diagnostics, examinations with especially low X-ray and contrast media doses, as well as imaging without breath-hold. Users benefit from the intuitive operability of the new touch panels and the fast examination procedures which supports them in meeting the growing demand for scans in the future.

This is achieved through a range of innovative technologies: Somatom Drive's new Straton MX Sigma X-ray tubes and Sigma generators precisely deflect the X-ray beam, allowing for more targeted beam focusing and enabling examinations to be performed with very high energy levels at low voltages. With these lower voltages, contrast media – often a major challenge for seriously ill patients and patients with reduced kidney function such as diabetics – can be lowered accordingly. Users can freely set the X-ray tube voltages in 10 kV steps between 70 kV and 140 kV. This means that the voltage and, therefore, the right dose can be selected for each individual patient. Scanning patients at a lower kV reduces their exposure to radiation. This is of benefit, for example, in pediatric cases as well as for patients with tumours who need to be scanned frequently to monitor disease progress. Even for heavier patients, the highly adjustable kV values allow for extremely precise imaging.

Further information visit: www.siemens.com.

Innovative systems for radiology from Siemens



This year's European Congress of Radiology (ECR) in Vienna included innovations from Siemens Healthcare in the area of medical imaging and therapy. Siemens' products and solutions help healthcare providers worldwide deal with the challenges of changing healthcare systems. In times of tight budgets and increasing time pressure, Siemens solutions are geared to obtaining high-quality results in diagnostics and interventional therapy with maximum efficiency.

At ECR, Siemens Healthcare will introduce new applications that will reduce the time needed for MRI neuro examinations, increasing patient throughput and reducing costs per scan. In MRI, neurological imaging accounts for a majority of all examinations. A new application from Siemens Healthcare employs an innovative technique to acquire imaging slices simultaneously rather than sequentially – reducing routine acquisition times by up to 68% for diffusion tensor imaging [1]. This application – Simultaneous Multi-Slice – is first being introduced for brain examinations, bringing advanced techniques such as DTI and Bold into the clinical routine. Advanced examinations can be very lengthy, and Simultaneous Multi-Slice reduces scan times to lengths compatible with the clinical routine. While the application is initially being introduced for advanced brain examinations, Siemens sees great potential to accelerate further routine examinations of the brain, orthopedics, and abdominal areas.

For further information visit: www.siemens.com

WReference:

1 Time measurements and images acquired on MAGNETOM Prisma together with Head/Neck 64.

Provectus Biopharmaceuticals in panel at Third International Conference on the Progress of Regenerative Medicine and its Cultural Impact

Provectus Biopharmaceuticals, Inc participated in a panel discussion at Cellular Horizons: The Third International Conference on the Progress of Regenerative Medicine and its Cultural Impact. The conference was held on April 28-30, 2016, in Vatican City, and was hosted by the Vatican's Pontifical Council for Culture, The Stem For Life Foundation and the STOQ (Science, Theology and the Ontological Quest) Foundation.

Peter Culpepper, interim CEO and COO of Provectus, said, "We were deeply honored to be participating in this global conference and to be doing so with one of our investigators, Grant McArthur, who leads investigations into new cancer treatments that control cell growth, division and differentiation."

"Provectus and its investigators are engaged in multiple studies that are of relevance to the conference. Our phase 3 study of intralesional PV-10 as a stand alone treatment of locally advanced cutaneous melanoma addresses early-stage advanced melanoma, while our study of IL PV-10 in combination with a systemic immune checkpoint inhibition for treatment of metastatic melanoma, specifically Merck's Keytruda (pembrolizumab), addresses more advanced-stage melanoma."

The complete press release is available at www.pvct.com/pressrelease.html?article=20160427.1 on the Provectus website.

PROVECTUS BIOPHARMACEUTICALS, INC.

BACR AND ECMC JOINT MEETING

Therapeutic interventions for cancer prevention – the way forward
July 18th – 19th 2016 – University of Bristol – School of Chemistry

THE BRITISH ASSOCIATION FOR CANCER RESEARCH

ECMC

OVERVIEW:
This multidisciplinary meeting will address the enormous opportunities and some of the challenges faced by researchers in the field of therapeutic cancer prevention. It will draw on examples spanning from 'bench to bedside' and beyond, to highlight what advances in basic and translational science can bring to the prevention trials of the future.

