IOP | Institute of Physics
South West Branch

PHYSICS SOUTH-WEST

The newsletter of the South West Branch of the Institute of Physics

Issue 10 November 2008

Ford receives an MBE

Retiring chair Dr Peter Ford received his MBE at Buckingham Palace on 4 March. It was announced in the Queen's New Year Honours List and was awarded for services to higher education and to science.

For the second time in less than three years, we are able to print a photograph of Buckingham Palace, and in front of it a proud former chair of this branch.

Dr Peter Ford, as we announced recently, has been granted an MBE for services to higher education and to science, and we are proud to picture him with his award. This is almost at the very moment that he steps down as chair, and moves away from the committee after a long and significant service.

The retirement of Peter from the committee and this deserved recognition, coming just a couple of years after the similar retirement and recognition of his great friend and colleague in so many endeavours, Dr Vincent Smith MBE, really brings home the transformation that is taking place in the governance of the branch. I have only been editing the newsletter for nine years, but these honoured gentlemen were the only chairs of the branch that I had known until recently, and they carried out the role to very positive effect.

Drs Ford and Smith have been tremendous popularisers of physics over many years, with Vince's forté being informative and entertaining lectures and Peter's the stimulating and even more entertaining demonstrations.

During 2005, the European Year of Physics, the pair toured the country with a joint lecture on Einstein. This was so successful that the tour spilled over well into 2006 and was known with great fondness as the "Pete and Vince show".

Like his predecessor, Peter's knowledge and enthusiasm will be greatly missed.

Hadrons and Higgs

Can there be anyone in the remotest parts of the planet who has not heard of the Large Hadron Collider (LHC)? The Bristol University Particle Physics Group, led by Prof. Nick Brook and Greg Heath, is very much involved, with Dr Helen Heath also passionately occupied in communicating the ideas that are associated with it, as readers of the previous newsletter will be aware.

The Bristol Particle Physics Group is one of the oldest in the country and is currently made up of 10 full-time academic staff, nine research assistants and 14 PhD students. The university gained a Nobel Prize in particle physics in 1950 for the discovery of the pion, and the work at the LHC is potentially of similar importance. The group has a number of researchers based at CERN. Attached to the LHC is a reader in physics – our own Dr Vince Smith.

The personal is physical

South-West regional officer Alison Rivett's report from the Fleet Air Arm Museum shows that real physics and original science are being done by school-age physicists. There is nothing like a personal involvement in science at a relatively early age to whet the appetite for a career in physics.

There is also a piece by postgraduate student Valentina Squitieri. It is unusual for someone genuinely to open their heart about their passion for a subject, but it is delightful.

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Everyone enjoys the festival fun

There are an ever-increasing number of science festivals these days, but the Cheltenham Science Festival is one of the more established events. We are lucky to have what has been described this year by Lord Robert Winston as "the best science festival in this country" taking place every year at the start of June, right here in the south-west region. Since its launch in 2002, the festival has gone from strength to strength, selling more than 19 000 tickets this year. I've had a great time there as a volunteer, presenter and interested member of the public, but if you've never attended the festival, what exactly are you missing?

This year there were a variety of events to interest physicists of all ages. Institute member Dr Mike Ries explored the wonderful world of atoms, molecules and polymers in a sticky hands-on session for primary-school pupils. He surprised a few audience members with solids that flowed and liquids that bounced in his Primeval Slime show.

A packed marquee of secondary-school students were wowed by Dr Andrea Sella's amazing demonstrations in "When is a gas not a gas?" He used dry ice, floating bubbles and exploding plastic bottles to great effect to explain why some materials are solids while others are liquids or gases. The experiments gradually got more spectacular and perilous as we explored the world at –200 °C with the aid of the biggest dewar of liquid nitrogen that I've ever seen. But the highlight of the show was undoubtedly his efforts in making liquid-nitrogen ice-cream for the entire 300-strong audience – a real tour de force.

Out on the floor in the interactive Discover Zone, festival goers came face to face with scientists and engineers from many disciplines. There were more than 20 stands where you could make your own molecules, try out your reactions and put your maths skills to the test.

On hand to explain the workings of power stations was a team from British Energy at Barnfield, Gloucestershire. Visitors to the stand were invited to build their own mini electricity generators and went away with a greater appreciation of the challenges that are involved in keeping our country fully powered.

