

Awards for Irish students at IPhO

The 38th International Physics Olympiad (IPhO) took place on 13–21 July 2007 in Isfahan, Iran's second city. A record achievement saw every member of the Irish team gaining an award. Paul McElhinny from Dublin and Simon Wright from Belfast each won a bronze medal, and Mark Moriarty from Cork and Eamon Robinson from Derry were each awarded an honourable mention in this world-class competition.

Almost 80 national teams took part in the IPhO competition. This year, Uruguay and Nepal participated for the first time. The contest takes the form of a five-hour theoretical exam involving three extended physics problems and a five-hour experimental exam consisting of several linked tasks. For those curious about the physics, which is at the core of the event, most of the questions asked over recent years (and the outline solutions) are now available on the IPhO website at www.jyu.fi/tdk/kastdk/olympiads.

Situated in the Iranian central plateau 1600 m above sea level, 340 km south of Tehran and 1000 km from the Persian Gulf, Isfahan is a city of 1.6 million people. In contrast with the surrounding arid deserts of sand and rock, and chains of



Ireland's IPhO award winners (left to right): Eamon Robinson, Simon Wright, Paul McElhinny and Mark Moriarty.

high mountains, the Zayandeh Rud river sustains the city in a huge oasis, with large trees with lush verdant foliage. All that appears above the canopy of vegetation are the cool blue tiles on the bulbous domes of the Islamic mosques and the city's magnificent bridges. The city was conquered by Muslims in 641 and its civilisation and culture were put on a new track from that point onwards. In the 11th century it was the home to Persian philosopher Avicenna. Its main monuments are essentially the work of one man, Shah Abbas the Great, who made it his capital in 1598.

Among the many memorable

sights for the students were the 33-arch Si-O-Seh Pol bridge of 1602, the (resonant $\omega = \omega_0$) shaking twin minarets, the sound-boxes in the music room of the Shah's Palace and the expanse of Naghsh-e Jahan Square, with the original goalposts of Shah Abbas I still in place.

It was in this exotic setting that four Irish second-level students competed with more than 300 other young physicists. In the words of an IPhO official, these Celtic warriors competed among "one hectare of physics students" in the exam centre at Isfahan University of Technology.

The theoretical questions this year were based on the photometry and spectrometry of binary stars, the physics underlying an accelerometer designed to activate the safety air-bag at the instant of an automobile collision, and dimensional analysis leading on to relations governing the thermodynamics of black holes, Hawking and cosmic background radiation.

The laboratory task saw the students using a photoresistor fitted to a spectrometer to determine the energy band gap and the thickness of a semiconductor thin film. The questions were, as always, testing but also interesting and stimulating for the students.

Residential training took place at Dublin City University during the spring and early summer, directed by Paul Van Kampen, Eilish McLoughlin and David Rea, and assisted by staff from the School of Physics, all of whom generously volunteered their services. Practice in problem solving took place by e-mail. IOP Ireland is pleased to have supported the students and, once again this year, it congratulates all who were involved in this record national success in physics.

David G Rea St Colman's College, Fermoy

Practical ideas at physics teachers conference

Physics in Practice, the 34th annual conference for physics teachers in Northern Ireland, was attended by more than 60 teachers at Queens University Belfast on 27 June 2007.

The meeting opened with a very entertaining and informative lecture, "The human body – the ultimate physics laboratory", by medical physicist Kevin McGuigan. Originally devised for teenagers to interest them in physics, the lecture did not censor any of the gory detail, to the delight of the teachers watching.

John Nunn from the National Physics Laboratory followed with a presentation of the invaluable new teaching

resource, the "virtual laboratory". This was originally developed in India where he was teaching and few of the schools or students had access to a laboratory, hence the idea of producing a virtual one. Teachers can obtain a free copy by attending a training session. Contact Paul Nugent (e-mail paulnugent@eircom.net) or Vida Given (e-mail v.given@btinternet.com) for details.

"Sizing up our galaxy – stars and space travel" by Stephen Smartt kept the audience fascinated with clear explanations and illustrations of the basic tenets of astronomy, one of the best topics in physics to capture students' interest.

The meeting ended with the ever-popular "Hands-on and easy to prepare" demonstrations from the Irish Science on Stage team, led by Paul Nugent. Useful teaching and demonstration examples of physics were brought by the Science Enhancement Project team and by teaching staff and technicians from Belfast Metropolitan College. **Allison Hackett** Institute representative

Carles Morros (right), a technician from Belfast Metropolitan College, demonstrates the electric field between two oppositely charged plates.





Nuala
mine
ith
ollege)
eto
reen)
the
s in
ect on

of
n Year
e) for
its were
ysics
es,
and
and to
mploying

Students compete at Dublin City University to take part in IPhO

This year's national competition to select a team of physics students to represent Ireland at the International Physics Olympiad (IPhO) took place in Dublin City University on Saturday 27 January with almost 120 registered students. Schools from all over Ireland nominated their top physics student to compete and a further cohort of students was specially invited based on their excellent performance in mathematics and science in the Junior Certificate.

Some 75 countries participate and each country selects a team of its five best second-level physics students to carry out a five-hour practical and a five-hour theoretical assessment. Since 1998, Irish students have won four bronze medals and six honourable mentions. At the Irish Science Olympiad (ISO) physics competition in



Dr Eilish McLoughlin (Dublin City University) with top Physics Olympiad student Mark Moriarty from Christian Brothers School, Cork.

DCU, the students were given a three-hour exam covering a range of physics topics. A total of 10 medals were awarded:

- Gold medals went to Mark Moriarty (Christian Brothers School, Sidney Hill, Cork) and Eamon Robinson (St Columbs

College, Derry).

- Silver medals went to Barry O'Farrell (Colaiste an Spioroid Niamh, Cork), Simon Wright (Methodist College, Belfast), Brendan Moroney (St Columbs College, Derry) and Galen Lowrey (Clongowes Wood College, Kildare).
 - Bronze medals went to Paul McElhinney (Belvedere College, Dublin), Steven Knox (Cookstown High School, Tyrone), Rachel Brown (Banbridge Academy, Co. Down) and Jennifer Quigley (Presentation Secondary School, Ballygarry, Co. Tipperary).
- The ISO Physics trophy went to Mark Moriarty, who is a fifth-year student of Frank Cotter in Christian Brothers School in Cork. Mark has had remarkable achievements in physics and last year represented Ireland at the European Union Science Olympiad in Brussels and the IPhO in Singapore.

Six more students were

commended: James Hickey (Colaiste Michil CBS, Limerick), Nick Byrne (Colaiste Raithlin, Co. Wicklow), Ryan Loughran (St. Pauls High School, Newry), Cillian McPolin (St. Colman's College, Newry), Martin Quigg (Loreto College, Coleraine) and Mark Conroy (Colaiste Phobal, Roscrea). They will join the 10 medallists to form the ISO Physics panel for 2007 and will be invited to Physics Olympiad training. Final team selection will take place over the coming months with staff from Physics in DCU. Finally, a team of five students will be selected to represent Ireland at the 38th IPhO in Iran in July 2007 led by Dr Eilish McLoughlin (Dublin City University) and David Rea (St Colman's College, Fermoy, Co. Cork).

Eilish McLoughlin
Dublin City University

Obituary: Bill Lanigan, 1961-2006

Bill Lanigan a member