SESSIONS:
- Dietary interventions for cancer prevention
- Aspirin – what else do we need to know?
- Overcoming barriers to prevention and the way ahead
- Drug repurposing – what next?
- New approaches and recent advances

SPEAKERS:

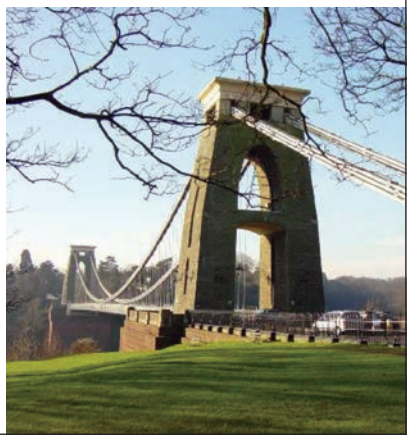
Bernardo Bonanni	Milan, Italy	Farhat Khanim	Birmingham, UK
John Burn	Newcastle, UK	Ruth Langley	London, UK
Rob Coleman	Sheffield, UK	Richard Mithen	Norwich, UK
Jack Cuzick	London, UK	Chris Paraskeva	Bristol, UK
Andrea De Censi	Genoa, Italy	Carlo Patrono	Rome, Italy
Farhat Din	Edinburgh, UK	Michael Pollack	Montreal, Canada
Malcolm Dunlop	Edinburgh, UK	Peter Rothwell	Oxford, UK
Michelle Harvie	Manchester, UK	Owen Sansom	Glasgow, UK
Mark Hull	Leeds, UK		

ORGANISERS:
Karen Brown, Leicester
Ann C Williams, Bristol
Kate Davies, Bristol
UKTCPN steering committee

DEADLINES:
Abstract submission
1st June
Early Bird Registration
8th June

UK therapeutic cancer prevention network
collaborating to prevent cancer

http://bacr.org.uk/events/30



NCRI Cancer Conference

6 – 9 November 2016
BT Convention Centre
Liverpool, UK

Join us at the
2016 NCRI Cancer Conference
The UK's Largest Cancer research meeting

Submit your ground-breaking research by **5 June 2016**

Take advantage of earlybird rates **Deadline: 30 June 2016**

Topics include:
- Science journalism
- Radiobiology and prostate cancer
- Immunotherapy
- APOBECs and relevance to cancer
- Phase III trials
- Surgical oncology

… And many more

Confirmed speakers include:
- Kat Arney, *Freelance science writer and science broadcaster, London, UK*
- Rob Bristow, *University of Toronto, Canada*
- David Currow, *Flinders University, Australia*
- Liepeng Chen, *Yale School of Medicine, USA*
- Iain Hagan, *Cancer Research UK Manchester Institute, UK*
- Reuben Harris, *University of Minnesota, USA*
- Mark Krasnow, *Stanford University, USA*
- Charles Rudin, *Memorial Sloan Kettering Cancer Center, USA*
- Alex Snyder, *Memorial Sloan Kettering Cancer Center, USA*
- Jennifer Wargo, *MD Anderson Cancer Center, USA*

conference.ncri.org.uk @NCRI #NCRI2016

RCR
The Royal College of Radiologists

RCR asm 2016

ANNUAL SCIENTIFIC MEETING 2016

Wednesday 14 September 2016, The Barbican, London

The oncology lecture stream, which features as part of the RCR's ASM, will provide an update on planning and delivering state of the art radiotherapy for pelvic malignancies (lower gastrointestinal, genitourinary and gynaecological), issues of normal tissue tolerance, pelvic retreatment and managing the side effects of pelvic radiotherapy.

The President's Lecture will be delivered by Professor Hedvig Hricak from Memorial Sloan-Kettering Cancer Centre, USA, speaking on Oncologic imaging in clinical decision making – the next frontier. The programme also welcomes Professor Søren Bentzen of the University of Maryland, USA, speaking on Normal tissue tolerance.

The ASM will feature an industry exhibition, College AGM and lunchtime symposium delivered by Professor David Larson, Stanford University, California, USA on CT Radiation dose optimisation and process control, which is an ideal opportunity for attendees to network with colleagues from around the world.

The 2016 meeting App will feature the full programme, biographies of plenary speakers, allows delegates to create personalised schedules and make notes on sessions during the meeting. Look out for exciting new features including learning points and references and poster abstracts. This will be available to download free from the Google Play or Apple App store by searching RCR ASM.

Attendance at the meeting will earn delegates 6 RCR CPD credits.

Early bird registration fees are available until Friday 27 May 2016.

For details of the programme, venue, and accommodation and to book a place, please visit: www.rcr.ac.uk/asm

11-13 December 2016
RAI Amsterdam, The Netherlands

8th European Multidisciplinary Colorectal Cancer Congress

www.EMCC2016.org

International Symposium on Pediatric Neuro-Oncology 2016

Dear Colleagues and Friends of the Pediatric Neuro-Oncology Community.

The 17th International Symposium on Pediatric Neuro-Oncology (ISPNO) in 2016 is taking place from 12th - 15th June in the vibrant and cosmopolitan city of Liverpool. The venue for the conference is the award winning Liverpool Convention Centre set on a delightful waterfront that has achieved world heritage.