This year the theme was "taboos" – many of the talks and events braved difficult topics. Jim Al-Khalili chaired a debate between a physicist, a bishop and a journalist in which they discussed "The God particle" – what the hunt for the Higgs boson and a "theory of everything" means for religion. In a recording of Radio 4's *The Moral Maze*, a panel including Michael Portillo and Peter Atkins argued robustly about the place of uncertainty in science and religion.

For the less confrontational of us, some light relief was provided by the "Not rocket science" experimental panel game show, which pitted boffins against comedians to the amusement of all.

The highlight of the festival for me was a stunning show from the Science Made Simple group (founded by Cardiff physicist Wendy Sadler). "Visualise: the beauty of science" combined live demonstrations, physical theatre and film to produce a show entirely without spoken words that explored science and the laws of nature. The swirling whirlwinds, dancing flames and giant synchronised smoke rings kept a fascinated audience absolutely spellbound.

Keeping up with all of this frenetic activity was the *Litmus Paper* team. *Litmus Paper* is the festival's daily news-sheet, sponsored by IOP Publishing. The company has a long-standing involvement with the festival and every year an employee is seconded to act as production editor. Their reports highlight the variety of topics that are covered over the five days of the festival.

There is certainly a great deal to entertain everyone, no matter what your age, background or interest in science. If this has whetted your appetite, then the 2009 Cheltenham Science Festival is taking place on 3–7 June next year. You can find out more information on the website at http://cheltenhamfestivals.com/whats_on/.

Alison Rivett, South West regional officer

BLADE studies structure and machine dynamics

Bristol Laboratory for Advanced Dynamics (BLADE) is Bristol University's £18.5 m research facility, which was opened by Her Majesty the Queen in February 2005. On 1 May it welcomed an organised visit by members of the branch.

The visitors saw BLADE's unique capabilities for studying the dynamics of structures and machines, ranging across the entire engineering spectrum in two superbly equipped laboratory buildings. They also heard about the facility's role as part of a range of state-of-the-art research centres, including the Advanced Composites Centre for Innovation and Science, the Rolls-Royce Composites University Technology Centre and the AgustaWestland University Technology Centre in Rotorcraft Vibration.

The visitors admire a structural testing rig on the South West Branch's trip to BLADE in Bristol.

The joy of astrophysics

Committee member, Valentina.

In this space that is briefly to be my stage, I will share my belief that each person needs a life as colourful as possible. To do so, we should fill our moments intellectually and physically, so that at the end of the day tiredness and satisfaction give birth to a smile. For me, the most challenging activities, and those that matter to me the most, are those related to physics and particularly to astronomy. Every new idea is a storm, an adventure, a refuge, to be lost to then discover, as I did each time we moved country: Rome, New York, Brazil, the world.

Maybe that's why I feel more comfortable reading than living, because I can immerse myself into worlds where I can finally envision infinity, never-ending fractals whose spirals reveal the surreal landscapes of Dali. Maybe that's why when I'm nervous or sad, or just silent, I sit down and write, because there I can materialise the thunderstorms of life into characters filled with insanity, passion or wisdom, in a place where the thin, decaying line between heroism and villainy slowly dies away. Maybe that's why I rely on a sketchbook, because in drawings I can focus on those details and colours that hide from our haste. Maybe that's why I would rather listen than talk, because I believe that there is something mesmerising about a chaotic intertwining of millions of lives and words into a moment. Maybe that's why they say that I'm shy.

Maybe that's why I hate and love politics and history, because with tears and hurt they give you the strength to fight for utopias of peace, because suddenly you want to change the world, you want to know everything and you want to make a difference.

Maybe that's why the sports that I find irresistible are sailing, swimming and horse-riding, because reality surrenders to a new form of life, a new point of view, where you become part of waves of water and wind – suddenly you can fly. Maybe that's why I go crazy for chocolate.

Maybe that's why I wish that I could live myriad lives. For the intricacies of literature, those revolutions with words stronger than steel; for the mysteries of psychology and criminology, the beauty of the mind with its obsessions and folly; for the infinities of mathematics; the absurd logic of biology; the glorious history of the birth of civilizations and gods; for the elemental fury of the realms of sorcerers and fantasy, fascinations that fill the pages of the books on my shelves.