The biennial ISPNO meeting has become the pre-eminent event in the field of Pediatric Neuro-Oncology, being the only global meeting of the multi-disciplinary international community of professionals involved in the research, diagnosis, treatment and rehabilitation of infants, children and young people with Central Nervous System tumours.

ISPNO 2016 Liverpool will feature:

- A full programme of plenary and poster sessions, keynote talks and round table discussions covering all the main aspects of CNS tumours in children and young people.
- A day dedicated to Neuro-oncological surgery - with leading international experts in Pediatric Neurosurgery.
- A full day neuro-oncology nurses meeting and a reception for nurses hosted by The Brain Tumour Charity.
- A pre-meeting Education day with state of the art lectures given by world-class clinicians and scientists.
- An open meeting of Posterior Fossa Society.
- A Family Day.

We will offer a memorable networking and social program with the Welcome Reception at the brilliantly designed waterside Museum of Liverpool, a fantastic gala dinner and optional social events at the Cavern Club – home of the Beatles – or a Latin themed evening.

For all conference information please visit

www.ISPNO2016.com

We look forward to welcoming the International Pediatric Neuro-Oncology community to Liverpool.

Together we will create an incredible meeting. With Very Best Wishes

Professor Barry Pizer
Chair of the Local Organising Committee of ISPNO 2016 - Liverpool.

The BRAIN TUMOUR CHARITY

BTOG 2017

15th Annual BTOG Conference 2017

Wednesday 25th - Friday 27th January 2017

Dublin

Poster submission:

Opens 1st August 2016 - Closes 1st October 2016

Registration and hotel booking: Opens 1st September 2016

BTOG is a multi-disciplinary group for professionals involved with thoracic malignancies. BTOG aims to improve the care of patients with thoracic malignancies through multidisciplinary education, developing and advising on guidelines for patient care and facilitating and nurturing clinical trial ideas into full protocols.

BTOG Chair: Dr Sanjay Popat

Secretariat: British Thoracic Oncology Group (BTOG)
Glenfield Hospital, Leicester LE3 9QP England

Tel: + 44 116 250 2811
Email: dawn.mckinley@uhl-tr.nhs.uk
Website: www.btog.org
Twitter @BTOGORG

BRINGING TOGETHER THE BEST OF BASIC SCIENCE AND CLINICAL RESEARCH IN NEURO ONCOLOGY

SPEAKERS
Gelareh Zadeh University of Toronto
Richard Vile Mayo Clinic
Richard J. Gilbertson University of Cambridge
Nicola Sibson Oxford Institute for Radiation Oncology
Luisa Ottobrini University of Milan
Bernhard Radlwimmer Heidelberg University
Sebastian Brandner University College London

THEMES
Immunotherapy
Novel Technologies
Clinical Studies
Education day
Career workshops
Science networking sessions

European Head & Neck Course
BIRMINGHAM-AMSTERDAM-POZNAN

VUmc VU University Medical Center Amsterdam

9th European Head and Neck Course
5-7 October 2016 Amsterdam, the Netherlands

Three day course covering current management of head and neck cancer within a multidisciplinary framework. Format consists of lectures, panel discussions, videos, and keynote lectures dealing with more controversial topics. Audience participation through question and answer sessions. Course is suitable both for trainees (residents and fellows) in otolaryngology, oral and maxillofacial surgery, (plastic) surgery, radiation oncology and medical oncology, and other specialist as well as providing a stimulating update for practicing surgeons and physicians.

Topics
Management of the neck
Modern imaging techniques
Oral cancer, incl. HPV-tumors and robotics
Larynx and hypopharyngeal cancer
Salivary gland cancer
Reconstructive techniques
Chemo-radiotherapy
Complications

Course directors
René Leemans, Professor ORL/Head and Neck Surgery, Amsterdam, The Netherlands
Wojciech Golusinski, Professor ORL/Head and Neck Surgery, Poznan, Poland
Sat Parmar, Consultant OMFS/Head and Neck Surgery, Birmingham, UK
Paul Pracy, Consultant ORL/Head and Neck Surgery, Birmingham, UK

Faculty
Jaap Bonjer,The Netherlands
Ruud Brakenhoff, The Netherlands
Remco de Bree, The Netherlands
Jan Buter, The Netherlands
Simone Eerenstein, The Netherlands
Ralph Gilbert, Canada
Pim de Graaf, The Netherlands
Hans Langendijk, The Netherlands
Jean Louis Lefebvre, France
Piero Nicolai, Italy
Christian Simon, Switzerland
Bing Tan, The Netherlands
Jan Vermorken, Belgium
Yoon Woo Koh, Korea

Venue: Art'otel Amsterdam, by Park Plaza
Course fee: € 550 (incl. course dinner)
Contact: Vanessa Buijs (eurohnc@vumc.nl)
www.eurohnc.com

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BETTER MEDICINE
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8-12 SEPTEMBER 2017
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Mark your calendar for
the upcoming ESMO Congresses.