Maybe that's why I ended up studying astrophysics, because there is nothing else that encompasses all of this at once, nothing that I can more profoundly plumb the depths of than cosmology. There is nothing that I desire more than meeting other people who, like me, could spend a day in the planetarium of New York City marvelling at every corner, who have been longing to devour each and every astronomy journal available in the libraries of Rome, or who would attempt to paint every breath with the astonishing rainbows of the heavens, with the indescribable complexity of every droplet of the Earth, because the universe is beautiful.

I was thinking out loud again. Maybe that's what they mean when they say falling in love isn't being naked in front of one another, but in front of yourself. **Valentina Squitieri**, branch committee member

Bestival offers physics-in-the-field experience

As outreach representative for the South West Branch, I get invited to a number of events throughout the region. Thus it was that I found myself, over the weekend of 18–20 July, on a windswept hillside. The venue was Camp Bestival – a family music festival held at Lulworth Castle near Wareham, Dorset. I was there to observe and support the Physics in the Field team, with a view to assessing the possibility of the branch taking on the event in 2009.

Physics in the Field aims to bring physics to public audiences at festivals and other non-science events throughout the summer. It uses physics tricks – hand-held demonstrations that illustrate an area of physics. These include putting kebab sticks through balloons without popping them, finding out how to turn a glass of water upside down over someone's head without drenching them, and making rockets using indigestion remedies.

These demonstrations are set up on a stall at a public event and passers-by are invited to have a go at the tricks. Institute-branded "freebies" (including posters, frisbees, T-shirts and stickers) are given out, and visitors are encouraged to visit www.physics.org to find out more about physics.

Physics in the Field uses student volunteers from the local area who are recruited through the membership. They encourage the visitors to try the tricks and explain some of the physics behind them. They also act as role models and are encouraged to talk to visitors about their life in physics.

Camp Bestival was a lively place. The activities included a music stage, a karaoke tent, a comedy tent, food stalls (expensive) and a small farm. Physics in the Field was located in the Magic Meadow area of the festival and shared a large marquee called the Laughter Library with the spoken-word artists and stand-up comedians. Different science shows were planned for each day and the demonstrations were performed on two tables outside the tent.

The Friday show presenter was Famelab 2007 winner Nic Harrigan with his show The World Inside a Microwave. He was hilarious, dressed in chef's garb and vaporising light filaments in a microwave oven. Unfortunately, Paul Stevenson's show Maths in the Weirdest of Places, was cancelled on the Saturday because he was stuck in a huge traffic jam offsite. The Sunday show, Flash! Bang! The Science of Explosives, was presented by Marieke Navin from the Museum of Science and Industry.

Over the weekend there were a large number of positive comments from both children and adults who had fun doing the tricks and learning about physics. Many said how much they had enjoyed doing some hands-on science at a festival.

All of the volunteers had a physics background, were good at engaging the visitors with physics and were enthusiastic throughout the weekend. I enjoyed their company and also benefited from meeting Liz Jeavans (outreach officer) and Caitlin Watson (Physics in Society manager), both having left the joys of London for a short time.

Physics in the Field has been invited back to Camp Bestival for 2009. However, the IOP team, who put a lot of hard work into this event, encountered a number of problems with this festival, not least with its organisation. The South West Branch will consider the evaluation very carefully before deciding whether or not to take Physics in the Field to Camp Bestival next year. A number of issues need to be resolved and one option would be to take the activities to an alternative public festival in the region. **Patrick Butterly**, outreach representative

Awards celebrate young science

On 2 July, primary, secondary and sixth-form students from all over the south west gathered at the Fleet Air Arm Museum in Somerset to show off project work in science and technology at the South West Celebration of Science and Engineering. This annual awards ceremony, organised by Gloucestershire Setpoint, rewards the creativity and problem-solving abilities of the teams as well as choosing the region's representative for the CREST National Science Fair, plus the best Junior engineer for Britain and Young engineer for Britain entries in the south west region.

For the second year running, the South West Branch sponsored a prize for the best physics-related project and many Institute members attended to help to judge this and other categories.

In the impressive surroundings of the Concorde Hall, the students displayed their projects under Concorde. Being in the presence of such a technological marvel did not daunt the participants, who throughout the day talked enthusiastically about their work to the judging teams. There was much evidence of problem solving, innovative thinking and the application of science to everyday challenges, but several projects stood out as particularly good examples of the application of physics.

In third place was "Load cells 2". A team from Marling School in Stroud, Gloucestershire, had developed and built a load cell to test a key machine at its industrial partner's factory. Although other teams from the same class had also worked on this problem, Marling 2 really showed an insight into the science behind its load cell.

Top: some of the youngsters exploring physics among historic aircraft. Bottom: regional officer Alison Rivett with a group of winning students and their Institute of Physics goody bags.

In second place was "Son of Spikey". The team from Highcliffe School in Christchurch, Dorset, had undertaken the project as part of the Engineering Education Scheme. It had worked with Royal Navy engineers to solve the problem of how to measure the buoyancy of submarines under construction. The solution, which the team had designed and built incorporating electronics and modern materials, seemed like a great improvement on the existing technology – a big stick called Spikey.

First place went to "The properties of novel composite materials used in landing gear". The winner of the physics prize was a team from Churchdown School in Gloucestershire for its Engineering Education Scheme project – an investigation into the thermal and sonic properties of a novel composite material, which its industrial partner Messier-Dowty was considering using in the manufacture of aircraft landing-gear components.

The members of the team – Robert Hudel, Thomas Large, Ashley Turk and Karl James – clearly explained the variety of tests that they had devised themselves to test the composite material's properties. The judges were particularly impressed with their extensive research into the subject, which included looking up papers from the IOP's electronic journal archive, as well as their sound understanding of a large number of physics principles.

The first-placed winners were pleased to receive an Institute goody bag each, and their school was awarded a year's subscription to the Institute of Physic's Affiliated School's Scheme.

Alison Rivett, South West regional officer

The deadline for contributions to the February 2009 issue of this newsletter is:

Wednesday 31 December 2008

E-mail your materials to

chair-sw@physics.org

Bristol pays tribute to John Ziman

John Michael Ziman FRS
1925–2005
Physicist, philosopher, humanist who explored the meaning of science in society
"Science is public knowledge"
Lived here from 1964 to 1982

This was the wording that was composed with Christopher Orlik, the local council's "Mr blue plaque", for the plaque to be installed outside the house in which John Ziman lived in Westbury on Trym. Although John and I never worked together, he was the closest anyone came to being my mentor, so, when his daughters Kate and Claire invited me to speak at the unveiling of the plaque on 17 March, I agreed.

I knew that the Lord Mayor of Bristol would be present for the unveiling, as would John's widow, Joan Solomon. The head of Red Maids School, where the daughter of the present occupants of the house is a pupil, had asked me if some of her girls could attend the event. What I did not know until the night before was that they were not seniors, as I had assumed, but infants and juniors, and that "some" meant the entire school. So I hastily rewrote my speech and awaited the event with apprehension bordering on panic, because John Ziman was a deeply intellectual man, not someone whose work could easily be summarised for five-year-olds.

Arriving at the house on a chilly morning, I was greeted by 107 little girls on the pavement opposite. They were as good as gold and politely listened, or at least pretended to listen, as I gave my speech.

Then Joan Solomon stepped forward to give her prepared speech about John's last book, *Science in Civic Society*, which she had arranged to be published posthumously. But when she saw all of the girls, she instantly reverted to her physics teacher mode of many years ago – an inspiring teacher according to Julie Staunton, one of her star pupils who studied for her BSc and PhD in Bristol and is now a professor at the University of Warwick. Fixing the girls with what I can only describe as a commanding twinkle, she began: "Good morning girls".

The voices of 107 girls in high-pitched unison replied: "Good morning".

"Cold, isn't it?"

"Yes".

"Then let's jump up and down, shall we?"

Obediently, everyone (including the adults) jumped.

"Are we warm now?"

"Yes".

"Well, that's physics! Now you know that science can be useful."

The Lord Mayor unveiled the plaque and the present occupants of the stunningly remodelled house invited us to have refreshments.

Michael Berry

South West lecture programme

At the time this newsletter goes to press, the branch lecture programme is as follows. It starts strongly with a cosmology series that kicked off with a bang, literally in Cheltenham in September and continues with another in Bristol.

5 November 7.30 p.m.
Is the Big Bang in big trouble?
Gary Mathlin (Bath University)
Junior Common Room, Bristol Grammar School, Bristol.

12 November 7.30 p.m.
Twinkle twinkle little neutron star
Paul Roche (Cardiff University)
Junior Common Room, Bristol Grammar School, Bristol.

26 November 7.30 p.m.
The cosmic web
Peter Coles (Cardiff University)
Junior Common Room, Bristol Grammar School, Bristol.

4 December 7.30 p.m. (refreshments from 7.00 p.m.)
Fusion: powering the world's future
Tim Jones (JET)
Elwes Building, Park Campus, University of Gloucestershire, Cheltenham.

The physics principles and latest developments in magnetic fusion will be discussed, together with technological and key engineering challenges that need to be overcome to make fusion energy a reality.

5 February 2009 7.30 p.m. (refreshments from 7.00 p.m.)
Ambrose Fleming
Dr Brian Bowers
Elwes Building, Park Campus, University of Gloucestershire, Cheltenham.

Ambrose Fleming is remembered primarily for his invention of the thermionic valve in 1904 – the invention that made radio practical. But that was only one of the contributions that Fleming made to electrical engineering and to modern life. The valve arose from his work as scientific adviser to the Marconi Company. He was also closely involved with the early electric-lighting industry.

21 March 2009, all day
Festival of Physics (includes branch AGM)
Redland Green School, Redland Court Road, Redland, Bristol.

These are always entertaining and informative days, with good food and good conversation. A full report on the 2007 Festival of Physics was included in the June newsletter and can be viewed on the branch website at www.iop.org/activity/branches/South_West/index.html.

Check out the branch website at http://sw.iop.org

Neutrons star in the South West

In the first branch lecture of the new academic year, organised with the IET, Dr Anna Watts of the University of Amsterdam spoke at the University of Gloucestershire on "Firestorms and starquakes: the dangerous life of a neutron star".

The talk's abstract conveyed some of the excitement: "On 26 December 2004, an earthquake off the western coast of Sumatra triggered a deadly tsunami. The tremor was so violent that it left the Earth ringing for days, enabling seismologists to study the interior of our planet. Less than 48 hours later, the Earth was hit by the brightest burst of gamma rays ever recorded. The cause? A starquake on a neutron star with an ultra-intense magnetic field, 50 000 light-years from our solar system. And just as on the Earth, the quake left the star ringing with seismic vibrations – the first time that this had ever been observed.

"This has opened up a new way of studying these stars, with their crushing gravity, exotic nuclear physics and enormous magnetic fields. I will discuss what we are learning from neutron starquakes, triggered by everything from magnetic flares to thermonuclear explosions, and outline what we hope to discover with future observations using both electromagnetic and gravitational wave astronomy."

Branch secretary Dr Edward Ratzer attended the talk and sent the following report.

"In a well illustrated talk, Dr Watts presented the current state of knowledge on neutron stars as well as some of the more speculative theoretical ideas that will be able to be tested by future generations of gravitational-wave detectors. Furthermore, she linked the techniques and findings back to Earth geophysics and in particular the study of earthquakes. This was a very strong start to the season of lectures and a good precursor to further astronomy talks."

Roger Brewis, editor

Speech relives Ziman's physics

This is Prof. Michael Berry's speech at the unveiling of a blue plaque in celebration of John Michael Ziman.

"We are here to celebrate the life of John Michael Ziman, who came to Bristol from Cambridge in 1964, aged 39, and lived in this house for 18 years. His daughters wanted this fine plaque to be installed; the new owners of the house, Mr and Mrs McAndrew, have graciously agreed; and Christopher Orlik from the council has made all of the arrangements for today's unveiling. This included asking me to speak about John, and inviting his widow, Joan Solomon, our Lord Mayor and girls from Red Maids School.

"John was a physicist whose career followed an unusual pattern. I'll say why it was unusual after telling you about his physics.

"Most people who are not scientists think that physicists spend their lives trying to discover the fundamental laws of the universe. Some do, but this search is rewarded only rarely – less than once in a century. That's because we already know the laws that describe the physical world on our human scale, on vast cosmic scales, and on the tiny scales of atoms and smaller. What's left is understanding how these laws of nature in the large and small fit together; at the moment, they don't.

"But the physics that we already have is wiser than we are; hidden in its mathematics are explanations of many things that are important in our everyday lives and in our technology, and it can take a lifetime to understand just one small area. This is how almost all scientists spend their lives, including John Ziman.

"His special area was the physics of metals. There's a great deal to understand: why electricity passes better through some than others; why some are magnetic and others not; why some are hard, some soft and some brittle; why they are all different colours; and why some melt at low temperatures while others stay solid up to thousands of degrees.

"Metals are made of atoms, with electrons moving among them. Electrons and atoms are tiny, and the physics needed to describe them is quantum mechanics. This is weirdly different from the earthly and astronomical scales described by Newton's physics, with its forces (gravity, friction, etc).

"Quantum physics is deeply mathematical. That's why physicists tend to divide into theorists, who do the mathematics and try to come up with explanations, and experimenters, who test the explanations in the lab and often discover things that theorists didn't think of. John Ziman was a theorist, but one who kept very close to experiments. He was never happy unless he could calculate a number that agreed with what experimenters had measured.

"There's an earlier Bristol connection. In the 1930s, long before John came to Bristol and soon after quantum mechanics had been developed, the theorist in our department – Nevill Mott, who later received the Nobel Prize – was among the first to realise that this new physics would be important in understanding metals, and he attracted sponsorship from industry. In those days, this was unusual.

"John started (in Cambridge, and Oxford before that) by studying the magnetism of metals, but soon moved to the area that made him famous. This was metals in their liquid form. These are important not only to understand but practically – in nuclear reactors, for example, liquid metals are used to conduct the heat away from the reacting core and to cool it. They are hard to study because they are different from solid metals. Solids are crystals, with the atoms arranged regularly like oranges packed neatly in a box. In liquids, the atoms move around randomly. So to understand liquid metals you must understand the quantum physics of electrons among a disorder of atoms.

"When John entered this fiendishly difficult area, there were no formulae describing the amount of electricity that would flow through a liquid metal. He had the persistence and insight to cut through the complications and make predictions that agreed well with what was being measured in the lab.

"Another Bristol connection is that the ideas that John applied with such imagination and so precisely were based on a general formula devised by Derek Greenwood, who was a member of this department until he died a few months ago.

"These ideas apply more widely. When metals are mixed to form alloys, even solid ones, these are crystals too but with different atoms randomly on the different sites. Since quantum mechanics describes matter in terms of waves, the ideas that John developed apply to other types of waves too, such as explaining why light bouncing among water drops in clouds makes them white, or why the lenses inside our eyes are transparent even though light gets disturbed by irregularities inside them. In physics, once something has been discovered in one area, the ideas get applied all over the place, even in subjects that seem different but where at a deep level the same principles are at work.

"If this were all, we would still be celebrating John Ziman today, as a high-class successful theoretical physicist. But, as I said, there was another side to him: he was a deeply cultured man. To be cultured means not just to be good at one thing all your life, whether it is physics, maths, music, sport, politics or anything else. It means being interested in the connections between different aspects of life. For John, this meant not only doing science – making physics – but understanding how and why science works. This is usually studied as philosophy, concerned with logical mysteries like how it can be that we scribble weird mathematical symbols on paper and this can describe what happens inside a star or be applied to design the thousands of transistors in your mobile phone.

"But as with his physics, John's way of thinking was unusual even here. He realised that science is not just logic; it is also a human activity. It succeeds because minds working together reach farther and deeper than minds working alone. On the surface there is some occasional competition among scientists, but it is an overwhelmingly co-operative activity. The lone scientist is a romantic myth.

"From his earliest years as a scientist, John was concerned with this aspect: how the community of scientists organises itself. He wrote several books on this theme while in Bristol. But – and this is the unusual part of his career that I mentioned at the beginning – suddenly, a few years before he left Bristol in 1982, he abandoned physics completely and devoted the rest of his life, in London and then near Oxford after he retired, to exploring how (in his words) science is social. That is why on this plaque you will read (and it is another of his phrases): 'science is public knowledge'.

"Last but certainly not least, I will mention another of John's lasting achievements: he created the modern theoretical physics group within the physics department in Bristol. Soon after he came here, he encouraged a number of young physicists to join him – including Robert Evans, now the head of the physics department, who is here today, and me. It is not easy to keep people working in different areas feeling that they are part of the same group. One way in which John did this, and one that we remember with affection, is through the relaxed and magnificent summer parties offered by him and his first wife Rosemary in this house and in its garden that he loved so much.

Michael Berry